The R-390A Owners Manual by Chuck Rippel, WA4HHG
Jan 1998

You are the proud owner of a Collins designed R390A/URR general coverage, HF radio receiver. In many circles, the R390A is considered to be the finest HF radio receiver ever built. Weighing in at 85 lbs, this electro-mechanical wonder was designed in the early 50's and released February 24, 1954 which also happens to be my birthday. Thanks to features such as a 6DC6 first RF amplifier, a suite of Military Grade Collins mechanical filters and full tracking RF and IF sections, the R390A is capable of copying signals down to its -143db noise floor, close to the galactic limit. All this while operating in high over load/strong signal environments.

Originally built by Collins Radio Company in Cedar Rapids, IA, the R390A was designed by 2 teams. The mechanical team being lead by Fred Johnson while the electronics team was overseen by Ernie Pappenfus, K6EZ. Besides Collins Radio, there were 13 other sub-contractors which built R390A's until the last one rolled off the assembly line in 1984. Banks of these fine radios served the country in all branches of the military and also the CIA and NSA for monitoring communications from behind the Iron Curtain during the Cold War years where the R390A was classified TOP SECRET until the mid-1960's. Stories are told that R390A's are still in use by the NSA where senior operators far prefer their quiet, yet stellar performance over modern, mega-dollar receivers from Harris, Racal and Watkins-Johnson. I hope you enjoy this wonderful radio, unduplicated in performance and rich in history over the many years of service it still has to offer. -73- Chuck Rippel, WA4HHG

Care and Feeding

Before powering up the receiver: There is nothing really very different about owning and operating an R390A but there are a few issues to be aware of. By now, you know that this radio is quite heavy! Weighing in at 85 pounds without the accessory cabinet, your R390A is a "boatanchor" in the truest sense. Keep this in mind when considering a location and operating position; placing it on a light desk or TV table might result in this 85 pound radio ending up in your lap! Another consideration is the amount of heat given off by the R390A's 26 vacuum tubes using both 6.3 and 12.6 volt filaments. Make sure the radio has adequate ventilation. Finally, and perhaps most important, before plugging in or powering up the radio, be safe! Make sure your R390A has a good electrical and RF ground.

The audio output of this receiver is much like most other military receivers having a 600 ohm impedance. This means, if connected to a regular 8 ohm loudspeaker, it will sound weak and distorted. The "local audio," that is, the audio controlled by the "local gain" control on the front panel appears on pins 6 & 7 on the left hand terminal block as viewed from the rear of the

receiver. The impedance mismatch when using a 4 or 8 ohm loudspeaker can be overcome easily. The first solution is to purchase a 600 to 8 ohm AUDIO transformer. These can be found (at times) at Fair Radio for about $8. An easier solution is found right at the local Radio Shack. Purchase a 70.7 volt line transformer (cat. Number 32-1031) and connect the primary terminals marked "C" and "10" to terminals 6 and 7 on the left hand terminal block located on rear of the R390A. Then, connect the secondary side of the transformer, terminals "8" and "C" to your 8 or 4 ohm speaker. This will result in an 500 to 8 ohm match which will give good performance. A closer match may be realized by using a 25 volt line transformer and using the same configuration as above save for choosing the "1" and "C" taps on the primary side of the transformer. The secondary wires as above in the 70.7 volt line transformer.

The antenna connection is even more simple. The radio has been aligned using the "Balanced" antenna input located on the rear of the receiver. Turn the receiver around and face it. TB-102 will be on your left and TB-103 on the right. The "Balanced" antenna input is located in the upper middle. Examine the connector and notice it has two holes for pins located within the connector. Simply tin your antenna wire and insert it into the right hand pin hole. Insert a wire in the left hand hole and ground it using one of the screws which hold the antenna relay unit to the rear panel. The "Unbalanced" antenna input can also be used but with a decrease of performance unless it was aligned to that input.

If you wish to use the proper connector, there are several approaches from which to choose. A combination of a UG-971/U and a UG-636A will adapt a BNC connector to the "balanced" antenna input. A UG-970/U will adapt a PL-259 to the "balanced" antenna input. A UG-636A/U will also adapt a BNC directly to the "unbalanced" antenna input.

The vacuum tubes originally had black, heat dissipating IERC tube shields installed on them. According to a study done by Collins Radio, this increases tube life by up to 53%. If your radio does not have them or simply has shiny heat shields which have been painted black, it might be a good idea to pick up IERC shields at a hamfest. The R390A uses three sizes, short 7 pins, regular 7 pins and regular 9 pins. These have gotten expensive of late as more and more tube enthusiasts realize their worth.

A couple of other "don'ts" come to mind. To keep the receiver stable, DON'T, turn on the "ovens" switch located on the back panel of the receiver. It causes the receiver to steadily drift in normal temperatures and can also cause the PTO to be irreparably damaged should the thermostat fail causing the oven to lock "on." Another tip: if the receiver is going to be left on but not in use, DO NOT use the "STANDBY" position on the FUNCTION switch. The now unloaded stages will cause the various voltages in the

receiver to rise upwards perhaps beyond the tolerances of some critical components. This is caused by the multiplicity error in our sometimes 120v+ line voltage v/s the 115v in use when the 390A was designed and built. Since it is normal for the "LOCAL GAIN" control to not completely mute the audio when turned down fully, it is natural to consider putting the receiver in "STANDBY." Remember, DON'T. Instead, turn the audio down and also back off the RF GAIN control to about 11 o'clock and the residual audio will disappear and no damage will be done to the receiver.

One of the mods I install is a precision replacement pot used to zero the "CARRIER LEVEL" meter. It is located on the top of the IF chassis (chassis module behind the "LINE LEVEL" meter). To adjust it, let the receiver warm up for about and hour then unplug the antenna and tune the R390A to a dead spot on any band. Remember, the R390A is VERY sensitive and simply unplugging the antenna is not 100% insurance of completely removing a signal. Once a dead spot has been located, zero the "CARRIER LEVEL" meter with the presicion control.

The "IF OUT" connector on the rear of the receiver can provide an IF signal to the VERY EFFECTIVE, highly recommended, Sherwood SE-3 synchronous detector. An SE-3 and R390A combination are a "deadly" combination of classic tube engineering and modern technology. I have found that using the SE-3 MK3D, the operator is able to recover about 30% more useable audio from a given AM signal with more fidelity and far less distortion than the R390A alone. All of this, without the shortcomings of todays receivers using "modern," (cheap) engineering approaches.

Speaking of audio, supurb results can be realized by coupling the "DIODE LOAD" point on TB-103 located on the rear of the receiver to a Hi-FI amplifier. Simply obtain an audio extension cable with an RCA plug on one end from Radio Shack. Place a 470K resistor in series with a 10uf, non-polarized (also available at Radio Shack) capacitor and connect it to one of the screws holding the jumper across the "DIODE LOAD" screws on TB-103. Do not remove the jumper. Connect the other end of the capacitor/resistor network to the center conductor of the RCA cable then ground its shield to the "GND" screw located on TB-103 immediately to the right of the "DIODE LOAD" screws. Plug your cable into the TAPE or AUX jack on your stereo receiver, adjust the tone controls as appropiate and enjoy. For EXCELLENT AUDIO, try tuning into the Venezualean Ecos del Torbes after local sunset on 4980. Open the "BANDWIDTH" to the 8kc position and enjoy some of the best hollow state audio you will ever hear!!!

Resources for the R390A Owner

* Sherwood Engineering

Builders of the SE-3 MK3D and other useful items. I have personally had very satisfactory dealings with Bob Sherwood beginning in 1975 when I bought a modification package for my Drake R4-C. While the SE-3 MK3D is not effective in receiving SSB, I cannot recommend it highly enough for achieving top AM performance with the R390A.

Sherwood Engineering
1268 Ogden Street
Denver, CO 80210
(303) 722-2257
P.O.C.: Bob Sherwood

* Hollow State News Compendium

The Hollow State News focuses on service and useability issues on receivers such as the R390A, Hammarlund SP-600 and HQ-180(A). Recently, Charles Talbot, K3ICH has offered a bound reprint compendium of all issues of the HSN. Contact him directly for information and pricing.

Charles Talbot - K3ICH
13192 Pinnacle Lane
Leesburg, VA 22075-6146

* Hollowstate News

HSN $5 for a 4 issue sub. Back issues $1 each and as if 1/1/97, we are at issue #39. Make checks payable to: Ralph Sanserino.

Ralph Sanserino
PO Box 1831
Perris CA 92572-1831

* R390A Manuals

Original manuals can be purchased from:

National Technical Information Service
Technology Administration
U.S. Department of Commerce
Springfield, VA 22161

The NTIS Sales Desk is available between 8:30 a.m. and 5:00 p.m., Eastern time, Monday through Friday.

Sales Desk: (703) 487-4650

Mail Orders Send orders to
Subscriptions: (703) 487-4630

NTIS

TDD (hearing impaired only): (703) 487-4639

Springfield, VA 22161

Fax Orders (703) 321-8547

Fax service is available 24 hours a day, 7 days a week. To verify receipt of your fax, call (703) 487-4679, 7:00 a.m. to 5:00 p.m., Eastern time, Monday through Friday.

* Hi-Fi Audio Chassis

Noted Electric Radio Author Bill Kleronomous, KD0HG will modify an existing R390A audio chassis to provide "hi-fi" sound backed with about 5 watts of push-pull power. As an added bonus, the 600/8 ohm audio matching transformer is no longer required. So, if you want to hear excellent audio from your R390A, consider obtaining a spare audio chassis and send it to Bill to modify. While not especially attractive for DX'ing, I can personally attest to the improved audio for the program listener. Contact Bill for current availability andpricing at:

Longmont Audio Labs
224 Main Street
Lyons, CO 80540
(303) 823-6438

* Cabinets

Yes, thats right. Cabinets! You can purchase top quality vintage-type metal cabinets which fit the R390A. These are even complete with piano hinge top covers! The best part is the price, about $125 for the "DCR" series cabinet as of 1997.

Premier Metal Products Company
381 Canal Place
Bronx, NY 10451
(718) 993-9200 (East Coast)
(909) 829-3089 (West Coast)

* Collins Collectors Association

While the CCA focuses largely on Collins' contribution to amateur radio products, membership can be helpful to R390A owners. I recommend membership in the CCA. Any person who has an interest in Collins Radio is welcome to join. Annual dues are $15 per year for those living in the US and $18 for Canada. This includes a membership certificate and the quarterly newsletter, The Signal.

Mail your remittence in US funds to:

The Collins Collectors Association
PO Box 840924
Pembroke Pines, FL
33084-0924

* Electric Radio

ER publishes a monthly magazine about the size and format of the current NASWA Journal. It is a very worthwhile publication and focuses entirely on tube or "hollow state" receivers and transmitters. Electric Radio is $38 per year mailed first class and $28 for 2nd class. Canada is $39.

Electric Radio
P.O. Box 57
Hesperus, CO 81326

* Fair Radio

Fair Radio has been around since 1947 and sells, among other things, R390A parts and entire sub-chassis. Their prices are, in my opinion, a little on the high side of reasonable but Fair has always given me excellent service.

Fair Radio
PO Box 1105
Lima, OH 45802 (419) 223-2196

* Antique Radio Supply

Antique Radio supply caters to the hollow state enthusiast. They have a large selection of vacuum tubes and other goodies.
6221 South Maple Street
Tempe, AZ
(800) 706-6789

* North American Shortwave Association

For those interested in listening to Shortwave Broadcast or Shortwave Broadcast DX'ing, NASWA fills the bill. They publish a monthly 60+ page bulletin with program schedules, features, DX listings and other S.L. material. NASWA is the oldest SWBC focused organization in North America. A sample bulletin can be obtained for $2 from:

NASWA
45 Wildflower Road
Levittown, PA 19057

Hamfest Shopping List

by Chuck Rippel

It is never a bad idea to have a few spare parts around for your R390A. Even though the receiver was designed and built to the highest quality mil-spec standards using silver plated contacts, all stainless steel hardware, modular construction and industrial grade tubes, it can still break. The spare receiver I bought for $50 a few years ago as well as this stock of replacement tubes has proven invaluable the few times mine has actually needed repair. This is the suite of vacuum tubes used in the '390A. It is a good idea to pick up at least 2 complete suites of tubes while they are still reasonably priced and even better to have 4. Make a few copies of this page and take it with you to the next hamfest. Always try and purchase the industrial tubes. Prices as of 1996..... Total Tube Count: 26

(3) 6AK6	$2 – 5
(2) 5654	$2 – 5
(1) 3TF7	$20+
(2) 12AU7/5814A	$2 – 8
(2) 26Z5W	$10 – 20
(6) 6BA6/5749W	$2 – 5
(3) 6C4/6100	$2 – 5
(1) 6DC6	$5 – 10
(1) 0A2WA	$5 – 10

As of this writing, tubes are not as difficult to find as some of the hand-wringers might say. On the other hand, the number of available tubes is finite so consider building a stock with the goal having at least 4 complete sets on hand. Also, always try and purchase JAN tubes. These are found in plain, white boxes, are labeled JAN and also show the date of mfg on the box. In the case of the 6BA6, 12AU7 and 6C4, try and purchase the 5749, 5814A and 6100 respectively which are premium tubes with JAN/Industrial specifications.

** NEVER, EVER INSTALL CHINESE OR RUSSIAN TUBES IN AN R390A !
(Unless there are no more US tubes left on the planet)

IREC Tube Shields for R-390A

by Chuck Rippel

The R390A uses 5 different sizes of heat dissipating, black, IERC tube shields. Installing the correct type and part number shield can dramatically decrease the operating temperature and in turn, increase the life of the vacuum tubes. Collins addressed this back in the early 50's in service bulletin #303 which graphically compared the beneficial performance of various types of tube shields with not using shields at all.

The proper tube shields can easily identified. They are anodized black (or deep purple), have an open top with a series of tabs folded over a thin, octagonal metal tube inserted longways inside the shield. They are also plainly labeled "IERC." There is a unique model number stamped on the outside of the shield denoting which size it is designed to fit. Refer to this number when obtaining the shields. Below is an inventory with individual quantities of the 5 different part number IERC tube shields used in the R390A:

Part Number	Quantity	Description
6025-B	1	Tall 9 Pin, used for the ballast tube
6020-B	9	Medium 9 pin, used on 5814A's and 26Z5W's
5015-B	2	Short 7 pin, used on the 5654's
5020-B	13	Medium 7 pin, used on 6BA6's, 6C4, 6AK5, etc.
5025-B	1	Tall 7 pin, used on the 0A2

Black tube shields labled "WPM" my also be found. While I personally don't feel these are quite as effective as the IERC design, they are far and away better than the shiny types described below.

Radios which still have shiny tube shields should have them replaced with the above IERC shields as soon as possible. Even if they have been painted black on the outside, these shields have no provision to grip the tube bottle and sink the heat away from it. Also, the bright inside surfaces of the shield actually reflect the heat back into tube and on to the dark internal plate structure which could cause the tube to over dissipate and shorten its service life.

Rippel's R390A/URR Restoration Summary

(an excellent outline of restoration workflow...editor)

For:_____ Owner: _____

Order Number:FR-36-039-N-8-0189(E)

Each R390A/URR that I rework has many hours invested in the electronic, mechanical and cosmetic restoration process. Each receiver is given a thorough general operational check before the restoration process begins and any problems or deficiencies corrected. Below is a brief, general checklist of what was done to this particular receiver. Other, specific items are addressed on a unit by unit basis according to need and may not be specifically noted here.

- General- Electronic & Mechanical

* Clean switches and control pots with Caig Laboratories, DeOxit®
* Remove all sub-chassis assemblies and clean main chassis with water displacement/lubricant
• Lubricate front panel switch click stops with Redline ® CV-2 synthetic grease
* Remove all subchassis modular plugs and clean pins. Apply DeOxit® to plug sockets and re-install
* Install 3 wire A/C cord per military procedure
* Verify proper fuse value(s)
• Remove, clean and grease front panel bearing-thrus for "Kilocycle Change," "Megacycle Change," "Bandwidth," "Ant Trim," and "BFO Pitch" controls
* Test all vacuum tubes and replace as required
* Clean all vacuum tubes and apply DeOxit® to pins and reinstall
* Tighten all tube socket screws

- Main Chassis Assy/General- Cosmetic

* Remove, sand, repaint, re-white and bake-finish all control knobs
* Remove, clean, strip to bare metal, fill as required, sand, repaint, re-letter and bake-finish front panel using DuPont Centari® Acrylic Enamel (automobile) paint
* Polish or replace and polish stainless steel front panel screws
* Remove and refinish meters
* Remove, sand re-paint and bake-finish readout bezel. Clean lens.

- RF Sub-Chassis Assy

* Set cam profiles to match PTO electrical "length."
* Set Veeder-Root counter for proper (35kc) end run out
* Remove all RF and IF slug racks and clean hardened grease from bearing slides. Re-apply Mobil-1® synthetic lubricant to bearings and slide surfaces
* Re-solder all connections in signal path with silver-solder

* Clean and lubricate gear train with Mobil-1® synthetic gear lube
* Clean Veeder-Root counter readout
* Clean sub-chassis
* Clean antenna trimmer and align gear train. Lubricate helical gear.
* Set calibrator frequency

- P.T.O. Sub-Chassis Assy

* Remove PTO, disassemble, clean and lubricate with Redline ®synthetic
* General visual check, test for bad connections
* Reinstall PTO and set end points
* Shim PTO for proper mechanical centering on tuning shaft
* Set "Zero Adjust" clutch for center
* Clean sub-chassis

- IF Sub-Chassis Assy

- Replace C-553 with .01ufd 600V Orangedrop capacitor to protect mechanical filters
- Replace "Carrier Zero" pot with 10 turn, precision wire-wound variable resistor to allow accurate meter setting

* Grease "Bandwidth" click stops
* Tighten all wafer switch stacks
* Clean sub-chassis

- AF Sub-Chassis Assy

* General visual check and test for bad connections
* Clean sub-chassis

- Power Supply Sub-Chassis Assy
* General visual check, test for bad connections
* Clean sub-chassis

Prior to final Q.C., each radio is operated for a full 3 hours.
This allows the unit to properly heat-saturate before a full alignment of:

* 1st and 2nd IF's
* RF Sub-chassis assy
* IF Gain
* AGC coupling
* BFO neutralization
* Crystal filter neutralization
* Mechanical filter impedance matching (where applicable)
* 1st Crystal Oscillator
* Carrier Level meter (will drift with time and is user adjustable)

* DX Situation Test

Notes:

R390A Sensitivity Performance Summary

EAC Mfg R390A #905
Order #FR-36-039-N-8-00189(E)

After completion, each radio is checked for sensitivity and general performance on significant bands used by the SWBC DX'er and Amateur Radio Operator. Below is a final post-restoration performance summary for this receiver.

Band Frequency 10db S/N + N Sensitivity (uv) 4kHz filter, AM

120M 2.2 MHz
90M 3.3 MHz
60M 4.8 MHz
49M 6.0 MHz
41M 7.1 MHz
31M 9.6 MHz
25M 11.8 MHz
20M 14.2 MHz
19M 15.2 MHZ

PTO End Point Error:

This R390A/URR Restored and Tested For: (to be filled in by tester)

Some Targets to Hear on the R390A

Evaluating the performance of this receiver by listening to the amateur bands or the BBC is a little like looking across your yard with a telescope. You don't really find out much more than you already knew. Here are a few Shortwave Broadcast DX targets to try for. All are just a bit on the difficult side. The challenge just might surprise you and open up a whole new hobby segment, Short Wave Broadcast DX'ing.

All listings are by UTC time:

* 1130 AUSTRALIA 2.310 MHz VL8T CAAMA Radio. This station along with its sister on 2.325 broadcast to the Australian Outback. Look for them between 1100UTC and local sunrise. (Propagation during winter months only)
* 1130 Papua New Guinea 4.890 MHz National Broadcasting

Commission. While the transmission is in English spattered with Pigin, this programming of this station is intended for local consumption. They sign off weekdays at 1200UTC but are on longer over the weekends.

* 1228 India 11.585 MHz All India Radio Hear this somewhat easy catch as it signs on at 1230 UTC. They stick around till 1600 and you can hear exotic sub-continental music. Also try10.330mHz during the same time period or 11.620 during local evenings.

* 2200 Ghana 4.915 MHz Ghana Broadcasting Corp. The later afternoons yield many stations broadcasting on the 60 meter Tropical Band. This is one of the strongest and can show as early as 2000 UTC in mid-winter. This is the frequency for the Home Service where the listener can enjoy a sampling of African "High Life" music.

* 0230 Peru 4.991v MHz Radio Ancash.This station is nearly co-channel with the 350 watt R. Apinte in Suriname. Both are excellent catches. R. Ancash is a station by which I usually judge the performance of a completed R390A.

* 0130 Venezula 4.980 MHz is Ecos del Torbes. A real powerhouse in ECNA, you can hear plenty of Latin music till their 0400 sign off.

* 0250 Zambia 4.910 MHz ZNBC. This station signs on at 0300 but runs a long interval signal, the Call of the Fish Eagle from about 0250. This is usually followed by great selections of African "Hi-Life" music.

* 0300 New Zealand 15.115 MHZ Radio New Zealand. While this is a government station, it runs local commercials and programming. Interesting listening.

Operating Notes

Because your BFO makes a great AM tuning aid, it has been carefully set up to help you perfectly tune a station. Ever wonder when a station is perfectly tuned and in the center of a filter passband? That is quite important for best audio recovery and lowest distortion.

Your R390A has 4 Military-grade Collins Mechanical Filters plus 2 crystal filters in the IF section whose center frequency is 455KC. I have optimized their center frequency very carefully during alignment. Additonally, the BFO has been precisely set to zero beat with a 455KC signal coming through the IF when it is set to "0" or center on the front panel scale. Here is how to use the BFO as a tuning aid:

A. Make sure that the white marking line on "BFO Pitch" knob lines up exactly with the "0" mark on its front panel scale.

B. Select the filter you wish to use.

C. Turn the BFO on then tune the main, "Kilocycle Change"

control for an exact zero beat with the carrier of the desired station. Do not adjust the BFO control to attain zero beat!

D. Turn off the BFO and monitor the broadcast.

Using this technique, the desired signal is centered exactly in the IF passband. You are assured of maximum audio recovery with the lowest possible distortion. Remember, this technique is for AM only. SSB, a kluge on the R390A at best, requires a different procedure.

© 13 January 1998

Date: Fri, 15 Oct 1999 12:26:49 -0400
From: "Chuck Rippel" <crippel@erols.com>
Subject: [R-390] Re: "Let the buyer beware"

IMHO the EAC's have the most utility because they are the most widely available, newest build. Yes the Dittmore-Freimuth (high serial number #250) and the newly discovered 1968 EAC contract (high serial number ~149) would be the exception but are not widely available.

Keep in mind that EAC did a 1960 run also. I put those near the same category as the Motorolas. That said, I have seen some real junker EAC's and some very, very nice Capehart, Amelco and Imperial units.Here is a ranking based soely on my preferences. There are plenty of radios which break these rules so take it as very general.

Ranked in order of desireability for USERS, not collectors:

1968 Dittmore-Freimuth
1968 EAC
1967 EAC
Teledyne/Imperial
Capeheart
Amelco
1960 EAC
1984 Fowler
Collins
Motorola

Date: Thu, 12 Nov 1998 02:37:43 -0000
From: "Chuck Rippel" <crippel@exis.net>
Subject: [R-390] Mechanical Tip

Just before Floyd and I started filming, Les Locklear called me with a tip he wanted included. Its one I had never heard of and when I tried it, found it

worked great.

When installing any of the high failure, non-mar clamps. Take a "Q" Tip with a little oil on it and moderately lubricate the inside of the clamp. Distrubute the oil evenly and do not add so much that the gripping surface gets oil on it. Also, install a small amount of grease on the threads of the clamp tightning screw.This works great ! Les explained that as the clamp was tightened, the oil allowed it to seat much better and give greater purchase more evenly on the gripping surface. This allows for a more secure mechanical coupling while not having to tighten the clamp nearly as much. Thus, clamps virtually never break.

OVERHAUL TIPS by Nolan Lee

Date: Sat, 22 May 1999 14:46:15 -0500
From: Nolan Lee <nlee@gs.verio.net>
Subject: [R-390] R-390A Overhaul steps...

I've had a couple of requests for the list of items I did when I went thru my EAC last year so I'm reposting my original message on it to the list. The EAC has been running 24/7 since October of last year and I have no complaints. I've been wanting to pull it out of the rack and do a "visual" of it and check the tubes and the alignment but haven't had the time. Maybe this Fall. Your mileage may vary... nolan (entire article-editor)

Well, after spending months slowly going thru my two R390A's, one is finished. Below is an outline of the steps that I took during my overhaul. This was probably one of the more involved R390A "overhauls" done in the South. <grin> The other, will take longer, I'm probably going to replace all of the bushings in the RF deck amoung other things that I didn't do with this one.

The victim: I started with a cherry 1967 EAC contract model that was the "lowest mileage" R390A I've ever seen. All of the original modules, meters, covers, etc. were still on it. In addition, all of the tubes in it had date codes within a two or three month period of each other in 1968. Even with clean gears, there wasn't even a hint of a wear pattern in any of the gears and all of the aluminum finish in the tracks on the RF deck was still intact. The green paint on all of the module hold down screws was even 100%. I'd be surprised if this thing saw more than a few hours operation after the burn in period. There's no diode load hole in the front panel or adjustment hole in the top dust cover for the meter adjustment.

Jerk all of the modules out of it and rip it's gizzard out and scatter and toss the parts around! I tried, but I managed to not loose any of the parts and didn't even have any extra ones left over. <grin>

Chassis: Tested the dial lamps, checked the value of all of the resistors, the diode, the 2 capacitors, the meters, tested the selenium rectifier, and the antenna relay and inspected the contacts in the relay. Verified function of the main power micro switch, its placement, and measured the resistance of it. Measured the resistance of all of the front panel switches and potentiometers, and very lightly lubed the shafts of each, checked the ovens switch, verified the values of the fuses, checked their resistance, replaced one of the fuse holders that I didn't like the look of with a NOS one, and replaced the rear panel IF connector, the center terminal was missing. Checked the line filter, and checked the tightness on all of the screws holding the whole damn mess together. I removed all of the knobs and inspected and lightly lubed the set screws. Also verified that the index washers were installed in the two big knobs that prevent the clamps from turning. The next step ate up a lot of time. I removed all of the hoods of the chassis connectors to inspect and then measured the resistance of EVERY damn wire in the chassis. Then I installed a NOS military 3 wire 8 foot rubber 16 gauge power cord with a molded plug. Nice and flexible SJ. The original strain clamp for the cord was still there. First one I've ever seen. :-)

Power supply module: visual inspection, resistance readings of the transformer windings, and wiring, inspected the solder connections, verified 115 volt setting, stuffed two new 26Z5W's in it. Checked all of the screws and nuts for tightness.

PTO: Why bother? Chunked it in the R390A parts pile and installed an Army rebuilt Cosmos that I've been sitting on for about ten years, sealed in the box, to replace the Cosmos that was in there. It turned out that the endpoint was out a little less than 2 KHz, and linear within a little less than 200 Hz across the spectrum. I don't know what the specs on it where when it left their hands in Feb. of 1984 but it sure aged well. :-) I guess that I'll let it run a few weeks and then adjust the endpoint. I did power up the oven and verified that the thermostat worked, measured the resistance of the transformer, and tested the tube. I like the Cosmos PTO's. That blue label sure is pretty, bubba!

On a side note, I probably use a bit more complicated method than most people do when fitting a PTO to a receiver. If you're going to do it right, it might as well be done right the first time. Both halves of the Oldham coupler should be perfectly parallel to each other and the centerline of both shafts should be perfectly in line with each other on both planes. I only spent about an hour adjusting the position and height of the PTO in the chassis, but spent several hours measuring the components and setting up the fixtures to measure other aspects of the components. I first measured the run out of each half of the couplings while installed on their shafts. The one on the PTO was true within .001. The one on the KHz shaft of the RF

deck was machined improperly. he rib was .003 off to one side and wasn't square with the bore either. I tossed it and pulled a few others out of spares. It took several before I found one that was square with the bore and only had a little more than 0.001 run out. The next step was to check the center section. The width of the two groves seems pretty consistent, but I was curious if the two groves were machined at exactly 90 degree angles to each other. The groves were of a dimension that I didn't have any key stock for so I used two 12" long pieces of 1/4" ground steel rod. I centered the two pieces of rod, lengthwise, one in each of the two grooves, clamped the three pieces together. Then by measuring and comparing the distances between the four rod ends, I could determine the exact angle that the grooves were from each other. This part of the process was a wasted effort, the coupling center piece from the EAC was 90 degrees like it should be and so where the ones in spares that I checked. When I finally assembled the receiver and physically aligned the PTO to the chassis, mechanically and electrically, the dial indicator measured a total movement in the center section of the Oldham coupling of .003 when the KHz knob is turned. Close enough! Put that spring on! Oh, I used a little dab of Penzoil wheel bearing grease to lube the coupling. It's red and contrasts, in a pleasing fashion, the blue label of the Cosmos PTO. :-)

Crystal Oscillator Module: Tested the tube, and tightened the screws holding the tube socket to the chassis, they were loose. Checked resistor values, transformer windings and crystals. Bad 10 MHz crystal, throw one in it from spares. Most are still on the money, the few that are "off" are well within 1 KHz or maybe a shade more. I decided against spending ~250 dollars on new ones. <grin> Measured the resistance of all of the wiring and switch contacts and tested all of the fixed capacitors and spun all of the trimmers a couple of turns. Powered up the oven and verified function of the thermostat. Also, "timed" the two switch bodies. They were "off" a bit. Then when thru and re tested everything on it's underside just to make sure. I figured that anything that was a pain to remove, I double check everything.

Audio module: One of the original plug in electrolytic caps showed signs of leaking, tossed it in the trash, installed another one from spares. Reformed both, leakage at 50 volts over the rated voltage was less than 1 ma. per section after reforming. I fused them and ran them for a couple of weeks at full rated voltage on one of the HV supplies, they didn't explode and leakage declined even further. Good enough, bubba! (yeah, I know, Doc, but the power factors were good, I even checked that. :-) Ripped all of the paper capacitors out of the module, and tossed them in the trash. Installed two new .022 400V orange drops in the location that Chuck likes, and NOS Vitamin Q's in the other locations. I have the orange drops on hand and could have used them thru out but didn't like the way they sit on the circuit board. I did use an Orange Drops to replace the one on the chassis under

the circuit board. All of the new caps were tested for leakage at their rated voltage and tested to verify their value before installing. Checked all of the resistors for value, replaced a couple. Tested the mica cap, no problem there. Tested all of the tubes, they all passed but tossed the 0A2 and stuffed a new 6626 in it's place. I don't trust used 0A2's, had some weird problems with them. Tested the relay and measured the resistance of the wiring, the chokes, and the transformers. I left the 800 cps filter alone. Probably not a whole hell of a lot of R390A's out there that still have their original 6AK6's. All of the tubes are original except the rectifiers and the regulator. :-)

IF Module: Tested the tubes and the 3TF7. Measured the resistance of the wiring, the transformers, the switch contacts, and the resistors. I replaced more than a half a dozen resistors that were out of spec. Checked the capacitors and resistors inside the IF transformer cans, that could be tested. Some could not be tested in circuit. I tested the big above chassis oil filled capacitor for leakage and value. Tested all of the mica capacitors for leakage and value and then ripped all 18 or so of the axial lead paper capacitors out of the module and tested them just for kicks. EVERY "brown beauty of death" tubular capacitor that was in it leaked like hell and a good percentage had microscopic cracks in the bodies within maybe .020 of the seams and paralleling them. Most of these caps leaked at voltages below 50 volts when tested. Only one of the metal can axial capacitors leaked when tested. I replaced all 18 of the capacitors with Orange Drops. For the 0.1 and the 0.033 values I used 400VDC rated ones and for the 0.01 values, I used 600VDC rated ones. The reason that I didn't use 600V rated ones thru out was their size. It was a pain in the ass to the fit the ones that I used in there properly. If I'd have used the 600V ones everywhere, I'd have had to move the locations of some of the capacitors and a bunch of them would have had excessively long leads. I didn't think that this was such a hot idea in the IF section and figured that the best placement of the parts was in the original locations. ;-) Let's see, other than checking all of the screws and nuts, I think that was it for the IF deck other than lightly lubricating the shaft extensions where they passed thru the front of the IF module chassis. I didn't test the mechanical filters. I tested the blocking cap before I tossed it and it had tested good even at 100 volts over it's 300V rating.

Whew! The last one, the RF deck: After removing it, the first step was to take it apart. I removed all of the tubes and tested them, the crystal oven and tested it, all of slug racks and springs, four of which (for the variable IF slug racks) were really weak, so I installed NOS ones in that location when I put everything back together. The geometry for those 4 springs suck, they're stretched a lot more than any other location. I removed all of the RF coil assemblies and measured the resistance of all of the windings and checked what capacitors I could. The bridge wouldn't work on some, so I kept track of those in case I had some weird assed problem when I tried to

align it later.

I disassembled the gear train and tossed all of the parts, except for the counter, in a coffee can and sprayed a mess of gunk in there and let them brew. They weren't really dirty, but the original lube had mostly evaporated and what was left was stiff as hell and I don't really find the gear train much of a mechanical challenge so I ripped it apart. About the only thing I didn't take apart was the 6 camshafts and the antenna trimmer can. I worked a few drops of penetrant into the bearings of the cam shafts and kept lubing and wiping them until only clean oil would come out. Oh, I used 10W30 Mobil 1 synthetic oil for the RF deck except the detent where I used Penzoil wheel bearing grease. Two of the cams appear to have been stamped, I guess, with cracked dies, leaving a couple of sharp burrs on the surface that the rollers ride on. I stoned these down while maintaining the original cam profile. :-)

When you take the split gears apart, tie them together, with a bit of soft wire in the orientation that they were originally assembled with. I suspect that the halves were matched.

While all of the stuff soaked, I replace the three paper capacitors, with Orange Drops, and replaced close to ten resistors that were out of spec, checked all of the other capacitors and found a cracked .005 1KV ceramic disc. And yes, I measured the resistance of all of the wiring and of the band switch. ;-) I found an odd thing. One of the tube sockets only had one screw holding it to the chassis. When I attempted to install a screw there, it turned out that the little "C" shaped piece of metal that curves all of the way around one side of the socket had an unthreaded hole in it for the screw. I'm surprised that an inspector didn't catch this at the factory. I tapped the hole and moved on. Most of the gear clamps were either viably cracked or showed cracks when dye checked. I guess that they must have been over tightened when it was built. I replaced all of them with NOS clamps to be safe.

I found that several of the roller retainers had been over-staked on on a couple of the slug racks. This prevented the rollers from turning. In addition, a few of then ends were not square and had to be straightened. Burrs and gouges on the end surfaces had to be stoned down and polished. The fit and finish of mechanical portion of this EAC RF deck didn't impress me at all. The old Collins decks were much more finely finished mechanically.

I wiped each of the RF cores out with a pair of damp Q-tips, wiped the slugs off, and eye balled them. The Collins part numbers on all of the RF slugs are all the same EXCEPT the six variable IF slugs. They are different from the RF slugs. So, they aren't interchangeable.

I assembled the RF deck and mechanically aligned it and put the receiver back together. For what it's worth, the repeatability of the RF slug racks averages about .001, the repeatability of the variable IF slug racks averages .004 on one and .005 on the other. I suspect that this could be improved upon by relocating the location of the attachment point on the chassis of those four springs. This would require either shorter springs or possible just creating spring "wells" that extent slightly below the chassis so that standard RF deck rack springs could be used.

I fired it up and let it cook a while in Standby mode, at 7+000. None of the magic smoke escaped so I switched over and set the PTO to 2455 KHz and tightened the clamp. I stuck a VTVM lead into the unbalanced antenna connector and cranked it down to WWL on 870 and let it run more than a day before I did the first alignment. I always like to align a receiver twice. I go thru it and then when I'm finished, I start all over again.

I've been playing with it for about a day and a half since the alignment. This is the most sensitive receiver I've ever owned. It kicks ass. I did a few sensitivity tests using my URM-25F. I questioned the results so I dug out the URM-25D and tried them again. REAL close.

I started with a receiver that hadn't been abused and tried to do the best job that I could going thru it. I wanted something that I didn't have to screw around with every few weeks. Something that wouldn't wake me up at night with a burst of light like a Romulan disrupter (I've had R390A's do that before). Something that would sit there and run for month after month and need nothing but tube and dial lamps like my R-1051B's. Hopefully, this will do that. Many of the of the steps that I took, were "over kill", but I had fun doing it and learned a few more things.

The numbers you ask? Lets just say that they're as good as the best sensitivity levels that I've ever seen posted or in print on the R390A. Numbers, that up until now, I always had my doubts about.
nolan

CLEANING AND RESTORATION OF AN R-390 RADIO
by Dave Medley

This is just a start. I intend to expand this from time to time. Most of the R-390 (non "A") radios I have seen are dirty and generally pretty disgusting. This is due to a number of of factors such as old age (these radios were all built in the mid 50s) surfeit of cigar smoke and general neglect. However this is such a well built piece of equipment that it will withstand some pretty rigorous treatment and come out smelling (and looking) like a rose. I was first shown the cleaning technique by a Tektronix Tech in Dallas

many years ago.

1. First strip the radio down to its component parts which are:

RF sub assembly See VERY IMPORTANT NOTE BELOW.
IF sub assembly.
Audio sub assembly.
PTO
Power Supply
Calibrator sub assembly
Web containing the two 10 turn stops.
Front panel.
Back panel and wiring harness.

2. When you have done all this you will have the bare chassis which will be covered in grease, dirt, burn marks, mouse droppings and other gunk. You will note that this is a welded unit. The side and internal panels are permanently attached to the baseplate and in some places painted. After you have scraped all the gunk off you will find the baseplate is zinc coated and comes up nice and shiny. You will also have several boxes of hardware such as knobs, screws, meters, springs and stuff. I try to keep them separated into various piles so I remember where they came from. An empty egg carton is useful for this.

VERY IMPORTANT NOTE:
You will notice screwed on to the front of the gearbox a mysterious "do-nothing" Green gearwheel. If it is not there you are in deep trouble. After you remove the front panel and before you do anything else remove this green wheel and install it to the right of the large brass gear in the center. It will engage in a gear behind this. Be sure it is firmly fixed to the shaft. There is an oblong slot in the wheel which must be aligned with the slot on the shaft. Failure to do all this will result in loss of mechanical synchronization as soon as the RF deck is removed. This will cause you much wailing and gnashing of teeth later.

3. Here is the basis of the cleaning process. The ingredients you need are:
A 409 sprayer.
A wad of fine steel wool
A can of WD-40
A can of deoxit
A garden hose
Several gallons of distilled water.
An oven. Hot Arizona sunshine is a good substitute for this and makes the XYL happier.

Not all this stuff is used on all units as I will describe.

4. For the main chassis spray it well with 409 and rub with 0000 steel wool until it is clean and shiny. Now hose it off with the garden hose. If you live in the desert the water will come out near boiling point for a while so be careful. After the chassis is clean dry it by your preferred method. When perfectly dry repaint the painted areas. I just rough it up a bit with steel wool and paint over. I use Rustoleum Dark Machine Gray which is close to the original. Your chassis will now look like new.

5. Remove all the tubes and tube shields and then do the same for each of the sub assemblies EXCEPT the RF deck which needs more attention. Don't be frightened to really saturate with the 409 both inside and out. Let soak for 5-10 minutes then hose out until all trace of soapiness is gone. NOW sluice well with distilled water to remove the residue residue from your local water which is not real pure right!! Dry thoroughly. These units will all now look new (almost!)

6. For the RF deck start by removing the slug racks and the RF coils. Remove and discard all the springs which will be rusty. The coils are held in by two captive screws accessible through holes in the top of the cans. Now start the cleaning process with the gearbox. Sluice it well with WD-40. I mean well. Wash out all the accumulated gunk and dirt. WD-40 is cheap so don't be afraid to use it. It is a good idea to remove the counter before you do this. Now follow this with the 409 garden hose and distilled water treatment. Make sure it is thoroughly dry. I use a hair dryer to be sure all moisture is gone. When all this is done lubricate the gears sparingly. I use Mobil 1 synthetic gear grease.

7. Use deoxit on all the switch contacts. Don't forget the switches on the front panel. Clean the wiring harness also with the 409 treatment.

8. Repaint the front panel. The baked on enamel is extremely difficult to remove so I just rough it up with steel wool and paint over it. Be careful not to paint too thickly or you will have trouble filling in the lettering. This I do with a lacquer stick. Takes a little practice but looks fine. (MUCH MUCH more to come.!)

Subject: R390A Project
From: Paul S Courson <paul.courson@xxxxxxxxx>
Date: Fri, 4 Apr 1997 05:19:53 -0800

Hi Dave, Nice hearing from you! Sounds like you are really hooked on the 390(A) -- near and dear to me too. I'd like to eventually get hold of a Collins example, just to compare.

The difference you mentioned in RF sensitivity is a mystery to me. I know

that Mish, as a standard part of his renovations, puts a lower value RF Gain control in his units to broaden out the "sweet spot" where most users adjust within. That could feel like a different level of gain because the pot is in a different position.

>From my experience with both a 1962 Stewart-Warner and a 1967 EAC, I have not noticed any significant difference in audio characteristics. I base that on standard connections off the LINE output terminals and the LOCAL output terminals, feeding an external audio amp or input to a mixing console. The DIODE outputs also sound the same, and are superior to Line/Local taps as mentioned previously. (and better than the Kleronomos module) I also have had a 1966 EAC, and I don't remember any audio difference jumping out at me there.

My '67 serial number is 6200+, while the '66 in the 300's. You may already know that Electronic Assistance Corp. bought some heritage when it acquired HAMMARLUND in the late 1960s. For a while I took to calling my EAC's a "Hammarlund" just to reflect that heritage, but I later learned that the production output was kept separate. Your serial number suggests somewhere in '67, and you can tell by looking at date codes on certain components in the EAC modules, including (with some chronology risk) the caps in the power supply (easiest to find, but may already have been replaced). My RF Gain meter has a date code. The contract number is the same as yours.

The final production from EAC is among the highest quality I have seen. The wiring harness features TEFLON insulated wiring instead of plastic, which can really save a lot of grief in cases where units have had a hard life. Cosmetically, the metal surfaces seem more resistant to discoloration, although the dust covers are thinner. The front panel markings are engraved rather than painted like on units from the 1957 Motorola contract. The EAC meter markings are a whitish-light green rather than a cream or yellow hue, and seem easier to read. (I am probably seeing the higher radioactive luminesence, hi! You probably know that's why the govt pulled a ton of meters before surplus auctions)

There is some controversy over the PTO, which came in Collins and non-Collins varieties. The non-Collins is typically "Cosmos Industries" and criticism centers on one of two types within the brand, mostly having to do with end-to-end accuracy. Not a big issue for those of us who don't operate end-to-end. See decal for ID. It gets arcane to distinguish "good" and "bad" Cosmos PTOs.

A radio with modules made by multiple contractors is affectionately known as a "mongrel." There is no stigma attached; it is a positive testimonial to the interchangeability of parts as the rigs came thru the repair depots over

the years. However, it is highly likely that a repair/maintenance depot has had its hands on a rig whose modules do not match the serial number contractor. That doesn't have to be bad, either, since in many cases those facilities were known to have entire subassy's tested and ready to go for swapouts to swiftly get a rig back to the user. As with your 4444, it can mean something that it has never had to go through a depot, and can suggest low mileage.

It can also suggest a unit had so many MAJOR problems that it was shelved. I mentioned how some of the EAC's allegedly had quality control problems, to the point the gov't reputedly rejected high numbers of incoming "new" units. EAC is said to have refurbished (fixed?) said units, and turned them around to market to the amateur community. Advertisments in late 60's CQ magazines might be something cool to put in the dossier on your 4444.

Good luck on the SSB mod, for what it may be worth. I have seen a turns counter assy located in the BFO front panel position. It appeared to be a calibrated BFO offset rather than the variable unstepped pot routinely found. Maybe there's more to it, but as mentioned, there was a SSB adapter made for the R390(A). It is a rack-mount module maybe 4" high. I know little about it, including whether the govt ordered any other versions like your correspondent in Italy may have on his EAC. Keep in touch!

Date: Wed, 22 Oct 1997 19:10:04 -0600
From: David Medley <davemed@...>
Subject: [R-390] Bristol Wrench Problem

There has been much correspondence re Bristol wrenches and it is not hard to find them. HOWEVER with the original radios there was supplied a Bristol wrench with a long shank and a T-bar handle. This is really essential for any serious work with the mechanical adjustments in the R390/390A radios. The shorties which you can buy are a real pain when trying to get at a clamp buried somewhere in the innards of the gearbox. Where did all the originals go ? Where can one find one today or does anyone have any bright ideas as to how to make one from one of the L-bar jobs?

Date: Wed, 22 Oct 1997 23:58:29 -0500
From: Don Stepka <dts4@...>
Subject: [R-390] Re: Bristol Wrench Problem

My US-made Torx T-9 bits and drivers all do a fine job on the #8 Bristol screws. Just a touch loose, but I've been able to get even butchered ones out, and I've never stripped the splines on a tight one. None of my US-made T-10s will fit the #8 Bristols, but my Chinese T-10s all do (some quite tightly,

others about right). Torx drivers are very easily obtained in a wide variety of styles and special configurations. Of course, the right thing to do is to get the correct tool:

If the Xcelite #8 Bristol blade mentioned here the other day (#99-66, if I recall correctly) is similar to their Allen blades, it will give you 4-5" of Bristol spline sticking out of a handle, and you can use extensions (joint diameter approx 1/2") if you need a longer driver than that. Vaco probably makes something comparable.

Date: Thu, 23 Oct 1997 09:39:49 -0400
From: Roy Morgan <morgan@...>
Subject: Re: [R-390] Bristol Wrench Problem

> ... any bright ideas as to how to make one from one of the L-bar jobs?

My thoughts are:

- drill the ends of some 10-inch drill rods to fit the Bristol, chamfering the end. Bend the back end into an L.
- if the rod is fairly thin, harden the whole thing,then let down the temper to a straw color.
- Grind that useless L-wrench into three pieces
- silver solder each one into the end of a rod.

Maybe soldering would let the temper out of the bristol wrench segment, I don't know. If the rod is thick enough, you could drill and tap it for a setscrew, but that may not hold well. - maybe two setscrews would be needed. I would predict trouble from this method of holding the wrench segment into the end of the rod.

Could we find some deeply sunk bristol set screws? If so, you could grind off the non-sunk end and drill and tap the end of a rod for it. Then silver solder that into the end of the rod, fit a set screw above it, and have a replacable-tip wrench.

Lastly, soft drill rod could be crimped to hold a bristol segment into the end. Non-replaceable, though.

Date: Thu, 23 Oct 1997 12:06:16 +0000
From: crippel@...
Subject: [R-390] Re: Bristol Wrench Problem

Bristo-spline wrenches are available from Xcelite in either a set or individually. The number 8 is Xcellite number is 99-66 if you want to buy it individually. This is for the wrench only, it also requires the plug in handle.

I recommend buying the entire set, however. I have used nearly every one of mine at one time or another.

Date: Thu, 23 Oct 1997 17:09:25 +0000
From: crippel@...
Subject: [R-390] Bristol Wrench Problem

> A complete set of short-arm Bristol "L" keys, the real deal from The Bristol
> Wrench Co of Bristol, CT, is less than ten bucks from McMaster-Carr (630-833-0300).

Good resource, thanks for the post. I have found the "L" keys, unless you get the real long ones, make it very hard to remove say... the large "Kilocycle Change" knob. Certainly, at $10, a set of "L" keys is more than worthy to have in your tool box. I'll probably order a set for myself. Good info!

Date: Thu, 23 Oct 1997 19:43:13 -0600
From: David Medley <davemed@...>
Subject: [R-390] a neat solution to the Bristol Wrench problem

Here is another one of my stories, hopefully interesting to the members.

As I recounted before I suddenly came into possession of three R-390 radios, all made by Motorola although one had a Collins label. Two of these radios were OK and were restored to workable condition without much trouble. The third was pronounced a basket case but I determined to try and restore it as a project. What has all this to do with Bristol wrenches? Well I am coming to that so be patient.

This basket case turned out to have many faults and was in poor shape and I worked through it from the easy stuff, finally finishing up with the RF unit which had to be removed. This radio has a strange green gear wheel fixed to the front of the unit. It does nothing useful (so I thought). Anyway the instructions for removing the RF unit include removing this green wheel and fixing it to another part of the unit "to prevent loss of mechanical synchronization" so I did that but failed to fix it firmly enough so that while I was working on this scruffy RF unit it came loose and guess what. The synchronization got messed up big time!! Phooey!! So I had to go through the sync process. For anyone who has tried this with the regular small bristol wrench you will know how really frustrating this process can be. So I put out an appeal for some suggestions re a long shaft Bristol wrench and received several great responses. Some told me of the available Xcelite kits but none of the tool vendors in Tucson have ever heard of Xcelite. The real gem was a suggestion to use TORX wrenches freely available even at the local, handy ACE hardware store. This is interesting. T-9 TORX wrenches made in the USA do a good job in the

Bristol Set screws but these are hard to find. T-10 wrenches made in China are a close fit and tend to be too large. Anyway to get to the point I bought a T-10 from the local hardware store and sure enough it was a tad too large SO I got out my handy file and carefully went to work on it with the result it is now a really perfect fit and the sync chore on the RF unit was a snap. Also the big knobs etc etc. So guys if you live in places where you cant find Xcelite tools just head for your local hardware store.

Date: Mon, 10 Nov 1997 16:16:54 -0700 (MST)
From: Richard Loken <richardlo@...>
Subject: [R-390] [R390] What do all these MWO numbers mean?

My R390 has three "MWO" numbers written on it and I assume that stands for something like maybe "Modification Work Order". So... What does MWO really stand for and what do you suppose these particular MWO's might pertain to? this one is stamped on the back:

MWO SIG 191 Jul 1955

And thes two are hand written in white paint above the frequency readout on the front panel:

MWO11-5820-294-35/1
MWO11-5820-294-35/2

Any guesses?

Date: Mon, 10 Nov 1997 23:13:03 EST
From: paul.courson@... (An Unsigned Note)
Subject: [R-390] Ceramic Filter R-390A, and MWO defined.

I had an ex-military guy tell me MWO stood for Make Work Order. I think it really stands for Modification Work Order, and it is roughly equivalent to numerically-designated upgrades you see in software circles. General Electric's commercial two-way radio nomenclature used REV.1, REV.2, REV.3 and so on, written on the chassis to denote an upgrade.

Each MWO number relates to a documented change to the circuitry. The numbers seem to be random, but apply to a specific modification. Collecting all known MWOs for a given set means you've got all the upgrades. Sometimes a successive MWO will be more extensive and incorporate an earlier MWO, but you need a programme guide to verify.

Here, if a given radio missed getting an MWO, it might have been caught in a subsequent MWO and you may NOT see it on the panel. Multiple MWOs suggest that your radio was sent in to a depot for regular care & upgrades.

(preventative maintenance like adjustment, alignment, lube and cosmetics would routinely be performed as part of a MWO). I'd like to invite anyone with a more definitive word to please elaborate.

Tom Norris sure has stirred things up with the discovery of his stock & correct "ceramic filtered" R-390A !! I've gotten a few emails from people who've never heard of this odd and rare beast, and as we hear Tom go on about the audio quality.....

I smell the collectors drooling! Essential to audio comparisons among the three types of 390s out there: Use the DIODE LOAD, and match the levels between examples in a given test run. The LINE and LOCAL outputs are *so* distorted and (deliberately) frequency limited that they are useless for most AM reception. They won't sully the audio of a carbon mic T-368, I'll say that. They also hide the differences that are clearly audible among these sets.

Tom seems to have a happy mix of the "new" style circuitry of the 390A, with the higher fidelity resembling that of the 390. Good catch, Tom, and hang on to that ceramic filter assy for the day you want to show off. Many will understand, however, your motivation to drop that Motorola bank in there for a bit more segregation on the bands. I find the 390 really a 10m or daytime 75m receiver, but not much more. As soon as things get pinched below 8kc bandwidth, the listening pleasure is lost to nearby congestion.

Perhaps consider circulating some snapshots of a side-by side comparison of the ceramic and mechanical assys? Send them to Steve or myself and he will post them on his page as JPEG images for all of us to peruse.

Date: Tue, 11 Nov 1997 13:22:24 -0800
From: Travis Martin <travism@...>
Subject: Re: [R-390] Broken set screw

Well, Rick, this one is a bit of a challenge. The first thing you need to understand is that the main tuning knob isn't held on with a set screw, but rather by a clamp around a split boss in the knob. Can you get the megacycle change knob off and look at it so that you'll see what you're up against?

An e-z out won't help in your case because a piece of wrench is broken off in the screw, so there's no hole to put the e-z out into. You could drill the head off of the screw and save the knob and the rest of the clamp, but the piece of allen wrench is hardened and will laugh your drill bit off.

Worst case, you may have to ruin the knob by enlarging the hole enough to grip the head of the screw with long nosed pliers or even vise-grips to

loosen it.

But are you sure you're looking in the right spot? The screw is offset from center quite a bit, since it's on a clamp and not drilled perpendicular to the shaft; could it be that you aren't looking at the screw? I say this only because you referred to it as a set screw and mentioned re-tapping; this makes me think that perhaps you aren't familiar with the way the big knobs are held on...it's not at all like the smaller knobs which do, in fact, have set screws.

One more thing that might work, but be careful: If you turn the knob all the way to the end-stop, you might--I emphasize might--be able to force the knob farther in the same direction, slipping the knob on the shaft and gradually pulling it off while you are turning. Once it's off, you can get to the clamp screw easily and remove it. If you can't get the broken wrench piece out, you can replace the screw. But be very, very careful...if the knob won't slip pretty easily, you can get carried away and wreck the end stops. You need to have a good mechanical feel for what you can get away with...

The first thing I'd recommend is to get one off and look at it so that you can see how these knobs are made and how they are held to the shaft. Let me know how it turns out. Good luck and 73,

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Date: Tue, 11 Nov 1997 12:03:36 -0800
From: Jim Haynes <haynes@...>
Subject: Re: [R-390] Broken set screw

I was gonna suggest pretty much the same thing - but instead of turning the knob to the end stop and then trying to twist it off, maybe you can grip the shaft behind the panel with vise-grips or something and then try twisting the knob off. That way you don't risk damaging the end stops.

Date: Wed, 12 Nov 1997 00:41:02 +0000
From: Bob Roach <KE4QOK@...>
Subject: Re: [R-390] Broken set screw

I've been a machinist for about 20 years and this is always a tough job. If you are lucky the guy used a cheap allen key and it will be soft, if not then you will need a cobalt or a carbide drill to drill it out. If you have room in the hole you can run another short set screw down in the hole and use the socket to start your drill in the center(use a drill the same size as the hex key). If you are successful in drilling though both screws without going off center then it should be a fairly simple matter to back them both out with an easyout. You may also want to soak the stuck screw with penetrating oil for a few days before you start just to help things along.

The most important advice I can give is not to hurry. Take lots of time to think through what you are going to do and what the situation is going be like if what you do does not work. When you get ready to drill get someone with a good eye to watch that you keep the drill straight this will free you to pay attention to what is going on in the hole. As long as you drill straight down dead center you can work you way out until you reach the tap drill size and then dig out the remaining bit with a pick and the hole will look just like new.

One other thing. Sometimes a few light taps with a punch will loosen the broke peice, but you do not want to swell it up or put a lot of dings in it. Lot of light taps are better than one big one. Good Luck and let me know how things turn out.

From: "Chuck Rippel" <crippel@...>
Date: Mon Dec 8, 1997 3:24 am
Subject: [R-390] Preserve Your Front Panels

Almost every rack mounted radio I have ever seen from boatanchordom has had the paint chipped off the front panel where the rack mounting screws went it. Here is a solution to that problem: I came across 4 as new 1967 EAC R390A's (thanks Dr. Electrode). Two of the radios were the owners "keepers" and he had the forsight to invoke a clever way to protect the front panels. Here is how: Using the standard fastener compliment of (10/32??) screws and Finish Washers, he mounted common faucet washers under the finishing screws. These small black washers are semi-hard rubber or plastic and can be found in the faucet repair section of any hardware store. They serve to keep the finish washers from coming in contact with and thus scratching up the paint.

There are a couple of sizes I tried:

A 1/4L (the "L" is important) washer will fit under a finish washer nearly perfectly. However, the down side is that they must mate exactly as there is on-side overhang or extra margin from the washer. These are nearly invisible on the radio.

A 3/8 washer has just a extra margin but fits under the washer nicely. They can be seen easier than can the 1/4"L size above.

Both washer types are about 1/8" thick and black. The look is not quite as clean as screws and finish washers alone but you can be assured that your front panel paint will not become scratched up. Besides, for .20 each, its worth at least a trial on one radio.

I have both types in use here on a couple of radios. My advice would be to

buy enough to do one radio and see if you like the looks.

There is also a 3/8" "O" ring that will fit under the washer yet is thick enough to keep the washer off the panel ever so slightly when moderately tightened down. Problem is, it does not have thickness to be tightened enough to support the radio in a rack.

I have used a set of "O" rings in my 75A-1 to good success where I re-finished the front panel on about a year ago. That receiver is mounted in a cabinet and the rack screws serve only to hold the receiver in the cabinet and of course, round out the looks. To assure a fit, take a front panel screw and finish washer with you to the hardware store.

From: paul.courson@... (An Unsigned Note)
Date: Mon Dec 8, 1997 2:40 pm
Subject: Re: [R-390] More on Panel Preservation

I'd like to suggest another rack hardware item that may also serve well. Broadcast supply houses and many retail outlets catering to musicians have some nice fiber washers ostensibly used to lift a chassis from the rack ground.

That function is less important to us as we properly ground our sets in other ways. The washers also do a wonderful job of protecting the front panel AND the hole of the radio through which the rack screw travels to get to the rack. The washers are shaped with an outer shoulder that separates the bottom of the rack screw from the radio., but *also* an inner column that rests in the hole, helping center the screw and serving an insulating sleeve.

Without such a guide, I have found that the weight of the radio can cause the screws to settle on an edge of the hole, tearing up the paint in the hole. The damage can sometimes erupt into the front panel area and cause a chip. That'll piss ya off.

From: "Dr. Gerald N. Johnson, P.E." <geraldj@...>
Date: Tue Jan 20, 1998 7:05 pm
Subject: Re: [R-390] R--1051B Lite Bulbs

It was standard practice at Collins to put a resistor in series with every panel lamp to limit inrush and to operate it a little cooler for longer life. I recall the value was 56 ohms for a 327 (28 volts 40 ma) which still hasn't a very long life. Its worth using a 328 for longer life in circuits made for 327s.

From: "Chuck Rippel" <crippel@...>

Date: Tue Jan 20, 1998 9:13 pm
Subject: [R-390] R390A Lamps

While we are on the subject of lamps, the R390A uses 2 3/4 Midget Flange Base lamps. The stock lamp is a #328, 6.0v and has a 1,000 hour rated life. There is a direct replacement, the #381 lamp. It is 6.3V and carries a 20,000 hour rated life. Mouser sells these at $.93 and $1.27 respectively. I'd be interested is knowing the lamp number for the R1051 as I have a couple of these. A hybrid receiver with a 2 tube front end, they work great and were the sucessor to the R390A.

From: "Chuck Rippel" <crippel@...>
Date: Mon Feb 9, 1998 2:54 pm
Subject: [R-390] Preferred Manual

I have been asked which manual is the most complete. By far, it is the version: NAVSHIPS 0967-063-2010 dated 15 April, 1970.

Date: Wed, 21 Jul 1999 17:19:00 -0500
From: Nolan Lee <nlee@gs.verio.net>
Subject: Re: [R-390] who made my R390a?

I did'nt mean to give that impression. This is simply a lesson and demonstration in deductive logic. I'll make a brief comment on each of the questions that I posted for him to answer to explain some of it.

>>Are there any markings on the rear panel with SN, MFP, etc? Also, look >>for little inked round, square, or triangular inspectors stamps on

Some contractors stamped (inked) the contract number on the rear panel. In addition, the EAC inspectors stamps are rather distinct. I've got access to a mess of the Collins stamps on spare modules around here for ident purposes. Any other ones, we would make a query of the list members.

>>Does it have the spring steel bracket on the rear panel to hold the tools

The later contract receivers didn't use the bracket.

>>How many fuses does it use?

Early receivers used only one fuse. The contract numbers and SN ranges of this are known. If it's a single fuse model, then it's easily narrowed down to either a Collins built receiver or a Motorola of either the 1954, or the first half of the 1956 contract.

>>How many spare fuse holder clips are on the rear panel?

I've seen a "transitional" three fuse model that had only one spare fuse clip. It was easy to identify as a Motorola, even without the rear panel contract number and the thick varnish all over everything globbed all over everything since they were the only ones building receivers when the 3 fuse production change was made.

>>Are the rivets that hold them to the rear panel the same for each of them if it has three?

If two of the rivets holding the spare fuse clips to the rear panel are different than the other, there's a good chance that it was originally an older single fuse model that was laster modified to a three fuse model. There are other things to check to determine this.

>>Are the two terminal strips on the rear panel black or grey in color?

EAC and Dittmore-Freimuth receivers used grey terminal blocks. I think that one other did too. It'd be easy to take a survey from the list members to answer this question. :-)

>>Is outside surface of the rear panel covered with a brownish looking
>>varnish that looks like it was applied by a graduate of the Evellyn
>>Wood & Ray Charles School of Speed Painting?

Real common with Motorola and Stewart-Warner receivers. It is a single fuse model and was painted in varnish, odds are, it's a Motorola. If it's a three fuse model, there's a good chance that it's either a "late" Motorola or an S-W. The S-W varnish is usually more of a "golden color" than the "brownish" Motorola varnish.

>>Is there a date code on the AC line filter?

A 1960 date code would indicate and EAC, an SW or maybe a Capehart. A 1963 date code would indicate an Amelco, a Capehart, or an Imperial. The contract date are well know and the date code on the part would be pretty close. When taken with other information, the date codes of a lot of the chassis stuff are a good indicator, if they're original.

>>What about a date code on the bathtub style electrolytic capacitor
>>Take a close look at the ovens switch attached to the rear panel
>>Is there a date code on the little 1N198 germanium diode (CR110)
>>Most JAN diodes have date codes, but...
>>Is there a date code on C101, the metal cased axial lead capacitor

See the comment on the line filters above. The more date codes you find, the

better....unless they're ALL different years. :-)

>>Is the lettering on the face of the front panel engraved/recessed
>>or is it flat with silkscreened lettering?

Collins, engraved. Amelco, engraved. EAC, engraved. Imperial, engraved. Motorola, silkscreened. Teledyne, engraved. etc.

>>Is the main wiring harness wiring insulation teflon or plastic?

Teflon means either EAC or Dittmore-Freimuth.

>>Do the shielded wires that are bundled in the main chassis harness
>>have insulation over the braid and a round insulated "ends" to the
>>braiding or are they exposed with hex shaped metal "ends"?

Early models used the exposed braid. I don't remember off hand when this changed, somewhere around 1959 SW or 1960 EAC I think.

>>Which contractor built each of the modules?

More clues..... :-)

>>I've seen a number or R-390A's that had the SN of the receiver written
>>on the front panel in either pencil or grease pencil under the metal SSN
tag.

Does yours have the SN under the tag? :-)

See, figuring out who built one isn't as hard as you first thought, huh? Naturally, I'm not giving away all of my secrets. Many of them came from old Helga and I was sworn to secrecy. She'd probably have both of us snuffed if I told you, sorry. ;-)

Date: Thu, 29 Jan 1998 17:32:20 -0500 (EST)
From: Tom Marcotte N5OFF <trinit69@idt.net>
To: r-390@qth.net
Subject: [R-390] Age of R-388/390

To get the approximate age of the rig, examine the xtals. This is no guarantee, but I find its pretty close. Also, bathtub caps generally have a born-on date.

Date: Wed, 10 Mar 1999 09:49:43 -0600
From: Nolan Lee <nlee@gs.verio.net>
Subject: Re: [R-390] Bogus Tags

If the rear panel of you receiver is marked with a sn of 636, then that will not be the one for the front panel. The rear panel number of the EAC built R390A's appear to never match the serial number on the front panel, even "out of the box". It may be several thousand digits apart. The same goes for the modules. Sorry.

Date: Mon, 15 Mar 1999 18:29:03 -0600
From: Nolan Lee <nlee@gs.verio.net>
Subject: RE: [R-390] going, going, gone!

I used to assume that a 1967 EAC was built in calendar year 1967. If over 10,000 were built it seems doubtful that they started production on January 1 and ended production on December 31. How long did this contract last, and when did EAC stop producing them? The meters should be dated on the backside with a date stamped in red or white ink/paint. Also, the capacitor located on the rear panel below the line filter may or may not have a date on it. The frequency crystals will also have a date on them, either on the bottom or side. If it's still got the original tubes, they'll have a date code too. Ditto for the filter capacitors that plug into the audio deck.

My EAC is in the 3400 range and if I remember right, a lot of the components were dated in 1968. Your receiver, being a higher SN will probably have been built/assembled in 1968 at the earliest. Holler back with the date codes you find. It's possible that they exctended into 1969. I don't think any one has ever compiled the data on this.

Date: Mon, 15 Mar 1999 18:45:09 -0600
From: Nolan Lee <nlee@gs.verio.net>
Subject: Re: [R-390] going, going, gone!

>Fiscal Year 1967 would have been 01 JUl 66 through 30 Jun 67.

They were built later than that. If I'm not mistaken, the contract for the EAC's was "awarded" in 1967. I have no ideas of the terms of the contract but they'd had had to delivered them within a specified period from the time it was awarded. They may have had to deliver within 6 months (very unlikely) or a year, maybe more. When did the commercial ads first appear for EAC offering the set to the public? I'd guess and say that that probably wasn't done till after they had either finished the military contract or close enough to the end to see what they'd have left over and chose to dispose of surplus inventory.

It's kind of like, but not as bad as the 1951 contract R390A's. They weren't built until 1954 or 55 if I'm not mistaken. The GPO didn't even publish a

manual for them until 1956. Collins may or ay not have released a preliminary "throw away" type manual in 1954 or 1955. If they did,. It's got to be very scarce. I've never even heard of one being mentioned.

Chuck's got several of the '67 EAC's and I think one in the 9 or 10K SN range. Maybe he'll remember the date codes and post.

Date: Fri, 26 Mar 1999 12:16:32 -0700
From: "Eustaquio, Cal J" <cal.j.eustaquio@lmco.com>
Subject: RE: [R-390] Spares?

C553 (definitely) or else risk your hard to replace mech filters. The electrolytic, black beauty, and brown stinger capacitors. Check all screen, plate, and cathode resistors. And, that pesky ballast tube (you know, the oft talked about 3TF7 that many have made a suggestion to replace with resistors, jumpers, regulators, and the like. Spend $17.50 for a spare at Fair and "don't make Nolan puke";^). Get some spare rectifier tubes or replace with diode/resistor combo's. And stack up on #328 bulbs. Better yet, find high longevity replacements like #345's (at 10K hours) or another bulb. Pretty much that's it. Oh, been informed to ensure that the handles should remain on. Just in case your R-390A takes a nasty fall, it will take the beating instead of a valuable Veeder Root bezel, meter, or what have you.

Date: Thu, 25 Mar 1999 07:53:09 -0600
From: "J. Kincade" <w5kp@swbell.net>
Subject: [R-390] R-390A Compendium - Finally!

Finally, after days of effort and probably killing several trees in the process, I finished putting together the initial version of my personal R-390A Paper Compendium, sort of a giant hard copy FAQ. Regressing from electronic filing to paper may seem weird, but I have found that electronic archives, while a great asset, are a time-consuming pain to keep going back to repeatedly. I found I was constantly hunting for stuff I just knew I had read "somewhere" in a post on this reflector, and hated to waste bandwidth by revisiting the question on the list. So I set out on a quest to glean the most (IMHO) directly useful posts over the past year or so, with the idea of building myself a workbench-handy reference containing the best of the best from all you wizards out there.

Ended up printing about 300 posts, many several pages long, on my tired LaserJet 4L (it's little tongue is still hanging out), arbitrarily categorizing everything, and putting it all into a fat 3-inch 3-ring binder under the following subject categories:

ID/General Info (includes historical stuff)

General Rebuilding
Schematics/Manuals
Main Chassis
Connectors/Cables
General Test & Alignment
Cleaning, Paint & Cosmetics
Meters
RF Deck
PTO
IF Deck
AF Deck
Line Voltage & Power Supply
Xtal Cal/BFO
Troubleshooting
Cabinets, Cases, & Covers

Some of the categories get a bit fuzzy and overlap and it was a definite pain to put together, but it's done now, and I will continue to add to it by saving, printing, and inserting what appear to me to be the most informative posts. I highly recommend that R-390 semi-newbies (like me) do this drill if you can stand the pain. It's amazing how much you will absorb and retain as you read and organize all this stuff, a disk crash will have no effect on it, and it will be an extremely handy addition to your workbench bookshelf.

Next: The SP-600JX-xx Compendium - that is, if I can find enough material to fill a 1/2" binder! Clearly, Hammarlund fans are not as prolific in their writing and public contributions as R-390'ers. However, I have found them to be equally friendly and helpful - you just have to get out of your lurking chair and go ask the questions directly. Finding help on old Nationals is another story - there is only one active "expert" that I know of on the web, Mr.Larry Ware in Florida, who appears to be the Chuck Rippel of the "old National" world. He is friendly and helpful, and above all knows old Nationals like many of you know the 390.. Seekers will find, lurkers are left behind.

Date: Thu, 25 Mar 1999 08:01:42 -0800
From: Bob Bennett <rjb@lynden.com>
Subject: Re: [R-390] R-390A Compendium - Finally!

Man you must have been selective. My compendium is 5 (full) 3-ring binders, with a whole lot more still uncataloged. Similar headings though.

Date: Wed, 08 Sep 1999 09:16 -0700 (PDT)
From: rlruszkowski@west.raytheon.com
Subject: [R-390] Rework Contracts

There is money in rework. (Howard Hughes, Hughes Aircraft Company).

From time to time guys come along with good ideas. The implementation of the idea is to big to install as a field mod kit. So off it goes to the low bidder. Some places specialize in the rework. The process off tearing one down and doing a complete over haul and installing the changes is not the same process as running a new one down the assembly line. So the folks who do the original build are not always the folks who do these rebuilds. Some rebuilds were just to replace things that failed early in life.

From time to time we techs would drop a R390 in the Teletype de-greaser to clean it up. OK today but it kills the wire harness over time. A rebuild would be to take a lot of these receivers collecting in a depot and have them rebuilt to replace the harness and things trashed by the de-greaser. It recovered a lot of receivers at less cost than a new production order.

Navy ship board systems really catch hell from the salt. Hughes Aircraft did lots of these reworks in the 80's early 90's on systems for the Navy. The guys in the field (aboard ship)just do not have the resources to do a rework to clean out the salt and repair things. So the systems were sent to a contract factory and re-worked. Again on a bit contract. A few spare sets were re-worked and then cycled through all the systems to be re-worked. Part of the contract is the logistics of swapping all the units out. Sure I'll meet this crate on a dock "where" and do a ship board swap. Drop the old unit back in the crate and get it shipped back to the factory. Also help the guys getting the re-worked unit to get it installed and on line. A long one here on re-work

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Date: Mon, 13 Sep 1999 16:52:00 -0700
From: dma@islandnet.com
Subject: Re: [R-390] wiring harness?

I meant to copy my comments to Richard to the list, but hit the wrong "reply" icon! Anyway, in addition to the usual sources of problems (in the connector shells, bundle chaffing) I've run into two that took me awhile to track down.

The first resulted from using a Green head screw that was too long in the upper hole on the front of the RF chassis. This screw (which is a nuisance to remove and reinstall and is thus often missing) goes through to where the wire bundle is. If this screw is too long, it'll go right into the bundle, with random and possibly spectacular effects. Fortunately, in my case it took out the audio and was easily fixed. The other spot is where the shielded wires go to the audio level control. If you are not careful when reinstalling the front panel, one of these wires can be pinched between the

front panel and the chassis divider that fastens to it. It won't break the wire, but I had one that had obviously been flattened at some point and was shorted. There may be other odd things like this, but if you have a problem right after reattaching the RF deck and/or front panel - have a look at these two spots!

Date: Fri, 24 Sep 1999 10:16:05 -0600
From: "Eustaquio, Cal J" <cal.j.eustaquio@lmco.com>
Subject: RE: [R-390] wiring harness follow-up

Congrats on finding a lot of your problems. Just another caveat: whenever putting your R-390 back together, ensure that you check some of those stray wires that might be pinched after bolting down the module. I paid the price in the form of a cracked BFO switch. Luckily I had a spare hanging around. Keep up the good work. Cal, N6KYR.

Date: 05 Oct 99 07:43:01 -0700
From: "Richard McClung" <richard_mcclung@tcibr.com>
Subject: Re: [R-390] R-390 Mods

Re: [R-390] R-390 Mods 99 10 05
Here's the short version of the **35/2 MWO.** I don't have 35/1.

URGENT
Department of the Army Modification Work Order
MWO 11-5820-294-35/2 Modification of the Radio Receivers R-390/URR and R-390A/URR to Eliminate Spurious Radiation 5 October 1959

Purpose of modification is to eliminate continious radiation at 340 mc as a result of parasitic ascillations, by connecting the suppressor grid to the cathode of the local audio output tube V603.

R-390/URR:
Unsolder and remove the jumper lead connected between pin 2 and ground of tube socket XV603. Connect and solder a suitable length of No. 22 AWG solid wire between pins 2 and 7 of tube socket XV603.

R-390A/URR:
Unsolder and remove the jumper lead connected between pins 2 and 4 of tube socket XV603.

Connect and solder a suitable length of No. 22 AWG solid wire between pins 2 and 7 of tube socket XV603.

Date: Sun, 10 Oct 1999 15:06:10 -0400
From: Al Tirevold <tirevold@mindspring.com>

Subject: [R-390] Eight New manuals on FAQ

After a very busy couple of months, I have found time to scan in and place eight new documents on the FAQ site. I temporarily removed the Workcard document in order to get all of them into my alloted space. I should have additional disk on-line in a few days, at which time I will replace it. The eight new documents are:

NAVSEA 0976-LP-063-2060 Field Change 1 - Eliminating Spurious Radiation

NAVSEA-0967-LP-063-2070 Field Change 2 - Increased audio output level on line output terminals

NAVSHIPS 0967-063-2140

Field Change 4 - Installation of Diode Load Test Jack and

Field Change 5 - Modification of Antenna Input Connections

NAVSHIPS 0967-063-2110 Field Change 6 - Internal Heat Reduction

NAVSHIPS 0967-063-2111 Temporary Change T-1 to Field Change 6

NAVSHIPS 0967-063-2112 Temporary Change T-2 to Field Change 6

NAVSEA 0967-LP-063-2120

Field Change 7 - Reduction of internally generated interrfering signals

NAVSEA 0967-LP-063-2040 Performance Standards Sheet

Many Thanks to Pete Wokoun for the above manuals. I also scanned NAVSHIPS 0967-063-2050 - Maintenance Standards Book for (Radio Receiver R-390/URR). BUT - it is 32 pages and 3.15MB in size, so it will have to wait until I have more filespace for me to upload it. Craig McCartney and Pete Wokoun each supplied me with copies of the '-2050' manual. Serendipidously, the flaws in one copy were not there in the other, and I was able to get the best of both scanned!! This completes the pile of R-390A documents that I have to scan. There are still several R-390A documents in the list that I do not have copies of yet. Does anyone have a copy that they would like to share on the FAQ?

Date: Sun, 17 Oct 1999 11:54:35 -0500
From: "Dr. Gerald N. Johnson, P.E." <geraldj@ames.net>
Subject: Re: [R-390] R390A Recommendations Needed

User repairable (from Fair Radio catalog) probably means all parts present, no major detected disasters, not necessarily working at all or on all bands. It doesn't smoke badly or blow fuses, but might not hear anything but the strongest of signals.

Checked probably means makes noise on most all bands, definitely doesn't mean its guaranteed to meet the original specifications for performance, nor that the leaky capacitors, both electrolytic and paper, have been replaced, nor that all tubes are perfectly good. E.g. it isn't restored. It just doesn't smoke while sort of functioning.

If you want a receiver in high quality working order you have to deal with those like Chuck Rippel who have gone the whole route of restoration, though maybe leaving out the cosmetics to save money.

Cabinets are tough. They can be bought but cost more than half the price of a working receiver new from the factory. Cal on this list did get a production run a few months ago, I presume they are all in use now.

Date: Mon, 18 Oct 1999 10:54:11 -0700 (PDT)
From: Tom Marcotte <courir26@yahoo.com>
Subject: Re: [R-390] Wanted: R-390A

You'll probably want a rig that has recently been serviced by a "qualified person." The rig you invest in should have the "problem" parts changed out before they fry other components, PTO and racks are properly aligned, etc. If you are willing to learn to work on them yourself, there are lots of web resources with hints on tuning up a unit to first class shape. If you aren't able to work on them yourself, I'd look for a unit from a qualified fixer-upper type guy like Chuck Rippel or Rick Mish (Miltronix), or other folks on this list who are handy with garden hose, pizza oven and signal generator . . . . . only half kidding about the tools.

A "checked" unit from a Fair Radio will likely make noise on all bands but won't be up to the DX standards typically tossed about on this list, so caveat emptor.

Date: Mon, 18 Oct 1999 14:07 -0700 (PDT)
From: rlruszkowski@west.raytheon.com
Subject: Re[2]: [R-390] Wanted: R-390A

And I add the following. Do not let the checked unit throw you. It is a wash, Do you feel lucky today? Will the checked unit have everything you need or will it cost you about then next 100 dollars for the parts? If you are working a R390 today you are not an appliance operator. This is your

hobby and you have a personal interest in that space heater you have doubling as a receiver.

If it's a Fair Radio checked unit, It did work in the last year. It's an R390 or A and it can work again. The question is do you want to put the hours into getting it up to DX standards? After burning the fire bottles for a few thousand operating hours (4380), how are you going to get it back to DX standards? You mite as well jump in and do the first round of service your self now. No time like the present to learn. These R390's have survived because of their awesome serviceability.

You can read the net pages and quickly identify the dozen problem caps. Spend 10.00 on a CD and have all the service manuals any tech ever had to do service with. You can learn to do this your self. Remember even GI's could teach other GI's to perform this work even under the influence of large quantities of beer. And in old days with a cigarette in one hand. If the receiver is "all there" (less radio active meters is still all there) it can be returned to great performance. Not all gear trains were created equal. If your receiver doesn't have the best model then gear train then it will be what it is to tune. But the signal received can be as good as any other R390 and that's a lot better than most other receiver models. The PTO way not be real close. But that can be worked as a smaller problem than the whole receiver.

If you tuned off a R390 in a rack, unbolted it, paid for it and brought it home, would you drop it on the table plug it back in and use it for the next 6 months with out looking inside of it? If you picked it out of a land fill (I should get so lucky on the price) and brought it home you would do a certain amount of "service". Your going to pull it down to the sub assemblies, Give it a bath. Clean up the gear train. Check some of the moving parts. Eyeball every thing. Check the tubes. Meter Meter some of the little dohickies. Re assemble every thing and then turn it on. Even then you are not going to just turn it on. After a once through on the alignment you have a clean, lubed, aligned, inspected, operating receiver. Now you can go to work on it and get it up to DX standards. This is where you begin to understand why you chose to own a R390. If you can't hear it you can't work it. If you own something else you may not be able to do anything about the ones you can not hear. With an R390 it just gets more sensitive with alignment and care. A bit long but I hope some one is less worried about putting down several hundred dollars for a receiver and then starting to get it "working". this can be hard to explain to family and friends, exactly again why are you going to do this.

Date: Tue, 19 Oct 1999 21:40:07 -0700
From: Matt Parkinson <mattradi@earthlink.net>
Subject: Re: [R-390] Re: Miltronix

They are very good but there are many who do about the same job and maybe cheaper . HA HA HA like me . I can do the radio depending how bad it is cost wise a little cheaper . I think they charge about 800.00 or better and you pay shipping back and forth . I am about 250.00 cheaper and you get the same quality of workmanship . But there is another guy who name is Chuck Rippel who is really great but you will have to be put on a waiting list and it is long. If you can wait that is another way to go .

Date: Wed, 20 Oct 1999 04:30:53 -0700 (PDT)
From: Tom Marcotte <courir26@yahoo.com>
Subject: Re: [R-390] Re: Miltronix

Miltronix is run by Rick Mish. He does 390A's for his day job (re: only job). I think his wife helps out as well. He's been at it for years and does a great job. He offers fix ups of your radio, or purchase of a radio from him. I know in past years, he had a number of rigs that he reduced to modules, restored, and then reassembled/matched according to manufacture (sort of a depot scramble in reverse).

If you want a restoration to be just like original, you have to tell him that up front, otherwise he will focus on performance, e.g. ballast tube replacement with SS, filter cap replacement with non-orig caps, etc. Not a bad thing, just not original.

Many of the folks on the list have done the same thing. His ad sites repair of the big Collins iron, TMC, etc. Chuck Rippel also does a great job with 390A restoration. Chuck has in the past restored filter caps with their original cans.

Date: Wed, 20 Oct 1999 10:14:15 -0400
From: k8pou@juno.com
Subject: Re: [R-390] Re: Miltronix

Rick does a fantastic job on the 390as and 390s. I have two of his excellent restorations. you can't find a more knowledgeable technician. I have met him at dayton hamfest and have talked to him on the phone many times. I can highly recommend Rick! I understand that not only does he do complete restorations, but he will also do only what you want done. PS: Rick is located in Toledo, Ohio.

Date: Sat, 30 Oct 1999 07:35:57 -0400
From: "Walter Wilson" <wewilson@knology.net>
Subject: Re: [R-390] Recomendations on purchasing a R-390A

"Junk" depends on what you perceive as junk. Ugly with a blue stripe

painted across the front but all the pieces there and receiving AM stations on some bands seems to be typical of the used/repairables.

I would recommend a "checked" unit from Fair Radio for the extra $100. I recently bought one, and love it. I think mine is above average from them, because mine was ordered when Dave did not have a backlog and I encouraged him to take his time. The checked units will have a repainted front panel versus the government's blue stripe for the used/repairable. Both will have all their parts and pieces, but the used/repairable is just put on the bench and a few stations are tuned in to make sure it receives something on some bands. The checked units are cleaned up inside a bit, front panel and knobs repainted, and checked pretty well on all bands. Dave spend a few hours tweaking the checked units, and if anything is way out of adjustment, he fixes it. Call Fair Radio and ask to speak to Dave. He'll give you a better description of the difference between to two. He does all the R-390 work.

One nice thing about Fair Radio is that if you do find problems with components that are too far out of spec or failed and need replacement (other than out-of-tolerance resistors or tubes or capacitors), Dave will send out a replacement or exchange part and no charge. I did not have to do this, but Dave and several of his customers have confirmed this. Dave will send you what you need to get the used/repairable to work, but you have to do all the checking and all the work. That may be fine if you already have a working R-390A in the shop and enjoy doing the work.

Date: Sat, 30 Oct 1999 10:53:16 -0400
From: "Wm. L. Townsend" <wlt@tesnet.com>
Subject: Re: [R-390] Recomendations on purchasing an R-390a

Based on the two I have, the 'Used Repairable' R390A from Fair Radio is far from junk. They will need to be cleaned up and not everything may be working perfectly, but they should contain all the parts and will be basically functional. Over the past year I've bought two and both have worked 'out-of-the-box' from Fair.

One was in a lot better shape than the other, but both worked and could have been used with no more than two or three hours of cleanup. Add another couple of hours to strip, clean, and lubricate the geartrain and you end up with a pretty nice radio. I've spent a lot more time on these two than just the basic cleanup, but the point is that both ran fine with only minor work. (The stripes come off with lacquer thinner.)

In addition, I have one that was 'restored' by a previous owner. It works fine and looks good, but I think I like these two better...

It's possible that not all the 'Used Repairable' R390As from Fair are as good as the ones I bought, but I think they'll probably take one back if you're really not happy with it.

Date: Thu, 11 Nov 1999 20:21:25 -0600
From: "Dr. Gerald N. Johnson, P.E." <geraldj@ames.net>
Subject: Re: [R-390] Problem with Cramolin contact cleaner

Lubriplate is a superb lubricant for mechanical parts. Standard equipment for teletypes for half a century (even had a teletype part number). It makes a strong lubricant film, which would prevent electrical contact. Keep it OFF contacts, I think. 73, Jerry, K0CQ

Date: Thu, 11 Nov 1999 22:06:06 EST
From: SBJohnston@aol.com
Subject: Re: [R-390] Problem with Cramolin contact cleaner

Lubriplate is a good lubricant for mechanical applications rather than electrical - seems to be particularly good for flat surfaces sliding on one another. It might be good on the mechanical innards of a switch, but I would use a contact cleaner/lubricant on the electrical contacts themselves.

Date: Sat, 13 Nov 1999 09:39:37 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] IF Module

As I recall, Chuck Rippel does individual module repairs or restorations, but best to contact him directly. I believe his email address is crippel@erols.com. His service offerings are described on his web pages -- don't have the latest URL handy. He may be too busy, from what I hear. Meanwhile: Sounds like you've taken an intelligent approach, however that's is no help against a dumb problem. ;-) I assume you subbed out the tube(s). Most of us keep a tube on a tester only as long as possible to take a reading, as too long can cause damage. A tube may be on the verge of failing or shorting whereby it only gets loopy after it has been running a while. Also, there are some defects which even the better testers don't reveal. That's where the old tube-jockey approach can win out over the scientifc measurements method. Another thought: Failing solder connections. A few months ago, there was a thread on how solder joints that were originally good can go bad. Long-term chemical reactions can occur in the joint, usually aided by rosin that didn't completely boil out when the connection was originally made -- but not limited to that. I forgot who educated us on this, but it was really long, long term - like decades. These are not visually apparent -- not necessarily dull gray as with a cold solder joint. Also can be thermal, so that the problem doesn't

start until the heat migrates from surrounding components, through the chassis and into the joint. Of course, there can also be a hairline crack in a joint -- especially around stress points - tube sockets, harness sockets, etc. Sometimes, the bad joint doesn't turn into an outright open when things expand -- it becomes a capacitor, or maybe even a diode. Unlikely to become a VSLI chip though. ;-) To scope those out involves a low-tech tap test, developed by the Neanderthal Institute -- the "If in doubt, hit it with a stick" school. With a meter on the AGC, you'd tap around on the module both before and after the "bewitching hour". The thermal effect can be such that you'll get nothing from tapping until things warm up just enough. Most likely, you'd have to leave the meter on it for an hour or more as you tap around the tube bases and the tubes themselves.BTW, Chuck mentions on his web site that, as part of a restoration job, he resolders all joints in the signal lines with silver solder. I think I already mentioned what seemed like a similar problem with an HQ-180A. Found a microphonic condition, with what seemed to be as many as 3 tubes. But actually, when it was just one -- also a 6BE6 in the IF section. It had tested fine on my TV-7D/U, but was the "loudest" on the tap test. If you suspect Z503, you could swap between the two IF decks.

Date: Sat, 13 Nov 1999 10:58:01 -0600
From: "Dr. Gerald N. Johnson, P.E." <geraldj@ames.net>
Subject: Re: [R-390] IF Module

On soldering:

The military contractor held onto a fallacy that a mechanical connection was made better by a blob of solder. Much of the time that was true, but sometimes the solder didn't bond to the terminal and the wrapped wire at the same time. But because the connection was mechanically secure the radio worked to specs anyway. After a few decades of heat/cold, salt air, unprotected storage, and basements, corrosion can have made a connection that wasn't properly soldered finally go open.

Resoldering all connections with a gently activated flux can help a radio, if no parts get cooked in the process.

Because grid emission causes a stage to counter AGC and to have higher than normal plate current and thus higher than normal gain, a tube with grid emission may be more microphonic.

Date: Tue, 16 Nov 1999 06:47:52 -0600
From: Nolan Lee <nlee@gs.verio.net>
Subject: [R-390] the EAC after 13 months of 24/7

Thirteen months ago I completed one of my R390A "projects". I started

with a like new cherry 1967 EAC and went thru it replacing all of the under chassis paper caps, out of spec resistors, etc., in probably one of the most detailed R390A "blue printed" overhauls ever done. I still have the list of steps done if anyone cares to attempt dispute my claim. :-)

My goal was a receiver that I wouldn't have to screw with for as long as possible, hopefully a decade, other than tube and dial lamp replacements and an occasional alignment, etc. My "usual" routine for BA receivers, depending on the model, is to pull them out of the rack every six months and blow the dust out of them and either test or replace the tubes and check the alignment, etc.

I didn't get around to doing this with the EAC for various reasons until last evening. It's been running 24 hours a day and seven days a week for a little more than thirteen months now on a Variac at 115 volts. Doing a little quick figuring, I make that as about 9400+ hours of "power on" time. About six months or so ago, I noticed what I thought to be an AGC problem with strong signals that I figured was probably a gassy tube. I've also noticed a gradual decrease in sensitivity.

All of the tubes in this receiver were the 1968 date coded originals other than the two 26Z5W rectifiers and the 6626 (0A2WA) voltage regulator which I replaced out of habit when I put it back together after the overhaul.

Early this evening, I fired up a mess of test gear and pulled the EAC out of the rack and removed the covers.

There wasn't enough dust inside to justify uncoiling the air hose so I started pulling tubes and testing them. I did the bottom side of the receiver first. I was susprised that both of the rectifiers and the voltage regulator were still fine. In the past, I've never been all that impressed with the life of those specific tubes.

One of the things that I did when I originally put the receiver back together was to replace the original WPM conductive insert tube shields with the IERC ones for the two rectifiers, the VR, the PTO osc tube and the 3TF7. I also installed some of the IERC tube base heat conductive strips out of some scrapped T-195 transmitters.

One of the 5814A's on the audio deck (V602) was gassy as hell and needed to be replaced. Other than that, all of the tubes on the underside of the receiver were well above minimum so I left them in there. I was really surprised that the 6AK6 local audio output tube lasted this well, they usually don't. ;-(I suspect that this is due to the "correct" lowered B+ voltage from running the set at 115V and tube rectifiers rather than SS ones.

I rolled the receiver over and did the IF deck next. I figured for sure that I'd find a bum tube or two there, but all tested well above minimum values, especially the 5749's. I paid particular attention to testing the tubes in the AGC circuit, especially for the gas test but couldn't find a problem so I dug out the TV-2B and retested them. Still not finding any problems, I reinstalled them.

The 5654 on the crystal osc deck tested right at "minimum" but I've had these test at less than half of their minimum value and still work perfectly so I left it.

The first tube on the RF deck that I tested was the 6DC6 RF amplifier and it was pretty flat at about 2/3 of the minimum value (no surprise there) so I replaced it. What did surprise the hell out of me was the first mixer (6C4W) next to it. I couldn't get much more than a slight twitch the meter on either tester. Totally flat, so I replaced it. All of the other tubes on the RF deck tested pretty decent except for the 5654 (V207), the first crystal oscillator. It was about 25% of minimum so I replaced it. With both the first oscillator and the first mixer tubes both in as bad a shape as they were in, I'm pretty surprised that the receiver even worked below 8 MHz.

I powered it back up and jumpered it into the antenna coupler and did some quick "surfing" and found that the "AGC" problem was gone. I'm beginning to wonder if what I thought was an AGC problem with strong signals wasn't a problem with the 1st mixer/osc circuit. ;-) About 99% of the use of the radio is on frequencies below 8 MHz. I never tried to see if the problem was present on the higher frequencies, it never occurred to me. ;-(

At any rate, after a total of 9400+ hours or running, only 4 tubes needed to be replaced. That's not too shabby, and better tube life than I've gotten out of any of the R390A's that I've owned in the last 24 years.

I think that a lot of this has to do with the fact that I started using a Variac set at 115 volts rather than my normal 125 volt line voltage, I no longer use the ovens, plus the use of heat conductive tube shields. All of the previous "long term" R390A's and my old Collins that I've had since 1975 all came with the standard old nickeled brass or copper shields. I even removed the shields from the 8 tubes mentioned in the manual and the two rectifier tubes to "improve" cooling as recommended in the 1956 manual. Duh...I won't make that mistake anymore. :-) Even though I had access to the WPM and IERC heat conductive type shields, I never really made it a point to use them until Chuck's post on them a couple of years back. It appears that engineers at Collins were right and that the use of them really does improve tube life.

Another labor saver for this maintenance session was the fact that even

after baking for 13 months, there was absolutely no need to clean lubricate the gear train. It appears that synthetic oil IS the only way to go. That saved a few hours. <grin>

As for the alignment, other than setting the gain adjustment, and the carrier meter zero, I didn't even bother. I made those two adjustments, and checked each band for sensitivity. Its not nearly as sensitive as it was when I first finished the overhaul and alignments last year, but it's still averages well below 3 microvolts across the spectrum. Maybe I'll do an actual full alignment in another six months or so. I suspect it'll be time to replace most of the rest of the tubes by then.

Overall, I'm happier than hell with it. I think that all of the extra effort during the --- It was all worth it.

Date: Tue, 30 Nov 1999 11:53:51 -0700
From: "jordana@nucleus.com" <jordana@nucleus.com>
Subject: [R-390] Dittmore-Freimuth EAC Question...

Hi again... When I picked up my '67 EAC, I also received a Spare Parts kit for it... it is marked with the '67 EAC Contract number, but all the parts inside are from the '68 Dittmore Freimuth contract... my EAC 390A has some '68 mfgr date codes on several components, ie. Caps etc, but all modules are EAC and stamped from the same '67 build... the Dittmore Freimouth marks have been covered on the tube boxes, but some of the 'covering' has flaked away and the Dittmore-Freimuth stamp is clearly visible... it is marked and covered the same way on the Fuse,Lamp,and Neon Lamp packs also... the pack itself is marked 12-68 ... would this be December '68 or the 12th week of '68???

Date: Sun, 19 Dec 1999 11:30:34 -0600
From: "Dr. Gerald N. Johnson, P.E." <geraldj@ames.net>
Subject: Re: [R-390] R390 dial lights

I suspect the light output of the LED lamp is far more directional than the ordinary tungsten filament. But I've not looked at any of the white lamps. I know the high output red leds for a few years ago were very focused.

The lamp books say this on lamp life and output versus voltage.

Changing the voltage 5% changes the light output 10%, and the life doubles if the voltage does down or is cut in half if the voltage is raised. So lamps designed for greater efficiency don't last as long (providing the technology is the same). As tungsten is operated at higher temperatures to get greater illumination efficiency, the evaporation rate increases. A quartz lamp attempts to operate the envelope at a high enough temperature that the

deposits reevaporate and some might even condense back on the filament. Much lamp output is lost in most lamps due to tungsten smoke on the inside of the glass.

Date: Sun, 19 Dec 1999 18:29:10 -0600
From: Nolan Lee <nlee@gs.verio.net>
Subject: [R-390] R390A & R-1051B dial lamps...

>Did you happen to see any LED replacements that might work in an R-1051? Something to make up a Frankenbulb out of?

I didn't even bother to look. One of my R-1051B's has been sitting here running since about 10/96 or so, 24 and 7. It had a new set of military lamps in it when I took it out of the Navy repair depot shipping box. As best as I can figure in my head, the radio has been running over well over 26K hours on those original lamps, which were originally rated something like 2K or 3K hours.

I have replaced about a half a dozen pairs of tubes in each of the R-1051B's. I don't even bother to test them, I just change them every six months. Other than touching up the frequency standard in them every six months or so, they've been pretty trouble free. I've got a counter on one now. It's showing 4.9999989 MHz. It looks like it's drifted down 1.1 Hz over the last half a year. It could just be that it's cold out here in the shop right now. Maybe one day, I'll luck into a 5 MHz Cesium standard real cheap. :-)

The lamps that I use for rebuilding the original lamp assemblies are rated 7K or so hours (Don, do you remember the exact number?) running at the full 28 volts. Last year, and the year before, I assembled a total of a dozen or so of my "Frankenbulbs" for a couple of friends. So far, none of them have failed that I know of.

With my lamp life mod, mine are running somewhere around 21.6 volts if I remember right. Running the lamps at 75% of design voltage should increase the life by 3000% or so according to one of the lamp manuals I have. As far as I'm concerned, the lamp life problem with R-1051 series that used the Grimes lamp assemblies has pretty much been solved.

The R-1051B pictured on my website has original military lamps running at 21.6 volts and is plenty bright enough for me.

>URM's are problematical.

Another reason that I like the 25F. It uses standard #47 style lamps. <grin> They aren't as easy to change though. :-(

>I think it was the D that I tried to screw in a known good bulb that
>wouldn't light up. It didn't go in all the way (lamp on top of the
>dial), so I applied a bit more force. Broke the thing. That hurt
>-- just my pride -- supposed to be fixing things, not busting stuff.

Not cheap either. Those damn things are expensive. I guess somewhere down the line, I need to work out a method to repair them like the R-1051 lamps.

I've found that some "old" #323 lamps will test either open or have real high resistance with a meter, but will work fine when the normal operating voltage is applied. After that, the resistance readings are normal. I don't know if there's a microscopic film of oxidation that developes on the lamp leads during storage or if maybe it's in the lamp itself where the filament is crimped in the support wire. I've seen this problem with a few of the R-1051 lamps also.

So, if a #323 or R-1051 lamp measures bad with a meter, don't toss it until you've tested it with power.

>I think the glass hit up against the dial edge. Are there different
>versions of the bulbs with different lengths and the same thread size?

If I remember right, there's a thin spacer washer that goes between the lamp and the panel. I had some red #323's years back, but they were the same other than the color.

>I bought a pack of ten 328's from Fair, before I knew about the long
>lifers. Oh well. Didn't I read a post that the non-A takes a different
>(6.3 volt) bulb?

I'm not real familiar with the non A R390, sorry. I'm still using NASA surplus #328's that I picked up twenty some ought years ago. I haven't bought a #328 in decades. The boxes each had about a half a dozen different inspectors stamps and a sheet with a plotted curve of some type in each box. No telling what NASA paid for them. :-) I've used a mess of them thru the years. No crib deaths in the bunch.

>Meanwhile, another sort of bulb question. I got an R-1051B that was
>missing it's fuse caps. For the benefit of the others, since I know you
>know, these are clear plastic,

I've seen a few early ones that were amber for the plain 1051 too.

>shaped a bit like R-390 knobs with an
>integral neon bulb indicator. The fuse holder itself has a resistor for

>the neon. When the fuse opens, the neon is supposed to glow.

Correct, and catch your attention. :-)

>Well, I thought I had a pair of spares from a non-B (AKA straight/AKA
>plain) R-1051 that would fit. Not so. However, the fuse caps from my
>TMC antenna coupler did fit.

Yes, the strandard 1051 fuse holders are different from the B model.

>So, I got Dave at Fair to send me a couple of fuse caps off a B that
>was lying around for parts. They were the same as the first ones --
>no go.

Interesting. All of the B models that I've seen for both the R-1051's and the T-827's use the same fuse holder cap.

>The pair from the TMC that fit have a longer
>reach and the shape of the cap is different -- long and narrow and bea
>no resemblance to an R-390 knob. What's the skinny on these jobbies?

No idea. The fuse caps on my CU-656A antenna couplers are identical to the ones in my R-1051B's and T-827B's. The only difference is that the O ring groove on the caps for the couplers are empty where as the ones for the receivers and transmitters have orange silicon O rings in them.

Date: Mon, 20 Dec 1999 14:52 -0800 (PST)
From: rlruszkowski@west.raytheon.com
Subject: Re:[R-390] RE: Replacement bulbs

Unfortunately, we cannot make an LED replacement for a #323 bulb.
How about you just make your self a pair.

One while small LED.
One surface mount resistor.
One small brass tube.
Some solder as needed.
Some epoxy as needed.

Select a small brass tube at the hobby shop the size of the 323 base. Chuck the tube into the drill press. Use a tool bit to bevel the end out to make the base retainer. Cut the tube to length. Sand the top clean. put one lead of the LED to the tube. Put the other lead to the resistor. add fat lead to the other end of the resistor. Remember this must all tuck in the tube. If its DC direction of current flow will matter. Glue this all together. Leave the resistor lead sticking out the bottom center to the base. Add the extra drop

of glue to build up the round base. Trim the lead and sand the bottom. This is a craft job. But you will only need to do this once.

Date: Wed, 22 Dec 1999 15:17:14 -0500
From: "Walter Wilson" <wewilson@knology.net>
Subject: [R-390] Loose connections

I was amazed this week at what a difference good connections seem to make.

Last week, I took my R-390A off the shelf to check the tubes. I had a new (to me) TV-7A/U tube tester that I had just recalibrated, along with a handful of NOS tubes. I ran them all (the R-390A tubes) through the tester, and found two below spec and two more that were marginal. I had replacements for the two bad ones on hand, and replaced those.

After reassembling the radio, there was an excessive amount of crackling type noise. It was before the limiter circuit, as it was present at the Diode Load terminals. It occurred even when the antenna was disconnected. I knew I had reseated all the tubes properly, and had even coated the pins with DeOxit before insertion. Upon inspection, I first tried to isolate the problem between the RF and IF deck by disconnecting the coaxial signal leads (at J213 and J218) that connect 455 KC IF signals into the IF deck. The noise stopped when I unplugged J213, but it turned out the noise could be stopped by holding the cable on J213 with a little pressure. Let it go, and the crackling noise returned. I had not suspected a loose connection since I could not "bump" the radio and hear any discernable change in the noise. I put a small spray of DeOxit on the connector, and the noise simply disappeared. Subsequently I gave all the connections in the radio a small burst of DeOxit spray, and no more problems. Once again, this radio is the quietest one in the shack with great sensitivity. Signals that you can just tell are present on other radios in the shack are 100% copyable on the R-390A. What a great radio! And three cheers for DeOxit!

When I had first listened to my radio, I thought I was going to have to "fix" something. But all I had to do was work on the loose connections.
(This radio is a little bit like my wife. Replace the word "radio" with the word "wife" in the last paragraph. For a real kick, try the same for the last three paragraphs.)

Date: Wed, 22 Dec 1999 18:04:28 -0600
From: Richard Biddle <theprof@texoma.net>
Subject: [R-390] RE: Replacement bulbs

Hmmm, when the bulbs finally died, I took the old bulbs, scraped the guts out, went down to Rat Shack, bought a miniture screw base lamp of the

right voltage, tack soldered in to the old bulb's carcuss, and pluged it in. Been fine for the last couple years. I haven't bothered order the right ones yet, but I suppose I will someday:)

>Date: Thu, 20 Jan 2000 13:31:32 -0500
>From: Mark Masin <kenwin@worldnet.att.net> (Am Trans-coil)

I have been viewing for some time now the questions and entries on this net. American Trans-Coil has over the past 40 years been manufacturing components for the R390A. We have approximately 200 front and back panels, as well as the sides and bottom covers.. Some of the front panels have tags on them. The one on my desk right now is a Motorola, order no.14385PC-58, SERNO: 234. In addition we have crystal osc, tuning cores and holders, RF and IF chassis, and still hundreds if not thousands of transformers. Most of the transformers are of our manufacture, but we still have a great many of those that came out of the original equipment. I do not believe we have any PTOs remaining. During the summer of 1998 Chuck came up to see us and we sent him packing with a great deal of merchandise. Most of this is what you have seen advertised on his web site. Although, we do not have any tubes or tube shields remaining, we still have a lot of material that Chuck either left or material that we subsequently found when we moved out of Queens NY to our present location in Oyster Bay, NY in January 1999. We also have a limited supply of material for the R390, R391 and R392 mostly transformers and raw material. We are interested in selling all of this material either individually or as a lot. It is difficult for us to take an accurate inventory as well as it being very time consuming. If anyone is interested in seeing if we have the parts you need, please email me as much information as possible, especially if you have a signal corp drawing number and national stock number (nsn or fsn). I will try to get back to you as soon as possible. American Trans-Coil is still very active in military spare parts programs so that takes up a great portion of my time. We do not operate a store front business, we are still a manufacturer. In addition, we have been the dominant manufacturer of GRC-106 spare parts for the past twenty-five or so years. We have a tremendous amount of completed modules and material left if anyone is interested. I ask that you email me inquiries first and not to call so we don't clog up our switchboard. Mark Masin, American Trans-Coil
kenwin@worldnet.att.net
- --
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- --- Please visit our Web Site at: http://www.atc-us.com ---
Don Reaves WA5BBS dr@cei.net
R-390 military radio mail list manager
CCA QCWA ARRL AMI

Date: Fri, 21 Jan 2000 11:01:41 -0500
From: Mark Masin <kenwin@worldnet.att.net>
Subject: [R-390] American Trans-Coil

I want to thank everyone for their enthusiastic response to our posting of R390A parts available. We will try to accomodate all emailed requests as soon as possible. I would appreciate it though, if you email to kenwin@worldnet.att.net> your requests and not call us directly. For the many of you who have called I have requested that you then emal your requests. In this way, we have a chronological record of when items were requested as there is a limited supply of material. As a further note, all R390A chassis parts, panels, covers etc are on an 'as is' basis. These are items which are not new, nor refurbished. Also, for those who are interested in original tags, we are not going to take them off of the front panels. They are going to be sold with the panel. As of now we are formulating a price structure and we should be responding to your emails by the middle of next week. Again, thank you for your response and hopefully we will be able to satisfy your requests.

Date: Fri, 21 Jan 2000 16:05:45 -0500
From: Mark Masin <kenwin@worldnet.att.net>
Subject: [R-390] R390A Front Panels

I have had people working through the day to come up with some answers on R390A front panels. Here is the information that we have. 1. The price for the front panels is $17.00 each plus $3.00 handling and any applicable shipping charges. Shipping will be done through UPS. We will accept credit card purchases. They have their original nameplates. These are panels that have knobs, except for the kc and mhz knob and they probably need to be repainted. There are no meters. They have their handles. The switches and potentionmeters on the back side have had the wires cut. They have the view plate for the frequency. The printing for the most part is etched not silkscreened. They are worn but not broken.In most cases there are some scratches. For those enthusiasts who desire a perfect finish, they will need some work. They also need a good cleaning. We have the following manufacturers:

Motorola 37 each
Collins 37 each
Electronic Assistance 35 each
Stewart-Warner 23 each

Capeheart 29 each
Imperial Electronics 13 each
AMELCO 11 each
Teledyne Systems 4 each
Dittmore-Freimuth 2 each
Unknown (without nameplates) 6 each

I have received over 50 emails today concerning our material. Many of you have asked for front panels so we took an inventory of this material first. If you wish to place an order for these panels specify which manufacturer is your 1st and 2nd choice (only panel orders will be accepted at this time) please email me that you wish to do so. I will be in contact with you next week to arrange the credit card purchase and shipping. If you wish to place an order please include your zip code so we can calculate shipping charges prior to contacting you. Obviously, with a limited quantity these will be sold first come, first served and 'as is'. Other R390A material information with be forthcoming next week.

Date: Sun, 23 Jan 2000 23:56:37 -0500
From: William J Gittere <bgittere@juno.com>
Subject: [R-390] MANSON C374-004-000

This weekend I acquired a Motorola R390A which is in questionable condition. One of the things I noticed is that there appears to be some modifications but they also appear to be legitimate.

There is an assembly which plugs into the socket for V401. It is labled (R390A), Manson C374-004-000. It seems to match the other chassis and seems to fit right in. It also has a wiring harness which goes out thru a hole in the back panel to a bracket with 4 connectors on it. One has three pins and is labled "control" and the other 3 are BNC's Labled "J3 9-17MC", J2 SYNTH, and J1 17MC.

Question is: is anyone familiar with the arrangement of both of these as to what they do, if they are documented anywhere and how to use them. At present there is no audio coming from the receiver but there is a major component missing from the AF subassembly with the wires left hanging. Any input will be appreciated.

Date: Mon, 24 Jan 2000 04:06:54 -0600
From: Tom Norris <badger@telalink.net>
Subject: Re: [R-390] MANSON C374-004-000

It is all the pieces to make the R-390A an R1247. there are three external chassis that plug into the whole mess to make a synthesized R-390. I have all the synthesizers, but have yet to find one of the R-1274s as they seem to

be hard to find. As to the AF deck problem, dunno, what exactly seems to be missing and where is the bundle of wires coming from that are hanging out?

The external synth is an odd setup. You still have to manually tune the 390 to the freq that you want, then you tune the synthesizer, there are two units -- one for MC and one for KC. There is also an SSB convertor that goes with the deal. The two synths weigh more than an R390! (Or close anyway)

Date: Sat, 29 Jan 2000 07:22:34 -0600
From: Nolan Lee <nlee@gs.verio.net>
Subject: [R-390] MIL-HDBK-217F online...FREE!

Judging from the number of you guys that have emailed me in the past asking to see if I ever found a copy of a certain book posted as "wanted" by me on my website, I'm sure that you'll find this interesting... I just received an email message from someone that was digging around on my website and noticed that I was looking for a copy of the military electronic parts reliability handbook. I've been trying to find a copy for several years without any luck. I though that the price that he wanted for it was a little steep at forty dollars. It was for an "electronic copy" of the very latest version with supplements, all in adobe, on a CD for $40.00. Hell, I can buy about 25 fifths of Thunderbird for that... ;-)

Being the overly paranoid and suspicious person that I am, I went and hit the military contractor assistance site and did a quick search thinking that they might have added it to their available files. I had previously searched for MIL-HDBK-217E on that site without any luck and decided that I'd give it another try. Bummer, no luck. ;-(

Well, I got to thinking about his comment about "the very latest version" and figured that I'd try a search for a later revision. <grin> I hit pay dirt using MIL-HDBK-217F with their search engine and sure enough, there it is as big as life for free public access download with two Changes files.

http://assist.daps.mil/eAccess/index.cfm?ident_number=53939 is where you want to be, so load up the truck and move to Beverly...hills that is... The main handbook is 205 pages that are a little more than 15 megs in size. There are two Changes consisting of a total of about 107 pages and totalling about 9 megs in size. It's taking me a while to download the beast since I'm only getting 21.6 dial ups right now because of all of the recent rain, but a few hours or so of download time and...Hmmm, come to think of it, I should delay sending out this message until I've got it downloaded. I'd hate to get about 99% of the way finished and you guys overload the server. <grin> I love it when my tax dollars are put to good use!

Date: Sat, 29 Jan 2000 08:25:35 -0600
From: Nolan Lee <nlee@gs.verio.net>
Subject: [R-390] MIL-HDBK-217F download instructions...

I received a few messages from people having difficulty logging onto the site for various reasons. Here are steps that should work.

First go to **http://astimage.daps.dla.mil/online/**

Then click on the Assist Quick Search (no login required) icon which is on the right side of the display. That will take you to http://astimage.daps.dla.mil/quicksearch/

Enter MIL-HDBK-217F in "Document ID" search box and hit the "Submit" icon. That will take you to a query response page listing the "hits". Click on the displayed hit of MIL-HDBK-217F(2). That will take you to http://astimage.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=53939 At the top of that page, click on the little document icon just to the left of "Click here to access document images." That will send you to http://assist.daps.mil/eAccess/index.cfm?ident_number=53939 where you can do a right click and "save as" on each of the three little Adobe icons in the "media" column. I think that should do it, nolan

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Date: Fri, 11 Feb 2000 18:51:33 -0600
From: Nolan Lee <nlee@gs.verio.net>
Subject: Re: [R-390] My ATC order and "Correct" front panels

Every original Collins built R-390A that I've seen had an engraved front panel.

>What is "correct" for a Collins built radio? Engraved.

>Does it depend on the contract?.. Not that I'm aware of.

>panels and that somehow Motorola got "off the hook".

I never really got into the Motorola ones. First, on account of the silk screened front panel. They're next to impossible for a someone to refinish at home. If you're patient, you can hand letter one. I've seen some that turned out really fine. On a side note, A friend of mine renumbered the speedometer glass in a 1938 60 series Cadillac with nothing more than an enlarged photo of an intact one, an eye loupe, a toothpick, and a bottle of white enamel. It looked factory. I'd have cut out a stencil with an Exacto knife and sprayed it. <grin> The second reason that I've avoided the

Motorola R-390A's is that every one that I've ever seen looked like all of the modules had been dipped in varnish and allowed to drip dry. They're a real pain to replace parts in and unless you revarnish whatever you did, the repair sticks out lick a sore thumb. I've chatted with a bunch of people that have Motorolas and from what I gather, they seem less prone to have drifted resistors and bad (original) capacitors. I guess that over the long haul, that varnish helped keep a lot of humidity out of those components. Originally, I'd figured that they'd have been more drifted resistors on account of the decreased cooling of the components. Weird...

Date: Fri, 11 Feb 2000 20:18:26 EST
From: KB9VU@aol.com
Subject: Re: [R-390] My ATC order and "Correct" front panels

I have a Collins manufactured R-390A with a silk-screened front panel. Collins Contract 14214-PH-51, serial number 716. Most of the fellows I know of with early contract Collins built units have silk screened panels.

Date: Mon, 14 Feb 2000 14:07:20 -0500
From: "Tetrode" <tetrode@sprynet.com>
Subject: Re: [R-390] Bristo wrench....need one!

I just bought a couple of replacement spline blades from Tecra Tools for $3.75 ea; .096" type 99-66, which fit all the spline type screws in my radio. They are designed to snap into the Xcelite handle, so you'll one of those too if you don't have one. They are at www.TecraTools.com

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Date: Fri, 18 Feb 2000 16:04:27 -0600
From: "Dr. Gerald N. Johnson, P.E." <geraldj@ames.net>
Subject: Re: [R-390] Riveting switches

I went looking to where I though I'd last seen that riveter, and it wasn't there. But I did find a sack with some ceramic switches and a couple 12 volt relays, a thermodisk type thermostat and a couple large baluns. My newest McMaster catalog hasn't made it to the computer yet. Anyway, think eyelets instead of rivets and you'll find vendors of them and of tools to apply them. One tool from Vector was a new tip for a hammerless center punch. That's probably not quite controlled well enough for a ceramic switch wafer.

Another tool that would set rivets and eyelets quite well is a hand punch like the Whitney JR #5 or the deep throat XX. Would take making bits, but they have about a ton of force at closing, punch 9/32 or 17/32" max holes in 1/16" steel. There are knock offs of the Jr #5 in JC Whitney catalog sometimes. The punch has a stud and shoulder, the die has a thread on the outside. With a lathe I've made various tools for them. Actually the

ordinary punch and die would work well probably choosing a die to support the flange of the eyelet and a fairly small punch so its center punch piece would flare the eyelet. JC Whitney (ak Warshawsky) didn't invent them. The Whitney tool company did. probably near a century ago. The Jr #5 cost me $13, but is around $85 in the legitimate catalogs these days, maybe more. Handier than snot for building stuff, fast, and looks better than drilling.

Date: Tue, 29 Feb 2000 16:56:11 -0000
From: "Phil Atchley" <ko6bb@elite.net>
Subject: Re: [R-390] Low gain below 8MHz & Calibrator Re-visited....

I realize that Caig want you to use their products (DeOxit etc) but on their Web site under cleaning connections they say to NEVER use an eraser to clean contacts etc, it rubs off any precious metal coatings the contact has but it also leaves behind a sticky non-conductive coating that can be extremely difficult to remove. This is due to the adhesives in the eraser. (Up to this time I have also been guilty of this practice on occasion.)

Date: Tue, 29 Feb 2000 13:02:22 -0600
From: Randy Guttery <comcents@mississippi.net>
Subject: Re: [R-390] Low gain below 8MHz & Calibrator Re-visited....

When cleaning gold contacts on card edge connectors, etc.- the Navy manual always specified that a GUM eraser be used - both for the reason sited above (adhesive residue) plus gum erasers tend to be MUCH less abrasive...

Date: Tue, 29 Feb 2000 20:31:17 -0000
From: "Phil Atchley" <ko6bb@elite.net>
Subject: Re: [R-390] Low gain below 8MHz & Calibrator Re-visited....

> Since gold was used in many of the pins of other connectors, I wonder why gold-... parts....

I can think of a couple reasons, first perhaps the specified connector was not available or too costly (remember the R-390A is a "Cost Reduction" version of the R-390). Also, silver conductors are "usually" very reliable, even with a coating of oxide on em, the engineers probably didn't look down the road to nearly 50 years after the design date. I do audio repairs part time at a local shop, just try to get some parts for some "Consumer Grade" audio gear just 2-3 years after production ceases, or even during production in some cases!!!! I'd say that the engineers did a pretty good job of specifying parts for the R-390A's. (Even if it is nearly impossible to find the mini BNC's)

Date: Thu, 2 Mar 2000 20:34:42 -0500
From: "Tetrode" <tetrode@sprynet.com>
Subject: Re: [R-390] "Mini-BNC Connectors"

They are known as "MB" connectors, presumably short for Mini-BNC.

As far as I can tell, they are used virtually nowhere else in the electronics world, although a friend told me he's seen them in some boatanchor Mototola commercial VHF radios.

A year or so ago, I searched through a pile of parts and connector catalogs and came up dry. I did find one cable manufacturer that said they could make RG58 coax patch cables with MB connectors, but they would be in the $60 dollar range. I never persued it, and the name of the place escapes me at the moment.

Finally, I found that Surplus Sales of Nebraska sells a few different styles of new MB plugs for RG-174 and RG-58 coax. Prices were about $6 back then, which isn't bad considering their prices on other items. I saw them listed in their web site, probably in the BNC section.

Date: Thu, 2 Mar 2000 22:51:54 -0500
From: "Tetrode" <tetrode@sprynet.com>
Subject: Re: [R-390] "Mini-BNC Connectors"

(CRF)RF-0721-25 Automatic connector. Straight plug, 2 lug bayonet, for RG-174, 188 etc. Silver plated.

(CRF)5904 TRU right angle plug, 2 lug bayonet, for RG-174, 188 etc. Silver plated.

RG-174 is small diameter coax so either of the above should work OK in the 390A as replacement connectors. The other straight and right angle connectors that are for RG-58 would be good to put on one end of a regular BNC cable to connect test equipment. The names Automatic and TRU are manufacture's names.

Date: Fri, 3 Mar 2000 01:10:57 -0500
From: km1h@juno.com
Subject: Re: [R-390] "Mini-BNC Connectors"

National used them in a few Navy radios including the monster FRR-59...is that the right # ?..... I have several of those jumpers and test bench jumpers that were scrapped at the end of the contracts. They are all with RG-58.

Date: Thu, 2 Mar 2000 18:30:57 -0800

From: "Glen Galati" <eldim@worldnet.att.net>
Subject: Re: [R-390] "Mini-BNC Connectors"

This is the Type MB Series that is no longer manufactured. If you have an old NEWARK Catalog you can find them listed under Amphenol . I'm looking at a 1983 #106 onPage 397. The plug is a JAN 45000, TYPE 46000 Receptacle Chassis Mtg. The price of these skyrocketed after they were discontinued.

Date: Fri, 03 Mar 2000 08:44 -0800 (PST)
From: rlruszkowski@west.raytheon.com
Subject: [R-390] Mini-BNC Connector part numbers

The ones in hand are RF 0721-50 mini BNC female center BNC lock, fit on R390 deck connectors. Coax is M17/11 RG303 125 30194 BNC-M-5A BNC male connector. The back bushing is sized to the Coax. These are the part numbers in the Murphy assemblies. In my receiver I found the following part numbers.

IPC 68725 straight IF deck
IPC 68775 right angle antenna input.
IPC 68700 Unbalanced antenna input coax
IPC 45875 right angle OCS deck.

Needless to say these are long out of production. I do not have a parts manual so I can not look up the FSN's for the connectors.

Date: Fri, 03 Mar 2000 10:36:06 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] "Mini-BNC Connectors"

>They are known as "MB" connectors, presumably short for Mini-BNC.

Sometimes referred to as "mini-bastards" by folks who are used to working on the much larger PL-259 sized connectors.

>Finally, I found that Surplus Sales of Nebraska sells a few different styles >of new MB plugs for RG-174 and RG-58 coax.

The bandits? Just say NO! Instead try RF Connections:

http://www.therfc.com/ email: rfc@therfc.com
These are not listed on his web site but I just called them and they are digging to see what they have for MB male cable connector for RG-174, RG-316, 3/16".

The following are all in stock:

BNC male cable connectors:
69475 BNC(M) for RG-174,179,188,316 $4.75
RFC69475 BNC(M) for RG-174,179,188,316 Import $2.50

RG-174 (polyethelyne) is $ .12/ft
RG-316, (teflon) is $ .55/ft

Stay tuned, I'll report what they find in the MB cable connectors.

Date: Fri, 03 Mar 2000 11:52:15 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] "Mini-BNC Connectors"

>Instead try RF Connections: ...

It turns out that they do not have any MB cable connectors for the 3/16 size coax, but they do have MB cable connectors for larger coax (They appear to be for the RG-58 size coax.) These have the number 48875 on the package. Price is $5 each.They estimate that to make up a cable with the MB connector on one end, about one foot long with RG-58, and a BNC male on the other end would cost $17.87. (Made-to-order cables are not returnable.)

NOTES:
1) The MB series connectors are mechanically not the same as the normal BNC series in that the cable connector has a collar and the center connection is a FEMALE one with surrounding insulation, not a male pin as in the BNC series. The normal chassis mount connector has a fixed cylindrical body with two pins at 180 degrees and the center connection is a MALE pin.

2) There does exist a variant of the MB connectors with THREE bayonet pins. Look closely at hamfests when you think you have discovered a find.

3) It would seem good to have some jumper cables MB to BNC and maybe an MB Tee adapter to do signal injection and alignment with a signal generator. Some of the circuits in the R-390 depend on the capacitance of the cables as part of the circuit conditions, so re-touching of some adjustments may be needed after the thing is back to its normal configuration. The IF output is a cathode follower and likely is not sensitive to cable length, characteristic impedance, or capacitance.Here is the web site for The RF Connection. I'm a happy customer and neighbor with no financial interest. They have recently had a change in "staff". The venerable hound dog at the shop has become a silent key and a new one has

moved in. He is half Rhodesian Ridgeback and half Retreiver.
Web site: http://www.therfc.com/

Date: Fri, 3 Mar 2000 18:39:54 -0500 (EST)
From: Norman Ryan <nryan@duke.edu>
Subject: Re: [R-390] "Mini-BNC Connectors"

You can find mini-BNC connectors at hamfests. Hate to see you pay six bucks a pop from that overpriced outfit in NE. Sure, it might be a bit tedious rooting around for them at hamfests, but remember it's a day out of the house with a bunch of regular guys. :-)

Date: Sat, 4 Mar 2000 03:28:49 -0000
From: "Phil Atchley" <ko6bb@elite.net>
Subject: [R-390] More "Mini BNC Blues"....

The saga continues. As I mentioned before, I'm using this old Motorola R-390A many hours a day, "testing" it while waiting for the capacitors and other parts to come in for a rebuild. Well today the thing started making the most terrible noise bursts, sounded like lightning strikes over in the next block over! But I knew it was the receiver cause the DX-394 didn't do it. I thought, goodness, one of them infamous paper capacitors is finally letting loose and I ought to expect the sweet smell of burnt resistor soon. Turned the set off. Turned it on after a couple hours cooldown, same thing.

Then I started "wobbling" things. Eureka, the good ole Mini BNC PL217 struck again. I thought this one was from the Xtal Oscillator, but no it disappears under the chassis, without going into the schematic I'd hazard that it is the PTO cable. (Unit is in a cabinet) Well, to make a long story short no amount of cleaning helped this "lil stinker", BUT the cable was long enough to permit the plug to be routed 180 degrees from it's normal direction. Eureka again! It is neither erratic or noisy, so it will stay in that position till I can repair/replace the cable. Moral of the story? In R-390A's noise and things aren't always the fault of the BBODS or GLODS. Goodness, I thought I was going to be limited to listening to the R/S DX-394 SS rig till I repaired the "A" 8-(

Date: Sun, 5 Mar 2000 11:59:39 -0800 (PST)
From: John Kolb <jlkolb@cts.com>
Subject: Re: [R-390] "Mini-BNC Connectors"

I asked a connector manufacturer rep at an electronics show what they were called and was told mini-BNC. I've run across one or two cables with a Tektronix part number on them with a Mini-BNC.

Date: Mon, 6 Mar 2000 22:55:02 -0500

From: km1h@juno.com
Subject: Re: [R-390] Close spaced signal dynamic range

.....out it. The variable IF alignment may still be suspect but maybe not.....

Intermod is generated in either the first RF stage or mixers as a rule Paul. If new tubes make no discernible difference alignment wont help....unless it is so far off and yours does not appear to be.

> .....else has experienced the reported issue or tried my test: pick a strong BCB >signal, generate a 100db signal +10kc away, hear the image +20kc away from >the BCB signal. So, I can't say for sure if the issue is normal or if the problem >exists in R-390a receivers known to be 100% up to spec.

Define 100dB? That is an unknown accuracy meter reading. What is that in microvolts or dBM?

> My interpretation of Dr. Johnson's response is that the issue is to be expected by the multiple conversion design and the RF bandpass filters. I cant see where RF bandpass filters (meaning front end LC filters) would have any impact. Added mixers certainly could be an issue.

I was not kidding when I mentioned the mechanical filters. They are a known source of IMD since they saturate and go non-linear at high RF levels. Add to that their age, increasing attenuation, and you can introduce problems well below original new condx. You can check them out (I know you did somewhat in the initial post) by trying all 4 mechanical filters even if it means using 2 sig generators. If the problem persists then it is likely time to go change caps and out of tolerance resistors.

In order of ease:

Tubes: possible but only one probably the culprit

Filter(s): one or two maybe, not all 4. Continued use at very high signallevels will degrade them.

Caps/resistors: most likely, it doesnt take much cap leakage or a 100% resistor tolerance change to screw things up.

Date: Mon, 06 Mar 2000 23:18:59 -0600
From: "Dr. Gerald N. Johnson, P.E." <geraldj@ames.net>
Subject: Re: [R-390] Close spaced signal dynamic range

I'd like to see your data. ARRL tries to make believe they invented receiver

testing and doesn't like changes to their routine. But the real problem in many commercial receivers on the market today is that the first IF filter is wide enough for amateur FM and to allow (I believe) the second injection oscillator to be tuned maybe 10 KHz in tiny steps for the fine tuning part of the synthesizer. That lets the first oscillator only use 10 KHz steps so the reference frequency can be high, the changes less frequent, and thus reduce the phase noise because the loop bandwidth can be greater. The second injection can be generated with fine resolution with a DDS and be very clean for phase noise and other spurs. This fine tuning need makes it impossible to use a narrower first IF filter. Unfortunately that means the first IF gain and second mixer need to be truly tough for handling strong signals and clearly aren't. Also it means that for most frequencies, the IMD curve won't be symmetrical because the desired signal won't be centered in the first IF filter. For laziness and simpler equipment, I've been working on using a 5722 noise generator for measuring MDS and then one sturdy crystal oscillator for the "interference" to see what level of strong signal changed the MDS or the receiver NF (which would then be independent of measurement bandwidth, so long as the strong signal doesn't leak past the filters). Then I can use various spacings without needing a brace of 8640B or better. I'm more interested in VHF than HF at the moment, because from use on 75 meters I find the Corsair II does a very fine job.

The European ham magazines do measure IMD and block versus spacing to how the problems from that broad first IF filter. The curve for the TS-850 was published in DUBUS a few years ago. I have that review scanned if anyone wishes to see it. It also includes a suggested mod for easier use with transverters.

Date: Wed, 8 Mar 2000 14:32:35 -0800 (PST)
From: Tom Marcotte <courir26@yahoo.com>
Subject: [R-390] Depot Tales/Engraved Panels

I was on vacation this past week, and ran into the most interesting chap just by chance. (His identity shall remain top secret lest the list bombard him with questions and offers). This guy is presently working as an avionics technician.

At the shop where he works I noticed a nice restored BC-348 (wrinkle), three nice 390A's with early 90's stock tags (new covers, screws and lockwashers!), and a few nice 51J's all with covers. We struck up a conversation, seems he used to run a contract shop where they would take in govt radios to be fixed, including 390A's. He said that "the girls" (all female staff apparently) would strip the rigs down to bare everything and do the overhaul. They had (and still have some) all the parts they wanted from Ft. Mom and Toby. Interestingly enough, he said that when they got a silkscreened panel into their shop, they would strip it, and then engrave it

with a Panograph machine. The girl had in front of her a typesetting guide for the panel lettering, about 1" high. She would follow the guide, and the machine would engrave the panel, reducing the size at the same time to the proper height. No panels were ever re-silkscreened on the front (but they did do backs). He said he would order meters from the Simpson standard catalog, and then afix new faces for the 390A scales. He talked like these should still be available now, but I think this issue has been worked and they are probably out of stock. He still has eleven crated finished rigs and beaucoup parts. However he is not sure who owns them exactly, so they are going to stay put, that is his final answer.

He also did PRC type radios. Would accept a load of 200 or so, and do swaps and fixes to make as many work as possible. Sometimes they could make 125 out of 200, sometimes only 75. He is also in custody of a hand made 2-18.0 Mcs receiver, perhaps a Ft. Mom prototype, that he can't identify (and this guy knows his way around BA's). It is not marked at all, and he says it is a great SWL rig. Conclusion, there are still a few folks out there that we have not heard from regarding 390A lore.

Date: Wed, 08 Mar 2000 20:04:08 -0500
From: antipode <antipode@ne.mediaone.net>
Subject: Re: [R-390] Depot Tales/Engraved Panels

This is true. Simpson no longer has any of the tooling to build the type 182 meters used in the R-390 series of receivers. Moreover the line level meter is a VU meter, which Simpson will not build under any circumstances in any of their case styles.

Date: Sun, 12 Mar 2000 08:39:51 -0500
From: "Randall C. Stout" <rcs1@sprintmail.com>
Subject: [R-390] Stiff KC knob

I was working on a Teledyne R-390a that I had gotten some time ago. It had been very poorly packed and damaged in shipment. The front panel was bent, as were the rear corners, etc. It had always had a very stiff change action for the KC and MC knobs. There was no grinding or obvious binding spots, just consistently stiff throughout the travel. I had cleaned the gear train (in situ)but that didn't seem to make any difference. Yesterday I was cleaning the slug racks, very light lubrication per Chucks tech., no difference.

I thought that perhaps the front panel had shifted from the shipping damage, so loosend all the front panel screws, ran the controls through several cycles, and retightened. No help.

I finally took off the KC knob again and looked at the bush where it goes

through the panel. This 5/8 nut was pretty tight, so used a wrench to loosen it, looked for any burrs on the shaft, retightened it by fingers, and tried it again. Wow. What a difference. It now turns very nicely. The question is, what is the correct torque setting for this nut, or is finger tight close enough?

Is there a correct procedure to position that bush so that it doesn't bind when snugged up?
Anyway, perhaps a useful tip for the new folks on the list who are struggling with carpal tunnel from stiff action!

Date: Fri, 17 Mar 2000 06:52:14 -0600
From: "Jerry G. Kincade" <w5kp@swbell.net>
Subject: Re: Re: [R-390] RF Deck cleaning tip

Gasoline does leave a film after it "evaporates", plus it is definitely dangerous to handle and use outside a tank. Go to your local gun store and buy the large economy size can (20 oz., I think) of Birchwood-Casey "Gun Scrubber", about $9. Look at the ingredients on the can. It is 1,1,1, tricholorethane (I think I spelled that right). Don't use it inside, its fumes will eat your lunch. But it works instantly, cleans perfectly, isn't a flash hazard, leaves NO TRACE of a film (or any protective surface at all). Lube anything that will rust, immediately after using it. Gunsmiths have used it for years. It's cheap, relatively safe, and works perfectly.

Date: Fri, 17 Mar 2000 19:01:26 -0500
From: km1h@juno.com
Subject: [R-390] It lives

Today my ‘55 Collins fired off for the first time in who knows how many years. Step one, plug in the line cord and BANG. Blew the fuse. Seems that a former technical genius had wired one of the rectifier diodes in backwards. Replaced both with my favorite 1N5408's. At 1KV 3A they are BA proof. Hmm, try it again; no bang but filaments light with function switch off. A quick test shows the microswitch always on. Oh well, I have a good one on one of the ATC panels but looks like a pain to replace. Leave it for know until I have a real need to drop the panel.

Put controls in the proper positions and stuff a 30' wire strung up in the basement rafters in the whip socket. Wow signals and hum almost as loud. Swap out the 2 plug-in filter caps and no more hum.

Start at the low end and cranking thru the MC bands. Nothing at 4, 9 and 21 Mc. Manual says they all share one xtal. No 12Mc HC-6 xtal in the junk box but I have a bunch of 12MHz computer xtals; the little ones with wire leads. Gee, they work. Solder on a pair of #16 pieces of wire and stuff into

the socket. Works for now, dunno how much the little bugger can stand before it blows. Nice of Collins to include the rear panel holes so I could get the xtal cover off. However I think I'll do a nice neat nibble of the rear cover holes so I dont have to remove the screws in the future, just loosen and lift. I do have good HC-6 12.500 and 14.000 xtals, will swap one for a real 12.000.

Clean a few noisy pots with Caig MCL and spend the next hour playing. The bands are hot and signals are all over even 28MHz, some sort of contest is on. Europe to California at least, not bad for a basement wire.

All IF filters work and no more fireworks. Time to pull out the EAC audio module and try the Collins. Gee, it works too. Plug in the back-up Collins and another passes the smoke test. I'll get the EAC off to Dan.

Now to test the spare EAC IF before I send it off to Kurt as a swap for a Collins. Gee that works so that will be in the mail tomorrow.

I haven't even turned on the sig gen yet to check sensitivity. I guess WWV moved frequency to 10004; wish they would have told me. Calibrator is loud on all frequencies.

Also the Medium AGC seems sluggish and high audio is a bit distorted. Oh well, I expected to have to do some work!

BFO injection is excellent and SSB tunes right in, the radio is very stable and no warble as it's tuned on CW or SSB.

Now the fun begins. All in all I'm very surprised since there is no indication any caps or resistors have been replaced in any of the modules yet it appears to be functioning reasonably well. AM quality is great as long as signal levels are below about 70 on the Carrier meter. Could be the cheap speaker.

Date: Mon, 20 Mar 2000 09:29:38 -0600
From: "Anderson, Craig - Ext. 1365" <CAnderso@stp.tec.mn.us>
Subject: [R-390] Dishwasher Safe R-390A

There have been quite a few posts lately regarding dishwashers to clean R-390A modules. Back in my engineering days in the 1970s, I ran the calibration lab at a major aerospace company. We used Tek scopes and many then were still tube based. When we sent them out for calibration, Tek had a large dishwasher like machine that they used to clean them. Since those scopes had fans, they sucked in a lot of dust and dirt. When they came out of the machine they looked as new. They were then calibrated and sent back to us. So if it was good enough for TEK it should

work for R-390As. I suppose if we were purists we would use de-ionized water.

I used the dishwasher approach several times back then on Motorola Motrans to get the gunk out and learned through trial and error what not to do. Do not use powdered dishwasher soap! Most of them are too caustic (NaOH i.e. Lye) and will etch the aluminum. I once put an R-390A panel in the dishwasher (my wife gave me some strange looks) and when it emerged, the paint had taken on a very dull appearance due to the caustic nature of the dishwasher soap. After ruining the panel, I did some research and discovered there is a wide disparity in the level of caustic agents in various brands of dishwasher soap. If you are going to use the stuff, use only **Palmolive Gel** soap. It has the lowest Lye content and does a good job. Use only half of what you would normally use for the "normal" two pass wash cycle. If you have very soft water be aware that it may require less soap to avoid etching. Follow the wash with an extra rinse cycle. It works great and won't etch the aluminum if you are careful.

As has been stated earlier, don't put the VRC or PTO in there. I have had very good luck on both RF, AF and IF decks using this method. I use DEOX-IT PRO GOLD on all contacts and tube/connector socket/pins and a large can of compressed air to make sure residual water is dispersed before **baking out in a convection oven for 30 - 45 minutes set at the lowest temperature setting.** This last step is important. If you don't use some form of surface prep on the contacts etc., you will have a residue on the contact surface as a result of the evaporative process. By applying DEOX-IT before, this is prevented.

Date: Mon, 20 Mar 2000 07:50:34 -0800
From: Terry Burge <terrybu@newman.ens.tek.com>
Subject: Re: [R-390] RF Deck cleaned....

Dish washers can be very good for cleaning up radios but you do need to be cautious. I once bought a Murch 2000B tuner and got the bright idea to put it in the dish washer. Did a great job but still had a minor amount of scum on it so I ran it a second time. Took the paint off the front of the cabinet!. If only.... But for alot of things a cleaning job thru the dish washer can do wonders.

Date: Tue, 21 Mar 2000 03:13:22 -0000
From: "Phil Atchley" <ko6bb@elite.net>
Subject: [R-390] Results of RF deck cleaning....

Well, after all the furor and friendly discussion my cleaning techniques created I thought I'd post the results. For the benefit of "newbies" I won't re-iterate how I cleaned it <g>.

This is the 3rd R-390A that I've had, though it is the first one I've pulled the RF deck on for cleaning. The first one was nearly brand new. The man I got it from had pulled it NIB out of the wooden shipping crate. It had never been rack mounted, hence no scratches. At that time R-390A's were going for about 100 or so and you could hardly give one away. (I swapped a Bencher Paddle I paid 90.00 for and 25.00 dollars cash for it.) Wish I had it today!!!

Well, when I got this puppy it was the stiffest tuning thing I've ever seen in my life! I would almost prefer to take the lug nuts off a truck, at least there you have leverage. Slight exageration I suppose.

Now, after cleaning and a very light lubrication it's the easiest tuning R-390A I've ever had. Very smooth, though I won't go so far as to say it's as smooth as one of Dr. Chuck's radios. I just used a dab of a black "lubriplate" like grease on the rack sliding surfaces. This is a special very fine grease (with graphite??) that we use on VCR's, CD carriage assemblies etc at the shop where I work. Not sure of the brand, it has a Japanese part number. It doesn't seem to harden or corrode or anything. Then I put a "little" light oil on the various gears etc. I know, I know, oil runs off. BUT, it doesn't congeal into glue either! Un-orthodox by the standards of this list? Yes, but it works for me. So, that is my results after all this controversy. Would I do it again? Yep.

Date: Mon, 20 Mar 2000 22:52:49 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Results of RF deck cleaning....

It sounds like the "metal assembly paste" I bought some years ago to lube the gears near the fusing assemblies of our big printers. In addition to graphite, this stuff has molybdenum -- say that fast three times. Sometimes also called "moly" grease I think. The little tube cost me about 20 bucks, but I bought it directly from HP.

It's particularly good for sliding surfaces, as it filles in the pits and pores in the metal surfaces. I'm not that crazy about it as a gear lube, though. You're not supposed to lard this stuff on. Actually, the preferred way to apply it is as if you're simonizing a car, burnishing the stuff into the surface and leaving little if any wet. You can then put a thin film of oil or light grease on top of it -- where it makes sense. Good for the ends of the slug rack and the mating surfaces where you don't want to put much oil. It tends to darken the metal a few shades.

Date: Tue, 21 Mar 2000 18:57:39 -0500
From: eengineer <eengineer@erols.com>
Subject: Re: [R-390] Xtal Calibrator Question

One other way that I use to test a crystal involves a scope and my HP

3525A synthesized Sig gen. I pick a 1V square wave, AC coupled and feed into the scope (Sig and GND of the Generator tied to Input and ground of the scope). Put the crystal across the Input and Ground of the same lines (Driving the crystal AND the scope) and watch the display. Here is where the 3425A shines. I can program it in .0001 Hz increments or larger.

Pick the crystal freq on the sig gen, and when you finally sweep the frequency of a good crystal, you will force it to resonate, which will be quite obvious on the scope. I do this with 32KHz, 8MHz, and 16.384 MHz crystals at the office when I suspect they may have gone south. On the other hand, not too many crystals I ever see go bad. (And we hit them with up to 5000 G's sometimes) I might have seen 2 or 3 in the last 3 years.

Date: Wed, 22 Mar 2000 12:29:48 -0500
From: km1h@juno.com
Subject: [R-390] Re: [Collins] Super Clean is revolutionary new cleaner

Glad someone knows chemistry! Tnx for the heads up Jerry. I've been using Cascade Plus in the dishwasher and havent had any etching problems. I only use about a third to half in the holder and follow up with 3 rinses and then right into the oven for drying. Nicotine coated and greasy SB-220 style amps come out like shiny new Wonder if Cascade has changed their formula or if they sell different formulas around the country. Here in NH most suburban and rural homes are on well water and septic systems. Lye would probably not be very good for septic systems. The ingredients say sodium carbonate, sodium silicate, phosphorous and enzymes. Are any of those dangerous to our precious BA junque? BTW, many BA chassis were alodine dipped for corrosion protection. Aircraft supply shops carry the stuff and its a pretty simple process. Would make a 390x look more original as compared to shiny bare aluminum. I'm heading over to Wal-Mart anyway later and will pick up some Super Clean just to see how it works on the wifes dirty Volvo engine.

Date: Wed, 22 Mar 2000 12:10:35 -0600
From: "Dr. Gerald N. Johnson" <geraldj@ames.net>
Subject: [R-390] Re: [Collins] Super Clean is revolutionary new cleaner

Sodium carbonate is washing soda, and the product a home water softener leaves in the water replacing lime. A moderate cleaning compound. Sodium silicate I'll have to look up. Phosphorous in compounds works for mild cleaning, also encourages algae growth in streams. Many areas try to reject it in cleaner and soaps because of that. enzymes are live things. I suspect lye has been used for cleaning sewer pipes for as long as both have been know to exist, but it could easily kill off the working critters in a septic tank.

I've seen commercial dishwashing compounds (as used in an Army mess hall dishwashing machine) eat away at a 3/4" diameter aluminum rod used to stir the concentrated powder/liquid in the input chamber. Over a few months of daily use the rod was eaten to a point.

I'd lean more to low concentrations of hand dishwashing soaps and hand work. Take the dust out of the radio with a small paint brush and small tipped vacuum cleaner (I use a milker inflation from the farm store as that small tip, quite flexible).

Then rinse with water, LOTS of water, finish with distilled water so as to not leave lime or washing soda deposits and dry with lots of warm air. My old air solar collector was a fine source of such warm air. A furnace heat duct is another, though if the filter isn't clean, might include a redusting of the radio. A good BA needs dust to prove it wasn't made last week anyway doesn't it?

I've used that RTTY mix on really bad situations a time or two. It contains oleic acid, that's derived from rosin and acts like a soap, acetone, that dissolves organics, but has been know to shrivel Drake plastic dials, and other things easier to find. That RTTY mix acts a lot like the descriptions of Super Clean, e.g. foams when brushed, then cleans rapidly and washes away with water. It was almost impossible to get a piece of aluminum worked on in the Collins production or model shops and get it out WITHOUT alodine. Same thing for cadmium plated steel parts. Unfortunately for the BA fanatic, alodine was not consistent in color, not even across the same panel.

Date: Wed, 22 Mar 2000 13:32:13 EST
From: Radiomatt@aol.com
Subject: Re: [R-390] Re: [Collins] Super Clean is revolutionary new cleaner

Yeah, but don't forget corrisive effects of DHMO. It is a common ingredient in most solutions. See:http://www.radix.net/~fornax/me/msdsdhmo.html and http://www.dhmo.org/facts.html#CHEMICAL

Date: Fri, 24 Mar 2000 04:49:16 -0800 (PST)
From: Tom Marcotte <courir26@yahoo.com>
Subject: Re: [R-390] contract date

That contract is from 1967. The rig will have many dated parts, such as large caps and xtals. Don't know how rigs were prepared for Manson Labs.

Date: Fri, 24 Mar 2000 07:54:51 -0600
From: plmills@attglobal.net
Subject: Re: [R-390] contract date

I've had one R390A with the Manson mod on it, which I removed. The mod looked as if it were done on a standard R390A and did not require any addtional holes. The mod I had consisted of a revised PTO bracked to let the PTO be mounted about an additional 1.5" rearward to accomodate the assembly that plugged into the PTO tube socket. The regular PTO bracket was neatly secured under a screw so as to be available to undo the change. The other mods were simply plug-ins to the xtal oscillator tube socket and to the xtal oven socket in the rear. A bracket holding connectors was then added to the rear of the mainframe under existing screws. All cables were routed through existing holes.

Date: Mon, 27 Mar 2000 23:17:14 -0500 (EST)
From: Norman Ryan <nryan@duke.edu>
Subject: Re: [R-390] R-390A Loss of B+ and soft start and stuff...

Thanks for the good words. With the soft start mod your rigs will last much longer-- important to keep in mind since replacement parts will get ever more scarce. The 200 Ohm, 20 Watt, resistor is for the solid state rectifier mod, right? If anyone does the carrier level meter adjustment mod, be sure to get the smaller version of the ten turn pot. I'm not sure if the larger ones fit at all, but I know the smaller one is less trouble to install. Even though you don't need to add it, the ten turn knob looks radically cool!

Date: Tue, 04 Apr 2000 13:53 -0700 (PDT)
From: rlruszkowski@west.raytheon.com
Subject: [R-390] Calibration Problem?

Tom, Did any one suggest you look in the crystal can and see if the crystal is in the can? In the back right corner of the FR deck is an 8 pin octal plug can. It has 2 crystals. 17Mhz and 200Kz. The cal osc free runs about 100 Khz. and gets in sync with the 200Khz crystal. These things "fall" out of the can. At 15Mhz your oscillator is 3 to 7 Khz low 5 /15 is 333 Hz per meg. WWV at 10MHz should call at -.996 (if the 15 mhz and 10Mhz conversion crystal both have equal error.). So you 100Khz cal oscillator is about 33 hertz low.

No crystal.
Loose crystal in socket.
Loose can in socket.

Crud on contacts.
Bad crystal.
Cold solder joints.

Date: Sun, 16 Apr 2000 14:02:43 -0700 (PDT)
From: Tom Marcotte <courir26@yahoo.com>
Subject: [R-390] EAC Spec Variances, Was Filters etc.

The R-390A specs for splices clearly say that:

3.4.3 Splicing.-Wires in a continuous run between two terminals shall not be spliced during the wiring operations.

Clearly EAC did this in the front panel and in the IF deck at least.

3.13.48 refers to "Electro-Mechanical Filter Unit" whatever that is. Perhaps EAC argued that a vibrating crystal is "mechanical". I know that on many items like meters and wrenches, specific vendors were called out. Don't know that this was done with filters, or else this might not have happened. I think the Clevite filtered decks are a collector's item personally.

Date: Mon, 17 Apr 2000 13:21 -0700 (PDT)
From: rlruszkowski@west.raytheon.com
Subject: [R-390] Report Of Cold Solder Joints.

My 62 EAC has been giving me problems. After it warms up 4 or 5 minutes the output level would fade out. I isolated it to the IF deck fairly quick and started the search for the leaky cap. Early tube swaps had eliminated them from the source of the problem. I now have a fully recapped IF deck. Doing the caps did not solve my problem. I did fix some other things. Sooo I went off to Radio Shack for a can of freeze spray. A double go round under the deck did not locate any thing. Sooo I thought of the IF cans on top. Off with the covers and in with the frost. Second Can and Bingo. I did not expect the caps in the cans to be bad. But once over all the joints with the solder iron solved the problem. Those are small joints and one cold one after 38 years ain't so bad.

I still do not like my AGC. AGC to MGC is about 1/2 of my power output. I can not work that 1Db above the noise with AGC. Any ideas on getting AGC gain equal to MGC gain at 2 uv input. I only have a .8 volt positive level on the AGC jumper in AGC. its is zero volts in MGC. the difference is enough to make me want to change it. The carrier level function is also poor. I need a local AM power house to wiggle my meter.

Date: Tue, 25 Apr 2000 23:13:22 -0400
From: "Mort Denison" <mdenison@blazenet.net>
Subject: [R-390] EAC R390A Rebuild Project

I just acquired an EAC R390A (with name plate) this weekend and am getting it back to a sqeaky clean appearance. It has all EAC modules:

AF S# 3098
P/S S# 4423
IF S# 9601
OSC S# 4175
RF S# 4310
Chassis S# 4922
Tag S# 2952

Nothing matches but I'm just glad it's all EAC. The modules cleaned up nicely. I'm not going to recap at this time mainly because I've never attempted it and my wife thinks I died here in the basement. The front panel also cleaned up nicely. I rubbed it down with lacquer thinner and then applied a coat of car polish. There's a couple of small scratches and chipped paint around the rackmount holes but no big deal. I'm now stripping the knobs and will repaint them with Rustoleum black gloss paint. I've had pretty good luck with that brand. The white lines will be filled in using Liquitex High Viscosity Acrylic Artist Color in titanium white. It's a nice bright white. The paint is available in a tube for $3 -$4 at craft shops like Ben Franklin. I use a fine brush to fill in the engraved part, let it set for a few minutes, then use a shop towel wrapped around a wood block and dampened with a dab of spit to remove the excess. I had good luck doing the panel on my R725 using it.

The mini cable connectors as well as the antenna relay were pretty tarnished. I borrowed my wife's Tarn-X wipe and rinse solution for silver that she purchaed at Wal-Mart. Buffing with a paper shop towel dampened with the solution makes them look like new. A few spots I had to use 0000 grade steel wool dampened in the solution. I rinse them and give them a shot of De-Oxit. Never had a problem using it.

The chassis was pretty sooty which gave me an ominous feeling. I pulled both filter caps out of the AF deck and noticed a fair amount of corrosion on the bottom of the plugs. A closer inspection turned up numerous fractures in both plugs. I guess they both let loose sometime in the past which hopefully explains the soot. Some praying going on that nothing else failed as a result.

I've managed to find a set of spares and I've order caps from Mouser to rebuild them. Anyway, another $50 I wasn't expecting.

I replaced twelve tubes which tested pretty weak including a shorted 6AK6 in the AF module. Don't know if this caused the caps to blow, was a result of them blowing or coincidence. As part of the deal I got a couple spare ballast tubes. They're not 3TF7's but are Amperite TJ311M01's. Anybody know if they're a sub? I'm replacing all the stainless pan head and flat head

hardware that's in view, along with the countersunk lock washers. There's a web company, http://www.barnhillbolt.com/, that has any stainless hardware you could want with extremely reasonable prices.

Anyway, I hope it works when I get done. If not, it'll be pretty.

Date: Mon, 1 May 2000 10:35:26 -0400 (EDT)
From: "Paul H. Anderson" <pha@pdq.com>
Subject: Re: [R-390] Rebuilding an angled Mini-BNC connector

> Anyone have any experience rebuilding an angled MiniBNC? The one
>that connects the unbalanced input to the RF deck has come apart (okay, I
>helped it a little, but it had come loose, been twisted a couple of times, and
> I didn't trust it). According to the manual, the end cap is either soldered
> or staked in place. I assumed my was soldered since it had a small bit of
> solder on the outside edge of the disc and there are no "staking" marks.
> I've tried to unsolder it, but the insert will not come out. Am I just not
> getting it hot enough? Anyone "been there, done that"?

I used a small butane torch to heat the case enough, then used a heavy bent paper clip to push it out from the inside. In my case, the wire had already come out, so clearance was not a big problem. Basically, my soldering iron wasn't hot enough to heat the whole thing easily to pop the cover off.

Date: Mon, 1 May 2000 07:45:49 -0700
From: "Kurt" <radiouser@uswest.net>
Subject: Re: [R-390] Rebuilding an angled Mini-BNC connector

The angled mini-BNC connectors that I have rebuilt were just soldered and came apart without difficulty. Holding the connector with a pair of liers(I used a rubber band to keep them closed) Use solder wick to get the cover as solder free as possible then while the connector is still hot, turn the connector up side down with the pliers and hit the connector on the bench top and the cover will fall off. This is a definite " Your mileage may vary".

Date: Mon, 01 May 2000 11:04:47 -0400
From: "Wm. L. Townsend" <wlt@tesnet.com>
Subject: Re: [R-390] Rebuilding an angled Mini-BNC connector

They can be a real pain to get out. I've had the best success by using a small burr-type bit in the Dremel and cutting into the body of the connector at a 45 degree angle on the side of the top where the cover is installed. This will actually cut through the side of the connector body and a small portion of the cover plate. It won't take much - if you cut in about 1/32" or so, you will just be able to see inside the connector. At that point, if you stick a dental pick or real small screwdriver into the hole you can pry out the cover.

When you put it back together you can cover the hole with solder and nobody will ever know...

Date: Mon, 1 May 2000 13:33:26 -0400 (EDT)
From: Norman Ryan <nryan@duke.edu>
Subject: Re: [R-390] Rebuilding an angled Mini-BNC connector

Kurt's solution looks like the neatest method.

Problem with those soldered on caps is that they fit snugly in place in some instances. Thus it makes one who hasn't grappled with one wonder if the things were meant to come apart at all. A press fit disk will throw you off. So give the heated piece a good whack against the benchtop and that should loosen it in most cases. Kinda like the Columbus egg trick: He got one to stand on end by smooshing its end on the table and won the bet. Rules didn't say HOW it should be done. :-)

Date: Tue, 2 May 2000 22:26:41 EDT
From: DCrespy@aol.com
Subject: Re: [R-390] Rebuilding an angled Mini-BNC connector

Late reply, but a different approach: I drill a small hole in the cap. Then heat it with a soldering iron while pulling on the cap via a stiff wire wire bent at the end and inserted in the hole. The cap comes right out! Cover the hole with solder when re-assembling.

Date: Wed, 3 May 2000 08:08:54 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Rebuilding an angled Mini-BNC connector

To all who replied to my original request, thanks. I was finally able to get the cap off with a bent paper clip pushing from the inside. It's a bit dangerous, though. When the disk finally popped out, there were some splatters of hot solder that came flying out with it, one of which ended up on my hand. Not bad, but if it had been in my eye, it could have been serious. Just a word of caution.

Date: Sun, 7 May 2000 23:15:43 EDT
From: W8JOE@aol.com
Subject: [R-390] R-390A's at Fair Radio - Observations of a visit to Fair

Hello: I was passing by Lima on Friday and decided to stop in to Fair Radio. While I was there I asked to see what the $400.00 390A's with the replacement meters looked like. "Joe" took me in the back and showed me one that they were working on. It really looked nice. The face was perfect as far as I could see. I would have had no problem displaying that radio.

Joe told me that they take about a week to a week and 1/2 to get the radio ready once they get an order. So, I surmised from that statement that once you send in your order, they pull a radio out of their stack (which I did not see), and start to work on it. They make sure it works well before it goes out to you.

Anyway, as soon as I have a few extra bucks I am going to get one, and thought that you all might be interested in how it works back there.

By the way, when you go to Fair, there is not all that much to see. Everything is all stacked up in the showroom, but I did not see any "nice" pieces. I bought a roll of field telephone wire, and Joe had to go in the back somewhere and get it. When I went into the back room, which was very big, there was stuff all over, but arranged so they could find it. There were guys packing stuff up for shipping.

So, I would not bother stopping by again unless I wanted to save shipping (but you would have to pay Ohio Sales Tax). If you wanted to test something before you bought, that might be a reason to stop by too. But, it is really a mail order house. By the way, everyone was very nice and polite and respectful. Joe N8TI

Date: Mon, 8 May 2000 00:30:02 -0400
From: twleiper@juno.com
Subject: Re: [R-390] R-390A's at Fair Radio - Observations of a visit to Fair

Funny...I stopped by on my way home Friday (to CT from Indy) and came to the exact same conclusion. I also asked about the 390A's and got the same answer. Was Joe still buried in a paperback? Anyway, I did find a very nice RMC2x4 / TNF 2 (a receiver multi-coupler with two channels having four outputs each as well as a tunable notch filter on each channel) in the showroom for $150 and brought it home, as well as a full set of their new-manufacture R-390 covers which are almost indiscernable from the original. By the way, the RF cover IS screened. But don't bother to go there, you don't really see anything, and that place really is in the middle of nowhere...

Date: Mon, 8 May 2000 06:31:29 -0400 (EDT)
From: "Paul H. Anderson" <pha@pdq.com>
Subject: Re: [R-390] R-390A's at Fair Radio - Observations of a visit to Fair

For what it is worth, Joe let me and my friend, Patrick, go back and look at their piles of equipment several times. It is organized and accessible, but kind of overwhelming to see pallets of blue striper R-390 or R-390A's, not to mention thousands and thousands of other things. I think there were

several hundred in the particular spot we were looking, and probably more elsewhere. I also got to root through their pile of R-392's to find one to take home. They have at least two piles of those, as the ones up front are a motley collection of spares and some ok ones. Last time I went, a month or so back, there was a "checked" R-392 ready for delivery. I thought it was new - it was so nice.

I also saw a large box full of IERC's - no shortage there... some particular types weren't present, like the 6027-B (tall 9 pin, I think, like the ballast tube).

I'm sure that for checked R-390, R-390A, and R-392, they take the best starting point they can, and are pretty good at picking out the piles they have.

Anyway, if you ask real nice, and they aren't busy, I imagine Joe will show you around. I'm sure it depends on the phase of the moon, the weather, his book, etc, so don't be pissed if he doesn't - he really is a good guy. Paul

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Date: Mon, 08 May 2000 09:04:21 -0500
From: "Dr. Gerald N. Johnson" <geraldj@ames.net>
Subject: Re: [R-390] R-390A's at Fair Radio - Observations of a visit to Fair

Then it hasn't changed in the last 31 years.

Date: Tue, 09 May 2000 20:23:07 -0500
From: "Dr. Gerald N. Johnson" <geraldj@ames.net>
Subject: Re: [R-390] Aluminium Treatment

I just did an Alta Vista search on Alodine. With results in any language there were 1208 hits. Far too many to check. With languages limited to German there were 16 hits, about 1/3 of those have .de in their address so are likely in Germany. While I know I have found Alodine in some hardware stores in Iowa or Missouri, my local hardware store didn't have any today and couldn't find it in their catalog.

Date: Tue, 09 May 2000 20:37:06 -0500
From: "Dr. Gerald N. Johnson" <geraldj@ames.net>
Subject: Re: [R-390] Aluminium Treatment more

There's a very interesting discussion at:
http://www.ifinishing.com/2200-2399/2308.html concerning Alodine and other brands of Iridite treatment to military specs.

http://www.eaa1000.av.org/progsumm/oct96/alodinep.htm has a practical discussion from a home builder of aircraft.

A similar pair of Alta Vista searches on Iridite turned up 619 (all languages) and 3 (German).

Date: Fri, 12 May 2000 12:10:32 -0500
From: "David Wendt" <dwendt@electrocam.com>
Subject: Re: [R-390] Glyptal Cement

Give a look at something called "Torque- Seal" by Organic Products of Irving TX. It is described as an "anti-sabotage Inspector's lacquer." It comes in small 0.5 OZ tubes and is very handy for doing just what you are talking about. Thick, crappy, brittle adhesive paint. Holds on just good enough to keep something from turning casually. Easily pops off when you want to turn something. The tubes make it real easy to apply a little dab just where you want it. We use it on pots just as you describe and also external screws to see if customers have been peeking.

Date: Tue, 16 May 2000 09:38:07 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Nice find

I called Fair yesterday to order some things, including a 3TF7. Dave told me he has no more for sale. He has a very small stock that he's hanging on to for the rebuilds he needs to do. Anyone have a source for these at a reasonable price (<$25) ? I have a resistor network in place now, but I'd sure like a tube in there.

Date: Tue, 16 May 2000 07:50 -0700 (PDT)
From: rlruszkowski@west.raytheon.com
Subject: Re:[R-390] R390A Dial Lamps Revisited

328 Original bulb
328AS10 A longer life (different filament materiel same volts & amps.)
328AS15 A longer life (another filament materiel same volts & amps.)
328R The rugged one. (less light same volts & amps.)

Any one will let you read the dial in the dark. (makes a nice night light)

Date: Tue, 16 May 2000 11:00:25 -0400
From: Glenn Little <glittle@awod.com>
Subject: Re: [R-390] R390A Dial Lamps Revisited

I think that you will find that the 328R is a red colored bulb. Use for night viewing to keep from causing night blindness. We used a lot of these on the submarine that I was on.

Date: Tue, 16 May 2000 12:29:07 -0400
From: "Charles A. Taylor" <calltaylor@prodigy.net>
Subject: Re:[R-390] R390A Dial Lamps Revisited

www.radioshack.com has 328 lamps at $0.10 each.

Date: Tue, 16 May 2000 13:42:12 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re:[R-390] R390A Dial Lamps Revisited

>www.radioshack.com has 328 lamps at $0.10 each.

And it appears to me that they are $0.92 each. I cut and paste from the above page:

328 - T-1 3/4 Midget Flng Base $0.92 Cat.#: 900-2685 RSU#: 11337888
328 - T-1 3/4 Midget Flng Base

Availability On-line yes..... In Stores..... no 1-800-THE-SHACK.... yes

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Date: Tue, 16 May 2000 13:37:13 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] R390A Revisited

Also, try http://www.mouser.com/catalog/cat_602/75.pdf
Part number: 606-CM328. They're $0.93 each, but $0.81 for 10 or more, and $0.78 for 100 or more, no minimum order. The folks at Mouser are great to deal with.

Date: Wed, 17 May 2000 07:05:55 +0000
From: "B.L.Williams" <B.L.WILLIAMS@prodigy.net>
Subject: Re: [R-390] R390A Dial Lamps Revisited

> I think that you will find that the 328R is a red colored bulb. .....

We used red in night flying in Army aviation, or at least we used to. A lot of us are of the over 40 type here on the list, so I thought I would mention that red light hurts more than it helps. First, red light only preserves about 10 minutes worth of dark adapting out of the 45 minute norm for someone who hasn't spent the day outside in the sun. Second, red light makes it harder to focus when we are in the over 40 age group due to presbyopia- which is when our lens harden naturally due to age. This is when squinting doesn't do anything anymore and you find the doc suggesting bifocals. You would be surprised at the difference in looking at red lit things and blue-green lit objects. Blue-green is the best wavelength for any eye condition

and it does minimum damage to dark adaptation. I would not put red bulbs in the R-390A for this reason. It would make the numbers more fuzzy. We couldn't get blue-green bulbs for the instrument lighting so we put plastic filters over them. Maybe that would be a nice thing to do on the radio.

Date: Thu, 18 May 2000 10:53:30 -0400
From: "Tetrode" <tetrode@sprynet.com>
Subject: Re: [R-390] R-390A Repair Manual

Manfred, Don't buy it, you're lucky you were outbid! This manual is available in limitless quantities so there's no need to compete for it on Ebay. You can also buy direct from ziggy7 (Roger) for a fraction of that price, see the attatched list below. Yes, I have heard they are very good quality. Or you can buy Jeff Adams R-390 CD for $10 which is excellent and packed with manuals and info. 73, John here is a copy from Roger of the list (slightly dated)

You can order manuals directly from me if you don't want to bother with Ebay. I have reprinted 16 military manuals so far:

1. Collins R-390 Maintenance Manual 6.95
2. Collins R-390 Depot Repair Manual 19.95
3. Collins R-390 Operator's Manual 9.95
4. Collins R-390A Operator's Manual 14.95
5. Collins R-390A Depot Repair Manual 24.95
6. Collins R-388/51J3 Complete Manual 19.95
7. Collins KWM-2/2A & PM-2 Complete Manual 19.95
8. Collins R-392 Depot Repair Manual 19.95
9. Hallicrafters SX-28A Complete Manual 19.95
10. Hallicrafters SX-73 (R274) Complete Manual 19.95
11. Hammarlund SP-600 Set of 3 Manuals 24.95
12. TV-7 Tube Tester Operator's Manual 9.95
13. TV-7 Tube Tester Depot Repair Manual 19.95
14. TV-7 Tube Tester Tube Settings Manual, enlarged to 8x11" to read easier. 12.95

15. Zenith Transoceanic H500 (R520) and 600 Complete 24.95

16. Bendix R-1051B Receiver Complete Manual 29.95

I will soon be adding the manuals for the I-177 tube tester and a great Army manual on watch repair.

The starting prices on Ebay are slightly less, but most weeks end up higher than these prices. Descriptions of each manual are in my Ebay listings, just do a search by seller for Ziggy7. Priority Mail is $3.20 for the most

manuals..
Package deals: any 6 for $100 plus S&H, all 16 for $200 delivered in USA.
Thanks and 73,

Roger Engle, kf4zqm, radio nut :-)
2679 Carlisle Court
Orange Park, FL 32065

Date: Thu, 18 May 2000 18:09:13 -0400
From: antipode <antipode@ne.mediaone.net>
Subject: Re: [R-390] R-390A Repair Manual

I've bought a couple of manuals direct from (Roger) Ziggy and have been very favorably impressed. His copies I think are better than the originals, particularly the photographs. I highly recommend his manuals. Bill Sievers W5IQJ

Date: Sun, 28 May 2000 00:22:52 -0400
From: Glenn Little <glittle@awod.com>
Subject: [R-390] Silver solder on ceramic terminals

The reason for the requirement to use silver bearing solder on the Tektronix ceramic terminal strips is discussed in the Tektronix manuals. The terminal strip is ceramic. The terminals are plated onto the ceramic. This process involves the plating of silver onto the ceramic, with other solderable metals plated on top of this. If you use non silver bearing solder you will get the same effect as soldering with a copper tip and not using a copper bearing solder. The copper soldering tip is eroded due to the leaching of the copper into the solder. The same happens with the ceramic terminal strip. If silver bearing solder is not used, the silver is leached out into the solder.

This has to do with the electro-negativity series in chemistry. A repair or two without silver bearing solder will cause minor weakening of the silver to ceramic bond. Extensive repairs will result in total failure of this bond. This is why Tektronix provided silver bearing solder with each and every scope that they sold that used ceramic terminal strips. They knew that if they did not that their good name would be compromised by the technician that did not understand the requirements for special soldering procedures.

If you solder to a gold plated conductor and then remove the solder, you will find little if any gold. If you analyze the removed solder, you will find your gold dissolved into the solder. In a plant where circuit boards are assembled with a wave soldering system, the solder has to be analyzed to determine the level of dissolved contaminants such as gold, silver and other plating materials that have become dissolved into the solder bath.

When the contamination level reaches preset limits, the solder bath has to be changed.

This has been a long answer to a question that has been asked a few times.

Hope it helps to explain the complexities to soldering. It is truly an art. At my workbench at work, I have three different fluxes and two different solder alloys.

Date: Sat, 27 May 2000 23:20:21 -0500
From: "Dr. Gerald N. Johnson" <geraldj@ames.net>
Subject: Re: [R-390] Cool!!

Dave, Ed and Glenn already covered the leaching pretty well. It's not breaking its leaching the silver leaving nothing to solder to that is the problem. Could be that you used Ersin savebit and the copper already in that colder served the same purpose as silver in the silver bearing solder dousing the propensity of the lead tin solder to dissolve all the available silver.

Fortunately I never had to work on my 543 often enough to worry about running out of solder, but I have seen plain solder leach all the metallic silver from the ends of chip capacitors when I soldered them too many times on a VHF bread board.

Date: Sun, 28 May 2000 00:38:10 -0400
From: "Ed Tanton" <n4xy@att.net>
Subject: RE: [R-390] Cool!!

Hi Dave, et al... the silver-bearing/ceramic thing was no gimmick. Every time you soldered one without using silver-bearing solder, your soldering iron leached some small amount of silver from the metal/ceramic bond. Eventually, it becomes very difficult to solder within the particular terminal.

When I worked for TEK back in the early 1970s you would see the occasional strip that had obviously been worked on too many times w/o silver-bearing-solder.

It was VERY difficult-even with liberal applications of rosin flux-to solder to these joints-even though I was using solder with silver content.

Date: Tue, 6 Jun 2000 22:00:18 -0400
From: "Walter Wilson" <wewilson@knology.net>
Subject: Re: [R-390] 2 questions from a new user

> .....acquired a mint (really) R-390A, a low serial #, from the large production run in 1967.

Congratulations. All R-390As are fun and enjoyable, but it's especially fun when you get a nice one in pretty good shape. But one word of warning. R-390As are addictive. I bought my first one last September, and now that I have it in really good shape, I have acquired two more. One is an EAC '67, and the other a Stewart-Warner. And I'm pretty certain these won't be the last. Working with these radios is fun and relaxing, and sometimes quite challenging. Each seems to have its own personality.

> Resistors change in value, capacitors get leaky, contacts oxidize, etc.

There are just a few things I always like to do with an R-390A.

RESISTORS Check them all, especially the larger ones. Carbon resistors seem to drift higher over time, depending on how much heat they've had to dissipate.

DEOXIT Buy a can. Use it on all your wafer switches, contacts, tube pins, connectors. You don't need to soak anything, but get it on there and insert/remove or twist a few times to distribute. Does not do any good on contacts that carry a high current, but does wonders on most connections.

CAPACITORS My personal preference is to replace ALL paper caps and Vitamin Q caps. I also rebuild the filter caps (C603 and C606) with new electrolytics inside. I check the 2 uF oil filled AGC cap for leakage, and if bad, leave it in place but disconnect it and solder a 2.2 uF electrolytic replacement under the IF deck. I use a 600V orange drop for C553 to protect the mechanical filters and use the smaller 400V orange drops for the rest. This just simply puts all capacitor questions to rest.

LANKFORD AGC MOD One other thing I always do with an R-390A is the Lankford two-diode AGC mod, which improves SSB reception considerably. I usually replace the 12 pF cap between the BFO and detector with a 47 pF cap (recommended with the Lankford mod and other articles). I don't like doing mods to my R-390A, but this one adds considerable benefits, is quite common, and can be easily reversed. Details follow:

<excerpt from a previous message to this list>
Credit for these AGC mods for improved SSB goes to Dallas Lankford and H. Cornelius (Hollow State News #1,10,23,27,36). My notes are based on the version in HSN 23:

- -one diode in parallel with R 547, cathode as follows
    -----|<-------pin 2 V506A

- -one diode in parallel with R 546, cathode as follows
    ----->|-------pin 1 V509A

I used good quality 1N4148's piggy backed to each resistor.

This is the simple change and it makes a HUGE difference.. If you want to go a little more sophisticated, get the HSN copies via Ralph Sanserino (sanser@GTE.net)

You can also add more BFO injection by adding a 47 pF cap in parallel with C 535. With the R-390A's circuit layout this does not fool the AGC. I got mixed results with this. It requires readjusting the lone trimmer on the left side of the IF deck (see the manual). <end of excerpt>

CURRENT INRUSH LIMITER

One last "mod" I like to do is to add a current inrush limiter inline with the incoming AC power. This mod does two things: 1) it gives a softer start because the voltage comes up over a few seconds as the current limiter heats up, and 2) it reduces incoming line voltage by a couple of volts. This mod is fully described on Jan Skirrow's site, http://www.skirrow.org/Boatanchors/ . I use the Keystone CL80.

Date: Wed, 07 Jun 2000 06:15:20 -0700
From: Craig McCartney <craigmc@pacbell.net>
Subject: RE: [R-390] Wire type

For RG-187A [Belden 83267]. in small quantities call Skycraft in Orlando, FL.

http://www.skycraftsurplus.com/coaxcable.htm

Date: Wed, 7 Jun 2000 08:52:17 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Wire type

Along these lines, I notice the shielded wire is, in some cases, terminated by crimping a ferrule around the shield with a wire enclosed in the crimp. Does anyone have any information as to this procedure, specifically, where would one find the correct ferrules and crimper tool.

Date: Wed, 07 Jun 2000 10:29:26 +0000
From: "B.L.Williams" <B.L.WILLIAMS@prodigy.net>
Subject: Re: [R-390] 2 questions from a new user

I'm glad someone else mentioned this technique. After reading about lifting foil I decided to do my recap job like that. I did a quick resistor replacement on the AF deck this way a few months ago. It would make future cap replacements easier, and lessen the dangers of overheating. Some of those leads are made of heavy duty wire that provide good support and long contact surfaces.

Date: Wed, 07 Jun 2000 14:06:38 -0500
From: Nolan Lee <nlee@gs.verio.net>
Subject: Re: [R-390] 2 questions from a new user

.....you don't unsolder a tie point and splice .....

I generally clip the component out,then heat the joint and hit it with a solder sucker. Then I use dental picks and a tiny pair of needle nose pliers to unwrap the old lead. It's tedious but the end result is very good. For the capacitor ground terminal tie points in the IF deck, I remove the screw and nut and remove the point and unwrap the old lead from it and then reinstall it. It's easier that way.

>That brings up the subject of collateral damage.....

I have an assortment of melt downs in the past, mainly in the IF decks. A cap will short and usually take resistors and an axial leaded choke with it. Some of the meltdowns in my old single fuse Collins R390A were pretty spectacular. This is another big incentive to modify a single fuse 390A to a three fuse configuration and to make sure that the AC fuse is 2A rather than the 3A they originally came with. If I get a chance in the future, I'll shoot some pictures of fried IF decks that fried because of shorted paper caps. I've got a number of them that I keep for spare parts.

>A possible area to do the splice technique, maybe.

I don't like the splices.

>Probably should replace those "terrible two" that'll take out the
>mechanical filters one by one -- without delay.

I've never had a filter failure because of failure of those caps. I guess that I was lucky. Knowing about the problem now, there's no way in hell that I wouldn't change those blocking caps.

>I use variacs to keep things down to 115 from the 126 at the wall. Did
>you ever set up a bucking transformer?

I did one a while back to play with, but I've got a pretty good accumulation

of Variacs. I recently scrapped a pair of joystick remote control units for TV cameras that each had two little 2.25 amp Powerstat 10B Variacs. I plan to mount the four of them on a panel with a dual duplex outlet box on the rear. This will work fine for a pair of R-1051B's and a pair of R390A's and allow separate control for each receiver.

>You mean you don't have an automatic Halon extinquishing system?
>Me neither. ;-)

I've got them all covered except for class D fires. I've got a good assortment of CO2 and pressurized water fire extinguishers here in the shop hanging on the walls. The local fire extinguisher place I deal with made me a hell of a deal on a bunch of steel cylinder 20 and 40 pound charge CO2 ones that they took in on trade from a local hospital that converted over to dry chemical types because these were "too heavy" for the staff. With fresh hydros, new hoses, new hanging brackets, and charged, I think I paid about $40 each for them. A bargain. You can do a lot in an enclosed building with even a single twenty or forty pound charge of CO2. I think that the 2 1/2 gallon stainless pressurized water ones were $20 each ready to go. Another bargain. I dumped the halon a few years ago. If you use one, it costs a fortune to refill now that the Govt had declared freon as the work of Satan. But it's OK, if you're house burns down and releases the freon from the central air, refrigerator, a couple of chest freezers, etc because it's "for the children". You couldn't give me a dry chemical extinguisher for free.

Date: Wed, 7 Jun 2000 18:15:30 EDT
From: W2ZR@aol.com
Subject: Re: [R-390] Need Phone number for Rick Mish

Rick Mish 419-255-6220

Date: Sun, 11 Jun 2000 23:45:08 -0400
From: "Chuck Rippel" <crippel@erols.com>
Subject: [R-390] R390A WWW Site Updater

Did about 6 hours of work on the WWW site today. Added an audio problem fix in the Common Failures area of the technical section thanks to Randy, N4TVC. Updated the 3TF7 ballast tube solid state replacement page (link is off the opening page). Added pictures of a working model installed in a beautiful 67 EAC (rear panel serial is like... #9647), has the large font front panel lettering, teflon rings on the RF deck cables, etc.... I did it originally about 12 years ago and the owner stopped using it. It works great but is going into the que for all the latest updates and some maintainence and will be offered for sale after I finish the one which is on the way. The ballast tube replacement works SLICK and is RF noiseless in tests thus far. No hacking, no drilling and 2 wires. Also, if you get a chance, measure the

AC voltage with an accurate DVM between pin 4 of V-505 and ground with the tube in place and everything warmed up. That one is "regulated" by the ballast tube and is in series with the PTO tube. Mine was 15.2 VAC! I am wondering if combinations of different ballast and BFO/VFO tubes yield different numbers?

I routinely replace PTO tubes due to low emission. I guess if other radios are like this one, the 7.51VAC v/s the 6.3VAC might boil the filaments just a bit.... Added a page on Ron Hankins PD-1 which works great for SSB reception. Cleaned a bunch of things up that just plain, needed doing. Keep 'em glowing!

Date: Sat, 24 Jun 2000 07:50:36 -0500
From: "Dr. Gerald N. Johnson" <geraldj@ames.net>
Subject: Re: [R-390] De-Oxit and binding in phenolic wafer switches

Old switch detents need more lubrication than a drop of oil. A smear of grease through the whole range of the detent ball's motion helps a great deal. Probably the same white lubriplate used for the rest of the mechanism is appropriate. Old grease can sometimes turn to sand and plaster...

I think the spray and Q tip are both too gross applicators for deoxit. A tip of a toothpick or the fine gauge needle applicator of the small bottle are about right. A tiny drop in each contact jaw will wipe the sliding parts adequately. Applying more gets it into the phenolic where it does no good and even too much on the contact surfaces can cause them to accumulate dust and grunge more rapidly than is good. It is no benefit as far as I can tell to try to cover the entire length of the sliding part of the switch because I don't think it works without mechanical abrasion from the mating parts of the switch. And I DON'T WANT it to be so active that it works without that help. Else it would EAT the switch alive. If there's a shot at spraying, there should be a way to get a drop on the end of a bent wire to those spots and keep them in control.

Date: Mon, 10 Jul 2000 23:22:05 -0400
From: twleiper@juno.com
Subject: Re: [R-390] Orange Drops and Gear Train

It makes a lot of sense because I just went through this while restoring EAC #1. The spring was not meeting the edge parallel, but at an angle when draging (not in detent). This had worn the edge to an angle, so if you had the spring adjusted the logical way (as I did) it would now drag rather roughly on the raised (less worn) edge.

I dressed the disk to have a slight convex surface and put spacers under the spring to move it to a new contact point. I used this really fantastic green

high tech grease (I'll get you the name...it's absolutely the best for these gear trains, regardless of what the next 152 responses to this thread and the government and manufacturers specifications say. It simply wasn't available 20 years ago) and it now slides smoother than whale shit on an ice floe... Tom

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Date: Fri, 4 Aug 2000 12:36:36 -0500
From: "Ross Snoeyenbos" <ross_s@excel.net>
Subject: [R-390] Military manuals

The sites I have for military manuals are:

ARMY http://www.adtdl.army.mil/atdls.htm

NAVY (RTM's)
http://www.cnet.navy.mil/netpdtc/nac/tramans/rtmpdf~1.htm

MARINE CORPS http://www.doctrine.quantico.usmc.mil/

Date: Wed, 23 Aug 2000 19:18:05 -0500
From: Nolan Lee <nlee@gs.verio.net>
Subject: Re: [R-390] nitpicking Gear Oil

>What Nolan was warning about concerning the synthetic gear oil -- of the >hypoid type with sulfur etc. -- was that the sulphur fumes promotes >blackening of silver. Which, my father used to say, is a known fact. (as >distinct from unknown facts or things that are known, but not facts.)

Correct. Sulfur is bad for silver.

>The thing that eats brass gears is ammonia. We were advised not to use >ammonia or cleaners containing it on the brassworks. As I recall, we >were told that it causes brass and related metals (bronze? copper?) to >crystalize -- become brittle.

Ammonia will make brass brittle and subject to fracture. So will mercury or mercuric compounds. You never reload fired cartridge that were originally fired with fulminate of mercury primers and you never polish cartridge cases with compounds containing ammonia.

>May be a few more nits to pick before we can nail these down. Valvoline >Synthetic 75W-90 I have here is certainally aromatic enough to wonder. >I suppose I could experiment with a shiny silverplated connector and a >few drops nearby.

Why even bother with something that thick and heavy. The more viscous

that the lubricant is, the more effort it required to tune the beast. I haven't cooked the Mobil 1 motor oil out of the EAC in 22 months of power on operation. That's good enough for me and beats the hell out of the grease and oil I used for over 20 years in the beasts. No mess and no need to relube a couple of times a year.

Date: Mon, 11 Sep 2000 21:46:03 -0500
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] Newbe for R-390 (vs R-390A)

There are many differences between the 390 and the 390A. But many general service techniques that are in common. First all the paper capacitors must be replaced. Don't ask questions, just replace them, 99.9% of the old ones are leaky enough to damage audio tubes and to upset AGC action and to burn up screen resistors. Its not worth the bother trouble shooting for them, just replace them. Same thing for the electrolytics. And while you are inside the modules, check all the resistors for resistance. The carbon composition resistors used have a tendency in 35 or 45 years to drift from heat and humidity and some will be more than 20% away from their nominal value. They can be replaced too. A bit of soldering skill should be in hand or developed before digging into the confines else the repairs could be more damaging to the radio.

The 390A is popular because of the perceived quality for selectivity of the mechanical filters. The mechanical filters were introduced to make alignment of the IF stages easier and more predictable which made the radio less expensive to build. The 390A has far simpler voltage regulation, just for the oscillators while all loads in the 390 have regulated plate voltage.

There are so many details different its absolutely necessary to have the correct manuals to accomplish any task. 73, Jerry, K0CQ

Date: Thu, 14 Sep 2000 23:23:06 -0400
From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: Re: [R-390] New 390A owner looking for advice.]

Two sources offhand -- Antique Electronic Supply at http://www.tubesandmore for $8.50 for the spray can of DeOxit D5. and -- somewhat cheaper at: http://www.radioshack.com

It's not in RS stores, but they have most of the Craig line, including Deoxit Cat.#: 910-3879 at $7.95 and Cailube MCL Cat.#: 910-3885 at $8.95. Use the latter for controls -- don't use DeOxit on the controls. The cat #'s are for the spray can, there is also a pump spray for the DeOxit and small bottles with brushes. There's something called Pro-Gold, but I was advised

against it for this stuff.

Another thing to pick up while you're at it is Caikleen RBR Cat.#: 910-3889 at $15.75 for 354 ml. Expensive, yes, but it works wonders on old mil type rubber cables and line cords. Gets the accumulated gunk off and rejuvenates the thing. Also good on those rubber seals on the URM-25's. I treated the seals with the stuff. At first it looked like I ruined them -- the rubber will sometimes swell up and get bumpy, but after a short while it shrinks back down and regains its flexibility. Also great for restoring those real rubber test leads -- so the red is red, etc. They regain their suppleness -- but will also look like a case of the pox until the stuff cures. I originally bought it before I knew about DeOxit for our high speed printers here and most of their rollers. The stuff has a pleasant citrus aroma -- at first. Then as the fumes build up it smells like the orange that ate New York. So use it with plenty of ventilation.

BTW -- there were some posts on DeOxit -- don't get it all over the phenolic parts of the switch wafers, it causes them to swell and bind. Although I have the aerosol, you might be better off with the pump spray or the little pricey bottle with the brush. I waste an awful lot of it spraying onto a swab.

From time to time, Caig offers some kind of intro kit deal with several of their products. Check out http://www.caig.com Somebody mentioned that they were doing this again. I couldn't find it just now, but they're reintroducing something called (Cramolin) R5 Power Booster -- don't know how that compares.

Date: Thu, 21 Sep 2000 21:21:15 -0500
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] 80 pound crystal set

Bristol wrenches are a competitor to Allen hex screws and wrenches. The two don't interchange. All the set screws in the 390 use Bristol. Allen wrenches will occasionally fit but most often split the Bristol set screw locking it in place.

Replace all the black beauty molded paper capacitors with Orange Drops first and save weeks of trouble shooting. They are all leaky. Mouser Digi-Key, Antique Electronic Supply carry them. Mouser has no minimum order requirement.

Apply Deoxit to the switch contacts and connector pins, one tiny drop per contact. Work it into the contact jaws. Don't soak the switches in Deoxit, it can damage the switch wafers and gives no benefit. The dropper bottle lasts years and makes applying small drops easy. The aerosol version is a

waste.

Date: Thu, 5 Oct 2000 21:48:20 -0400
From: "Walter Wilson" <wewilson@knology.net>
Subject: [R-390] Value of a fully restored R-390A (summary of your responses)

When I posted the original message, I promised that I would summarize the responses back to the list. Thanks for all the responses (11 total). There was quite a wide range of pricing mentioned, ranging from $500 to over $1500. Here are some quoted excerpts:

- --- I just picked up a S-W 390A from a friend of mine that works pretty well, but would be a prime candidate for a refurbishing ... maybe you would entertain the thought of a nice trade-in. << "I just might" >>

- --- I don't own one of these beasts but yours sure makes it tempting. I'd really like to find one done nicely like yours looks like.

- --- $500.00 would be a great price for the radio if it were all original and meters to boot.

- --- <edited> and <edited> get $1500 for a radio like the one you're selling. I haven't seen your work but that should give you some idea.

- --- I am in the process of restoring 16 A's and they are going to be priced at the $1,000.00 level

- --- $650-$750. Based on what I've paid for restored receiver and also bought a dog and had it rebuilt.

- --- I think <edited> is getting about $1K for a resto 390A,to give you an idea.

- --- Hello.. wanted to comment and say the radio is just beautiful. I'm in accord with what you say about keeping the spirit in cherishing fine radios. My wife thinks I'm crazy that when we pass a radio I tend to caress them and smell them.

- --- If you achieve a reputation for restoring R-390A's (ala <edited> or <edited>), prices for fully restored units (including restored front panel) can go as high as $1500 to $2000. Looks like you do a nice job on them.

Thanks for all the encouragement. I heard from a few of you that "fair value" can depend on the reputation of the person doing the work, and value increases if it is an EAC '67 contract both inside and on the nametag.

Others independently commented that this higher price on the EAC was undeserved, and their experience had not proven these to be any better following a good restoration than any other. Some commented on what they did during their restorations. All seemed to agree on replacing all paper capacitors, checking all resistors, checking all solder joints, and repainting knobs and front panels. One replaces the covers with newly manufactured ones. Some wash their gear trains in the dishwasher, and others disassemble, soak, and reassemble them. All seemed to share the opinion that a job worth doing is worth doing well. Thanks for all the comments, guys. This has been both educational and entertaining. It helped me firm up a price range I was already considering for a "fully restored" R-390A (above $750 but under $1000). Rebuilding R-390A receivers is a favorite pasttime, and I get a big sense of accomplishment when I see one of these really come back to life. I just hope I will continue to enjoy this hobby as much in the future as I do today.

Date: Thu, 19 Oct 2000 11:37:46 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: [R-390] New Screws

I've been wanting to replace all the front panel hardware on my R390A. Several of the screwheads have become chewed up over the years and considering I've refinished everything else on the front, I would like new screws as well.

The problem is they are difficult to find in small quantities. I'm talking about the good stainless steel MIL-STD screws; not the kind usually found at a hardware store (if you can even find the sizes at all). Does anyone know where I can purchase these in small quantities? I can easily find them in boxes of 100, but I don't want/need 100 when 5 or 10 will do. If no one knows a source, I'm considering buying 100 of each kind and putting together some "kits" for the front panel. These would include all the panhead and flathead screws for the front panel. Any comments or pointers for sources? Any interest in kits?

Date: Thu, 19 Oct 2000 11:49:02 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: [R-390] RE: New Screws

A follow-up to this. Does anyone know if the flat head screws have 82 degree or 100 degree countersink angles? One of the catalogs I've looked at lists the MILSTD screws with 100 degree heads and I wondered which these are supposed to be. I figure the countersinks are detailed on the front panel drawing, but I can't seem to locate that right now. Anyone know which drawing that is on the R390 CD?

Date: Thu, 19 Oct 2000 12:50:13 -0400
From: "Paul Bigelow/Austin/IBM" <pbigelow@us.ibm.com>
Subject: Re: [R-390] New Screws

Try: http://www.smallparts.com (No financial connection).

Date: Thu, 19 Oct 2000 13:47:38 EDT
From: Bobdsmith@aol.com
Subject: Re: [R-390] New Screws

Small Parts Inc sells stainless screws in quantities as small as 10.
www.smallparts.com

Date: Thu, 19 Oct 2000 14:44:50 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] New Screws

Small Parts has a nice selection, but they don't have all the exact sizes specified for the R390A. I have a local place that says they have 18.8 stainless but not MilStd. I'll probably check that out first. If I'm not satisfied, I may still look into getting a box of 100 and make kits. So far, not that much response; but I don't suppose everyone has gotten the message either. Perhaps I could offer kits of the non-MilStd as well. They might look just as good. We'll see.

Along these lines, anyone know what style screws were originally used on the terminal strips on the back? Mine had some missing and some that I filled in with whatever I had on hand. I finally got a handfull of 6-32 x 1/4 Phillips pan head screws and replaced them all yesterday. Of course, they work, but I'm thinking these may have been slotted pan-head screws instead of the phillips head. Dunno - they look kind of funny.

Date: Sat, 21 Oct 2000 13:38:27 -0500
From: Nolan Lee <nlee@gs.verio.net>
Subject: [R-390] tube/receiver life (17.6K hours)

I just turned off my '67 EAC R-390A...it's ran long enough for now. It's going to take me a while before I can get used to seeing a darkened dial in that rack. All of this talk about tube life and heat shields etc. just made me realize that it's been a week more than two years since I powered up my '67 EAC after I put it back together. That's 17,640 hours of 24/7 operation since October 13th of 1998. Oops, better add a day in there, we just had a leap year. <grin> Damn, time sure flies, huh? In that time frame it's been setting here in the shop running around the clock while experiencing ambient temperatures from below freezing to well over 100 degrees. I've had two problems with it. I slid it out of the rack after the first thirteen

months to correct what I had thought was an AGC problem where it seemed to overload easily. This problem was corrected by the replacement of four tubes. A 5654 (weak), a 5814A (gassy and could have been fixed) a 6DC6 (weak), and a 6C4W (weak). Other than the two rectifiers and the voltage regulator tube, these were the original 1968 date stamped tubes that were in the set when it was built. All of them tested OK when I checked them. I replace the rectifiers and the regulator because of previous bad experiences with those tube numbers. Two months ago, it died due to an open filament in the 6DC6 while I was sitting here listening to it. A new tube fixed it while the body was still warm. Right now, it works fine and exhibits zero problems. But, I suspect that I'll end up replacing a number of tubes in it. Probably every thing except the 3TF7. As high a mileage as they are I'd be paranoid of them even if they tested OK. Hell, the thermal shock of powering if back up might fry half of them with my luck. ;-(I attribute this long life to several things. The and primary one was the replacement of all of the paper capacitors in the receiver. In 25 years of messing with R-390A's, this is the first one that I've had for any length of time that didn't have a cap shorting and taking something with it or having to spend hours and hours troubleshooting some obscure problem that is almost always caused by a bum cap. Come to think of it, I might have been the first person to even consider replacing all of the paper caps in one. <grin> I think I just dislocated my shoulder patting myself on the back. ;-) The second is that I used heat conductive shields on all of the tubes. The set had all of the original WPM black shields with the inserts when I got it. I replaced the ones on the rectifiers and the 3TF7 with extra tall NOS IERC shields and added the conductive base inserts to some of the "critical" tube sockets. And no, In 25 years I have NEVER had a 3TF7 fail. The only replacements I've used were for sets that had missing ones or they were bad when I received the set. Running it on a variac at 115 volts probably had a lot to do with it too. My normal line voltage here is 125 volts. On a side note, the use of the Mobil-1 synthetic motor oil for the primary lubricant has proven to be a winner. It's easier to tune today than it was two years ago. I spent a hell of a lot more time checking everything when I put it back together than I probably needed to. But all in all, it was well worth it to me and I think that it was effort well spend. For what it's worth, I just checked the log on one of the R-1051B's and it's been running 24/7 since October 8, 1996. That's well over 35,000 hours. I cheat on them though and replace both of the tubes in each one every 6 months without even bothering to check them.

Date: Tue, 24 Oct 2000 13:41:58 -0700 (PDT)
From: Robert Meyer <meyer_rm@yahoo.com>
Subject: [R-390] Zero Adjust knob

I think that I posted this before but promptly lost the responses. Nobody EVER said that I was organized :-).

I need to put a zero adjust knob on my 390A. Many years ago, my oldest son (about 2-3 at the time) managed to remove it. I'm not sure how he did it but I need to get another one and install it. I've got the sneaking suspicion that I'm going to have to remove the front panel to do this. Not a happy thought for me but if I have to, I will probably lock myself away for a while and work on it until it's done, only taking food and water through a slit in the door... Of course comes the question (in two parts)... Where do I get one and how much mechanical engineering goes into putting one in? I've rebuilt car engines, taken apart and repaired tiny Yeasu HTs but this thing looks seriously daunting. I think I remember something about a washer being riveted to the shaft of the knob but it's been a while. So how do I do this (and no, I'm not going to give up on this project and allow someone on the list to take the thing off my hands to "dispose of" for me :-). I've had it since '81 and I want to keep it until I'm too old and feeble to turn the Megacycle knob...

Date: Tue, 24 Oct 2000 16:15:27 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Zero Adjust knob

It's not too difficult to replace. You only have to remove the front panel, screw the new one in, and replace the front panel. There are procedures outlined in the technical manual to do remove and reinstall the front panel - - not too difficult. You'll need a Bristol wrench to remove some of the knobs, etc. and a phillips-head screwdriver. Along these lines, the same adjustment mechanism on my radio looks pretty pitiful; kind of like it was dragged on its edge on the pavement for a mile or two. If anyone knows where I can get a replacement I'd appreciate it as well.

Date: Sat, 18 Nov 2000 19:04:17 -0500
From: john <jbharvie@erols.com>
Subject: [R-390] Interoperability

One of my infrequent posts need some help

Finally fired up the R390A I have been working for a long (!) time, lets call this issue "B". Not receiving any voltage out of the +150 volt test terminal but everything else appears to be either working (for the most part) no arcs, smoke etc..or I have yet to find the problem out.. Swapped from my working Imperial receiver ("A") into this "B" unit a functional AF module, measured +150 volts. Moved the "B" module into working receiver ("A"), the module worked fine, full receiver operation nominal. As a side note, noticed that of the 2 plugs into the module, J620 in the "B" module was 180" degrees turned around than the J620 was in the "A" module.

So question is what next to check for on what would preclude +150v volt circuit on a known good module. Is module swapping an acceptable practice? How much direct interoperability can be expected?

The power supply on both A and B appears to be working OK.

Second question is what is the normal position of J620...?

Date: Sat, 18 Nov 2000 19:18:35 -0600
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] Interoperability

Swapping modules for troubleshooting is why it's made with modules. Since one works and one doesn't in B but both work in A and the cable connector is turned 180 degrees for the not working PS in B, you might want to check for a short in the cable harness that is dependent on connector position.

Date: Sun, 19 Nov 2000 15:53:55 -0500
From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] New group member

I've seen your posts on other reflectors somewhere -- SWL, Hammarlund ??. Could have sworn you were on this one before, though.

Sounds like my first question to the group or list manager. This reflector covers the whole family of R-39X receivers, including the R-389, R-390 non-A and A, R-391, R-392, and even the R-388 and R-641, which was the airborne adaptation. Most of the traffic is about the R-390A and R-390 non-A, with the A more so.

> 2.) I can try this receiver before I buy it (but have to drive 800
> miles); what are the main and important things I have to look for ?
> Please can you give any advices to a newcomer ? I have a 51S-1, 75S-2
> and 651S-1 from Collins, but there is a larger differnce as I saw in a
> lot of pages on the web.

That's what we call a "loaded question". I'm not an expert and certainly others will reply, but to get you started:

1. First, I'd advise asking by email or phone a few things before making that trip.

2. How recently has the receiver/converter been run? A general boatanchor question. If it has been sitting idle a long time, caps may have deteriorated, etc.

3. What contract/manufacturer? Of course, many of these radios have been scrambled at the maintenance depots, so the owner might not know whether the tag is accurate. Most of my A's are mixed breeds with a variety of modules from different manufacturers. It might make a difference to you or not. It seems the '67 EAC is highly favored, but not exclusively so.

4. Was the radio fully or partially re-capped?

5. Any hum? The two plugin electrolytics may need rebuilding.

6. Very important -- does the radio work on all settings of the selectivity control? When a certain capacitor fails shorted it can destroy the mechanical filters.

7. Does the radio receive on all MC bands?

8. Are the meters -- audio and carrier -- both present and original -- or at least original looking? Does the carrier meter show good deflection? The meters on these radios were often removed when they were surplussed out and later replaced with similar looking, but not necessarily properly working ones. As with the filters, original meters can be expensive if you can find them.

9. Is the front panel stamped/"engraved" or simply silk screened (printed)? The stamped type are much easier to refinish if needed.

10. Does it have all its covers -- top, bottom, and RF deck cover?

11. Does it have the original rectifier tubes and ballast tube? Not critical, but if you're a boatanchor fundamentalist, you might prefer all hollow state. This can be reversed, but those tubes are becoming hard to find at reasonable prices.

These are questions you can ask in advance. None of them except maybe the selectivity/dead band ones are "deal killers". These radios are highly repairable and restorable, so if it is in otherwise good shape and the price is right -- go for it. The answers to the questions above would give some guidance as to what the radio is worth -- what it will need, etc. Most everything is available -- some though for a high price. If you're going to put the receiver in a cabinet or rack, the covers aren't important. You can by a repro set for about $55 if you want them.

When you get there, obviously you can evaluate the cosmetic condition. Don't worry about ratty looking knobs. They're metal and can be repainted

to virtual perfection. Check to make sure it receives on all bands and selectivity positions. The tuning is not particularly comfortable on these, but the MC knob should turn cleanly and lock in -- with some effort. The KC control varies quite a bit, depending on how the gear train is. This can most often be improved with cleaning and lubrication of the gear train.

My fingers are getting tired on the keyboard, so I'll stop here and let the other guys pick it up.

Date: Sun, 19 Nov 2000 17:00:55 -0500
From: "Walter Wilson" <wewilson@knology.net>
Subject: Re: [R-390] New group member

Welcome. This is certainly the right place to be for all R-390 and R-390A enthusiasts. I currently have five R-390A receivers.

There are differences between various R-390A receivers, but I have found the differences in ultimate performance to be minor ones. A lot of folks like the ones made by EAC during their 1967 contract (as opposed to their 1960 contract). The EAC '67 is indeed a nice unit, and I have one that I'm currently finishing.

In all my R-390A receivers, I go through and replace ALL paper capacitors, certain mica capacitors, rebuild the electrolytic filter capacitors, check ALL resistors and replace those that are more than 10% out-of-tolerance, refinish the radio cosmetically, and give it a complete alignment. If any of the "brands" of R-390A receivers is restored as such, I believe there is remarkably little difference in measured sensitivity following the rebuild. If you are not interested in completing a full restoration of this receiver, the later contracts with newer components may give you better results.

There are some differences in the quality of the mechanical gear train that drives the RF deck. Here, some of the earlier units (Collins 1955) seem to outshine some of the later contracts (EAC 1967). The gears should be easy to turn and should not exhibit noticeable "backlash" (loss of motion when direction is reversed).

Some easy things to look for:

1. Early rigs had one fuse holder for the AC line fuse. Later units had two more B+ fuses to prevent B+ shorts from doing greater damage. Three fuse holders is a plus.

2. Early units had hand-selected mica capacitors on the mechanical filter inputs and outputs. Later units had ceramic trimmer capacitors to "peak" the response. Removing the top cover over the filters quickly reveals the

presence or absence of four of the eight trimmers. The remaining four trimmer can be seen on the side of the IF deck after it is removed from the chassis.

3. Original line level and carrier level meters are a plus.

4. The CAL (calibrate) signal and the background noise should be about the same strength on all bands as the MC change is cycled through all bands. Problems in the 1st oscillator circuit will cause loss of sensitivity in the bands below 8MC.

5. Check all the mechanical filters by cycling through 2KC, 4KC, 8KC, and 16KC positions. (The 0.1KC and 1KC filter positions put a ceramic filter in series with the 2KC mechanical filter)

6. On a strong signal, you should be able to rotate the RF gain to full CW position (setting 10) without distortion while in the AGC function mode. If there is distortion, there will be an AGC problem to "chase out" at some point. Many receivers start distorting at about 8 or 9 setting of the RF gain initially.

7. The RF gear train should not exhibit much stiffness or backlash.

8. Black tube shields are a plus. IERC black shields are the best, closely followed by WPM black shields. These extend tube life by allowing the tubes to run cooler. The shiny tube shields can actually shorten tube life.

9. Check the linearity of the PTO. This can be done by calibrating the unit at one end of a band (X 000) and the making note of zero-beat up the band through X+000 (one KC above X 999). You'd like the drift to be less than 1KC up the band, but many start with more drift than that. The Cosmos PTO units are the easiest to correct the linearity. Other PTOs may not be worth the effort required. The better the linearity of the PTO, the better the mechanical gear train stay synchronized to the PTO frequency.

10. Be aware of any modifications done to the radio.

I hope you come home with a nice one. I think that once I drove 800 miles, it would probably follow me home. BTW, download a copy of the R-390A manual from http://www.hausernet.com/r390a/ if you don't have it already.

Date: Sun, 19 Nov 2000 18:32:30 -0500
From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] New group member

Hi Jerry, Kurt & group .. Good info although I'd say we might dabble in Hammarlund SP-600's once in a while, but there's another list for that. With their smooth flywheel action, they're of therapeutic value in treating R-390(x) wrist. Speaking of sore wrists, Jerry, I think you mean the R-1051(x)'s. Is there an R-1015A?? The '1051's come in plain (not A), B, C,D, etc. We have a separate list for that too, but sometimes revert to posting on the R-390 reflector. We try to avoid digression into off-topic material. For example, one of our members is having a strange problem with the PTO in his R-390A whereby it's dead on one half of it's range. I've been trying my best not to suggest that the veeder-root may be stuck in re-count mode -- or there's a chad jammed in the works somewhere. Ooops. Forget I wrote that. (On the other hand, I haven't seen an alternate explanation of that KC tuning problem.yet ;-)

Date: Sun, 19 Nov 2000 19:02:11 -0500
From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] New group member

I agree. Guess I was assuming Kurt would know that being a boatanchor collector already. If the radio hasn't been run in over a few months (other opinions?), it should be bench checked before powering it up. That would include testing the tubes, particularly watching for shorts, and going over some critical parts of the circuits with an ohmmeter. The plugin caps should be pulled and checked preferably with an old style cap checker that tests leakage at rated voltage. The IF deck should be pulled and the critical caps checked or replaced outright. I'm sure others could add to this list.

While it isn't a true fail-safe, I still use a variac to bring up the radio gradually with the power switch on and top off at the rated 115v to minimize strain and provide a better bail out chance if there's smoking or crackling. B+ voltage should be checked, I suppose. Another safety would be a light bulb in series with the AC. Although I have a powercord jig with a bulb socket, I rarely bother with this. Coincidentally, I'm in the middle of checking out a recent acquisition, and would like an opinion. I believe this R-390A has been run recently, but was bouncing around in the seller's trunk for about a week before we could connect. It looks to be unmodified except for a pair of old SS rectifiers (top hat style) soldered to the 26Z5W sockets. However, in testing the plugins I found that one section of the dual 45 mfd shows leakage -- about 6 ma at it's rated 300v on my Pyramid cap checker. According to the formula/chart in the Pyramid manual, that's within tolerance for its values. However, the other section and all three sections of the other cap read much lower -- under 1 ma.

Question is: Is it safe enough to run this way temporarily -- at least long enough to test it out? I don't have a sub handy, but could borrow one from another A here. The cap checker results don't look too bad, but that section

drives my DMM crazy. Instead of charging up to infinity (20 megohms on this DMM), it momentarily goes to overrange and then drops. There's also some physical leakage near that pin on the base. (Why do I get the feeling that I've answered my own question ;-)

I still have to check tubes, under the hood, etc. It might be nice to develop a couple of complete checklists -- one for appraising the condition of a unit and another pre-flight checklist for minimizing damage or disappointment on powerup after a long stint in storage.

Date: Sun, 19 Nov 2000 18:06:51 -0600
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] New group member

Still SP-600 dabbling is usually more of the sort of thing saying the same consideration to capacitor replacement applies. No details. Probably do mean 1051... Not a receiver I'm familiar with, nor likely to become familiar with. I didn't know it had a list of its own. I'd guess there's an IF rack that was sticking half way down to cut off reception on the low half of each band. Or that a drive has slipped so it is acting like the RF rack on the lowest band. There'd be no problem with chads if they'd used chadless schemes and mechanical readers based on 30s to 50s vintage Teletype tape readers instead of optical.

Date: Sun, 19 Nov 2000 19:54:32 -0600
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] New group member

There is a checklist for testing a radio new to the depot from the field in the Y2K manual. Should serve for most test needs. Other than possibly stiff gears, a few months of inactivity shouldn't bother a radio. More than a couple years is when the electrolytics get bad. And they plug in for easy replacement.

Date: Tue, 21 Nov 2000 18:36:16 -0800
From: "Roger L Ruszkowski" <rlruszkowski@west.raytheon.com>
Subject: Re: [R-390] Help to group member

I am wondering if it would be wise to swap out the IF subchassis with with a known working IF subchassis to isolate where I expect the problem to be?

If you have another receiver to drop modules into one at a time, Go for it. It is an easy way to work these multi problem cases down one bug at a time. The 390's are cool. Swapping a bad module into a good receiver will not trash some of the good receiver. Not a thing that can be said for sand state

stuff.

Working on getting my RF generator working..right now no external signal source except strong AM stations and WWW etc..

Once you get it up to the CAL tones. You can use them for alignment. That is not PRIME method but it can get you a lot closer than no method.

I have affirmed that ~5 crystals are not putting out anything..have to swap them out with some crystals in another crystal-oscillator subchassis..I measured no output at the the output j415 on these bands.

Swap them against their neighbor and check the output. Pick a good one and a bad one and swap them. If the problem moves with the crystal it's a crystal. If the problem stays, well then, dirty socket, dirty switch, a real bad switch contact, a broken wire, cold solder, bad trimmer cap. Just almost any thing but the crystal. The St. Julian Creek Depot receivers are reporting more than a fair share of bad crystals. So very cold nights is likley. Or being moved while very cold.

John, When you get some time for your hobby enjoy it. The receivers will wait for you. Ask for specific help down to a tube stage if needed. Post them out to the net also. I have no corner on good knowledge. Let everyone chime in. We will all win.

Thank you for your kind words. I do still love my radio hobby.

Thanks Rodger!

Nicely said.

I am one of those guys who is making a go with one of the St. Julian Creek Depot receivers. It had mud residue, grit everwhere and small stones in it when I received it. The RF chassis was (below the IF RF coils) was bent downward ~1/4 inch. Anyways after ~3 years of effort, with all parts receiving a lot of TLC I powered it up for the first time this past weekend.

All the (usual) caps have been replaced (signal and power, all resistors reviewed and replaced as needed). The AF module now has +150, speaker hiss is good, bandwidth selection 0.1 to 16 appears to be working. I put the AF module into another working receiver, works fine..I have yet to start any electrical calibration.

I noticed I made a big dumb mistake in that I can not turn the Megacycle fully to +32 so I have to go back and change the mechanical stop..and get that fixed. (So much for working into the morning hours)

BFO appears to be working as I can hear the tone, on center and either side as I rotate it.

Working on getting my RF generator working..right now no external signal source except strong AM stations and WWW etc..

Have a scope (Old Tektronix 454A), cap tester and multimeter..

I wish I had more expertise with the electronics of this unit, to pin point exactly where to look and "fix" the receiver electronics. The 4 voltage points on page 63 of the 358-35, E209, E210, E211 and E402 did not measure what was expected. (measured voltage was in the - -0.1 to -0.3 volt range)

Receiver has three correct fuses, none are blowing, total receiver current appears to be nominal.

Checked out the VFO in the good receiver, it is a COSMOS and now working well. Receiver has proper tubes in all locations, as to the functionality of tubes I have no obvious reason to indicate that they are not working.

I have a good collection of the manuals for the unit.. I also have a mostly working EAC receiver (next project) I have had since 1989.

What I am looking for are some pointers...I know you are a real expert on the user group from your prior posts. If you would be willing to assist trouble shooting over the web I would be willing to exchange some parts or tubes for your services. I am really strapped out for spare time but really love these receivers.. Please let me know if you could entertain this

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Date: Tue, 5 Dec 2000 21:14:28 -0600
From: "Jon & Valerie Oldenburg"
<jonandvalerieoldenburg@worldnet.att.net>
Subject: Re: [R-390] Re:Tubes Blown

>...with it I was just rechecking tubes and all of a sudden they all lit up .....

Another possibility is a cold solder joint on the filament line of the sockets on the deck, might be a good idea to hit them with an iron to ensure that they haven't opened. Jon

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Date: Fri, 29 Dec 2000 18:08:07 -0500
From: Glenn Little <glittle@awod.com>
Subject: Re: [R-390] drilling a panel

What we did while reworking missile bodies in the Navy was to use modeling clay. We would place the modeling clay on the back side of the body to be drilled into where the bit would come through. The clay would retain the shavings from the drilling operation. Mainly what we were drilling out were riveted in nut plates. This technique works well in any application where you do not want to get the metal into a piece of equipment. I know that this does not directly apply to the original question, but the topic seems to have digressed to drilling panels.

Date: Fri, 5 Jan 2001 15:24:32 -0500 (EST)
From: "Paul H. Anderson" <pha@pdq.com>
Subject: [R-390] small parts spotted at Murphys

While my fiance and I visited her family in San Diego, I had to go to El Cajon and visit Murphys. Wish I'd had longer, but I found some things of interest. One thing was a box full of twin-ax plugs mounted as pairs of two males on a six inch cable for $6/each. I bought a couple and verified that they plug into the twin-ax female on the 39x. They also had some nice short female MB to female BNC adapter cables for $1 or so. They have a lot of those - maybe 30 or 40. These would be good for injecting signals from a siggen into the IF deck on the 390A. If you have the IF output cable on your 390A, you don't need this adapter, but spares are fun, too... They did have a small number of loose MB connectors, but I bought those. You can reach Murphys at www.murphyjunk.com - I have no affiliation other than a satistifed customer.

Date: Sun, 14 Jan 2001 15:11:25 -0600
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] New member, new R30A

If you don't replace the old paper capacitors, you place the mechanical filters, the tubes and the performance of the receiver in jeopardy. Leaky capacitors do damage resistors as well. Leaky capacitors will damage audio tubes, mechanical filters, and resistors and will make the AGC work poorly leading to distorted audio. Acid leaking from the wet tantalum will EAT its surroundings.

Date: Mon, 15 Jan 2001 10:52:15 -0800 (PST)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] Two Questions, Connectors

....<snip> ....secondly, what is the nomenclature on the little miniature coax connectors/cables between modules. I think they are TNC but not sure. Where can one obtain replacement connectors or cables? The connectors are MB.

Date: Mon, 15 Jan 2001 13:17:39 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Two Questions

The connectors are sometimes referred to as MBC (Mini BNC). Fair Radio has them.

Date: Mon, 15 Jan 2001 13:46:14 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Two Questions

Oops. Tom is right. Make that MB, not MBC. Don't know what I was thinking!

Date: Fri, 19 Jan 2001 07:49:26 EST
From: Llgpt@aol.com
Subject: Re: [R-390] Boatanchor Tools/Techniques

> What type/size of soldering iron .....

My preference has been a 45 watt soldering iron and a variety of tips.

>What are the secrets for unsoldering / replacing caps? Just snip .....

Well, I prefer to remove entirely and clean up the old area w ith either a solder sucker or desoldering wick. (I use both depending on the situation) I also use heat sinks alot, usually hemostats, plus they are handy for a lot of other things.

Date: Fri, 19 Jan 2001 10:28:06 -0500
From: rbussier@lexmark.com
Subject: Re: [R-390] Boatanchor Tools/Techniques

Keith, pick up a solder aid tool. Looks like an pin punch or awl, very pointy on one end. These are usually made out of SS or fiberglass. That way, you can poke the opening in a 'O' type of terminal strip. I have found it best to use the following sequence: (for parts you can easily reach both ends)

1. clip off the old cap leaving enough lead (soldered to the terminal) to work with

2. use solder wick, with minimum heat to do the job. note, high heat used quickly, will actually cause less damage than less heat applied longer, to get the solder to flow.

3. when the solder is melted, grab the old lead and wiggle it until the solder

re-cools.

4, now the lead should be loose and you should be able to use flush cut pliers to cut the lead and loop (s), near the terminal. The wire pieces and parts should now just fall out.

5. quickly reheat the terminal to smooth the solder made rough by step 3.

6. make a small hook on the new cap's lead, hook into the terminal, crimp the lead and apply solder to the joint.

For the ends of some connections so close to other components that the above would cause collateral damage, clip the old lead, make a small hook. Do the same to the cap, crimp and solder. After a while, you will get so good (and the junction so small) it is virtually undetectable. Most of all, enjoy our legacy and brief time we are given to enjoy them.

Date: Fri, 19 Jan 2001 10:25:39 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Boatanchor Tools/Techniques (stand-offs)

Be very careful when heating and/or applying pressure to some of the tiny standoff insulators. They break very easily and are difficult to find replacements. The manufacturers usually wrapped at least one turn around these posts and getting the old lead off is sometimes difficult. Try not to pull directly on these, but a twisting motion with the needle-nose pliers (after removing all the solder you can) should unwrap the old lead (the old lead wraps around the pliers as it unwraps from the post). This doesn't apply as much pressure on these fragile insulators. I think the heat may also be the biggest culprit on these. They tend to sizzle when overheated and that breaks down the insulator making it brittle.

Date: Fri, 19 Jan 2001 10:57:41 -0600
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] Boatanchor Tools/Techniques

I prefer the Weller W60P or W100P with a 3/16" wide tip. These are 120 volt temperature controlled irons. The W100P is often sold for working with leaded glass. Your 25 watt pencil runs too hot but doesn't have the heat capacity to do tube work without cooking parts, your gun isn't easy to control temperature if its a Weller, if it's a Wen it's way too hot.

There has been considerable discussion about replacing parts in the past month. Cleaning solder and old wire off the lug can present the best appearance, so long as the surrounding components are not destroyed in the process. After a socket lug gets broken off, the alternatives of leaving a

lead and splicing the new component to the flying lead is far more productive though the result won't ever be as pretty as the cleaning. Sprague used to sell wire sleeves to aid in the wire splicing process, they came with replacement capacitors. Hooked wire ends are more secure than unbraced lap solder connections but harder to hide with spaghetti.

Date: Fri, 19 Jan 2001 11:07:45 -0600
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] Boatanchor Tools/Techniques

Well, if you have to ask what size tool to use, consider for a moment if it is wise to use an R-390A for a learning experience. I wouldn't buy an expensive old car and my first set of socket wrenches, and proceed to replace all of the bolts in the car with stainless steel bolts. I'd try it on a junker, first. That is, if I'd want to change out everything in the first place. Many of us find that the old parts work just fine. If you must change something without troubleshooting first, change only the cap that feeds the mechanical filters. An R-390 class receiver is a great way to improve your troubleshooting skills. Why deprive yourself of the experience by changing all the caps? I expect some people are doing rather well restoring radios that have been butchered by inexperienced but eager newbies. Just my humble opinion of a situation. Probably doesn't apply to you.

Date: Fri, 19 Jan 2001 12:43:18 -0500
From: rbussier@lexmark.com
Subject: RE: [R-390] Boatanchor Tools/Techniques

Keith, Barry is right. There are some of these (stand-off insulators) in the IF deck and they are very fragile, as I found out the hard way.

Date: Fri, 19 Jan 2001 18:19:50 -0500 (EST)
From: Norman Ryan <nryan@duke.edu>
Subject: RE: [R-390] Boatanchor Tools/Techniques

Absolutely right on those itty bitty standoffs. Excessive heat from the iron will break down the insulating material and excessive force will break them outright. Quickly sucking out the solder, then clipping out the lead carefully should get you by OK. Idea is to work carefully and deftly.

Date: Fri, 19 Jan 2001 19:43:05 -0500
From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] Boatanchor Tools/Techniques

That dental pick set of four is handy -- RS #64-1941 on page 223 in the current catalog - $9.99. But just above it on the same page is a 4 piece kit with two double ended picks, another with a very small wire brush, plus a

small spring loaded heat sink. (64-2227 - $4.19) In some respects, this set is a better choice as the pick ends have an oxide or something coating that doesn't get soldered up as you use them. Also, that little brush comes in handy for cleaning up connections. One of the tips has slot for forming the wire ends. If you buy the $10 pick set, try to do a close eyeball inspection of the ends. These are Pakistani specials and the tips are not all ground equally well, particularly the spade/scraper one -- best I can call it, and the handiest of the four. Look at a couple of packages. You can also try to weedle a worn set from your dentist, I'm told, but never had any success with that. <snip>

Date: Sat, 20 Jan 2001 11:20:46 -0500
From: "Chuck Rippel" <win.308@home.com>
Subject: [R-390] Rebuilt Capacitors - Last Call

After 6 months of not being able to find the proper elements for rebuilding the 2 filter caps on the R390A AF deck, I now have enough to do 30. The 30's were the problem. It took some real scrounging and an investment of several hundred dollars to get those in new build, Mallory elements but I managed. I'd say that failing some miracle, the supply is now dry. Many of you had written asking to have your caps rebuilt over the past 5 months and I had to decline due to lack of parts. The supply of parts allows that I can rebuild the caps for the first 20 people who make the request on a first come, first served basis. For those who want caps and a solid-state ballast tube replacement module, I'll make some sort of package deal. Haven't decided what it will be yet but will come up with something nice.

In other news, I now have an "apprentice." He is a very motivated ham in his early 30's and is super sharp. Those not on the restoration list are already aware of this as I first asked their counsel before taking him on. I got a unanimous vote of confidence. Right now, he is doing some of the more mundane chores himself while acting as a "2nd set of hands" in putting the gears back in RF decks, etc... This will allow me to severely drop the waiting time for rebuilds and, look at other receivers to expand to.

The R390 (non-A) is my #1 prime candidate. I already have one (mine) to do and come up to speed. I have also made an initial approach to Floyd at Hi-Res to later make a video tape in the style of the R390A series to share the knowledge with those of you of might wish it. As before, I plan to fully donate the material to keep the price down.

I have not discovered any new twists that haven't been spoken to before thus, have been pretty quiet list-wise. Am planning to post pictures of all the variants of the mechanical filters found in the R390A thanks to the wonderful contributions of some very fine and unselfish individuals. To reiterate, if you want filter caps rebuilt, get with me and I can

accommodate you fairly quickly. I have the parts (finally) in hand.

Date: Tue, 30 Jan 2001 22:13:17 -0800
From: Craig McCartney <craigmc@pacbell.net>
Subject: RE: [R-390] RG-187 Coax

>.....Looking for a source of the mini coax used in the R390A .....

I bought some RG-187 at a reasonable price at a place in Orlando, FL. I can't find the reference just now - think the name began with Space... Perhaps someone else can fill in the blanks.

Date: Wed, 31 Jan 2001 05:12:25 -0500
From: Jim Miller <jmille77@bellsouth.net>
Subject: Re: [R-390] RG-187 Coax

Ah yes, how could I forget. Skycraft surplus electronics in Orlando, Fl. http://www.skycraftsurplus.com/ I will check them out. Thanks for the reminder!

Date: Wed, 31 Jan 2001 07:36:27 -0500
From: Glenn Little <glittle@awod.com>
Subject: RE: [R-390] RG-187 Coax

Sounds like Skycraft. Large surplus dealer. Always go by there when I go to the Orlando HF. Never know what you may find.

Date: Wed, 31 Jan 2001 08:57:40 -0500
From: Al Solway <beral@videotron.ca>
Subject: Re: [R-390] RG-187 Coax

Skycraft Parts and Surplus has the cable listed at 0.35/ft.

http://www.skycraftsurplus.com/coaxcable.htm

Date: Thu, 1 Feb 2001 08:16:28 -0500
From: "Warren, W. Thomas" <wtw@rti.org>
Subject: [R-390] R-1247/GRC-129, is this it?

I picked up a 14-PHILA-56, S/N 10XX, manufactured after August, 1957, about a week ago and it has 7 extra small coax connectors on an aluminum plate surrounding the single fuse connector on the real panel. The 7 coax connectors comprise: VFO Bias and Out; OSC1 Bias and Out; OSC2 Bias and Out; and Correct.

Additionally there is a component board (perhaps 1 1/2 inches long)

mounted above the AC filter with some resistors and disk ceramics on it. It sounds very much like the outputs of the oscillators have been brought out plus perhaps (?) some electrode connections to the various oscillators (the Bias connections for each of the oscillators) for a correction voltage to be supplied by an external unit.

I'm inferring that the oscillator outputs are compared to some standard and then corrections supplied back to the R-390A to keep it on frequency. How about the "Correct" connector? Anybody have definite information on what these mods do? Any schematic diagrams

The front tag on the radio reads Motorola, S/N 10XX and doesn't mention Manson Labs. What are the best guesses (or actual facts) about this beast.

Date: Thu, 01 Feb 2001 06:05:08 -0800
From: Craig McCartney <craigmc@pacbell.net>
Subject: RE: [R-390] R-1247/GRC-129, is this it?

Your description sounds like the picture and list of parts in the TSC-25 manual referenced earlier. If so, that means you have an R-1981, which is an R-390A with a TMC mod kit that has something to do with stabilizing the oscillators. This radio is dangerous to operate beyond a 50 foot radius centered on a certain hill in Northern California (my house). Quick, ship it to me for your own protection. :)-

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Date: Thu, 1 Feb 2001 11:52:24 -0800
From: "Roger L Ruszkowski" <rlruszkowski@west.raytheon.com>
Subject: Re: [R-390] Front panel paint color.

In Kurt Brandstetter's web pictures the R390/A has a blue color front panel. The receiver shown has a Stewart Warner Tag. Did all Stewart Warners have original blue front panels? Did some of them have blue front panels? My receiver has / had no tag.

The front panel was sanded bare when I acquired it. It still is. It use to be blue. I see not trace of gray paint. The panel is stamped. The engraving was white color marks over blue color whatever paint. My large RF, AUDIO, Power, Band width, BFO knobs are not the standard knobs that are the larger size of the small knobs. Kurts pictures shows the knobs I expect to see on a R390/A. I though with my changed knobs that my front panel had been custom painted. Do blue front panels exist in fact? Do they offer any clue to the pedigreed of the receiver?

Date: Thu, 01 Feb 2001 23:10:06 +0100
From: Kurt Brandstetter <kurt.brandstetter@teleweb.at>
Subject: Re: [R-390] Front panel paint color.

Take a look to: http://www.knology.net/~wewilson/stewart-Warner_R-390A.htm ; the complete site is at: http://www.knology.net/~wewilson/

There you have also a "blue" one. But I must say, that the blue color of my R-390A/URR is not so intensive in real, the color is a bit more blue on the picture made with a digital camera compared to if you view it at daylight. But its not gray. BTW the receiver has the serial number 1590.

Date: Thu, 1 Feb 2001 18:26:08 -0500
From: "Jim Miller" <jmille77@bellsouth.net>
Subject: Re: [R-390] RG-187 Coax

Well I now have samples of Rg 187 and 179 here. The 187 is a white teflon jacket. The 179 is a yellowish semi clear teflon jacket (looks almost the same color as the original cables). The 187 is just a hair too large in diameter to fit into the small opening of a MB (mini BNC) connector.

The 179 is a perfect fit! So that's probably what it was supposed to be. Anyway Skycraft in Orlando has it in stock. It's 60 cents a foot, compared to 35 cents for the white stuff, unfortunately. It doesn't take much to rewire a 390 though. I got 10 feet of it. Now I can redo my old cracked cables. I will probably remove the existing MB plugs from the old cables and reuse them on the new cable.

Date: Thu, 1 Feb 2001 18:26:32 -0700
From: "Kurt" <radiouser@uswest.net>
Subject: Re: [R-390] RG-187 Coax

A quick question about your RG -179 from Skycraft. Is the center conductor solid or stranded?

Date: Thu, 1 Feb 2001 20:19:14 -0500
From: "Jim Miller" <jmille77@bellsouth.net>
Subject: Re: [R-390] RG-187 Coax

The center is stranded, looks silver. Is that good or bad? By the way, the outer jacket color is more of a "wine" or light brown color, semi transparent. Not yellow.

Date: Thu, 1 Feb 2001 20:10:22 -0700
From: "Kurt" <radiouser@uswest.net>
Subject: Re: [R-390] RG-187 Coax

The coax in my radios is solid conductor. The little bit of work that I have done leads me to believe that solid is easier to work with and somewhat

more durable. The stranded center conductor coax that I have used worked ok but, I want to change it to solid conductor.

Date: Thu, 1 Feb 2001 21:16:45 -0500
From: "Jim Miller" <jmille77@bellsouth.net>
Subject: Re: [R-390] RG-187 Coax

Their url is http://www.skycraftsurplus.com/

Their phone number is posted on there. Ask for Al B. I havent yet tried to replace the connector yet. It will be a learning experience. I have taken one apart and it looks straightforward, only smaller than a regular BNC. Just remember the order that all the pieces come off.

Date: Fri, 02 Feb 2001 09:36:17 -0600
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] RG-187 Coax

Thanks for the details on the wire.

> I will probably remove the existing MB plugs from the old cables and reuse them on the new cable.

Have you worked with those connectors yet? I have not done much with them, but some advice we got a while ago might be useful: The right angle connectors have a soldered-on top plate that can be hard to get off. Drill a tiny hole in the top cover of the connector - use a small drill. then heat the thing with the solder iron and pop it off with a small wire or a paper clip stuck into the hole. Another way is to file a notch in the thing just big enough to get the wire in at the side. The solder covers any hole upon re-assembly.

Date: Fri, 2 Feb 2001 10:33:54 -0500
From: jmille77@bellsouth.net
Subject: [R-390] RF Deck Coax Cables RG-179

To sum up...for those of you interested in replacing your cracked mini-coax cables from the RF deck, get the RG-179 cable, not RG-187. I find that the 187 is slightly too large in diameter to fit into the MB (mini BNC) connector openings easily. I did my first right angle connector last night, it wasn't too bad (see Roy Morgan's post on that also). Haven't yet torn into the RF deck and replaced the cables completely. Will post lessons learned as I do that. Or if anyone on the list has done this coax cable replacement, please give us some helpful hints. Thanks,

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Date: Fri, 2 Feb 2001 12:20:56 -0500 (EST)

From: "Paul H. Anderson" <pha@pdq.com>
Subject: Re: [R-390] RF Deck Coax Cables

Use _LOTS_ of heat to remove the back - my little soldering iron wasn't enough to easily free the back on the MB connector, but a small butane torch made it pop right off. On the angle connector, you might be able to insert a dental pick through where the wire goes to help push the back off, otherwise, you'll need to drill a hole.

Date: Fri, 2 Feb 2001 17:21:17 -0500
From: "Jim Miller" <jmille77@bellsouth.net>
Subject: Re: RE: [R-390] RG-187 Coax

Yes that was how I got the wrong number. I had a parts list that identified RG-187, but I later noticed it was the parts list for the VFO. I couldn't find a callout for the RF deck, but a gentleman on here (I forgot who) suggested it might be RG-179 instead, as indeed it was. Yes the coax from the VFO is a smidgen thicker.

Date: Fri, 2 Feb 2001 17:27:36 -0500
From: "Jim Miller" <jmille77@bellsouth.net>
Subject: Re: RE: [R-390] RG-187 Coax

Thanks for the hints. We should start calling this thread "RG-179 Coax" since that is apparently the correct type (not 187). I haaven't actually changed a cable out yet but I have looked under the RF deck to see how they did it, and I need to look some more. They seem to have terminated the shield to a piece of insulated wire, and it and the cente conductor come out of what looks like a plastic or rubber end cap (it could be metal Im not sure). To re-do this correctly I will try to remove that end cap and do the replacement cable exactly the same way if possible. Then there's the problem of snaking the replacement cable back through the lacing and all. I also want to remove the cable tag and reuse it but they are crimped pretty tightly. I will try various ways to loosen them without damage. This could be a lengthly process. I will first redo one cable that I know I must since it has an intermittent. The see how that goes and maybe do the rest.

Date: Fri, 2 Feb 2001 18:29:32 -0500 (EST)
From: "Paul H. Anderson" <pha@pdq.com>
Subject: Re: RE: [R-390] RG-187 Coax

Jim, that tag is fairly easy to loosen and move - it is a soft tin, or maybe aluminum. Unfold it a bit with a knife or screwdriver, then it will slide off, if I recall correctly. The hard part of the whole process is snaking it through the old bundles.

Date: Fri, 2 Feb 2001 20:58:06 -0700
From: "Kurt" <radiouser@uswest.net>
Subject: Re: RE: [R-390] RG-187 Coax

I have installed the two coaxes that form the balanced input in the RF deck. It was not that bad. This particular RF deck did not have the coaxes originally so I thought why not. I used some teflon coax that was the correct diameter but has a stranded center conductor, the original coax has a solid conductor. I was able to feed both pieces of coax through the existing bundle using a blunt end of soldering tool to open/ stretch the bundle as needed.

The shields were terminated inside the RF deck by soldering both shields together on a long tailed soldering lug and then placed under a screw. This was the method used in a junker SW RF deck that I have. The cable label tags were carefully slid off two junk cables and slid on the newly installed cables. I believe I had to loosen one by unbending the folded edge of the tag and then re-squeeze back together.

The right angle connectors are somewhat tough to do but using a lot of heat from a BIG soldering iron and a flick of the wrist, the back disc came right off. The stranded center conductor coax does not seem as sturdy as the solid center conductor and hence my previous comment about wanting to change to a coax with a solid conductor. RG 187 or something similar with a solid center conductor must exist because Collins is still using this stuff. I've it in KWM/HF 380's (not that new) 851S-1's and what appears to be the same type of coax in their 95S-1. If someone close to Cedar Rapids could to the Collins factory store or surplus outlet or what ever it is called, maybe some scraps could be found or even an original source. When someone replaces these coaxes let us hear from you. Maybe I was just lucky.

Date: Sat, 3 Feb 2001 18:37:20 EST
From: G4GJL@aol.com
Subject: Re: [R-390] RG-187 Coax

I had the same experience sliding new teflon coax into a StJ Blue stripe I have rebuilt. I had to change the coax on the PTO, and although access is easy, there is a potential pit fall. Beware of the chuck-like clip which holds the coax in place and grounds it. The clip is (predictably) stainless steel. You must take great care if you need to pry the petals of the clip part apart. It is easy to slip and damage your fingers.... Work on a bench, preferably in a vice while you loosen the old coax. After that it is a straight forward job.

Date: Wed, 7 Feb 2001 21:17:09 -0500
From: "Jim Miller" <jmille77@bellsouth.net>
Subject: [R-390] Contact Cleaner on Switch Wafers

My previous post about having to clean oils from my switches and trimmers makes me want to bring up another topic worth discussing. My 390A has been up and down in performance (specifically 2nd osc injection level) for a couple of weeks, seemingly getting alternating better then worse on some bands. Nominally I wanted to get 3-4 volts p-p of 2nd osc. injection, but as I cleaned wafer switches with commonly accepted sprays (Jif action or DeOxit) the performance would not get any better and even worsen unpredictably.

On a hunch, I finally guessed that oils being absorbed either by switch wafers of trimmer cxaps could be causing the problem... perhaps what I thought waqs a good thing to do (contact cleaner) may actually have been a bad thing. Since then I have 'bathed" switch wafers in Big Bath (this stuff displaces moisture and oils and then evaporates). I have had to take some trimmers apart and clean them in a similar fashion. Performance is now back to an acceptable level, with the exception of one band (7 and 24 mhz). My guess is there is still some oil embedded in a trimmer cap for that crystal, and I may have to replace it. Having learned that, I tend to think I will never again use either Jif Action (TV contact cleaner) or DeOxit on any wafers or any near a trimmer cap.

I believe that either the chemicals become absorbed by the switch wafers, or some overspray gets into the trimmer caps causing some partial or high impedance "shorts", and reduced oscillator or receive performance. My plan now is to "bathe" all rotary wafer switches in the Xtal Osc and RF modules in Big Bath to get the residues out, and then be extremely careful around trimmer caps. if I ever spray DeOxit or TV Tuner near them again. Just my own "lessons learned" report...your mileage may vary! Jim N4BE

Date: Wed, 07 Feb 2001 22:30:04 -0600
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] Contact Cleaner on Switch Wafers

SPRAYING contact cleaners on wafers is very wasteful of contact cleaner AND switch wafers. Use the dropper bottle to put the smallest possible drop on only the switch contacts. That's the ONLY place it does any good, it only harms the insulating materials when sprayed all over.

Date: Thu, 08 Feb 2001 08:19:00 -0500
From: Bill Riches <briches@dandy.net>
Subject: Re: [R-390] Contact Cleaner on Switch Wafers

Look at www.stabilant.com Great stuff.

Date: Thu, 8 Feb 2001 09:52:05 -0500

From: "AI2Q Alex" <ai2q@adelphia.net>
Subject: RE: [R-390] Contact Cleaner on Switch Wafers

Bill, with respect to Stabilant, it is good---but quite expensive. Something around $35 for an ounce or two if I remember correctly. It's sold in some automotive stores, usually on special order. I was able to come into a lifetime supply of Stabilant-22, and use it frequently. The last application here was on the fingers in the rotary RF amplifier turret of the Albacore sub's R-1051 receiver.

I've also used it to cure intermittent operation on my Ten-Tec Omni-V fluorescent display interconnect pins, and to restore operation of electro-mechanical assemblies in my old American Flyer toy train engines, particularly their drum-style reversing units. If placed on a DIP before insertion into an IC socket, it acts as a dielectric between the spaces between pins, and as a conductor that's better than solder between the pins/lead-frames and the IC socket contacts (however, it's better to use screw-machined sockets to start with!) It didn't do anything to help the warbly lead-screw in my R-390A's PTO.

Date: Thu, 8 Feb 2001 18:22:55 EST
From: G4GJL@aol.com
Subject: Re: [R-390] Contact Cleaner on Switch Wafers

Phenolic materials allow most oils to be absorbed quite readily/ Put a drop on a scrap wafer and leave over night if you need proof. The behaviour of DeOxit on metal contact surfaces is unquestionably good, but it was never intended to enhance the insulation properties of phenolic. There might even be a possibility of longer term decomposition of hygroscopic materials like SRBP / phenolic board. Barry Ornitz might have a better scientifically based explanation???

Date: Thu, 8 Feb 2001 20:26:00 EST
From: DJED1@aol.com
Subject: Re: [R-390] Contact Cleaner on Switch Wafers

I think you may be right. I had problems with my R4C- the gain would gradually fade away over a period of weeks after I had resurrected it and cleaned the contacts with deoxit. Based on some discussion on the message boards, I cleaned all the switch wafers with alcohol. I found that improved the gain and it seems to be staying OK. The conventional wisdom now is to use deoxit sparingly, and only on the actual switch contacts.

Date: Thu, 8 Feb 2001 22:46:57 -0500
From: "Jim Miller" <jmille77@bellsouth.net>
Subject: Re: [R-390] Contact Cleaner on Switch Wafers

Yes I just got Chuck Ripple's R-390 video tape set in the mail today. Should have gotten it sooner. He uses Q-tips (cotton swabs) to apply the DeOxit very sparingly to the metal surfaces only. I should have known better. But it cleaned up OK and is now pretty much back to normal. Actually I did have a DeOxit application pen that I could have used if I had been more careful.

Date: Fri, 09 Feb 2001 10:38:40 -0800
From: jan@skirrow.org
Subject: Re: [R-390] Contact Cleaner on Switch Wafers

This has been a very useful discussion. I have tended to use Deoxit spray when I can't easily get at the contacts themselves and liquid Deoxit with a Q-tip otherwise. I will be even more careful with the spray from now on.

I ran into an example of what can happen when contact cleaner goes bad a few months back. I'd bought a bunch of nice mil radio test sets. They'd been refurbed and put in war readiness stores. They were in great shape except for one. The test mode switch didn't work. When I opened it up I found that most of the switch wafers had literally disintegrated into a grainy, yucky mess. The remaining wafers crumbled when touched. These were good quality switches with the blue plastic wafers that were common from the mid 70s on.

Of course I have no way of knowing what was used on this switch, but it's the worst case of wafer damage I've seen. I did find a replacement switch - which cost more than the TS did, and more than a bottle of Deoxit would cost!

Date: Fri, 9 Feb 2001 16:24:08 -0500
From: "Jim Miller" <jmiller@iu.net>
Subject: Re: [R-390] Contact Cleaner on Switch Wafers

De-Oxit is not a bad thing, it just like anything else needs to be used in moderation. I just forgot what I had learned from the Collins reflector some months back, that the old switch wafers tend to absorb things like that and then swell up, binding the rotary part, and that if you get sprays on the Erie trimmer capacitors it will get into the dielectric pads and change their characteristics and may also react with the silver (?) layers of the trimmers. My mistake was to spray it onto the wafer switch of my Xtal Osc module. The trimmer caps for each xtal are mounted right under the front wafer. Need I say more? DeOxit makes a little ball-point pen sized dispenser you can use to precisely target a spot. Also, the red can Deoxit should not be used on potentiometers since it can react with the carbon. They make another version (blue can) for that. de Jim N4BE

Date: Thu, 15 Feb 2001 12:43:18 -0600
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] More Albacore work

Sounds like an expensive proprietary solution to a simple problem easily solved by common hardware. Either solution fails if the knob moves on the shaft. The fancy solution by failing to function if the knob slips out on the shaft under the pressure of the brake, the slotted bushing lock loosing knob position calibration when a heavy handed user turns the knob with the shaft truly locked. Can't win for loosing!!

Date: Sun, 18 Feb 2001 09:05:19 -0800
From: zorkler@linuxfreemail.com
Subject: [R-390] Literature

Been looking around for two magazines, that have been mentioned on this list, Electric Radio and HSN(?). Thought I subscribed to all of them until I hit this list. Can someone give me direction as to how I can get more info and subscribtion rates for these two. What's their editoral policy?

Date: Sun, 18 Feb 2001 12:57:51 -0500
From: "Walter Wilson" <wewilson@knology.net>
Subject: Re: [R-390] Literature

Hollow State News: Contact Ralph Sanserino (publisher) via
sanser@GTE.net
Electric Radio: er@frontier.net

Date: Wed, 21 Feb 2001 07:46:46 -0800
From: "Roger L Ruszkowski" <rlruszkowski@west.raytheon.com>
Subject: Re: [R-390] Special Wrench?

>Is there a special wrench to hold the inner part of the kc front panel bushing to >allow tightening of the nut? I can't seem to hold mine to get the nut tightened.

Just jam a damn screw driver in between the dial lock disk and the bushing. Give the screw driver a little twist to put some presure on the bushing. Apply a little more tight to the bushing nut with the proper wrench. This should get you enough tight for none military / mobile use.

In my many years of doing service in service, I never heard of one. If your not using your big Knobs for a step or hanging to many coats on them, do not worry about getting the bushing real tight. You would like to get them snug enough so they do not spin with the shaft and turn on the front panel.

A star washer behind the front panel can help. Locating one with the proper hole size is tricky. Use a "cheap bike wrench" (stamped thin sheet metal) to slide in behind the panel and the Dial lock disk to hold the KC bushing. The MC bushing has a bit more clearance. Loosen up the panel screws to get a bit more clearance if necessary. Does the front of your bushing have a slot cut across the front of them? Then you can use a pair of split ring pliers in the slots, around the shaft, to hold the bushing, while you tighten the nut.

One problem is to tighten the bushing ad keep them centered so as not to cause any unnecessary friction. We would get them up as tight as we could and then, carefully take the front panel down again so we could put a wrench on the back side. We would hang the front panel on two long screws in the front panel and then do trial and error. Slide the front panel out and tighten the bushings. Slide the panel up tight and run in a pair of short panel screws and try the friction. Out with the short screws. slide the panel out on the long screws. Then redo the bushing for a better fit. And again and agin until you get what you want. or give up.

Date: Wed, 21 Feb 2001 15:24:36 -0600
From: "Dr. Gerald N. Johnson, electrical engineer" <geraldj@ames.net>
Subject: Re: [R-390] Re: [MilSurplus] Preserving workmanship

I've clearly posted my opinions on what needs to be fixed if the radio is going to be used and not just static decoration many times. Nolan has too. Check the archives.

Date: Wed, 21 Feb 2001 07:47:05 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: [R-390] Special Wrench?

Is there a special wrench to hold the inner part of the KC front panel bushing to allow tightening of the nut? I can't seem to hold mine to get the nut tightened.

Date: Wed, 21 Feb 2001 10:42:53 -0500 (EST)
From: Norman Ryan <nryan@duke.edu>
Subject: Re: [R-390] Special Wrench?

Unless your bushing loosens during use, it shouldn't need to be extra tight. It's sufficient just snugging it up to where it will hold. If you leave it snug its position will adjust to the KC shaft if it should shift as in when you mount the receiver in a rack cabinet. Sometimes the shaft may bind a little bit. If the bushing is snug rather than tight, you can give it a light tap to settle it in. Don't forget to lightly oil the bushing.

Date: Fri, 23 Feb 2001 19:11:39 EST
From: DuffyF56@aol.com
Subject: [R-390] Test and question

I am the guy Dave was nice enough to post about. This is a test of using AOL 3.0 to post instead. I also have a question concerning the required R-390A Bristo/Bristol wrench. Which is it? The manual has listed a No. 8. What size (in a meaningful measurement) does that correspond to. I looked in a McMasters-Carr catalog today and they only list the wrenches they have in fractional inch size. Thanks for your help...both with this question and to those that responded to my problem about posting.

Date: Fri, 23 Feb 2001 19:19:22 EST
From: Llgpt@aol.com
Subject: Re: [R-390] Test and question

There are two basic sizes you should be concerned with, .096 and .111 both of these are 6 spline.

Date: Sat, 24 Feb 2001 16:36:57 -0500
From: "Tetrode" <tetrode@sprynet.com>
Subject: Re: [R-390] Journey Through The Cosmos

<snip> FYI, For those who want to make a permanent local copy of an interesting page to your hard drive it's very easy. Create an appropriately named directory (don't really have to do this but it helps to keep things organized and identified), and copy ALL the page elements to it. The browsers File/"save as" command will copy all the text/html stuff under whatever the native file extension is, such as .html or .htm. Then, save each and every graphic on that page (.jpg, .gif, etc) without altering the file name, to that same directory.

That's all there is to it. To view, use the browser's Open/browse file commands to open the local .html (or whatever) page that was saved in the previously created directory, and the browser will open it just like a regular web page with all the pictures and text in the right places.

Date: Sat, 24 Feb 2001 14:34:50 -0800
From: "khgrant@ix.netcom.com" <khgrant@ix.netcom.com>
Subject: [R-390] Zero Adjust Knob

I was reviewing the 'Adjust ZERO ADJ Control' procedure that says that there should be about 1/8" free-play between full counter-clockwise position and when it starts making contact with the gear assembly. With the knob as far on the end of the shaft as it will go, I have about a 1/4" gap between the base of the knob and the mechanical stop that is supposed to

prevent it from turning further counter-clockwise. It seems something is out of adjustment, but where. I don't have the front panel off at the moment, so I cant see what is on the end of the shaft. Can someone tell me what might be wrong here? The mechanical assembly drawing doesn't seem to show this shaft.

Date: Sun, 25 Feb 2001 10:14:15 +0200
From: "galpinp" <galpinp@freemail.absa.co.za>
Subject: Re: [R-390] Journey Through The Cosmos

Really excellent info! I did a Control-A, and Control-c (highlight all and copy all) and Control-V (paste) onto a blank Word document. Page Setup to Landscape, Print, and it all came out ready to go in with my copy of the Y2k Manual.

Date: Tue, 6 Mar 2001 12:16:53 -0600
From: "Ross Snoeyenbos" <ross_s@excel.net>
Subject: [R-390] RF Connectors and Cables

Just got a catalog today from this company, and it might be a handy source of connectors, cables, and patch cords for all of you. Company is Pasternack Enterprises, their web site is at: http://www.pasternack.com/
.

Date: Tue, 6 Mar 2001 14:09:28 -0400
From: "Jeff Adams" <jadams@mcqassociates.com>
Subject: [R-390] Re: [MilSurplus] RF Connectors and Cables

I have been using them for years (> 5) at the office. I think they have a $100 minimum now.

Date: Tue, 6 Mar 2001 13:21:34 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] RF Connectors and Cables

Minimum order: $100. Minimum line item: $10.

I would like a MALE "C" to FEMALE BNC adapter, but at $21.95, it's a bit pricey for me.

Date: Wed, 07 Mar 2001 06:35:49 -0600
From: "J. G. Kincade" <w5kp@swbell.net>
Subject: [R-390] Twirl-Con

From page 63 of the August 1962 CQ Magazine, under "New Amateur Products": "One of the cleverest gadgets to cross our desk recently is made

by Twirl-Con Tools, 1101 N.E. Street, Edna, Texas. <snip>

I remember somebody discussing these on the list a few months back. Wonder if there's still a source. It looks sort of like a small wirewrap tool used in telephone frame work. Hmmmm..... wonder if one of those could be modified to to this. Anybody near Edna, TX who can do detective work? <snip>

Date: Sun, 11 Mar 2001 18:38:01 -0600
From: Dave Metz <metzd@intelos.net>
Subject: [R-390] Twirl- CON Homemade version

"One of the cleverest gadgets to cross our desk recently is made by Twirl-Con Tools, 1101 N.E. Street, Edna, Texas. Their new tool simply winds wire of various gauges into a tight spiral of proper inside diameter to slip over component leads for easy service work. To replace a component in tight quarters, simply snip off the old resistor or capacitor leaving 1/4" leads at the terminal, twirl the replacements' leads and slip it over the 1/4"

Ok, guess it's time to share my secret tool and hope to not get flamed for not following painstaking desoldering procedures. To make one for less than a buck, here is my technique: Take a piece of 1/4" copper tubing about 3" long. Go find a #47 drill bit (approximate- but a good first one). Insert the flighting inside the open end of the copper tubing up to the point that all the flighting is inside the tubing. Crush this assembly in a vice for about 1/2". Then, take another 47 drill bit and drill a hole as close to the embedded drill bit and the end of the copper tubing. Tool is done! Then take, say a resistor, and insert about 1/4" of the lead through the drilled hole and then wind your spiral till you have a few turns wound on the smooth part of the drill bit. Take a side cutter and cut the component lead between the start of the spiral and the straight part that is inserted through the drilled hole. The resistor with a nice spiral slips off. Bend it with the spiral still on the drill bit to "aim" it in the appropriate direction to mate with the remaining defective component leads. Solder in place and enjoy. You purists may disapprove but it works great and avoids the cussing that follows when I break off a tab trying to unsolder multiple leads to a socket pin. I have three sizes, about a #47, a #28 and an 1/16 . Besides, it's incredibly fast and with 4 spiral turns, I suspect its about as electrically conductive as one can get short of purist replacement. And.... they make great wire stretchers. Take a piece of #22 buss wire. wind a spiral on one or two ends depending on the application and get that extra 1/2" lead length you need without major surgery. Most of all, in those tight places, one can replace a cap without major disassembly. Some time back I recapped an SX28 and was able to even get at the ones at the bottom of those boxes around the coils.

Date: Sun, 11 Mar 2001 20:16:02 -0800
From: "N9BMH" <N9BMH@wi.rr.com>
Subject: RE: [R-390] Twirl- CON Homemade version

My design is just as simple. Take a pin vise with a drill bit (of the lead diameter you want to attach to) turned upside down mounted in the pin vice collets. There is a gap in the collets that accepts the wire lead end and just twist the component around the drill bit. Pull part off the bit when you have 3 or 4 turns and solder to the clipped off lead.

Date: Mon, 12 Mar 2001 21:19:18 -0800
From: Dan <hankarn@pacbell.net>
Subject: Re: [R-390] Bent Shafts

I just did a shaft for a EK-07 this AM on the coarse/fine gear tuning shaft that was bent, had tweaked on it over the weekend and got it close, went to my friends machine shop and put it on a surface plate to check it out. Then put the clear end on a 6" machinist scale and tapped it with a plastic mallet, not enough weight got a lead mallet and tap it as we rotated it to plumb. The concern was not for it to break at the bend point as it was where the retaining CIRCLIP and tension washer went. Then chucked it in a lathe with a collet to hold the gear bushing so we could take a Swiss file and dress it to round to press back into the three bearings. Talk about smooth. Takes a lot of TLC and helps to have friends. Be very careful on trying to brute force straighten out shafts they are work and or hardened and they will snap at the "just a touch more" BEEN THERE DONE THAT. Hank KN6DI

Date: Tue, 13 Mar 2001 22:21:13 -0800
From: Dan <hankarn@pacbell.net>
Subject: Re: {Collins} Re: [R-390] REF: R-39XX MC & KC knobs & R-391 Pins

OK Gang, Here is the skinny on the knobs and clamps. The price for a run of 95 knobs will be $15.00 each plus shipping. The clamps based on a run of 210 will be $6.00 each including screw, nut, washer. It will be as to the drawing but we may round off the back side to reduce the cost as it involves some more machine time as it goes click, click, i.e. money to do the additional shaping. The packing and shipping will be combined to reduce cost for combined orders. Figure $6.50 for packed, confirmation of delivery and Priority mail in USPS system. I have enough so stated orders for the knobs I now need confirmation for the clamps, as I find them hard to digest, drink and sleep with. So there is an old saying of money talks and B-walks. Time to talk, Cut off date on the clamps & knobs is 3-30-01 for firm order by e mail and money sent to my Address. Shipment to be by middle of April and or sooner with enough Money in house.

Send checks, money orders or any legal tender to:
Dan Arney
18401 Chase St.
Northridge, CA 91325-3610

The R-391 pins/knobs should be ready by the end of the month
The rubber meter gaskets are still available for 12 for %10.00.
All tags at $25.00 no S/N or $27.50 with S/N of your choice.

Front panels exchange serviceable stripped. powder coated and silk screened $275.00 plus shipping. No metal work required, all hardware removed for: 32V-3, R-390 none, R-390-A, SP-600, SX28 and SX-88

All cabinets redone, choice of your color and style, Wrinkle, smooth, hammer. etc subject to runs being done. Questions to my address. Thanks, Hank KN6DI

Date: Fri, 16 Mar 2001 09:58:09 -0500
From: "AI2Q Alex" <ai2q@adelphia.net>
Subject: RE: [R-390] Off-topic (Hardware)

You might also want to try Small Parts Inc. in Florida. I've used them for years for small orders of small parts! The company is now on the Web at www.smallparts.com.

Date: Fri, 16 Mar 2001 11:43:23 -0500
From: "Jim Miller" <jmiller@iu.net>
Subject: Re: [R-390] Source for Capacitors?

I agree, Mouser is the best, bar none. They even call to follow up if there is a problem. I have never had a problem with them, and the prices are very very reasonable. Not the 10x inflated prices that joke Newark charges.

Date: Sat, 17 Mar 2001 11:30:25 -0800
From: jan@skirrow.org
Subject: [R-390] FS: mini-bnc to bnc adapters

I came across some mini-bnc to bnc adapters recently. I have more than I need, so if anyone else wants one or two (max) let me know. First come first serve. Cost is $5 each, shipping to the US included. These appear to be new and unused. Have a look: http://skirrow.org/Pix/adapter.JPG

Date: Sat, 24 Mar 2001 21:00:36 -0500
From: Glenn Little <glittle@awod.com>
Subject: Re: [R-390] dial light bulb for R390

When I was in the Navy we used 387 lamps to replace the 327 lamps. The 387 drew less current, put out less light and lasted longer. I recently picked up some surplus LED lamps rated at 28 VDC that have the same base as the 327. These are red in color. Might make a one time replacement for the R390A with a diode and cap added to produce the DC. The LED cannot act as its own rectifier as it's PIV rating is too low.

Date: Mon, 26 Mar 2001 12:38:22 -0500 (EST)
From: "Paul H. Anderson" <pha@pdq.com>
Subject: RE: [R-390] Need R390A help

I don't think there is supposed to be any appreciable audio noise from them. I have swapped several in and out, and noticed that they vary in level of noise unit to unit, but also depending on gear lash (the angled gear that drives them), and also on degree of oiling. I think you can disassemble them quite aways, and polish the shaft they spin on (no jokes, please). Because of where it is in the drive train, the gear lash, and dirty bearing surfaces, it can cause a lot of noise and drag.

Date: Mon, 26 Mar 2001 14:49:41 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Need R390A help

My R-390A made a horrible growl while turning the KC CHANGE knob in the downward direction when I first got it. After some examination I determined that the whole thing hadn't seen oil in many, many years. It was clean but very dry. After a good, careful lube job it is much quieter, actually the loudest noise now is the "banging" of the increment pins on the sides of the gears when they increment the next digit to the left.

Date: Tue, 27 Mar 2001 11:19:01 -0600
From: Roy Morgan <roy.morgan@nist.gov>
Subject: RE: [R-390] R-390a leaving it on STBY

Many tubes with normal coated cathodes develop a bad condition known as "Cathode Interface" if left in the non-conducting condition for long periods of time. A tube with this condition appears as if a resistor was inserted in the cathode connection. Certain versions of tubes were made to be used in computer service and had changed cathode chemistry to avoid the problem. If I remember right, the 5963 is one of these and is much like the 12AU7/5814.

Date: Tue, 27 Mar 2001 23:11:35
From: "Robert Jarnutowski" <bobjarn@hotmail.com>
Subject: [R-390] Spam from ATC

I second DanF and Barry's comments. It's just another source of hard to locate parts for the "treasures" that have been placed in our temporary care for just a few dollars of their original acquisition cost. We who are fortunate enough to own these receivers have an obligation to maintain and pass them on to those few fortunates who will inherit them in the dim future.

Date: Tue, 27 Mar 2001 19:07:22 -0500
From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] Spam from ATC

They made a number of parts for the '390's way back -- namely the coils. They also stocked a lot of other parts, like flats of tubes. Chuck Rippel bought out quite a bit of that all at once a couple three years ago and then assembled kits of "tubes 'n coils" and offered them to the list. They also made the RF MC strips for the turrets in the R-1051's and GRC-106's, among other things. A lot of stuff was simply dumped under pressure to make room. I've been there -- ATC is about 5-10 minutes from here.

> I didn't even see complete R-390A's for sale, so guess they decided that
> parting them out was more worth while than selling them complete. Can
> you imagine the trouble they went to in order to offer sides and rear panels?

I don't know if they have any complete R-390x's at all. I don't think whole radios were just parted out for this sale -- but a long time ago to provide an inventory of replacement parts to another clientele. They have got to be about the last thing you will need! What happen to the front panels? I also looked for the large KHz and MHz knobs I need so badly and no luck!

Front panels sold out on the first go-round. I know where you might find the KC and MC knobs, but I don't want to spark a stampede. Besides, the price is already high, and they'll become unaffordium before you get a chance. ;-) BTW, the front panels came with a lot of parts, not all of them good (i.e. some switch wafers might be broken due to stacking, etc.) -- but they did not include the MC and KC knobs.

The side panels are of help for anyone with a warped or scrunched one. However, they're labeled as "covers" on the website and not separated as to left and right sides, so you have to email to get the correct one or a pair - or you'll get two of the same. There are a number of worthwhile items, but not a full line -- no such thing anywhere. There are a number of non-R-390 items of interest, like new knobs for your GRC-106.

Mark may have some more stuff buried that hasn't been unearthed yet. I

have no pecuniary interest (tho' my wife says I'm a very pecuniar person), but I think it's in all of our "vested interests" to encourage Mark to NOT call for another dumpster.

Date: Tue, 27 Mar 2001 16:34:07 -0800
From: Dan <hankarn@pacbell.net>
Subject: Re: [R-390] Spam from ATC

Richard, I agree. ATC has been very straight forward with my dealings and has been as stated. Overpriced on some of the stuff but where are you gonna go????

Date: Tue, 27 Mar 2001 20:23:06 EST
From: DJED1@aol.com
Subject: Re: [R-390] Spam from ATC

I certainly agree with Barry- we shouldn't discourage any source. I bought one of their IF strips- as advertised, and all 4 filters seem to be OK. It would be nice to find a source of new radios and parts- but it ain't gonna happen.

Date: Fri, 30 Mar 2001 08:48:42 -0500
From: "Warren, W. Thomas" <wtw@rti.org>
Subject: [R-390] RF proof finger stock

I'm refurbishing a 390A mainframe and the finger stock grounding the RF unit to the mainframe has worn out (silver coating flaked off the underlying base metal). Does anyone have a supplier of this material?

Date: Fri, 30 Mar 2001 08:32:53 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] RF proof finger stock

I was told Fair Radio sells it.

Date: Fri, 30 Mar 2001 10:31:58 US/Eastern
From: mdenison@blazenet.net
Subject: Re: [R-390] RF proof finger stock

Bought some from Fair a few years ago. It will need to be cut to length and drilled for mounting. The fingers are smaller and the material appears to be unplated bronze.

Date: Sat, 31 Mar 2001 19:19:11 +0000
From: blw <ba.williams@home.com>
Subject: Re: [R-390] Standby

I dug out my Army TM 11-5820-358-10 Operator's Manual and found a reference to the standby position use on page 24. It is a caution in bold typeface that says the life of certain vacuum tubes could be shortened if left in standby for longer than 30 minutes. I didn't find the explanations of terms used page in my photocopy of the manual, but I remember from my service days that:

Note- Means something of value to be pointed out

Caution- Means failure to follow a procedure **could** result in damage to equipment

Warning- Means failure to follow a procedure **will** result in damage to equipment

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Date: Thu, 21 Jun 2001 11:14:58 +0000
From: blw <ba.williams@home.com>
Subject: Re: [R-390] [r-390] pink erasers

Be very, very careful with those pink compound erasers. They were called compound because of the abrasive compounds in them. Do tape heads with certain ones and you can kiss them goodbye after a while. The idea behind delicate work with erasers and electronics is to burnish the metal, not scrub into it. Sort of like polishing off the oxides, gunk, etc. I always look for the new types like those clear kids erasers. They are just some sort of rubbery substance without abrasives. Rub until dirty and clean on your pants or shirt and rub some more until the surface is nice and clean. You can get white erasers without abrasives. Cutting these erasers with a razor blade gives good shapes for particular jobs. You can cut good eraser tools.

Date: Mon, 2 Jul 2001 13:32:35 -0700
From: "Roger L Ruszkowski" <rlruszkowski@west.raytheon.com>
Subject: [R-390] Getting a bearing on bearing problem

Pop the new bearing into the freezer for an hour before you are ready to insert them. Get every thing all set to stick them in and then get them out one at a time and put them in.

Cool the inside part. Heat the outside part. Cool the shaft before you put it into the bearing. Heat the bearing and frame a bit before you insert the shaft.

On tear down you can heat the whole thing. apply heat to the out side. use a straw on a can to squirt the bearing to cool it heat, squirt and yank.

C clamp, with big nut (hole in the center to accept bearing) and small nut (to set on bearing) can work wonders to move these old bearings out without a smash and burn attack.

Date: Mon, 2 Jul 2001 15:25:50 -0700
From: David Wise <David_Wise@phoenix.com>
Subject: RE: [R-390] Getting a bearing on bearing problem

Thank you Roger (and Roy Morgan, who entered into a prolonged exchange) for your kind advice. I had forgotten about the heat/cool trick and believe me, I'll use it when the time comes. Removal of the old bearings will require a more exotic approach than Roger's C-clamp, because the two bearings have only one face accessible each. A co-worker thinks we can fashion a couple of hooks for a "blind" bearing puller.

As for the rear bearing, I think the easiest approach will be to push it out from the front, after I have the front bearing out. It all hinges on having places to hook around so I can apply The Force. I spoke to a technician at Fafnir (the bearing manufacturer).

He thinks the balls and races are ok; the 40-year-old grease inside these shielded bearings has simply hardened to rock. Since it's easy and safe, I'll try to soften it with whatever solvents I have around. ObR-390: A '56 Motorola R-390A is on a UPS truck, headed my way!

Date: Tue, 3 Jul 2001 07:47:29 -0700
From: David Wise <David_Wise@phoenix.com>
Subject: RE: [R-390] Getting a bearing on bearing problem (was HP 608D)

It was the grease. One shot of brake cleaner and it smoothed right out. I chased it with light machine oil to keep it sweet after the brake cleaner evaporates. I don't know if it will last, but today it looks good. Now I have to loosen a meter bearing just a skosh, and my HP 608D will be ready to help me align my R-390A.

Date: Thu, 5 Jul 2001 08:49:18 -0400
From: "Dee Almquist" <w4pnt@vaix.net>
Subject: [R-390] PANEL REFINISH

Since developing our new screen printing shop I am now looking at prospects of developing artwork, therefore, silk screens to redo the screen printed panels of r-390s & r-390As. This will include a total refinish job, stripping, etch prime, & color. I need to know if there is enuf interest to invest the money (R&D) to do this project. As most of you already know I have been doing (last 3 yrs or so) the Johnson cabs & panels. Your

comments are appreciated.

(540) 249-3161
Cell: (540) 471-7023

Date: Thu, 05 Jul 2001 13:00:08 -0400
From: Bob Camp <bob@cq.nu>
Subject: Re: [R-390] PANEL REFINISH

I have a couple of 390A's that have the silk screened front panels. The panels are in pretty darn good shape, but they could use a re-paint job. Interestingly, one of them has already been re-painted once. There are places where the paint has worn down through the most recent re-paint and you can see the lettering from the previous paint job.

I have no idea at all what that means, but it was news to me. I thought that strip and repaint was the standard way to do it. I guess not
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Date: Thu, 5 Jul 2001 13:42:51 -0700
From: "Roger L Ruszkowski" <rlruszkowski@west.raytheon.com>
Subject: [R-390] Found Mini BNC with 36" of RG-174 (50ohm) installed.

I was shopping at San Diego GateWay Electronics today. Found some (10) Mini BNC (nice mil green) with about 36" of RG-174 attached. The 174 is Times Wire & cable. Black color and more flexible than yellow or white stuff found in R390 or R390A units are 1.95 on the shelf.

For small orders send e-mail to me. I will by them here local and mail them in a suitable envelope at 3.00 each. I will take a check from you in the mail when you get your parts.

I was going to make up a test cable with mine. But due to the length and 50 ohm, some one may be wanting to fix some RF-IF or PTO cables.

There is a part number on the BNC but I can not read it. Once I get it under a glass I'll post the part number if any one wants to know.

Date: Sun, 8 Jul 2001 14:23:56 -0400
From: Al Tirevold <tirevold@mindspring.com>
Subject: [R-390] FAQ site updates

Wei-Li has provided a great compilation of recent wisdom posted to the R-390 reflector. I have placed it on the FAQ site. It can be found under "references" and then "Pearls of Wisdom". Additional enhancements/corrections have been made to the "Tubes" and "Systems" pages as well. Please let me know if you have any difficulties.

Date: Mon, 9 Jul 2001 09:10:47 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] EAC teflon wire or not?

The late model '67-'68 EAC's that I have owned (many five or so) have teflon wiring. They also have many modifications made to the modules to make assembly easier, like different plate structures in the modules (see IF module), wire splices (see IF module and front panel), etc, that you will not see in other makes. The '60 EAC's do not have these mods (I don't think) however the first 400 do (or did until changed) have Clevite ceramic filters.

Date: Mon, 23 Jul 2001 13:02:51 -0700
From: "Roger L Ruszkowski" <rlruszkowski@west.raytheon.com>
Subject: [R-390] Things in the Mail

OK fellows if your math challenged, See me all your funds, I will do the math and send any extra back. If you do not send enough I will ask you for more.

Send all funds to
Roger Ruszkowski
8942 Lamar St.
Spring Valley CA 91977

The long ones are $3.00 each
The short ones are $2.00 each

Those numbers include all the postage, shipping, handling and dogging needed to get them from them to you. Count the parts and write a nice even number on the check. If you are on this list and do not get yours, Send mail and let me know. If you are not on the list and want some or are on th elist and want some more, E Mail. a few are still available. Roger.

Date: Mon, 30 Jul 2001 08:47:46 -0700
From: "Roger L Ruszkowski" <rlruszkowski@west.raytheon.com>
Subject: [R-390] Striped Spline Bolts.

>...splined screw is very worn and my bristol wrench is not getting a good "bite".

One way out for the night is a hack saw,
An Exacto saw blade is good.
A very worn hack saw blade is OK
A sharp hack saw blade will work.

You may want to smack the saw blade with a hammer to reduce the kerf.
Put the blot in a clamp and then grab the clamp and bolt on a vice.
Add a flat blade slot to the top of the bolt.

Do feel free to swap the poor one forward where you can get to them.
Use them on the IF band width switch and BFO shaft.

Put the good ones back into gear train clamps.

Check Dave Medleys site for some parts.

Grind the end of the spline wrench to sharpen it up. This gets the rounded corner off the tool and can improve your grip on worn bolt sockets.

Lean the spline drive over to one side to get a bit more grip in the bolt socket to get it loose.

Tool skill is an acquired feel. Work at it.

Date: Mon, 30 Jul 2001 09:35:35 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Striped Spline Bolts.

You could also take a small flat bladed screwdriver and grind it to press fit the head of the screw, angled sides to grip better, tap lightly into the head. This should be a one-shot approach just to get the damaged screw out.

Date: Mon, 30 Jul 2001 10:50:00 -0700
From: Leo Jormanainen <lexa@mail.island.net>
Subject: Re: [R-390] Stripped Spline Bolts.

A four sided E-Z Out will work.
You can get them from NAPA.
Lots of manufacturers make them, Proto, etc.

Date: Tue, 31 Jul 2001 13:28:31 -0700
From: David Wise <David_Wise@phoenix.com>
Subject: [R-390] Restoration Bulletin 4: Gear Train Breakthrough

(MOT, 363-PH-54)

GEAR TRAIN:

I managed to get the rear cam off the 2-4MHz shaft. Last week I heated the cam with a propane torch (watch the solder!), quenched it with water, and let it sit with Marvel Mystery Oil. Multiple times. No good. I bent and

straightened the punch a couple of times, and then it broke. I straightened what was left, then broke it too. Now all I had was a 1/8" stub. I blasted the cam one last time, and this time I wailed on it while it was hot. Pay dirt! The old bushings drifted out easily. I got some bushings locally, P/N FF0310 from US Bearings. They're .250+-1 ID, .380 OD (too big), the right length, and have a 1/16" flange (too thick). I filed down the OD until I could press it into the panel's .375 hole, and thinned the flange down to .040 with 150-grit on an orbital sander chased with a single-cut file. The 2-4MHz camshaft now has less than .001" side play! I think I'll do the same to 4-8MHz and 16-32MHz. (8-16 doesn't look to need it, thank goodness.) <poet> That, plus the spring mod I did to Sun-2 / should get my backlash down to better-than-new. </poet> :-)

RANDOM:

C603 and C606 are forming up beautifully. Today they're ice-cold at 400V, comfortably higher than the pre-warmup transient on this solid-stated power supply. I'm not going to bother with the time-delay relay. I will add both B+ fuses, however.

I applied the RF Deck part of FC7 (screen resistors 56k -> 220k). I just realized that "Mods" and "Field Changes" are not the same thing. My RF Deck contained Mods 1-4 but no FCs. Data Point: C275 is a .033 BB. I found that though there's no Mod mark, Z201 have the later 1500pF cap instead of the early 2400.

Can anybody explain what 14-PM-56-A1-51 means? It's an Order Number (not a Contract Number), and although I've seen a table of Order Numbers somewhere, this one's not in it. Most of my modules are thus.

And where are the MWOs documented? Thanks.

Date: Wed, 01 Aug 2001 21:22:33 -0400
From: Bob Login <jlogin@mindspring.com>
Subject: [R-390] Ovens stay on with switch in off??

Hi, I have a Stewart-Warner that all of a sudden(?) started to change freq and to move by 8KHZ unbeknownst to me. So I ended up calling CQ not on 7295 but out of band!!! When I realized this I went to WWV and moved the veeder counter so I was now on freq. But I discovered that the real problem was that the ovens were on! I checked the oven switch and it was in the off position. Could the switch have been defective all along? I was not sure so I measured the resisitance across it 7ohm open 0.2 closed. So I just clipped the leads so I would be sure it was off. Turned on radio and still found the 200/17meg xtal oven to be on and the voltage at pin 3 to be 6.3vac; it's on! The xtal calibrator will not work properly and comes on only when the

zero adjust is turned then when turned off and on it doesn't work unless this process is repeated. This is because of the heat? The oven is also on at the PTO and the xtal osc. They all feel warm.... somewhere there's a short?Anyone out there with some advice on this problem?

Date: Wed, 1 Aug 2001 19:05:09 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Ovens stay on with switch in off??

No, that's normal. Those two should be on, that is, working all the time. The crystal calibrator should have its own thermostat and you should be able to hear it click on and off while operating. On the top of the can it says it should be at 180 degrees C, I think, at least mine says something like that.

The PTO HAS to be held at a steady temperature for stability.

Date: Wed, 1 Aug 2001 21:31:29 -0500
From: "Richard Biddle" <theprof@texoma.net>
Subject: Re: [R-390] Striped Spline Bolts.

I had a similar problem. If the spline screw head is not totally stripped, you might try some "Screw-Medic" made by Myro. A drop on the head of the screw or the bit makes it "bite" better. It is worth trying before you resort to primer cord or a cutting touch:)

Date: Sun, 05 Aug 2001 09:59:22 -0700
From: Buzz <buzz@softcom.net>
Subject: Re: [R-390] Fw: Frequenct display lamps

I've seen #328 lamps made with the bright LEDs, but don't know where to get them.

Date: Sun, 05 Aug 2001 15:30:20 -0400
From: Al Solway <beral@videotron.ca>
Subject: Re: [R-390] Fw: Frequenct display lamps

I have a lot of these lamps, about 50 of them. I will ship to any one who wants Qty 4 for one crisp US dollar. Let me know.

Date: Sun, 5 Aug 2001 18:06:11 -0400
From: "JM/CO" <jmerritt2@capecod.net>
Subject: Re: [R-390] Another ballast tube replacement question

There is no substitute for the ballast in the 410-B. Can't remember, offhand, what type this unit takes, but I'm sure they are available.

Date: Sun, 05 Aug 2001 17:06:41 -0500
From: Nolan Lee <nlee@gs.verio.net>
Subject: Re: [R-390] Fw: Frequency display lamps

>Does anyone have a specific source OR an excess of # 328 lamps for the 390As?

Pretty common lamp. Any electronics parts house should have these in stock along with the long life version, the 381. The illumination from the 381 is a little less but the lamp life is two or three times longer. I don't have any lamp manuals handy so I can't give you the specifics. I know that they vary from brand to brand. I've got some 381's over here that I bought on closeout from Mouser a few years ago that had a rated live of 20 or 25K hours or something like that. I've been waiting for the 328's in the set to die so I can replace them. <grin>

>Both mine have now gone and I want to light her back up.

Common with the R-1051 receivers too. When one goes, the other soon follows. When one blows, the voltage is increased to the remaining lamp because of the dropping resistor arrangement. I guess that it's often just enough to push the other lamp over the edge. When you change one, change both of them. It's a lot more pronounced in the R-1051 receivers. They are much easier to change on the R-390A. Much much cheaper, too. For what it's worth, I've logged over seventeen thousand hours on the original engraved base Westinghouse 328 lamps in my 67 EAC. The inside of the envelopes are darkening noticeably but they still work. I attribute a lot of this to having ran the old EAC on a variac at 115 volts for that time.

>For that matter, has anyone changed their illumination over to # 47s or such?

I wouldn't do that. The extra heat from the lamp wouldn't help the numbers on the counter. I've seen the dials in a lot of old sets burned/melted/discolored from too bright of a lamp. It's not worth the gamble. I've heard mention of LED replacements, but as expensive as they are, I could run mine with standard 328's for probably 50 years. In addition, you'd have to rectify the 6 volts that feeds them. Too much trouble. ;-(

>My 390A is an EAC from the 1967 batch. It is all EAC (I know - the PTO is Cosmos), s/n 131.

I have one of that batch too. EAC's came with a Cosmos PTO. :-)

>With the ER magazine improvements and mods, I've narrowed the IF bandwidth. It is no longer stagger tuned. I have better adjacent rejection.

Interesting. I've used both methods for alignment over the years and to be honest with you have never noticed any difference. I never really attempted to measure it though. How much difference are we talking about? It's already about as tight as anything I've ever used. When I had only the 1956 manual, I didn't stagger tune. When I got my first 1961 manual, I did.

>The next step is to work on the RF deck and
>significantly lower the noise figure. I'm already at the point that the
>IF gain adjustment will NOT go down as low as the adjustment is supposed toprovide. She is "very" sensitive.

Mine is sensitive too, with numbers as good as any that Chuck or any of the other hard core R-390A guru's have posted. I suppose that selective testing of all of the tubes in the RF section for noise would help. It's be a tedious operation though. Should be simple enough though. Some tube extenders and an quality oscilloscope would probably go a long ways at finding the really quiet tubes. Last year or maybe the year before, several people in the list were either in the process of, or had already replaced all of the solder in the signal path in the RF deck with silver bearing solder. I don't remember if anyone posted any numbers on the improvement. To be honest though, I find it hard to believe that the difference would be noticeable to the ear. I suppose that it could be measured with instruments. Personally, If I was looking to improve an R-390A and had some time to burn, I'd go thru it and replace all of the paper capacitors. Especially those in the IF deck. :-) Figure about twenty bucks or so and a couple of evenings to do the IF deck with 400 and 600 volt OD's. Cheap insurance against catastrophic failures that fry chokes, resistors, tubes, coils, filters, etc. and it will probably help performance. It sure won't hurt...

Date: Sun, 05 Aug 2001 20:23:31 -0400
From: Al Solway <beral@videotron.ca>
Subject: Re: [R-390] Fw: Frequency display lamps

Just finished responding to the first 7 that requested the #328 lamp. You are right they are a common lamp. Mouser has them in stock for $0.93 each and the #381 at $1.27. They list them with an MTBF of 1000 hrs and 20,000 hrs. I also have some of the #381 and they are in my R-390A. They should outlast me with our 117 VAC line power up here in Canada.

Date: Mon, 6 Aug 2001 12:30:25 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: [R-390] Wow, ... machine shop!!

I went to PR Engine Science, Inc. today. I had NO idea this guy had gotten so deeply into this stuff since highschool. I showed him an R390 knob clamp and a knob with broken fingers, we talked, we drew pictures, we looked at machines, we looked at similar projects he's doing,..... he says it'll work.

He's making up six clamps that I'll send to certain "guru" types on this list for approval and suggestions before I order the production run. If I had the other clamps from the radio already off I'd show them to him, too, so he can give me a price on making them. Split gear clamps? If anyone can do it he can.

I have examples of the clamps from the BFO shaft and the Veeder-Root counter. Are there any other sizes I'm missing? Let me know and we'll get started.

Date: Mon, 13 Aug 2001 19:52:32 -0500
From: "Richard Biddle" <theprof@texoma.net>
Subject: [R-390] White LED 328 dial lamps

I came across an article in Electronic Design on LED lighting. I went to one of the sources, LEDTronics (http://www.ledtronics.com/ and they had LED
replacements for the #328 lamp. Colors range from red to white to blue.

From the catalog: T1æ (5mm) Midget Flange-Based LED's

Part Number: F200-0CW-005B

Color: 8000K Cool White SiC/GaN
Retail Price: $9.50

I

llumination Angle: 120
Voltage (V): 5/6 V (B)

Typ Current (mA): 160
Typ Intensity (mcd): 15

B = BiPolar AC/DC

Haven't bought any as yet, but I thought it looked neat.

Date: Thu, 16 Aug 2001 17:36:41 -0400
From: "Walter Wilson" <wewilson@knology.net>
Subject: [R-390] R-390x Hints and Tips

I have made a few additions to my website, including a "Hints and Tips" page under "Restoration Resources." It has info for both the R-390A and the R-390 non-A. Much of the information comes from the wisdom transmitted on this list.

I welcome any comments, clarifications, or corrections. And I'm always open to adding more short "tips" here if you have some good ones you want me to add to the list.

Date: Wed, 15 Aug 2001 01:06:48 -0500
From: "Dutch WB7DYW" <WB7DYW@evl.net>
Subject: [R-390] New to the list and already needing help.

I acquired a Motorola R-390 today and after some tinkering got it to make noise. But I have a few problems that I could use some help with.

1. Sensitivity is low but working.
2. There is a fast "ticking" noise from the speaker, even with the antenna

disconnected.
3. I tested all tubes and it seems some have already been replaced.
4. The radio is very dirty and needs a bath (Well maybe later).

This is my first R-390 and I understand they are a great receiver so I am sure this one will need a lot of work. My problem is where to start, I am not ready to try an alignment as of yet but am sure it's in the future, for now I guess I need to work on the "Ticking" noise in the audio and the sensitivity. Being a Collins collector I have always wanted one and now I believe this heavy monster will test my metal. Any suggestions???

Date: Thu, 16 Aug 2001 21:38:45 -0400
From: Bob Camp <bob@cq.nu>
Subject: Re: [R-390] New to the list and already needing help.

First check the mods - it may be a feature, R-390 clock radio ... :)

A couple of questions:

1) Is the ticking nice and regular or is it intermittent ? A regular ticking would intricate a low frequency oscillation. A more or less random tick and pop type of thing probably is a leaky capacitor.

2) Is this an R-390 or an R-390A ? On the not an A version you have the power supply regulator stuff that could be doing something odd. On the 390A
you only have a VR tube in the power supply, and it could be doing

something
weird. If it's a 390A does the OA2 flash each time the radio pops ?
3) Is the ticking in both audio channels ? Obviously this helps narrow down
what may or may not be wrong and where.

My best guess would be that one of the electrolytic in the audio chassis has almost died. When they go all the way you get a wine out of the speaker. When they go most of the way you might get a fast ticking. So far I have had good luck with a 75% alcohol and 25% bottled water mix for cleaning. The water keeps the stuff from catching fire and the alcohol will clean off most of what you want to get rid of, but leaves the paint in place.

Date: Mon, 20 Aug 2001 06:02:52 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] Zero Set Traction Problem

I have a problem with a zero set assembly that I'd like to run by you. The zero set disk gets traction on the three legs of the clutch assembly as the zero set is advanced, thus turning the kcs dial assembly. It might turn 5 kcs upon depress and/or release of the clutch. I lubed the connection point between the pin and the disk of the zero set assembly (to allow the disk to turn as freely as possible on the pin) and cleaned and degreased the disk and the three clutch legs. The problem seems to be related to a combination of a slick tuning mechanism (doesn't have much resistance to turning) and the zero set disk turning when advanced (the force of pushing in on the clutch is enough to cause the disk/pin connection to get traction and impart a torque to the clutch instead of just a forward force). This is the first time I've seen the problem to this extent.

Date: Mon, 20 Aug 2001 09:17:54 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Zero Set Traction Problem

I have the same problem. It makes zero-setting a rather hit-n-miss operation. I noticed the post about the 5 vs. 4 spring clutch. It takes considerable pressure to "unlock" my clutch. Perhaps I should consider tearing into it. Maybe I'll find a 5-spring clutch as well.

Date: Mon, 20 Aug 2001 13:35:40 -0500
From: David Medley <d.j.medley@att.net>
Subject: Re: [R-390] Zero Set Traction Problem

I have had this clutch problem quite a few times both with R-390 and R-390A radios. It is almost always due either to the clutch plates being gummed up with old lube and/or corrosion or over lubing which causes

them to slip. The only solution that I know of is complete disassembly and cleaning. Before you even attempt this be sure you have some spare retaining rings and the proper tool to apply them. I have been meaning to write this up at least with respect to the R-390 and put it on my web page

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Date: Wed, 29 Aug 2001 07:26:42 +0000
From: blw <ba.williams@home.com>
Subject: Re: [R-390] Perfect for an R-390A!

I think we were using it in 1972. I can remember the date because I was working at a firm in Atlanta where we did plexiglass work. I remember a clear glue that we used in a syringe to glue the seams of custom plexiglass stands, pedestals, etc. I'm sure it was CA.

I vaguely remember my dad having something similar that he used sparingly. This stuff was very thin like CA. I had to hold two pieces of plexiglass at almost 90 degree angles so the other guy could shoot a thin bead along the seams. A good seam meant the glue was invisible when the seams were joined.

Date: Wed, 29 Aug 2001 13:11:33 -0400
From: "AI2Q Alex" <ai2q@adelphia.net>
Subject: RE: [R-390] Perfect for an R-390A!

We used it Amprobe Instruments in 1963. It was called Eastman 910.

Date: Wed, 29 Aug 2001 12:08:35 -0700
From: Dan Merz <djmerz@3-cities.com>
Subject: Re: [R-390] Perfect for an R-390A!

I think Eastman 910 was the original product and the only product until their patent ran out, then the other manufacturers swooped in. We used this product to bond strain gages to plutonium in the 60's. You can still buy Eastman 910.

Just for comparison with another testimonial, I repairs a favorite broken brown teapot, handle, spout and lid and this worked fine for a couple of years until it had another accident. I don't think it works well on porous surfaces however, but does on high fired ceramics. Dan

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Date: Thu, 30 Aug 2001 17:03:22 GMT
From: theprof@texoma.net
Subject: Re: [R-390]

"Cyanoacrylates are extremely rapid curing adhesives known as instant adhesive or Super glue. These adhesives were discovered by accident by Dr.

Harry Coover´s group at Eastman Chemical Company in 1959 while doing some basic research on characterizing certain polymers derived from a chemical called ethylene."

P.S. - there is an official MIL-STD "white wire" specification for "correcting" PCB errors in flight hardware that requires use of Eastman-910 or equivelent to fix the wires on the PCB.

Date: Sat, 29 Sep 2001 18:48:28 -0400
From: Glenn Little <glittle@awod.com>
Subject: [R-390] New Purchase

I just bought another R390A. This one is a little unusual. And it came with a case CY979/URR. First is this the correct cabinet? The Radio has a Collins tag on it. It is s/n764 with contract number 8719-P-55. It has MWO-11-5800-202-35/2 stenciled on the front panel. The front panel looks to be stenciled rather than engraved. There is a door that drops down in front of the freq readout. I guess this reciver saw time in the intel community. The back panel is punched for the other two fuse holders, the inside of the back panel has the decals for the fuse designations in place, however, there are blanking hole plugs in the holes rather than fuse holders. The wiring looks like it is original without the additional fuses. The PTO is Dubrow Electronics. The radio probably has been through depot. This is based on a Stewart Warner IF strip and Grey paint overspray on the audio chassis around the transformers. If the radio went through depot, this might account for the holes in the back panel that are blanked off. The mode switch looks like it will support the squelch option. The previous owner said it worked 6 months ago before it put it into the barn. It needs a little cleaning and at least the capacitor for the mechanical filters changed before I apply power to it.

Date: Sat, 29 Sep 2001 20:56:37 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] New Purchase

> I just bought another R390A.

Got the same affliction ...

> This one is a little unusual. And it came with a case CY979/URR. First is this the correct cabinet?

Tempted to reply "No, don't think so -- better send it to me right away." ... but I won't. Dunno -- does it look @NICE@ or just nice? Sorry ...

> The Radio has a Collins tag on it. It is s/n764 with contract number

8719-P-55.

1955 -- a good year! Chambers & Courtland streets were still Radio Row in lower Manhattan -- full of surplus shops later razed to build the WTC.

> It has MWO-11-5800-202-35/2 stenciled on the front panel. The front panel looks to be stenciled rather than engraved.

I think you mean silk-screened. Sounds right for the Collins, so tag isright for the panel.

> There is a door that drops down in front of the freq readout. I guess this reciver saw time in the intel community.

Uh-oh! Hope you didn't peek before you scrambled the "combination".

>The back panel is punched for the other two fuse holders, the inside of the back >panel has the decals for the fuse designations in place, however, there are >blanking hole plugs in the holes rather than fuse holders.

They might have replaced the panel at the depot with a newer one for some reason -- maybe broken/chipped barrier terminals?

> The wiring looks like it is original without the additional fuses. The PTO is >Dubrow Electronics.

Have an Imperial 37856-PC-63 here with a Dubrow. '63 was not a good year -- almost as bad as ought-one. How do the Dubrows stack up? The only Dubrow outfit I remember was a chain of automat places like Horn & Hardart. Remember those? (I've gotten stuck in the 50's here -- wonder why?)

> The radio probably has been through depot. This is based on a Stewart >Warner IF strip and Grey paint overspray on the audio chassis around the >transformers. If the radio went through depot, this might account for the holes >in the back panel that are blanked off. The mode switch looks like it will >support the squelch option.

The panel is a bit of a mystery, I guess. Are the holes D-shaped -- i.e. flatted on one side as would be the case if the panel was originally punched for the fuseholders? I'd imagine if the panel were punched at the depot as if to retrofit for additional fuses, they would have probably used a standard round Greenlee punch. Need to put this in the boatanchor forensics casebook.

> The previous owner said it worked 6 months ago before it put it into the

> barn. It needs a little cleaning and at least the capacitor for the
> mechanical filters changed before I apply power to it.

Check all the tubes also. While the best test is in the equipment, as they say, you might have a shorted on that will cause secondary damage. So far, in this Imperial, I've found 3 weak 6C4's, two weak 6AK6's in the audio deck and a shorted one -- in the V508 socket, which is supposed to be a 6BA6W/5749. Also the 6DC6 is subbed with a 6CB6A. That is listed as a sub somewhere, but is it really a good one? Also check the plugi-n caps and that wet tantalum in the audio deck before powering up. Good luck

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Date: Sat, 29 Sep 2001 21:35:57 EDT
From: Llgpt@aol.com
Subject: Re: [R-390] New Purchase

The Dubrow PTO's are a conventional PTO like Collins, Motorola, and Progressitron. They all had the corrector stack arrangement. Dubrow also built R-392's.

Date: Sun, 30 Sep 2001 01:42:58 -0400
From: eengineer <eengineer@erols.com>
Subject: [R-390] rf connectors

I messed around with one of the RF connector cables inside my R390A today, P114. Has anyone found a good way to clean these? Mine was pretty tarnished and I took a little Brasso to it on a rag. I have considered soaking it in a bowl of Brasso but I chickened out. Anyone ever done this and then finished it off w/ de-oxit? De-Oxit alone did nothing to clean it. Cheers, Jeff

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Date: Sun, 30 Sep 2001 02:17:23 -0400
From: "Ed Tanton" <n4xy@att.net>
Subject: RE: [R-390] rf connectors

If the tarnish is simply silver tarnish, you would do well to leave it alone Jeff. Silver oxide is just as good a conductor as silver. The only reason to polish silver is looks, and every time you polish silver you remove some of the plating.

Date: Sun, 30 Sep 2001 09:08:12 -0400
From: Bob Camp <bob@cq.nu>
Subject: Re: [R-390] rf connectors

The biggest problem is that you have a real hard time getting any cleaning stuff off of the connector. They will tarnish faster with the gunk on there. It becomes a no win situation and in the end there is no plating left. I would

hit them with a de-greaser if they are dirt rather than tarnished. The only part that counts electrically is the point inside where they mate together and this rarely gets nuked. They do look kinda ugly though don't they. Maybe if we all agreed to paint them a nice gray color. Then the tarnished ones would not be authentic

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Date: Sun, 30 Sep 2001 10:08:17 -0400
From: Al Solway <beral@videotron.ca>
Subject: Re: [R-390] rf connectors

How right you are Ed. I used Brasso to "polish" the antenna relay in my R-390A. It came out just beautiful. Now it's a crummy brownish color with blotches of silver. It is definitely not pretty. It was much better prior to the polishing. I would suggest cleaning with a good solvent to remove any greasy surface dirt and leave at that.

Date: Sun, 30 Sep 2001 10:40:44 -0400
From: "rbethman" <rbethman@home.com>
Subject: Re: [R-390] rf connectors

If anything, use silver dip, and then rinse with water. Silver dip is found in your local grocery store. The tarnish on silver is silver sulfite. Silver dip removes the layer of "tarnish" only. It does not attack the base material. After the water rinse, blow dry with a heat gun or blow dryer. This does specifically refer to silver. Gold itself does NOT tarnish. The problem with gold is simply an accumulation of "crud". Any decent general purpose "gentle" cleaner should remove the "crud". Then rinse with water, and blow dry. Be careful with ANY abrasive cleaner. Brasso is DEFINITELY abrasive. For electrical contacts you do NOT want to use an abrasive cleaner. The coatings are much too thin.

Date: Sun, 30 Sep 2001 13:24:07 -0500
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] rf connectors

>After the water rinse, blow dry with a heat gun or blow dryer.....

There is one more step. At this point you have clean, chemically active metal ready to take up sulfur atoms again. To stop the cycle, cover the exposed metal with a film of wax. Years ago at a local antique radio club meet, a museum curator recommended a special micro-crystalline preservative wax called Renaissance, made by Picreator Enterprises, Ltd. in London and available from Gaylord. Gaylord has all sorts of preserving stuff, including plastic envelopes that don't damage paper. Alas, it is my fate to have time to acquire stuff but no time to work on it, so the $25 8 oz can is unused and I can't tell you how well it worked. When I raised the

subject on the Boat Anchors list, several people said ordinary car wax would work just as well. I suspect that they are correct. The point is: protect the metal after you polish it. Don't just clean it up and then leave it exposed to the elements again.

Date: Sun, 30 Sep 2001 20:14:33 -0600
From: blw <ba.williams@home.com>
Subject: Re: [R-390] rf connectors

Consider this, that wax is putting a barrier between the metal contacts. I prefer metal to metal with nothing between except DeOxit. The antenna relay is one point where you are dealing with only millivolts, so every little bit of metal to metal contact is going to help. Fast drying compounds always leaves a residue. Wax leaves a wax layer. If you can reach the surfaces with a soft, non-compound type of eraser that is the best way to go. I keep several slivers cut for various locations. Some places are always unreachable. I once had a stock of dental wheels out of that soft eraser material with a hole in the middle. These were excellent for Dremel tools. They eventually dried up and became hard and brittle. Those soft erasers burnish the metal slightly while removing gunk.

Date: Sun, 30 Sep 2001 21:32:59 -0500
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] rf connectors

>Consider this, that wax is putting a barrier between the metal contacts.

Well, maybe not. I used to think that petroleum products would insulate contacts until I had to work on Star Island, off Portsmouth, NH, in 1955. Standard procedure for replacing a light bulb was to coat the base with Vaseline, mostly so you could get the bulb out again when it burned out. Nobody 'splained it to me, but the Vaseline had to be displaced by the pressure between the metal surfaces. BNC and screw-on connectors would have enough pressure to get through the wax. There's a lot of metallic area that doesn't meet other metal, and that needs protection from the elements. Can any Navy guys confirm this?

>The antenna relay is one point where you are dealing with only millivolts,
>so every little bit of metal to metal contact is going to help.

Again, maybe not. Contact area is required to carry current. The antenna for a receiver carries almost no current, maybe one or two electrons per nanosecond, so a lot of area is not needed. (I may be off on the number of electrons per nanosecond, but not by much.)

Date: Sun, 30 Sep 2001 22:56:48 -0400

From: "John KA1XC" <tetrode@worldnet.att.net>
Subject: Re: [R-390] rf connectors

I like to use acetone, Q-tips, elbow grease, and sometimes a tooth brush to clean up the male and female connectors. Results vary from fair to very good depending on the type of contamination on the surface, and that's as far as I go with the cleaning. After this I give the connector a quick shot of the 5% De-Oxit spray and tap out or blot off any excess. I'd strongly suggest keeping any kind of silver/metal cleaning compound out of a fully assembled connector; once the compound gets deep into the nooks and crannies of the connector and into the coaxial braid (if its a plug) it'll be next to impossible to flush out and can speculate that it would probably promote corrosion over time.

Date: Mon, 01 Oct 2001 09:24:06 -0600
From: blw <ba.williams@home.com>
Subject: Re: [R-390] rf connectors

It adds up if you consider all of the dirty contacts from the antenna relay all the way to the audio outputs. I didn't think much of it until the DeOxit thread last year. I noticed some very dirty tube pins and sockets that seemed to clear up a bit if I removed and inserted the tubes a few times to scavenge the contacts. The DeOxit discussion was going on every day, so I decided to put a bit on the tube pins to clean the sockets. Audio jumped a lot after that. It was like getting a new radio. Not splitting hairs or using toothbrushes to me. Just better reception.

Date: Mon, 1 Oct 2001 17:58:45 -0400
From: "rbethman" <rbethman@home.com>
Subject: Re: [R-390] rf connectors

Yep! You and I had this conversation before. I forgot which it was, but I knew it wasn't silver oxide. Silver dip doesn't seem to take off the plating as far as I've seen to date. That was why I specifically stated "Silver Dip". It is one of those dip it and wait a little for large pieces, for small items you can sprits it with a little spray bottle or just lay a rag with some on it on to the item (Q-tip also). No not need to rub. The only things I recommend cleaning are those that have a HEAVY coating of silver sulfide, especially a wafer switch. I cleaned up a very heavily silver sulfided B&W 850A. It was so thick that it was almost trying to flake off. It worked beautifully. Another thin for large items is Simple Green. I have sprayed it on large coils, let it set, then rinsed with plenty of water. Nice and clean.

Date: Mon, 8 Oct 2001 08:37:21 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: [R-390] Clutch and Zero-set mechanism

The zero-setting mechanism on my R390A hasn't worked correctly since I've owned it. Figuring the problem is mainly in the clutch, I took the liberty of tearing into it this past Saturday. I cleaned, polished, lubricated, and reassembled everything, but it is still not working properly. In fact, it seems stickier than before. I can see the clutch is disengaging (the pressure plate is being pushed out), but the clutch doesn't want to move freely). Are there any hints/kinks I need to watch for? I'm a bit annoyed at the level of effort I put into it with negative results (well, at least, the big brass gear is shiny now). Also, does anyone know of a source for the mechanism that mounts to the front panel for zero-setting? Mine looks like it could be a replacement/homemade device. I looked at the pictures on Walter Wilson's site, and they look quite different on his panels.

Date: Mon, 8 Oct 2001 10:43:51 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] Clutch and Zero-set mechanism

The lack of the proper gadget may be your problem. That thing exerts a great deal of force on the clutch, and you may be getting close but no cigar as to getting the clutch to slip. Are all of your panel screws tight? The panel will flex and it needs all the screws tight to cause the clutch to disengage.

Is there a stop on your zero set adjuster? I've seen them with and without the stop. If there is a stop it may be preventing you from screwing the thing in far enough to disengage the clutch. If you don't know what I'm referring to then you don't have one.

Date: Mon, 8 Oct 2001 14:12:09 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Clutch and Zero-set mechanism

Yes, I think the gadget is the problem. It will disengage the clutch (at least part-way as far as I can see it), but there is a part of it that protrudes in the center and if I continue to screw it in, it bottoms out in the center of the clutch shaft.

All the panel screws are in place and tight. Yes, I have seen the panel bowing without them, so I know what you mean.

I do have a stop on the zero adjuster bushing washer (and knob), but I have the knob far enough away from it to prevent it from stopping the process. The protrusion on the gadget is the main thing that prevents me from disengaging the clutch any farther.

I called Fair Radio and they do have these in stock. Another list member says he may have one and I'm going to wait to hear from him, but either way, I'm replacing the front panel gadget.

Date: Sun, 16 Sep 2001 23:41:49 -0500
From: "Dutch WB7DYW" <WB7DYW@ev1.net>
Subject: [R-390] Military style plugs needed.

I am in need of the plugs for power & audio for the CV-591A/URR SSB adapter,
The TMC part #'s Ms3106AQ-16S-5S & MS3106A-14S-2S. Anyone know a source for them?

Date: Wed, 10 Oct 2001 06:15:13 -0700
From: Craig McCartney <craigmc@pacbell.net>
Subject: RE: [R-390] Military style plugs needed.

I got some from Allied recently.

Date: Sat, 13 Oct 2001 18:25:00 -0500
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: [R-390] Clutch success story

I finally got my clutch/zero-set mechanism working today. Last Saturday, I tore into it, cleaned the clutch disks, lubricated everything, and reassembled it, but it still would not release the shaft to set zero properly.

Today, I decided to try again. Thanks to Glen who sent me a replacement zero-setting disk, that part of the puzzle was eliminated. I installed it yesterday, but it still would not release properly. When I assembled it last week, I used some lithium grease to lubricate the clutch plates and it seemed that this may have been causing them to stick together. Today, I disassembled it again and wiped the clutch disks and the associated parts clean and reassembled it.

This time, it worked perfectly. At last, a real sore spot with this radio has been fixed. I'm a really "happy camper"! I wonder if the clutch was originally lubricated? It seems to work so well dry. I couldn't figure out why there was a need to lubricate these and it really seems to work great dry.

Date: Sat, 20 Oct 2001 21:32:39 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] RF Connectors

> GE List. I have started the restoration of a 390A. The cloth wrapped

> coaxes from the RF deck r cracked and need to be redone. I have some
> replacement coax I think will work, unless someone else tell me otherwise.
> Its a 52 ohm uhf coax. My question is can I salvage the old coax connectors
> off the RF Deck?? I don't have any replacements.

The Army Field and Depot Maintenance manual (TM 11-5820-358-35) shows their fabrication on p. 55, in igure 32. It looks like they mighr be reusable with some care, It also liike they might be incredily fussy to work with, but then so does that tiny coax.

Date: Sat, 20 Oct 2001 22:36:36 -0400
From: James Miller <JamesMiller20@worldnet.att.net>
Subject: Re: [R-390] RF Connectors

I have reused the little miniature BNC connectors, and replaced a bad coax from the RF deck. Just have to take care when unsoldering the center pin. The diameter of coax is a bit critical too,... too large and it won't work well. There was a thread on this reflector 4-5 months ago about choice of coax by RG type. I forget the actual RG number, but it's in the thread. -- N4BE

Date: Sun, 16 Sep 2001 14:58:59 -0500
From: "Dutch WB7DYW" <WB7DYW@ev1.net>
Subject: RE: [R-390] RF Connectors

The coax is RG/178, and it is delicate work so take your time.

Date: Sun, 21 Oct 2001 16:59:36 -0400
From: "Peter Cade" <butrosg@bellatlantic.net>
Subject: Re: [R-390] RF Connectors

Cable's RG/187..... The RF and IF cables on my 390/A look pretty miserable..... cracked outer wrapping, and tarnished...but they test OK and as far as I can tell the teflon core is fine...i've several other problems, so i'm holding off on messing with them because the plugs look reeeealy fiddly to remove and replace.... Are you sure the problen is electronic, and not just cosmetic ??

Date: Thu, 25 Oct 2001 08:00:50 -0600
From: blw <ba.williams@home.com>
Subject: Re: [R-390] 7- and 9-pin tube extenders

I bought a set from Fair a year ago. They were $5 each.

Date: Thu, 25 Oct 2001 09:19:21 -0400

From: "Helmut Usbeck" <vze2gmp4@verizon.net>
Subject: Re: [R-390] 7- and 9-pin tube extenders

Fair Radio has them, including octal type, one of which I just purchased just a couple of weeks ago.

Date: Sun, 28 Oct 2001 10:21:58 -0500
From: Bob Camp <bob@cq.nu>
Subject: Re: [R-390] new r-390a

About 99.999% of the R-390's and 390A's are made up of random modules at this point. It does not seem to affect the function of the radio at all so I wouldn't worry much about it. Fair seems to do a pretty good job of checking out the "checked" units. I would expect it to receive something on all bands and to have all of the filters in pretty good shape. I would say that their checked radios are a cut above what you usually get at a hamfest as a "perfectly good radio works fine". Things you might find wrong either on the Fair checked radio or the hamfest special:

1) Check the end points on the PTO. They may need to be reset

2) The usual caps probably have not been replaced and it would be a good idea to replace them

3) The gear train probably was not torn down and spiffed up. Most gear trains are way over lubed when you get them. The radio probably would benefit from a tear down / clean / re-lube.

4) Almost any 390 acts as a dust magnet. I suspect you could have one in the middle of a class 100 clean room and it would attract crud. A general blowing out and clean up is always a good idea. You don't want the crud to get to thick, makes the tubes hard to find :)

5) Check the value of the fuses in the fuse holders. Now is the time to find out if the 1/4 amp holder has a 14 amp fuse in it.

6) Check the alignment of the power switch on the switch assembly. When they get to far out of whack they may weld shut. Of course they may weld shut when set up right ....

If you have a set of test equipment you can take the process a bit further. I'd check the supply voltages and measure sensitivity at a couple points in each rf deck range. If you write down what you measured it will be a very good starting point if something starts to seem a bit odd about the radio.

Date: Sun, 28 Oct 2001 19:02:20 -0500

From: "John KA1XC" <tetrode@worldnet.att.net>
Subject: [R-390] How to re-attach a split gear bushing to its gear?

Anybody have any experience/advice on soldering a steel split gear assy back
together?

My 390nonA RF deck is now in its final overhaul phase and while putting the gear train back together I noticed that the #106 split gear (108 tooth) on the 1-2 mc shaft was wobbling a bit, that is, as the shaft turned sometimes the two gears separated rather than remain next to each other. I remembered that this gear had always been like this since I obtained the radio and wondered why.

Since I was being such a perfectionist with this rebuild I decided I could not let the gear be and decided to investigate, and of course managed to get myself into trouble! Careful examination of the two gears showed that they were both flat and true, so I started playing around with the shaft bushing that is soldered to one of the gears and became suspicious that it was not seated correctly prior to it being soldered.

So out comes that heat gun, no results, and then the propane torch, no results, except to turn the bushing and gear red hot, and the "solder" is still intact and now the gear is warped from the heat. I was able to tap the gear flat again but managed to partially crack the "solder" between the bushing and the gear. Well, as long as it was cracked I figured a little more tapping was in order to see if I could get the bushing to seat correctly and sure enough it did, the split gears spin nicely right up against each other now with no wobbling.

The problem is how to solder the bushing back to the steel gear, but I'm guessing that these parts were really brazed, not soldered (as the brass cams usually are).

My assumption is that the gear and the bushing are both stainless steel, does this sound correct? Is brazing the way to fasten these?

At this point in time I don't have the torches and other items necessary to do this job, so I'm thinking that a jewelry repair shop might have the necessary tooling to so this. Outside of the soldering/brazing job that the gear needs, it is really in good shape and deserving of a repair, so I think I would definitely like to try to save the gear before giving up and seeking a replacement part.

Date: Sun, 28 Oct 2001 20:14:15 -0500
From: Bob Camp <bob@cq.nu>

Subject: Re: [R-390] How to re-attach a split gear bushing to its gear?

One fairly simple fix would be to epoxy the gear to the bushing. If it's the one I think it is then there isn't a whole lot of force on it. I doubt that you would ever shear the epoxy in anything like normal use. About all you would have to do is to clean the surfaces fairly well and then use a good grade of glue.

What ever you do let us know how it works out.

Date: Sun, 28 Oct 2001 23:46:12 -0500
From: Tom Leiper <twleiper@juno.com>
Subject: Re: [R-390] How to re-attach a split gear bushing to its gear?

This might be a good job for some PC-7 epoxy. Clean it up real good, scuff it with some sandpaper and see if it works. The stuff has incredible grip and holds like steel. Or, just pick up a cheap torch, some MAP gas and a coated brazing rod... $20

Date: Sun, 28 Oct 2001 23:40:03 -0800
From: "Bill Wackman <\"Bill Wackman\"" <wack@telus.net>
Subject: Re: [R-390] How to re-attach a split gear bushing to its gear?

The best thing here is to silver braze this gear, I just repaired a bandswitch dial cord pulley on a KWM-2 in this manner. You have to use 45% silver solder. This is marketed under various names like "Easy-Flo 45" or "Silvaloy 45" You also must use the correct flux. It comes in a little jar and is a white water soluble paste. The solder will only stick where the flux is applied. It requires some skill. The best (and easiest) bet is to find a friendly jeweller or goldsmith who will have the proper oxy/acetylene torch and has silver soldering experience. This is better than going the epoxy route, which, if it fails, could cause some gnashing of teeth other than the gear teeth!!!!! :) Do not confuse this process with common flux coated brazing rod. That went out with the street corner service station & the guy who wore a rubber bow tie. I know because this guy was my grandfather who taught me how to weld about 40 years ago!!! I hope this helps..... Regards Bill VA7WW

Date: Mon, 29 Oct 2001 09:43:39 +0200
From: "Bryce Ringwood" <BRingwoo@csir.co.za>
Subject: [R-390] Restoration questions and dimensions of RF Cover

When restoring a radio - how close to the original should one strive to get? I am considering a respray of my R 390A front panel - should I stick to the original colour - or change it ? I know of one collector round here who carefully removes the innards of tubular paper capacitors, places new

plastic caps inside and seals them with wax. I suppose we all do the same sort of thing with electrolytics. Sensible or not?

Should I return the RF stage of my AR 88 (replaced with an E88CC) back to its original 6SG7 circuit (Which will be noisier) ?

And where in the world can one find socket head machine screws that take a Bristol spline wrench? One of the previous owners of my radio has modified many of the heads to a sort of Allen key socket, using said key plus a hammer ... I know the above questions may see trivial - but I was just wondering.

Finally there seems to have been a top plate covering the RF section of the R390A - does anyone have the dimensions so I can make a new (unauthentic) one?

Date: Mon, 29 Oct 2001 07:30:17 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Restoration questions and dimensions of RF Cover

Fair Radio sells newly manufactured replacement RF covers.

Date: Mon, 29 Oct 2001 08:40:19 -0500
From: Tom Leiper <twleiper@juno.com>
Subject: Re: [R-390] How to re-attach a split gear bushing to its gear?

> What/where is PC-7 epoxy?

It is a very strong epoxy that has some kind of metal in it (I know because it is magnetic) and I have used it for years with difficult repairs, such as the intermediate housing on my boat, etc. I even used it to repair a cracked water jacket in a 1926 Fairbanks Morse generator I rebuilt for my dad, so I know it can take the heat. It is gray in appearance and the two parts come in red cans. Usually you can find it at auto parts stores, or check this web site:

http://www.right-tool.com/right-tool/pc7paste1lb.html

And here is a story I found about a typical PC-7 type repair:

http://pages.prodigy.net/thibaultr/Atlas_Lathe_Rack_Gear_Fix.htm

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Date: Mon, 29 Oct 2001 08:43:27 -0500
From: Tom Leiper <twleiper@juno.com>
Subject: [R-390] PC-7 info

Also, check this site for detailed PC-7 description:

http://www.pcepoxy.com/Products/PC-7_English_Ver_/pc-7_english_ver_.html

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Date: Mon, 29 Oct 2001 16:52:07
From: "Robert Jarnutowski" <bobjarn@hotmail.com>
Subject: [R-390] How to re-attach a split gear bushing to its gear?

I had the same problem some months ago. Resoldering did not work for me either. I cleaned up the parts, roughed-up the pieces a bit with fine sandpaper for better adhesion of the epoxy, degreased them with a degreasing solvent, then applied JB Weld, a two part epoxy. The repair is still working fine after 11 months of near daily use. JB Weld is available at most auto parts suppliers and only cost a few dollars.

Date: Mon, 29 Oct 2001 18:15:13 -0600
From: Jerry Kincade <w5kp@swbell.net>
Subject: Re: [R-390] How to re-attach a split gear bushing to its gear?

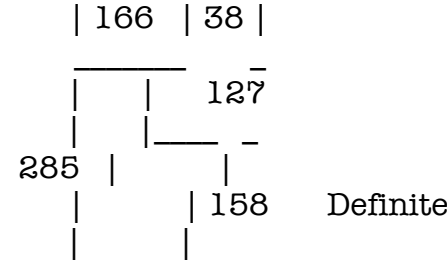
In spite of the fact that Paul Harvey hypes it, JB Weld does work. However, you MUST degrease the parts first with trichlor or equivalent. Even the tiniest bit of skin oil or whatever will affect the bond. I keep it around for last ditch repairs and it's never failed me. It's probably the same stuff as the PC-7 mentioned before. Like a can of DeOxit and a can of Gun Scrubber, JB Weld is a must have for the shop shelf.

Date: Mon, 29 Oct 2001 19:19:11 -0500
From: Tom Leiper <twleiper@juno.com>
Subject: Re: [R-390] How to re-attach a split gear bushing to its gear?

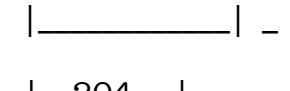
Yeah, I forgot about that stuff. Just like PC-7, and you don't have to buy as much. Repair should last forever.

Date: Mon, 29 Oct 2001 22:54:22 -0500
From: Norman Ryan <nryan@intrex.net>
Subject: Re: [R-390] Restoration questions and dimensions of RF Cover

Here are the RF cover dimensions in mm. for the R-390A:



Definitely not to scale!



Aluminum stock is 1.6 mm thick. Five mounting holes are 4.3 mm diameter. Locate them to suit the RF deck. Fair Radio has new reproduction units. Recently Fair sold me a good used cover for $8.00.

Date: Thu, 08 Nov 2001 22:39:44 -0500
From: "Gregory W. Moore" <gwmoore@moorefelines.com>
Subject: [R-390] Cleaning chassis and coils

Some time ago, someone (I believe it was on the R-390 reflector) mentioned using "Simple Green?" to clean BA's when restoring. I am now restoring an Eico 753 with a 751 PS and have some crud to get off of the chassis, looks like rust in color. I have not had occasion before to require a really thorough cleaning while restoring, having been lucky enough to acquire some stuff which was clean for starters. What I am concerned about is the if's and tuning inductors. If the coils on an R390(A) can be cleaned with this stuff, then it should be ok for my applications. If someone on here would help me out with the use of "Simple Green" (If that is, indeed, what they used to clean the coils, etc without damaging components, I would appreciate the info.

Date: Fri, 9 Nov 2001 00:23:40 -0500
From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] Cleaning chassis and coils

Lay off the trigger finger on that Simple Green!

If you check, I'm sure you'll find that the R-390 guys took some special steps. First, they were dealing with an R-390(x) which is modular and can be further disassembled. I'm pretty sure they pulled the slugracks and coils out of the RF decks before blasting that module. The coil covers are removable, so they may blast those, but not the coils themselves. One expert -- Dave Medley (are you there, Dave?) uses this approach, but then thorougly flushes the Simple Green or 409 out with a garden hose, and then flushes again with distilled water before baking the modules in an oven or the hot sun. It has been reported by a few that ionizing cleaners like SG (I think) and 409 can ruin phenolic and ceramic insulators -- like switch wafers and tube sockets. The stuff soaks in and then leaves salt residues which render the insulator conductive -- at least at higher voltages. Then you can get arcing. There's a difference of opinion on this, but I wouldn't take any chances. At any rate, I doubt if you can disassemble enough of the EICO's to play it safe with these cleaners. Best is to detail it the hard way, a small area at a time, and probably safer with a petroleum based cleaner -- even WD-40 if you clean that away. Those cleaners can

also contribute to corrosion if not completely flushed. One cleaner favored in the old mil manuals was trichloroethylene, which is non-flammable and very effective at removing grease. However, it is carcinogenic. ;-(I wouldn't put anything on the coils themselves. Just dust them off with compressed air or use a soft bristle brush. If in doubt, leave it dirty. Whatever you do, don't spray or squirt anything inside the coil forms Test a small area of that red stuff first. If the chassis is truly rusted, then none of the above will work -- just very careful, small spot at a time elbow grease.

Date: Fri, 09 Nov 2001 10:02:36 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Cleaning chassis and coils

Don't do it. Use Windex, paper towels, chopsticks and patience.

Date: Fri, 09 Nov 2001 11:35:28 -0500
From: tbigelow@pop.state.vt.us (Todd Bigelow - PS)
Subject: Re: [R-390] Cleaning chassis and coils

Those cheap throw-away foam paintbrushes work great for all but the tightest spots on the chassis. You can get different sizes, several for a dollar usually, and you can wash them and use them until they get torn up, then just cut the foam back a bit to smooth the edge. You can also tailor them to fit odd areas. For the really tight areas I usually use a screwdriver with a wad of cotton or paper towel. I'll have to try the chopstick approach, you could shave the end down and shape it to dig the crude out of cracks and around IFs, etc. Q-Tips as well, but they're a bit short at times. You can get the long wooden swabs at most pharmacies or even at a vet's clinic. I hit my Dr. up for a few when I go to visit.

Date: Fri, 09 Nov 2001 12:02:18 -0500
From: Norman Ryan <nryan@intrex.net>
Subject: Re: [R-390] Cleaning chassis and coils

First guy other than myself who uses Windex? It works fine and leaves no harmful residue that I know of. I spray it on an old cotton tee shirt and wipe. Didn't think of the chopstick, though-- nice idea. I use WD-40 for greasy spots or mineral spirits for grungy grease.

Date: Fri, 9 Nov 2001 14:07:50 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Cleaning chassis and coils

Doesn't Windex have some chemical that likes to slowly eat aluminum? I recall a thread about various cleaners some time ago and someone had done some experimentation involving soaking aluminum parts in a cleaner

and noting the amount of metal that is removed. Perhaps it is/was SimpleGreen?

Date: Fri, 9 Nov 2001 16:22:06 -0500
From: Tom Leiper <twleiper@juno.com>
Subject: Re: [R-390] Cleaning chassis and coils

I throw everything but the RF deck in the dishwasher. I soak the gear train by hanging it face down in a tub of engine degreaser. Then I hose down the whole RF deck and dry it with compressed air and a sun-tan. I use a soft bristle paint brush between coils while I am hosing things down. I only want to get the dust out, but if there is grime, I'll just use a little dish detergent or shampoo to suds it up. Oh yeah, I use Windex to clean the kitchen counter when I am all finished.

Date: Fri, 9 Nov 2001 13:37:54 -0800
From: "Greg Werstiuk" <greg_werstiuk@msn.com>
Subject: RE: [MilSurplus] Re: [R-390] Cleaning chassis and coils

Limiting glass envelope cleaning to a light water rinse may be a good idea, at least in the marking areas. The markings on many tubes deteriorate with heat and age and will easily rub off with little pressure even without the application of a cleaner and/or solvent.-

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Date: Fri, 9 Nov 2001 20:25:44 -0600
From: "Bob Nickels" <ranickel@mwci.net>
Subject: Re: [R-390] Cleaning chassis and coils

I'm no chemist but I know Windex contains ammonia. I'd urge caution...and as one BA expert who *is* a chemist has said many times "there's no chemical substitute for elbow grease". The best cleaner I've found is Dow Scrubbing Bubbles bathroom cleaner. It works very well and the foaming action does much of the work for you ;-) But it's aggressive enough to soften some of the older paints, so try it first and use caution.

A word to the wise: DO NOT let ANY cleaning substance get onto silk-screened dial glasses! The problem is that virtually no inks adhere well to glass, and some are so delicate the even plain water can ruin the appearance. A single squirt of a strong cleaner will leave you with a clear piece of glass and a new vocabulary! (Trust me, I know!)

Date: Fri, 09 Nov 2001 22:18:42 -0500
From: Al Solway <beral@videotron.ca>
Subject: Re: [R-390] Cleaning chassis and coils

About 4 weeks to late with this posting for me. Have a 1938 BC/SW band

Canadian Marconi radio that I am in the process of restoring. The dial markings WERE a decal and now they are not. Only thing gained is that new vocabulary.

Date: Fri, 9 Nov 2001 21:52:13 -0800
From: "Greg Werstiuk" <greg_werstiuk@msn.com>
Subject: RE: [R-390] Cleaning chassis and coils

I don't know if it is still available, but either Kodak or Polaroid, years ago, offered a plastic film with different color coatings which one could use to create overlays for panels, dials, and other applications. One would essentially create a contact print and develop it. While today's printers don't do a good enough job to directly create a solution on plastic, they should create a clean enough original from which to create the contact print.

Date: Sat, 10 Nov 2001 20:44:08 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Cleaning chassis and coils

I found this out the hard way. I had a perfectly good glass dial scale for an RCA 6K3 that was a bit dusty. I ran cold water over it (the dial scale, not the 6K3) for a few moments while *very gently* rubbing it with my finger. I began to notice some small paint specks floating and realized they were some of the lettering. I stopped immediately, but it was too late. The "middle" band had partially dissolved. I wish I had not touched it! :(I haven't found a suitable replacement yet. None of the dial scale repro places have this particular dial (yet).

Date: Sat, 10 Nov 2001 23:02:07 -0500
From: Al Solway <beral@videotron.ca>
Subject: Re: [R-390] Cleaning chassis and coils

I had a very similar incident with a Marconi 1938 radio dial glass. I will be contacting them sometime in the future to see what they can do.
http://www.dialglass.com/

Let me know if you do try them.

Date: Sun, 11 Nov 2001 10:47:33 -0600
From: blw <ba.williams@home.com>
Subject: Re: [R-390] Cleaning chassis and coils

One of the things you can do if the markings are on something that important is to make a rubbing of them....just in case. Tape a piece of thin paper over the dial glass and use a graphite stick to rub the paper.

This will make impressions on the paper of the paint on the dial. You will see the lettering and lines appear sharply. You would have a near perfect image of the dial when you are finished. I guess you could scan that image and clean it up later if you had to hand cut a stencil to repaint the dial. That would at least give you a last resort measure.

I use a big magnifying lamp and carefully clean around the markings with various things. I only use dishwashing soap and water. I accept a bit of dirt around the paint if it is too hard to get it perfect. I don't risk lifting paint any more.

Date: Sun, 11 Nov 2001 14:06:29 -0500
From: "John KA1XC" <tetrode@worldnet.att.net>
Subject: Re: [R-390] How to re-attach a split gear bushing to its gear? - follow up

Split-gear fixed! I'd like to thank everyone who took the time to respond to my question, the JB Weld epoxy did the trick.

None of the local jewelry repair places could deal with anything like steel, and the only other "metal fix" alternative was to go to a welding shop, so I picked up some JB at the local VIP auto store and fooled around with it for a couple days to see what it was like. Wow, this stuff is really strong!

In one of my experiments I degreased and bonded a couple of pennies together with about a 50% overlap. A couple days later I put the end of one penny in a vise and started yanking the other end with pliers and the top penny proceeded to bend while the epoxy bond still held! I continued to destructively test the bond until it gave way but this show of strength convinced me that this stuff was good enough for the repair I needed to do.

Back to the split gear..... I polished off all the crap that the torch left on the split gear and sanded the inner area where the center bushing sits. Checked the flatness of the gear and saw that it needed another trip to the anvil and that fixed that.

Next, I plied off most of what was left of the old brazing from the bushing, and then took a small file to the remainder of the braze until I got down to fresh metal. Then, put the bushing back in, checked the fit, put on the other gear and checked it again - excellent! Everything fit, (correctly for the first time), and the gear wobble was gone.

I finished the metal prep of the two pieces to be bonded by washing everything to get rid of the filing and polishing residue, gave it an application of metal cleaner (phosphoric acid solution) to complete the

cleaning and micro-etch the surface a bit, then degreased both parts in acetone and let dry.

After I mixed up the JB weld I used a tooth pick to apply a small amount to the inner surface of the center bushing which meets the split gear, and pressed it and the split gear together. A little epoxy squished through to the other side of the gear, cleaned that away and then checked the fit against the other gear and made sure that the two pieces were bonded close enough so that the snap ring had sufficient room to fit, - still good!

Finally I took the tooth pick and applied JB all around and on top of the center bushing and onto the gear surface until I had coated an area about an inch in diameter. This last part may have been overkill but since this split gear is in the innermost region of the gear train assembly, I did NOT want to have to go back in there again.

The final cure time on JB is about 15 hours, so I let it set for a day or so before proceeding. The bond is very strong, and after the split gear was assembled and installed it performed like new. Also, after this stuff is mixed it has a nice gray color which might prove useful for something like front panel repairs.

Date: Mon, 12 Nov 2001 09:16:31 +0200
From: "Bryce Ringwood" <BRingwoo@csir.co.za>
Subject: Re: [R-390] Cleaning chassis and coils

It looks like we've all washed the lettering off dials with water at some time. To recover from the situation, I scanned in what was left of the dial and touched up the mess on my computer using MSPAINT. I then printed a transparent stick-on after fiddling about with scales and stuck the dial on to a new perspex backing. (After trying to iron-on a dial with a T-Shirt transfer - even more vocabulary as I melted the original plastic dial and discovered how hard it is to purchase perspex sheet here.) Letraset do transfers from computer, so it is possible to replace a dial and do a proper job using this sort of technique. I also discovered computer screen cleaner removes the grey paint from R-390A front panels.

Date: Tue, 13 Nov 2001 04:35:22 -0500
From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] R390-A VFO Jitter

<snipped>> Now I put my glasses on, I see I do have a locking disk and its not a flywheel. Touch of Eddystonitis there..... A flywheel would be ill-advised for the KC tuning on an R-390(x) as it would likely cause crashing against the ten turn stops.

> Re: cleaning - One problem I have concerns cleaning fluids, since we don't have the same ones you use here - with the exception of WD- 40.

WD-40 is OK as a cleaner. I find it to be relatively safe and doesn't cause dulling as some pump-spray cleaners or petroleum distillates/denatured can. Not so great as a lube. More of a "water displacement" product.

> I use 'Servisol' for contacts and potentiometers (Very sparingly indeed- this stuff has a bad reputation).

Sounds nasty. Usually, the same stuff that's good for contacts is risky for pots. That's true of DeOxit also.

> Wynn's 'Clean Green' for general dirt removal.

A distant relative of "Simple Green"?

> Some pink stuff called 'Prepsol' for de-greasing

Sounds like a product called "BH38" here, which is essentially the undiluted active ingredient of such cleaners as Formula 409. It will dull painted surfaces and bakelite knobs. Probably an ionizing cleaner which may saturate phenolic and ceramic insulators with conductive deposits which are impossible to remove.

> .. and sprays based on trichloroethane on contacts when I just want to clean away dirt.

"Trich" or "cholorothene" is the stuff mentioned in mil. manuals. Carcinogenic, though. I don't think we have any aerosols with it any more, but available in cans in the paint dept. Excellent cleaner, with main benefit that it evaporates very quickly and leaves no residue. Also not flammable, so you can "smoke 'em if you got 'em."

> I sometimes use 300 thinners if I feel sure its not going to dissolve away anything nearby. Also air-duster and elbow-grease.

Be careful with the air-duster approach, especially if you don't know where the rig has been. This ultra-atomizes the dust so your lungs can absorb it readily. Use them (or compressed air) only outdoors and stand upwind of the work. Our postal folks recently cleaned some sorting equipment with compressed air. Of course the equipment had anthrax spores from the contaminated letters. The idea is to vacuum the dust, preferably with a vac that has a HEPA filter on its exhaust. There are other bad things other than anthrax you don't want to breathe -- like Hanta virus. Best to use a wet method with cleaners -- doesn't atomize the stuff.

> Your De-Oxit sounds like good stuff.

Yes -- it's the favorite of most, though not for pots. Also should be applied to just the contacts, not phenolic switch wafers which will swell and bind. Caig, the mfr. also makes a pot cleaner which is pretty good. I also use their "Caikleen-RBR" or similar name. Very expensive, but works well in restoring rubber parts -- feet, seals, such as around the URM-25's, and also great for restoring line cords and cables. Cleans off the crud and oxidized outer surface, seems to seep in and revitalize the rubber. Great for reclaiming grundgy looking test leads -- so the red one looks red again, etc.

You might be able to find their products via their website http://www.caig.com Maybe there's a distributor closer to you.

Date: Fri, 16 Nov 2001 15:25:05 -0800 (PST)
From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] Odd Cover

Have any of you ever encountered an original 390A cover than was different
than usual? I have one such top cover. The louvers are much larger than normal and there are maybe 1/2 as many. The color of the thing is gold. Otherwise it is the right size and shape, and came to me duly attached to a 390A. Anyone WTB or need this odd beast?

Date: Fri, 16 Nov 2001 18:25:38 -0700
From: "Kurt" <radiouser@uswest.net>
Subject: Re: [R-390] Odd Cover

The cover you speak of sounds like one that came on a radio that I got from Rick Mish. My cover was bare aluminum. The louvers were larger and fewer in number but otherwise was the same tight fit as the original(?). I thought the cover from Rick was a reproduction. Perhaps not. Maybe someone took one Rick's and had it alodined.

Date: Sat, 17 Nov 2001 02:38:03 -0500
From: Norman Ryan <nryan@intrex.net>
Subject: [R-390] Those R-1051B Panel Lamps

I sometimes wonder if my subscription to the r-1051 list has been cancelled until I wander over to the archives and see if anything has been posted. Sure enough, hardly anything there. Let's do something about that.

I've been working on a couple of R-1051B's lately, basically swapping modules around and taking care of a few things here and there. One of the

rigs had been dropped hard-- really hard. :-(The two handles were caved in to where they couldn't be bent back into shape without breaking-- they're brittle! I found a perfectly matching pair at a hamfest (Thanks, Alan Bond!) and after taking care of other body work, the receiver's outside looked pretty decent. Other issues were taken care of and the set works fine.

Now, you can imagine what happened to the dial lights after that fall. Both were dead. Seems they're the most tender components in the set. Anyone familiar with the R-1051B (and kindred rigs?) knows that replacement lights are hard to come by. What to do?

Nolan has a neat procedure he uses to repair the little screw-in lamps. Go here to see: <www.webdsi.com/nlee/frankenbulbs.html> His solution uses the 2187 lamp-- a kind of stripped down 327. Both work on 28 V.

I didn't have 2187 lamps on hand, but I had some 327's and I was antsy to get the dial lights lit so as to complete work on the receiver. Taking the shell off the 327 looked awfully tedious and very hit or miss-- probably would break several lamps in the process. I don't have that many bulbs to spare, so tried another approach. Here goes:

1. Using a 5/16-24 threading die, screw the dead lamp into the die's exit end. The die makes a handy tool for holding the lamp. Gently pry the knurled base off, using a pair of screwdrivers. You should have the knurled base in your hand and the threaded sleeve with old bulb still in the die.

2. Clean out the inside of the knurled base, removing any remaining wire that came from the bulb. Drill a 3/32" hole in the center of the base. This will be used for soldering to the tip of the 327 replacement lamp.

3. Retaining the threaded sleeve in the die, clean out the old bulb and its adhesive. Use a rattail file to smooth the inside out so that a 327 lamp will fit-- no need to fuss.

4. Take the die over to your vertical belt sander and grind off the ferrule so that you have only the threaded portion of the sleeve left. Deburr.

5. Tin about a third of the sleeve's top edge with your soldering iron. Careful not to get any solder on the threads! This will secure the 327 lamp. (We're going to retain the 327 lamp's base.)

6. Place the glass end of the 327 lamp squarely inside the threaded sleeve and deftly solder its shell to the tinned end of the sleeve. No need to go all the way around-- it suffices only to tack it in place once. Now the lamp should protrude from the sleeve like the old bulb did.

7. File some of the flange off the 327 base-- remember, we're still using the handy-dandy die as a holder. Don't take off so much flange that the insulator disc drops off. We're looking for a wringing (very snug) fit inside the knurled base's black plastic sleeve.

8. File the soldered tip of the 327 lamp a wee bit to clean its surface-- this will ensure a good electrical connection. Insert the 327 lamp base into the plastic sleeve so the lamp's tip touches the bottom of the knurled base. You'll see it through the 3/32" hole you drilled. Again, deftly seal up the hole with solder. Remove assembly from the die and drawfile the excess solder for a neat appearing surface.

9. We're not done yet. The assembly is going to be too long for the knurled base to make contact. Take a piece of 3/8" O.D. copper tubing and work out a suitable length to be placed over the plastic sleeve. Do this by first installing the lamp assembly in the receiver-- not too tight! Guesstimate the length of copper sleeve you need to fill in the gap you will see. Cut a piece of copper-- file smooth and deburr. Assemble and try for fit. When it's right, operate the receiver to see if it lights.

10. Finally, remove the lamp assembly from the receiver and once more, deftly tack the copper sleeve to the knurled base. One dot of solder is all you need or the plastic underneath the copper sleeve will melt. That's it!! Install the lamp and enjoy the fruits of your labor.

Admittedly, this is a tedious procedure. I worked it out using the materials at hand. I used no adhesive at all as I felt it would be messy to clean if I had to replace the 327's. The heat of the soldering is expected to soften the plastic sleeve so that it holds the lamp in place. However, you need to avoid snugging up the lamp too tightly as the lamp is tender. The first rebuild cost me two messed up lamps, but rebuilding the other lamp went much faster, taking a mere fraction of
the time. Kinda fun that time. :-)

Let me know what you all think of this procedure. I'd be especially interested in hearing from folks who try it and, of course, reading suggestions for improvement. Best of all-- let's hear about a source of affordable new old stock lamps!!

Date: Sat, 17 Nov 2001 11:43:34 -0800 (PST)
From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] More on Odd Cover

I did some measurements on the odd cover.

For comparision, an original cover has two rows of 3" louvers, 18 count. This odd cover has two rows of 4" louvers, 9 count. Also, the color is very gold, darker than normal. It is old, with old masking tape stuck to it, so I don't think it is an internet era repro.

Date: Mon, 26 Nov 2001 08:17:22 -0600
From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: [R-390] Tube Socket Adpters

I was just looking at Fair Radio's online pages and notice they have a Tube Socket Adapter kit. It contains socket extenders for several socket types - -- among which are 7 and 9-pin adapters used in the beloved R390[A]. I can't tell from the picture, but it appears these are the extenders with test tabs around the outer edge that are so handy for troubleshooting, measuring, etc.

While the entire set is a bit pricey for me, I think there are those on the list who've asked about these extenders so here are some of them. Again, I can't tell from the pictures, but they APPEAR to be the kind of extenders with the test points at the top. Ask them if you're not sure!

No financial interest in Fair Radio. Contact them, not me.

Date: Mon, 26 Nov 2001 09:59:35 -0600
From: blw <ba.williams@home.com>
Subject: Re: [R-390] Tube Socket Adpters

I ordered both a 7 pin and 9 pin test sockets from them about a year ago. They were $5 each, but very heavy duty plastic construction with durable test tabs. I've soldered and desoldered the test points with no problems. I would rather pay $5 each for these than $3.49 at RS for cheap junk. Maybe they still have these in stock.

Date: Mon, 26 Nov 2001 09:46:51 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Tube Socket Adpters

If Fair doesn't have any more tube socket adapter/extenders, I think AES has them. Maybe also Leeds in Brooklyn -- I think they're www.leedselect.com . Also, there are taller and shorter ones. Usually, the taller ones are a better choice. What I could use is a loktal extender.

BTW -- You _solder_ onto the terminals?! I don't thing that's a good idea. I've seen two styles of terminals -- lugs like those on a rotary switch wafer, and flush-with-the-bakelite terminals with small holes. I use a test lead push-clip thing or small alligator clip for the switch style and, if need be,

the push clip type can be made to catch on the flush type. Mostly, though, I just use a test prod for momentary resistance and voltage measurements. The holes in the terminals are the right size for the point of a sharp probe, so it won't slip off when you look away to read the meter or the manual.

BTW #2 -- For some equipment, the resistance and voltage tables assume the tube is out of the socket, and will say so. (We hope.)

OK, That makes 3 Barry's, thereby answering the question, "How many Barry's
does it take to answer a tube socket adaptor question?"

Beats two pair. ;-)

Date: Mon, 26 Nov 2001 20:57:42 -0600
From: blw <ba.williams@home.com>
Subject: Re: [R-390] Tube Socket Adpters

Mine are the test sockets with terminals and not lugs. They look to be heavy duty metal and plastic. I tacked some wire for the digital meter for the SP as I was moving the meter around too much when tinkering with it. I'll remove the test socket when I'm finished with this project and route wire into the tube socket. I'll probably do the same with my panadapter if I ever find out what is the problem with it. That panadapter is a real tar baby.

Date: Fri, 21 Dec 2001 11:51:03 -0700
From: "Kenneth Crips" <w7itc@hotmail.com>
Subject: [R-390] My R390A

Well My 67 EAC R390A has stopped working. All I am getting is a hiss like there is no attached antenna. No smoke, I have done the Cap change- out to protect the filters. Now I get to make use of the great R390A manual downloaded a couple of years ago. Any pointers would be great. The main question I have for the 390 is; do you work from the antenna input till you find the break, or work backward from where it is working till the break is found. These beasties are a bit more complex then most of My other hernia electronics.

Date: Fri, 21 Dec 2001 14:44:56 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] My R390A

Here goes:

1) Locate the test points that are on the RF deck. Locate them physically

on the

deck and electronically on the schematic and/or block diagram.
2) Get a little piece of wire or test prod and poke into each test point.

Start closest to the IF strip.
3) Listen to what you hear.
4) Think about it.

5) If that doesn't lead you to a conclusion, then study the manual, get out a signal generator, insert appropriate signals at the test points, thus doing a more thorough job of trouble shooting.

Good luck, and do let us know how you make out.

PS: MY '67 EAC is dead, too.. something at the second mixer is not working. Voltage/resistance checks are next for me.

Date: Fri, 21 Dec 2001 13:47:27 -0600
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] My R390A

Both are valid, and each has its uses. In this case, I think I'd break the radio into blocks (RF, IF, Audio), and stick a signal on the input of each and then work backward or forward until I found a place where things didn't get from one stage to another (or through a stage). Got tube extenders, an audio signal generator, and a modulated RF signal generator?

Date: Fri, 21 Dec 2001 19:55:18 -0000
From: "Phil Atchley" <ko6bb@elite.net>
Subject: Re: [R-390] My R390A

I usually troubleshoot from the audio backwards since you need to have a starting point. The other way of course would be to insert a known signal, tune it in (using a wide bandwidth) and then use a scope or signal tracer to chase the signal through the set. Now, since an R-390A does weigh somewhat less than 100lbs, (barely) you must donate it to a worthy cause (me ;-). Since a 'donor' is expected to get all donations to a donnee in a timely manner, pre-paid overnight FedEx is the best way to go.

Date: Fri, 21 Dec 2001 15:09:33 -0500
From: Bob Login <jlogin@mindspring.com>
Subject: [R-390]

Hi Ken, The 390a will not work if the ballast tube is shot! all you get is the hiss like no antenna is connected...73 Bob AA8A

Date: Fri, 21 Dec 2001 15:39:56 -0700
From: "Kenneth Crips" <w7itc@hotmail.com>
Subject: Re: [R-390] My R390A

Wow that was an easy DX; I am now singing: All I want for Christmas is a 3TF7..... Chuck turn your eye's away for a moment. What is the value of resistor used to bridge the 3TF7, I want to jump the socket to confirm the problem, that is provided it won't damage anything in the very short term.

Date: Fri, 21 Dec 2001 17:53:15 EST
From: Llgpt@aol.com
Subject: Re: [R-390] My R390A

Good to see you active on the list again. use a 37-40 ohm 10 watt resistor. It isn't real critical.

Date: Fri, 21 Dec 2001 17:31:19 -0700
From: "Kenneth Crips" <w7itc@hotmail.com>
Subject: [R-390] 3TF7

Hozanna in the highest, I found a source of 3TF7 and here I thought they weren't to be had anymore... go to the link below.

http://www.rutherfordsdesign.com/Tssltrmpg3.htm

From: "Joe" <joe.amp@verizon.net>
Subject: Re: [R-390] switch contact cleaning question
Date: Wed, 26 Dec 2001 23:05:11 -0500

I don know it this was a good idea but it was the only thing that worked after several people trying. Its almost allmost impossible to get to R-390 XTAL k switches without major surgery. I also made a steel hook tool and a 1/4 access hole to retention both wiper contacts at the bottom. After that: I cleaned off all the spray and silicone from past attempts and brushed in a past Oxy clean. Scrubbed with pipe cleaner, rotating. Rinsed with distilled water followed by gas line antifreeze (Alcohol) let dry. Then used 50-50% Cramalon Blue and red. Its been 10 years and no more needing to jiggle, the contacts still look good after inspection last month.

The 2-1oz's of Caig Labs http://www.caig.com/distrib.htm pure Cramalon Blue and red cost me more than the radio at the time. I dont see the pure 1 oz 100% DeOxit vials anymore, that was good stuff ! Joe
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Date: Wed, 26 Dec 2001 23:27:09 -0500
From: Barry Hauser <barry@hausernet.com>

Subject: [R-390] switch contact cleaning question

Don't do it! TarnX is very harsh stuff with sulphur (dioxide?) content. It is said to take some of the plating with the oxide. There may not be much plating left where the contacts rub on the rotors to begin with.

Lately, I haven't had a single rx come in here that wasn't partially deaf due to oxidized switches, particularly the bandswitch. However, with a good deal of patience, DeOxit will work. It would probably work faster if I broke down and bought the liquid form in the very small and pricey bottle. It's supposed to be concentrated, so they tell me. What I do is take a wood swab, remove some of the cotton, saturate it with DeOxit from the nozzle of the spray can and re-twirl the cotton so it doesn't get caught in the works. Then wet the rotors and contacts and work the switch back and forth through it's travel. If you can see the rotor(s) -- the metal disk that runs through the clip contacts -- then rotate the switch so you can reach a section and rub the swab on it. Keep re-wetting the swab because the DeOxit evaporates quickly.

It will look like nothing is happening on the blackened rotors and contacts. Forget about making the outside surfaces of the contacts shiny -- doesn't count anyway. You should notice the black coming off on the swab, even though the switch rotor is still black. It is also not necessary to remove all the black oxide, but after several passes you'll see some shiney metal. The main thing is to cut through the oxide with the swab and switch to the point where you can see a shiney fine line through it around the rotor metal. Sometimes, after the swab has had it, I break the end off at an angle and use it as a burnishing tool -- scrubbing the rotors with the stick soaked in more DeOxit. Not abrasive enough to do any damage, but be careful not to slip and bend the contacts.

Go easy on the DeOxit on the switch wafers -- don't spray them if you can help it. Probably posted this a dozen times by now, but DeOxit can swell up the phenolic and that may cause close-fitting rotors to bind. Probably not a big deal on a single or two-wafer switch, but could be bad news on a bandswitch. Frankly though, there have been times when I let fly with the stuff. Recently I had an SP-600 turret and RF strip that refused to work on all bands until I blasted it. Then there are some switch arrangements with wafers so close that you can't get in there with a swab. Also, leave the rotors wet, come back a while later and do it again. Sometimes with DeOxit I've found that it works after a wait and things suddenly brighten up.

Forget about TarnX. They also say that anything cleaned with it oxidizes much quicker -- and worse -- aftewards. You just have to thin the oxide down enough so the contacts can wipe down to the metal. Last treatment with DeOxit should leave the stuff wet and allow to air dry as the cleaner

leaves a protective residue. Hope this helps Barry

From: "Walter Wilson" <wewilson@knology.net>
Subject: Re: [R-390] switch contact cleaning question
Date: Thu, 27 Dec 2001 07:08:02 -0500

The 100% DeOxit is still available. Mine is in a little bottle with a brush applicator. You can get it from Caig or even from RadioShack.com. I like this version instead of the "spray it all over the radio" variety. I also recommend the ProGold in the same size bottle one the black tarnish is gone.

From: "Michael P. Olbrisch" <kd9kc@elp.rr.com>
Subject: RE: [R-390] switch contact cleaning question
Date: Thu, 27 Dec 2001 13:02:16 -0000

Got the RS part number handy? And maybe it is even available in store?

From: "Walter Wilson" <wewilson@knology.net>
Subject: Re: [R-390] switch contact cleaning question
Date: Thu, 27 Dec 2001 09:27:19 -0500

> Got the RS part number handy? And maybe it is even available in store?

R/S product ID for the 100% DeOxit is 910-3883. It matches Caig product D100L-2DB. R/S product ID for ProGold is 910-3878. It matches Caig product G100L-2DB. Both of these are 7.4 ml bottles of 100% with a brush applicator. They are only available on the web, not in R/S stores. R/S prices seem to be
discounted from Caig list prices.

From: "Peter Cade" <butrosg@bellatlantic.net>
Subject: Re: [R-390] Tube Extenders
Date: Sat, 5 Jan 2002 00:45:41 -0500

I sympathize.....I made some myself.
There are probably better ways, but this is what I did....

You need two 7 pin and two 9 pin tube sockets, and a couple of trashable tubes.

1. Remove the attachment skirts from all of the the sockets, and clip off and

c

ompletely remove the pin connectors from one each of them.

2. Carefully break the vacuum of the tubes by clipping off the evacuation tip, then with a pair of dikes break off all of the envelope down to the button base (this is easier to do, and less dangerous than it sounds....).

3. Clip off the connections to the internal electrodes, leaving the base with the pins and their internal extensions.

4. Cut 7 (or 9) 3 inch lengths of stiff bare copper hookup wire.

5. Solder these to the pins of the uneviscerated sockets, then bend them all down so that they are parallel.

6. Push the free ends of the wires through the open pin holes in the other socket. - doesn't matter which way round the socket is, since it just acts as a spacer and support. Let them protude through the other side by about 1/2 an inch.

7. Trim the wires to equal length, and carefully solder them to the internal pin extensions on the tube base (the pins are usually iron, so they'll solder easily)...

8. Apply clear Duco cement or something similar to the spacer socket to hold everything firmly in place.

You end up with an extension with a tube socket at the top, and a genuine tube base at the bottom... plugs in easily, and you can clip leads to the bare wires.. Good luck...!

From: "Chuck Rippel" <R390A@R390A.com>
Date: Sat, 5 Jan 2002 08:50:45 -0500
Subject: [R-390] Rear panel "Fins"

I see that change beginning pretty much with the 1960 EAC builds. The addition of the 2 B+ fuses are mentioned at the very bottom of the "Government mods" document on the www site:

http://www.r390a.com/html/g_mnt_modifications.html

>.....At some point, it appears the design no longer
>included the metal "fins" that were bradded to the rear panel to hold the
>Bristol wrench and screwdriver. My '56 Motorola has them, but this newer one >does not. When was this done? Was it it along the time they put the extra fuse
>holders to accomodate the change to the 3-fuse layout?

From: R390rcvr@aol.com
Date: Sat, 5 Jan 2002 10:59:47 EST
Subject: [R-390] Fuses and tool holders

My information states that the switch to 3 fuse holders occurred with #2683 in the 56 Motorola contract. The tool holders were present at least into the 60 EAC contract, since I have specs from #1 unit in that contract, which was not messed with, and it had the tool holders, while the Capehart contract that followed did not. It is possible that the change to no tool holders occurred later during the 60 EAC run, but I don't have any late rigs from that run to confirm that fact. It seems to me that most changes occurred between contract runs, but obviously not all, since the 3 fuse change was made mid contract. Always happy to get any additional info people might have on this subject.

Date: Sat, 5 Jan 2002 08:28:46 -0800 (PST)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] Rear Panel "fins"

It is interesting that the Fowler radios used the "old" drawing set, i.e. did not incorporate the EAC improvements.

Date: Sat, 5 Jan 2002 08:32:16 -0800 (PST)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] Fuses and tool holders

The drawing for the back panel has a revision date indicating deletion of tools. I guess they figured the depots could supply their own tools! I got a set from Wally's Wacky Tooltime World for my Collins. They will remain on the back panel until my son discovers them and uses them on his bike just like GI's likely did!

Date: Sat, 05 Jan 2002 22:43:33 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] R-391 positioning head

> I've got an R-391 multi-turn positioning head in my hand, and have a couple of questions.

Put it down verrrrry slowly and back away! Just kiddin'

> After soaking it for awhile in kerosene and cleaning the mud wasps nest
> out of various parts of it, it seems to behave itself and be in reasonable condition.

How can you tell -- I've got two 391's with not-quite-working autotunes. Still haven't gotten around to fixing them. But the description in the manual is a duesy. The R-105/ARR-15 is similar and a bit easier to follow.

> However, the locking pin does not snug all the way up to the big tuning
> knob. Is it normal for some R-391's to do this?

That much I can tell you -- yes -- the wingnutty head on the locking key/screw should not snug up to the knob, there's some space there. It doesn't work by locking it there, but inside someplace. You should be able to see that with it apart.

> Also, I've noticed that I can get it into a position where the main tuning
> knob is locked (this is with the unit out of the radio), and I can see
> that the pawls on one of the levers seem to be what is hanging it
> up. With a little careful jiggling and twidling, I can free it up, and
> then it appears to resume a reasonable behaviour. Is this, too, normal,
> and just an indication of how the mechanism works?

This is where I get lost. Looks like the mechanism is a job for a locksmith -- it's what I'd expect to find in a complicated (8-number?) combination lock for a safe. While you have it out, I'd suggest experimenting with different lubes. I don't know if the usual Mobil One would be good here. The pawls are all sandwiched together and the surface drag of a regular lube might mess it up. Also, it's the type of situation where, should the oil attract the slightest bit of dust, it might cause the pawls to stick. Might be an application for that very thin silicone lube or
even graphite. I suspect either the wrong lube or hardened lube is the reason why many of the autotunes don't work. However, there could be secondary damage as a result of jamming that occurs when they stick and allow the autotuner to run "past the end" and crash against the 10 turn stop, or worse.

> Thanks for any advice. I know this is a delicate part, and am being very
careful not to force anything.

Jot down some notes as you go along -- might help the rest of us. (Got a digital camera?)

Did you check the other modules -- the controller with the rotary switches & "1-8" dial, relay, etc? Be sure to check that transverse drive shaft (worm drive). There are four or five sintered bronze ("oilite") bearings pressed into the casting. On one of mine, the two on the left were so badly worn that the mating gear bounced off the motor drive gear when it started up. Little puddle of bronze dust underneath the bearing is a telltale. See if they're fairly snug. I think there are all sizes of these bearing available, but

might be tricky to press them out and new ones in. I wouldn't want to hit that casting with anything too hard.

From: Harry Joel <organic@cyberlane.net>
Date: Sat, 05 Jan 2002 23:43:59 -0600
Subject: [R-390] Anti-Stickum Lubricant

Just a thought, after reading the post about the problem with making sticky auto-tune mechanism behave. There is a possible neat solution I cam across during my current restoration of an 150-year old grand piano. I came across a graphite solution that after application leaves a micro-thin coat of graphite on the surface of any material its applied to. Should not gum up delicate and tight tolerances between sliding metal parts. Its called DAG Graphite Lubricant. Dries quickly and is sold by International Piano Supply. 1-888-668-3788
http://www.pianosupply.com/ips

Their part number is 8E02016 Not cheap at $12.20, but the 4oz jar should go a long way..... Nice people to deal with

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From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] R-391 positioning head
Date: Sun, 6 Jan 2002 02:42:51 -0600

Barry Hauser said,

"I think there are all sizes of these bearing available, but might be tricky to press them out and new ones in. I wouldn't want to hit that casting with anything too hard."

Yes, the bearings have to be pressed out and new ones pressed in. That last sentence should read, "I wouldn't want to hit that casting with anything!" A pretty good press can be cobbled up if you've got a bench vise and some round and flat bar stock. You'll need a micrometer to get the right diameter for new bearings. Use a hammer and you will cock the bearing going in or scratch the housing bore going out.

If the bearings are just dry and not worn, you can cobble up a "recharger" for sintered bronze bearings. Take the shaft out of the bearing and immerse the bearing and housing into a small jar or can of light oil. Now comes the tricky part. Pull a vacuum on the contents of the jar, perhaps using a vacuum hose from the carburetor of a running engine. Try not to suck oil into the engine, lest bad things happen to expensive machinery. If you can see the bearing, you'll see air come out of it. Wait for it to stop bubbling, then break the vacuum slowly. Oil will run into the pores in the bronze. Works better if oil and bearing are warm to hot. Good idea to test your

vacuum chamber first, lest you get hot oil and broken glass all over everything.

We made sintered bronze bearings from bronze powder in shop class, and oiled them using vacuum after they'd cooled from sintering. Great stuff. But that was the fifties - too dangerous now. Disclaimer: Forget everything I just said. If you don't have a bearing press and micrometer, take it to a pro. They may still make bearings, but they don't make housings anymore.

From: David Wise <David_Wise@Phoenix.com>
Subject: RE: [R-390] Tube Extenders
Date: Sun, 6 Jan 2002 10:19:11 -0800

Peter Cade gives instructions for making a tube extender from a socket and a junk tube. TM11-856A contains instructions for an even easier roll-your-own, using two sockets. The solid-core wires extend through the bottom socket to act as pins. Until I need to do a global voltage check, I'll just put a length of wire-wrap wire on the pin I want to probe.

From: "Peter Cade" <butrosg@bellatlantic.net>
Subject: Re: [R-390] Tube Extenders
Date: Sun, 6 Jan 2002 16:21:43 -0500

Yes Dave...I tried it using the solid core wires as the pins..... found it not easy to plug/unplug, and not very reliable contact, (probably due to me using the wrong gauge of wire. Seemed easier to use an actual socket - there's nothing like an actual tube base for plugging into a tube socket.

Date: Wed, 9 Jan 2002 15:26:43 -0800 (PST)
From: Rodney Bunt <rodney_bunt@yahoo.com>
Subject: Re: [R-390] SP600JX17 - drift

The 6C4 Oscillator at V4 is "braced" to the the chassis with a "thumb" screw, "brace" and "sheild" combination. If you move this tube the oscillator frequency moves. I have seen this tube shield and "brace" arrangement replaced with "heat dissipating tube shields" without this "brace" arrangement. This is not recomended, unless the "mechanical stability" of the "Brace" is reinstated somehow. This also is a potential source of "drift" before "warm up" has stabalised.

Date: Sun, 13 Jan 2002 01:02:32 -0800 (PST)
From: John Finigan <john_finigan@yahoo.com>
Subject: [R-390] Inexpensive bristol wrenches

Thought that some of you would be interested to know that I recently got some bristol driver bits factory direct from Chapman tools in Connecticut,

for $10 shipped. For that you get a mini-ratchet and 5 bits. The ratchet doesn't obstruct knobs or rf slugs, though I can't say I've tried it on every screw in the set. The quality seems good. These guys are in the Jensen catalog, but Jensen doesn't sell their bristol set. Shame, since it's about $35 cheaper than Xcelite. I guess its possible that some radios might have screws of a different size than mine has, so mileage may vary...

From: "Chuck Rippel" <R390A@R390A.com>
Date: Mon, 14 Jan 2002 19:13:24 -0500
Subject: [R-390] New to R390A

Welcome to the group. First, go out and buy that hernia belt you always wanted :-) Actually, you could do a couple of things. Call Antique Radio Supply and get on of their Hammond 600/8-4 ohm audio transformers. It'll cost you about $17. 30-20,000 hz and rated at like 12W. Its most excellent; one of Fred Hammonds personal designs.

While you are at it, buy a half dozen .01 and .1 Orangedrop capacitors they sell. I like the high performance versions. You'll see why in a moment. http://www.tubesandmore.com You might look around my web page: http://www.R390A.com Second, when the radio arrives, test it to make sure it works then, take the IF deck out and using the capacitors you bought above, swap out the ones that just about always go bad. They are on my web site at:

http://www.r390a.com/ProbCaps.html

If you do nothing else, CHANGE C-553, the plate blocking cap for the filters. There is a picture of it on the page noted, above.

Then, sit back and enjoy the radio, learning the technology as you enjoy one of the finer things in the hobby.

Date: Mon, 14 Jan 2002 20:47:16 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] New to R390A

Never thought this would happen, but I have to disagree with your advice -- the sequence anyway.

I strongly suggest that the pilgrim make a beeline to your site right now (no, don't stop for dinner) and be sure to check out http://www.r390a.com/html/C-553.htm . Then, make some checks/replacements before powering up.

After reading your web pages a couple of years ago, I always pull the IF

deck and at least check C-553 BEFORE I power up, and replace it. I haven't found a shorted one yet (in about 10 units) at least that an ohmmeter would show, but that horror story about blowing the filters one by one makes me verrrrry edgy -- paranoid even. It's easy to find using the photos on your web site. I consider this step to be a "Rippel Imperative". If one is lucky, there may be an orange drop already there, or a yellow poly jobbie.

As a rule, I do all I can to resist the impulse to test out the radio on arrival -- even if the seller had it powered up and running day before yesterday. I also pull the AF and PS modules and at least do a visual check -- and replace that blown up tantalum while I'm at it. Then, I use a variac, even though it's a bit of false security if the 26Z5W's are doing the rectifying.

Another pre-power thing -- check the tubes. Even if the rig is supposed to be working, tubes sometimes don't travel well and Murphy's Law requires that one tube develop a short in transit -- not because the carton was dropped, but due to all that vibration in the trunk of a car or on a stiffly sprung UPS trailer going cross country. Probably not, but, if it were so, Mr. Murphy further postulates that the tube short will be where it can do the most harm. I have found a few shorted tubes.

Remember, R-390's, unlike other household appliances, DON'T say: "Do not open. No user servicable parts inside." On the other hand, boldly stamped (or silk-screened) on the lower left corner of the panel is the admonition about reading the instructions. If there was enough room, the URL for Chuck's website, the Y2K manual, and Al Tirevold's FAQ site would be right there, too. Besides, these pre-flight checks will help you bond with your radio. ;-)

Other than that, pilgrim, do everything Chuck says, stay out of trouble, enjoy and ... welcome aboard,

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Date: Sat, 19 Jan 2002 20:35:20 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] DeXoit and ProGold usage and Calilube

I'm told by someone who has used both -- stay with DeOxit. ProGold is intended for gold plated contacts, like edge connectors. If I'm not mistaken, it does not have the same deoxidizing capability of regular DeOxit on brass, silver, silverplate, copper, etc. Also, some advise springing for the concentrated liquid rather than the spray, which is diluted. I use the spray and apply some to a swab to avoid soaking things. Cailube is the thing to use for pots. It works, but may take more than one application for a noisy pot. If the pot is worn -- e.g. a track is worth through the composite, or the wiper is not tight enough, it will still be noisy. It is sometimes possible to dissassemble and tweak a work pot back to decent performance. You

should not use DeOxit for pots. While you're gawking at the stuff -- a real miracle product is Caikleen Rubr, for cleaning and rejuvenating rubber parts. Excellent for test leads, cables, etc. I've even used it to restore the rubber seals on URM-25's and on pvc and vinyl line cords.

Date: Sat, 19 Jan 2002 21:03:22 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] DeXoit and ProGold usage and Calilube

See www.caig.com for lots of details.
Order direct if you like.
Check out special sampler kits.
Try to get the 2 cc liquid squeeze tubes and practice putting the absolute minimum amount of the stuff on exactly where it is needed.. No spray is needed.

>What is the difference,

ProGold is supposed to be better, is more expensive, may not be worth it unless you only need a small quantity. Supposed to last longer on the surface. Works on a different chemical process.

>do I need both,

Probably not.. but a larger can of DeOxit spray and a small tube or spray can (tiny) of ProGold should do everything you need.

>and if so, when do I use which?

DeOxit for normal use, Pro-Gold for extra special suff, and those gold plated switches buried WAY down in the HP and Tek test equipment that you really do *not* want to open up again, ever.

> Also, I noticed another Caig product, Calilube.

"CaiLube MCL"? this stuff is a gotta have: "MCL" means Moving Contact Lubricant, for such things as pots and sliding controls, the absolute, hands down very best thing for bringing back noisy and intermittent rotating controls. "Formulated for conductive plastic and carbon-based congtrols" (I'd use DeOxit or ProGold on wirewound pots.) See www.caig.com for lots more info. Some products are just De-Oxit re-labled. ("R5 Power Booster" is targeted at the battery users and car audio guys.. No. ladies don't want it, they just want to ride in the cool cars with the 500 watt subwoofer systems.) Caig Cramolin is rumored to be way better than DeOxit (which replaced it, apparently due to environmental concerns). Ignore all such rumors. You can't buy Cramolin now anyway. No, I do not have stock in

Caig.. I just have the quietest controls, smoothest running switches, and most trouble free audio system connections I have ever had in my life.

From: "Harrison Thomas" <tomharrison@cwnetdg.io>
Date: Sun, 20 Jan 2002 08:21:56 -0000
Subject: [R-390] DeXoit and De-Ox-Id

Anybody have any experience with GC Electronics sly play with Latin on DeXoit called De-Ox-Id? Are they the same?

From: "Al Parker" <anchor@ec.rr.com>
Subject: Re: [R-390] DeXoit and De-Ox-Id
Date: Sun, 20 Jan 2002 07:22:13 -0500

no, they are not the same, not even close. De-Ox-Id is more like WD-40 (let's not start a thread on that). It is Kerosene, Mineral Oil, and at least once upon a time, Perchloroethylene. I have a bottle that I got about 5-6 yrs ago in CA, with the CA cancer warning label on it. Al, W8UT

From: Harry Joel <organic@cyberlane.net>
Date: Tue, 22 Jan 2002 18:10:17 -0600
Subject: [R-390] Alternat for De-Oxid?

(For what its worth) Rummaging through MISC stash I came across a sample (not openend yet) of a contact conductive enhancement compound named Stabilant 22A. I got about 16 years ago. Its NOT a contact cleaner but a contact improver! The company homepage is:
http://www.stabilant.com/
A very positive review in QST is found
at:http://www.stabilant.com/revrw04h.htm
A current (2000) review at the e-insite web site is here:
http://technicalpapers.e
insite.net/data/detail?id=974337214_997&type=RES&x=1840494298

From: "AI2Q Alex" <ai2q@adelphia.net>
Subject: RE: [R-390] Alternat for De-Oxid?
Date: Wed, 23 Jan 2002 20:03:54 -0500

I use, and have used, Stabilant-22 since the mid-1980s when it first came out. It's very expensive, but is diluted in 99-percent isopropyl alcohol, and it goes a long long way. It's billed as a conductive polymer. It's a great insulator between contacts, but when compressed it acts as a conductor (better than solder). I use it on edge-wipe connectors (on the V-F display on my Omni-V transceiver), on my model trains (switch contacts, rail wipers), on coax connectors at HF and below, between DIP sockets and chip lead-frames, and on vacuum tube pins. Recently I applied Stabilant to each and

every sub-mini silver banana plug and jack on the RF coils of my R-390 (non-A) during reassembly after a total teardown (after a house fire almost destroyed it). It surely didn't adversely affect anything in the RF deck. The set is very, very sensitive and hot---even on 10 meters. Phenomenal stuff that complements De-Oxit nicely. I strongly recommend it for contacts that are under pressure as opposed to simply wipers (although it works there too).

From: "Kenneth Crips" <w7itc@hotmail.com>
Date: Wed, 23 Jan 2002 22:23:58 -0700
Subject: [R-390] Covers

I was looking at the covers in the R390 section of
http://www.atc-us.com/ATCSHOP/

It started me wondering I have the top and bottom covers for My R390A. One has round holes coined out of it, the other has louvers. Is there a top and bottom cover? Are these just mismatched covers? It seems to me the louvered one is the top one. This is the sort of thing one thinks about when one has but two functioning brain cells after a awful day at the Cheyenne, VA.

Date: Thu, 24 Jan 2002 01:17:17 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Covers

.....covers in the R390 section of http://www.atc-us.com/ATCSHOP/

Those arent' covers -- the first is actually a side panel, the second is one of the two vertical, fore-aft inside panels that form the three compartments in the lower half of the frame -- for the audio deck, PTO and P/S.

> It started me wondering I have the top and bottom covers for My R390A.....

The one with the round holes is the bottom cover -- louvered one is the top. Of course, the radio will work with them reversed, but could be a violation -- like issuing a distress call without cause, or somethin'. ;-)

From: "Bill Riches" <bill.riches@verizon.net>
Subject: RE: [R-390] Alternat for De-Oxid?
Date: Thu, 24 Jan 2002 07:09:49 -0500

Me too! I have used it on R390A, Edge connectors in computers, sound system connectors, and my 20 year old Crown Mixer switch type attenuator (part not available from crown) that nothing would clean the

contacts - I gave it a shot of Stabilant 2 years ago and it is still going strong. One drop goes a long way. Most professional sound guys have it in their kit.

From: "Kenneth Crips" <w7itc@hotmail.com>
To: r-390@mailman.qth.net
Date: Sat, 02 Feb 2002 01:46:27 -0700
Subject: [R-390] MB, Mini-BNC. Amphenol 45525

I have found a couple of sources of the mini-BNC connector.
http://hdcom.com/mbconn.html
http://www.surplussales.com/Connectors/MB.html

I have a couple of Amphenol 45525 MB's new in the package. having looked them over I hope I never have to put one together the center pin is tiny, and looks to be a real PIA to solder. The coax you must use is also a pain to work with.

Surplus Sales Of Nebraska (the second URL) has a rather bad reputation around here, I have never purchased anything from them so I have no first hand experience with them. A couple of my friends have and not been happy with the outfit.

Date: Tue, 12 Feb 2002 13:23:15 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] DOD manual site?

>I found the correct #s for the USM-118A manuals, and thought I would check
on the DOD site. Does anyone have the URL available for that site?

This may be it - reduce that URL back to something less to get to the search point: Here it
is:<http://www.dscc.dla.mil/Programs/MilSpec/DocSearch.asp>

>This is an amazing collection of military documents. Thanks for the
>pointer, Nolan. And now my tip: find a friend with high speed internet
>access. :-)

Thanks Don. I've been plodding along on that site for a good while and figured that it was pretty much common knowledge. The MIL-E-1* tube spec manual that I posted on my site back in 1998 originally came from there if I remember right. Or maybe it was the DSCC site. They've got a mess of documents online too. That's where I originally pulled the specs on the R390A crystals. Here's the shortcut (that has worked for over two years) to that page.

http://www.dscc.dla.mil/Programs/MilSpec/ListDocs.asp?BasicDoc=MIL-PRF-3098

Date: Tue, 12 Feb 2002 13:29:24 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] DOD manual site?

Here are Nolan's instructions for another site: The key is to click on the LEFT of the page: "QUICK SEARCH" this requires no login or account.

>Date: Sat, 29 Jan 2000 08:25:35 -0600
>To: r-390@qth.net
>From: Nolan Lee <nlee@gs.verio.net>
>Subject: [R-390] MIL-HDBK-217F download instructions...
>
>I received a few messages from people having difficulty logging
>onto the site for various reasons. Here are steps that should work.
>First go to http://astimage.daps.dla.mil/online/
>Then click on the Assist Quick Search (no login required) icon which
>is on the right side of the display.
>That will take you to http://astimage.daps.dla.mil/quicksearch/
>Enter MIL-HDBK-217F in "Document ID" search box and hit the "Submit"
>icon.
>
>That will take you to a query response page listing the "hits".
>Click on the displayed hit of MIL-HDBK-217F(2).
>That will take you to

http://astimage.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=53939
>>At the top of that page, click on the little document icon just to the
>left of "Click here to access document images."
>That will send you to
>http://assist.daps.mil/eAccess/index.cfm?ident_number=53939
>where you can do a right click and "save as" on each of the three
>little Adobe icons in the "media" column.
>
>I think that should do it,
>nolan

To: r-390@mailman.qth.net
From: Richard.McClung@Dielectric.spx.com
Date: Tue, 12 Feb 2002 12:37:56 -0800
Subject: [R-390] AN/USM-118A/B

YOU MIGHT ALSO LOOK HERE FOR SOME INFO/DATA:

<http://navymars.org/reg5/tech_lib_index.htm>
<http://www.spiritone.com/~nabil/hickok/>
<http://socrates.itd.nrl.navy.mil/PEETE/footnotes.html>

Date: Sat, 16 Feb 2002 19:34:00 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] REF: KC/MC knobs for R-39XX

I have been asked by several if I have any more of the repro knobs. I need a commitment of close to 200 knobs to hold the original price of $30.00 each plus mailing. I was forced to sell 20 that I was holding for myself, so I need about 180 request for new knobs. I need serious replies so as to cover and protect all that are in need. I still have R-391 knobs and locking pins, plus tags for all contracts.

Date: Sun, 17 Feb 2002 21:07:57 -0800 (PST)
From: Michael Watts <wy6k@yahoo.com>
Subject: [R-390] How to clean up tube shields?

I have two types of tube shields in several of the radios I'm rehabing. One type is aluminum and cleans up fine with aluminum polish. The other type are badly corroded and don't respond to aluminum polish or anything else I've tried. What's the magic chemical and what are they made out of?

From: "Merle Crowley" <lal@metrocast.net>
Date: Thu, 21 Feb 2002 12:31:35 -0500
Subject: [R-390] Info !

Hello... Wonder if anyone could tell me what size/number screw fits the four holes that hold the nameplate in place.

Date: Thu, 21 Feb 2002 09:57:36 -0800
From: Dan Merz <djmerz@3-cities.com>
Subject: Re: [R-390] Info !

Merle, mics as #2 screw (83 mils) on mine, so I think it's a 2/56 (hard to count threads but around 50/in), gray, a steel phillips head with lockwasher on the EAC I have.

Date: Thu, 21 Feb 2002 13:20:18 -0500
From: Al Solway <beral@videotron.ca>
Subject: Re: [R-390] Info !

It's a 2/56 thread and about 0.25 inch long.

Date: Wed, 27 Feb 2002 15:01:35 -0500

Subject: Re: [R-390] How to clean up the chassis?
From: twleiper@juno.com

> I guess I need to consider the dishwasher too but I don't have a compressor yet.

Use a hair dryer. The dishwasher works great, especially on the 390's, since you can put the modules in. The only thing I don't put in is the RF deck coils. The dish detergent will etch the aluminum slightly and brighten it up. What I do is pick up a couple gallons of distilled water and run the last rinse cycle over again, filling up with the distilled water first so that it doesn't use the tap water to fill. Do not use the heated dry, just take the parts out and blow them off with a hair dryer if you don't have a compressor. Whew. I finally was able to send an e-mail without mentioning the word Hammarlund.

From: "Bill Smith" <billsmith@ispwest.com>
Subject: Re: [R-390] How to clean up the chassis?
Date: Wed, 27 Feb 2002 15:31:28 -0800

I use a Hoover "Porta-power" vacuume hooked up to blow air. It is small and powerful and is almost as good as a full compressed air setup (and much more portable!). I don't use it for anything else. If they are still made, they are probably much more expensive today, but when I bought mine, they were selling for $60-$70. Well worth the investment.

From: "Bill Smith" <billsmith@ispwest.com>
Date: Wed, 27 Feb 2002 15:45:47 -0800
Subject: [R-390] Re: R-391 restoration update

Stating the obvious... use a temperature controlled soldering iron such as a number of Weller models. Tips can be obtained for a range of temperatures. This is especially true when working with printed circuit boards, but holds as well for point-to-point wiring.

Another hint, get a "Solder-Pullit" solder-sucker. You can heat a connection, remove the solder, then unwrap component leads and dress the new parts as the set was originally constructed. I have seen Chinese knock-off's for $5.00, though I am sure they are products suffering patent infringement. Small versions are available at Radio Shack, but I prefer the full sized devices.

Date: Fri, 01 Mar 2002 17:32:40 -0500
From: James Miller <JamesMiller20@worldnet.att.net>
Subject: [R-390] Need gear clamp - R390a

The screw threads stripped on the gear clamp that attaches the gear train to the Xtal oscillator shaft. Actually I just need a spline head screw to replace the one with stripped threads, but I'll buy the entire clamp if I have to. Can anyone help. Thanks, Jim N4BE

From: "John KA1XC" <tetrode@worldnet.att.net>
Subject: Re: [R-390] Need gear clamp - R390a
Date: Fri, 1 Mar 2002 21:45:38 -0500

One trick you can try if the screw isn't too bad is to put a washer or two between the clamp and nut. This shims the nut to a different section of the screw which may still have good thread. It's worked for me a couple of times.

Date: Mon, 04 Mar 2002 09:42:03 +1000
From: tbigelow@pop.state.vt.us (Todd Bigelow - PS)
Subject: Re: [R-390] New Subscriber with questions

Hi Tony - Congrats on the 'new' rig. Here are a couple thoughts: <snip>

> First and foremost in my mind is the question regarding
> what is the normal way to connect the antenna.....

Easiest approach(next to paying a lot of money for an adapter)is to make up a jumper with an IBM network connector on one end and the plug or socket of your choice on the other end. The IBM 'twinax' network connectors are available for somewhere around $2-$3 and you can run it out to a PL-259 on the other end for a switchbox connection if you wish, or directly to the antenna.

> Was there/is there a cabinet enclosure for the R390 .....

I'd suggest an old Air Force surplus rack if you can find one. They have a squirrel-cage blower at the bottom and a more typical fan on top for exhaust. Not only will a rack keep your rig cooler, it's also a good place to stash the R-390A and SP-600, as well as a speaker and other goodies.

> .....Are there any recommendations (initial DO's and DON'Ts for a newbie owner)?

Don't use the 'standby' mode. I'm sure there are other things as well.

> While in the USAF, I never was fortunate enough to get the R390
> at my "position", although they began arriving shortly before
> I got out (1961). So it has taken 40+ years for me to "UPGRADE"
> from the beloved SP-600, but I finally made it! 8-)

Don't muster out the SP-600 - it comes in handy as a band cruiser for fast searches and the like. It's also more justification for that rack! Welcome to the group, there is an incredible wealth of information available at your fingertips. Enjoy the rig, and keep us posted on your progress.

Date: Sun, 03 Mar 2002 18:50:08 -0600
Subject: Re: [R-390] New Subscriber with questions
From: blw <ba.williams@charter.net>

I have to agree with Todd. A lot of the members have SP-600s, like myself too. They are just neat radios and the audio is great. You will miss yours if you sell it. Glad you joined. Barry
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Date: Tue, 05 Mar 2002 23:33:10 -0500
From: James Miller <JamesMiller20@worldnet.att.net>
Subject: [R-390] RG-178 coax

If anyone is looking for the small RG-178 coax used in various places inside the 390a, I have found a ource: Sky Craft Parts and Surplus, in Orlando Florida. http://www.skycraftsurplus.com

$0.50/ft,

$0.0.425/ft/100+ft,

$0.40/ft/500+ft,

$0.375/ft/1000+ft

Skycraft Parts and Surplus

2245 W. Fairbanks Ave.

Winter Park, FL 32789
(407) 628-5634

Fax: 647-4831

I

nfo@skycraftsurplus.com

From: W2ZR@aol.com
Date: Wed, 6 Mar 2002 09:45:00 EST
Subject: [R-390] RG-178

RG-178 can be obtained from Nemal Electronics in Miami for 29 cents a foot. They can be reached at 1-800-522-2253.

Date: Thu, 7 Mar 2002 01:06:31 GMT
Subject: Re:Re: [R-390] RG-178 coax
From: twleiper@juno.com

You should check out Mouser, I think it may be cheaper. They definitely have it. Tom

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From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] RG-178
Date: Wed, 6 Mar 2002 13:27:13 -0600

They also have C to BNC adapters.
http://www.nemal.com/catalog/Pg20.jpg

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] RG-178 coax
Date: Wed, 6 Mar 2002 15:00:54 -0600

Is RG-178 the proper coax? I remember a thread about this a couple of years ago and according to the emails I saved, it was RG-179. I also have a quote from SkyCraft for RG-179. Which cable is correct?

Date: Wed, 06 Mar 2002 22:40:31 -0500
From: Jim Miller <jamesmiller20@worldnet.att.net>
Subject: Re: [R-390] RG-178 coax

Actually there may be two types in the 390a. I notice that the coax from the RF to the IF deck is slightly smaller diameter than others, such as the coax from the RF to the Xtal Osc. Are there actually two types in use? 178 and 179?

From: "Chuck Wells" <cwells@floydvwells.com>
Date: Wed, 13 Mar 2002 19:25:31 -0800
Subject: [R-390] R-30A Arrives!

I have been listening in for several months anticipating the arrival of my R-390A. Its a Collins Serial # 4435 restored to near new condition. Where do I find out what year it was made in?

From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] R-30A Arrives!
Date: Wed, 13 Mar 2002 22:26:11 -0600

Well, you might be able to figure out about when the tag was made. It was common practice to scramble tags and assemblies at repair depots. Serial numbers were started over with new contracts, so you'd need to know the contract number (which should be on the tag) in order to find out when the tag was made.

Date: Thu, 14 Mar 2002 04:51:48 -0800 (PST)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] R-30A Arrives!

The bathtub capacitor behind the PTO will have a date. This usually stays with the frame. The modules could have been swapped. The xtals will have a date as will the large caps on the audio deck.

Date: Thu, 18 Apr 2002 07:38:10 -0700 (PDT)
From: <jlap1939@yahoo.com>
Subject: [R-390] Archives/addresses

Friends, Well, I have had 3 questions dealing with boatanchors and archives. In trying to answer,I found the r390 archive listing I used, is gone, and, as I am not a member of ANY other electronics list through Majordomo, I cannot help.(The other connections through Majordomo in other subject areas I got on lists with, I have forgotten; in addition, they do not pull up locations in the archives, as far as I know.) PLEASE NOTE:

I used to simply go into "r390 archives" then back up one page to pick up a complete list of all the electronics dealing with tube tech, as well as other areas. This location gave the address for each. It was so easy, that I just did it that way..never wrote anything down...you could get it seemed, any list for electronics that was Majordomo. The inquires were: for the Boatanchor list, and: two for the orig.(pre-2002) r390 archive. It is my hope someone well acquainted with list addresses and management will tell these persons where to go for the needed information, and tell us if these old archives are still available, as well.

Date: Thu, 18 Apr 2002 11:08:21 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Archives/addresses

John -- It's easy as pie. Just go to the main (new) qth URL which is http://mailman.qth.net/ Select the list you want (R-390, Boatanchors, etc.) from the drop down thing. Then choose from the three "buttons" underneath that: 1998-2001 Digests, 1998-2001 Archives, and Recent Archives Sounds like you're looking for the middle choice -- which I missed the first time I went looking. Even if you try to go to the old URL, you get

redirected to the new (mailman) one. At least that's what just happened when I tried it.

From: "Jim Temple" <jetemp@insightbb.com>
Subject: Re: [R-390] Fair Radio R-390A Question?
Date: Wed, 1 May 2002 11:30:49 -0400

I recently restored a Fair Radio bought R-390A. I bought the Repairable version without the meters. It was quite beat up, but it did light up when received. To make a long story short, the overriding obstacle to overcome was **corrosion at the grounding points.** Just tightening the tube attachment points sometimes works, but in many instances, the attachment point needs to be disassembled and properly cleaned. My version, also, has a thin coating of some kind of shellac underneath the RF deck. After many hours of cleaning and tightening above deck screws, I finally discovered that the can attachment post of one of the transformers, UNDERNEATH the RF deck was loose and sitting on top of the shellac coat. This ground attach point was not available on top of the deck, so I was overlooking it. Another significant, and long, fix was finding a corroded solder joint. My point is that of all the hours I spent in restoring this R-390A, only one fix was associated with a component failure. All the rest were in fixing corroded solder joints and corroded ground points. One other suggestion is to go to Chuck Ripples site and check out the "common failures" section. The only capacitor that I found to be bad was in the list mentioned in this article. I would seriously consider shotgunning the replacement of the mentioned capacitors. I eventually did. This list is a great resource, and when they are bored, might make a hurculean effort to get you over a particularly sticky problem. Thanks,
guys. Jim

From: "Jeff Adams" <jadams@mcqassociates.com>
Date: Wed, 1 May 2002 11:37:17 -0400
Subject: Re: [R-390] Fair Radio R-390A Question?

.....My version, also, has a thin coating of some kind of shellac underneath the RF deck. After many hours of cleaning and tightening above deck screws, I **finally discovered that the can attachment post of one of the transformers, UNDERNEATH the RF deck was loose and sitting on top of the shellac coat. This ground attach point was not available on top of the deck, so I was overlooking it.....**
That is most likely the MFP coating of the radio. (Fungus protection)

From: "Greg Werstiuk" <greg_werstiuk@msn.com>
Subject: RE: [R-390] Success! Receiver Installed
Date: Thu, 2 May 2002 01:00:55 -0700

Missing top and/or bottom covers are common. These were often removed to improve ventilation thereby reducing internal heat build-up.

From: David Wise <David_Wise@Phoenix.com>
Date: Mon, 6 May 2002 11:52:18 -0700
Subject: [R-390] Voltage charts and socket extenders.

Sorry for the subject change, but I can't find the original email.

Roger Ruszkowski (sp?) recently posted an opinion that voltage readings were

(

a) taken with the tube out of the socket and

(

b) with a TS-505:

> From: Roger L Ruszkowski [mailto:rlruszkowski@raytheon.com]

>

A. we did not advocate tube extenders.

>

B. there were numbers in the TM.

>

C. we had a TS505 meter.
>
> I think the meter was to measure the pins with no tube in the socket.

I don't know the TS-505. Is it a VOM or a VTVM? In the manual, paragraph 5.4.5.2 says: "To avoid removing a subchasis when voltage is to be measured...at a tube-socket pin that does not have a test point, remove the tube and [emphasis mine] *use a tube adapter with test points*."

Although Table 1-11 "Test Equipment Required" mentions the AN/PSM-4 multimeter, I'm convinced it was only used to measure resistance, and that all voltages were supposed to be measured with the USM-116 or ME-6D/U Electronic Multimeter, which I presume is a 10Meg device. I don't know the AN/PSM-4's sensitivity, so I calculated circuit loading in the high-impedance limiter and audio circuits, for 1k/V, 10k/V, and 20k/V VOMs. They all yield expected readings that are somewhat below to far below the chart, while a 10M load always comes close. Also, there are places where a no-tube reading can be proven to differ drastically from the chart. An example is the limiter cathodes with the limiter turned off. They are around 80V with the tube but 0V without. Always use a VTVM to measure voltage at high-impedance points, and read voltages with the tube in place.

From: "Bill Breeden" <wbreeden@tconl.com>
Date: Mon, 6 May 2002 21:21:44 -0500

Subject: [R-390] Xcelite Bristol Spline Blades

Xcelite makes a nice set of Bristol Splines, but if you don't want a whole set, or if you just want a couple of spare .096 - 6 flute splines and an extra handle like I did (the only one I ever use on my R-390A), Tecra Tools in Denver sells Xcelite handles and blades individually. You can order on line at the following link:
http://www.tecratools.com/pages/service/blades.html

I received their catalog in the mail after my first order.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [Capacitors and Bristol wrench set needed...
Date: Tue, 7 May 2002 07:41:02 -0500

Not a problem. Go to www.mcmaster.com and search for bristol wrench. Contact them via email or call. Excellent people to deal with.

From: Thomas Kirk <KirkT@BUCKSLIB.ORG>
Subject: RE: [R-390] Capacitors and Bristol wrench set needed...
Date: Thu, 9 May 2002 13:56:26 -0400

I understand that they will sell to individuals, but once you get a hernia picking up their catalog, you will understand why they won't send it out to everyone. They have a real nice catalog on the web. Check the bottom of this page.

http://www.mcmaster.com/catalog/108/html/2640.html

Date: Thu, 09 May 2002 17:52:50 -0600
From: barrie99@marsweb.com
Subject: Re: [R-390] 3TF7 Failed in service

A long time ago someone (Rick Mish?) told me to never use "standby". Just leave the radio on and turn the gain down. He said that proceedure was easier on all the components. That's it, that's all I remember.

Date: Fri, 10 May 2002 07:04:16 -0700
From: Dan Merz <djmerz@3-cities.com>
Subject: Re: [R-390] Capacitors and Bristol wrench set needed...

Hi, I've bought from McMaster for quite a while, they have some of the more unusual hardware, nuts, bolts, screws, metal, phenolic, plastics. It's not as easy to surf the web catalog as the paper version but it's up-to-date, whereas my 6 year-old catalog has some outdated items but still useful. I've never had an order refused for being too small, though shipping and

handling is a consideration. It's a great place to order screws/nuts by the 100/box, and they have some of the harder to find sizes/head styles. I recently ordered some brass and aluminum sheet for making etched metal tags. Dan

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Date: Tue, 21 May 2002 19:31:20 -0500
Subject: Re: [R-390] The adventure begins (and a capacitor question).
From: blw <ba.williams@charter.net>

Maybe you can do some other things first, and get better performance right away. The first thing would be to check all of the tubes. I cleaned all of the pins on my tubes and put a tiny bit of DeOxit on each pin. I also cleaned every connector and finished with DeOxit again. I did the crystals last. Mine sounded like a different radio when I finished up. All of this is easier than tearing into it first thing. You get better audio from the diode load point instead of line audio. I
think it's #15 for positive audio out. You can get ground from #16.

From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] The adventure begins (and a capacitor question).
Date: Tue, 21 May 2002 22:04:28 -0400

> So my R-390a has arrived.

H'ray!!!

I know there are things that one should do before turning it on. I checked the fuses and replaced a bad one.

John, I think you skipped a few steps....

> But then I cast all caution to the wind and turned it on.

Well, that depends. If the previous owner said it was running recently without sparks or smoke (and actually took an oath to that effect) -- then it might have been safe. But -- you did mention that a fuse needed replacing. Sometimes they just wear out, but other times, a burnt fuse indicates that something is wrong.

> I'm not sure if it's completely functional. .....

Whaddya mean "line audio stuff" -- the meter?/ranges?

> Sounds great through a Klipsch Heresy.

That's a good start -- you're lucky so far. "Heresy" -- is that the right model

name? Does it defy accepted acoustical engineering practice? Or is the name something like "Heritage"? BTW, you are using a 600/8 ohm transformer, right?

A vintage speaker that's too ugly for my living room.

No -- probably more like your living room is not appropriately decorated. How many 6 foot rack cabinets? Droplight sconces? Neon beer signs?

So the overpriced shipping may have worked out. It's a little bit moody though.

What do you mean by moody?

> Maybe a lazy capacitor or something like that. So I'm thinking the first thing to do is start replacing capacitors.

But at least start with the problem ones -- particularly the mechanical filter killer -- C553 I think. At least check it with an ohmmeter, though that's not much insurance. I've yet to find one bad, but the consequences are so steep, I don't take any chances.

> I'm guessing if it's electrolytic, tantalum, or paper, it wants to be replaced.

What's it doing, or not doing?

> But my question is, what's the best capacitor to replace the
> paper capacitors with? Polyester, polypropylene, ceramic or something
> else? I get the idea that the *orange drop* is popular, but has anybody ever
> thought of using ceramics to replace some of the paper ones?

Orange drops seem to be the cap of choice for most. Some swear by the yellow poly's which are true axial and easier to fit in a number of spots. However, one problem is that they're easily damaged by the soldering iron, whereas OD's are not. Also, that heat resistance is somewhat more comforting during actual use. Prepare to get some spaghetti tubing or better yet, teflon tubing for the leads on the point-to-point caps.

> Maybe they are even more reliable than the orange drops. You can get 0.01 uf >in a 1000V version, and you can even get 0.1uf in a 200V version.

Sounds like you're talking about Radio Shack's. I think you mean 0.1 at 2kv. I pick those up from time to time to replace line filter caps.

> So it may be possible to replace all of the papers with ceramics. But I

don't know if it's a good idea. What do you guys think?

Not recommended. Later built SP-600's came through with mostly ceramic disks, but not the cap of choice for R-390A's in most cases. I'd replace that one cap right away before you burn out the filters. Unlikely, but you've been too lucky so far. Some things to check -- try all bands, using the calibrator if necessary or a siggen. It's not uncommon to find some are dead -- usually come in 2's and 3's according to the crystal configuration scheme. Some of the xtal decks have rather loose sockets, so get out the DeOxit and do those, tube sockets and pins, any switches you can reach -- and later on the ones you can't reach ;-).

Check all the tubes, especially for shorts. Check the gear train for grit, gluey grease. Oh -- with the top off and the "utah" cover removed, very carefully watch the slug racks as you change bands and tune through. Some may be binding on the downstroke. It's sometimes difficult to see and you have to press lightly on a rack that's supposed to be going down to see if it isn't hanging up. Also make sure the cam follower rollers are actually rotating otherwise you'll be flat-spotting them as you tinker around. Other basic preliminaries -- check the two plugin caps on the audio deck.

Check the mechanical synch using the procedure in the manuals. Look for any broken or loose clamps. Check the range on the KC control end to end. There are a lot of preliminaries that would logically come before a total recap job, at least from where I sit. This is one radio where there's lots to do and look at before listening. But that's the fun. Just be careful if someone casually asks "Whatcha doin' John?" and you answer "Watchin' the radio." They might take you away (There are a number of guys on this list that are unaccounted for. ;-) Barry

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From: "Jim Temple" <jetemp@insightbb.com>
Subject: Re: [R-390] The adventure begins (and a capacitor question).
Date: Wed, 22 May 2002 09:46:07 -0400

On Chuck Rippel's web site is a file that lists "problem" caps in the R-390A. The very first thing I would do would be to check the tightness of all the grounding points, above and below, all the modules. This includes tube socket screws and under deck transformer mounting points that serve as grounding points. Also, look carefully at all the solder joints and redo the ones that are not smooth and clean.

From: G4GJL@aol.com
Date: Fri, 31 May 2002 18:50:39 EDT
Subject: Re: [R-390] Cleaning Chassis and rebuliding -Long

Today I did some more work on the current BLUE STREAK project here.

(Not the 20 1960s Missile Project but the St Juliens renovation!) Here are some notes on my achievements, which are related to chassis cleaning but do not answer directly Jims question. Im afraid I do not have the mail you mentioned, Jim.

I have the rebuilt St Juliens receiver working very well, astonishingly so in fact. Especially as it was a pretty badly corroded and sand laden example from the massacre. I have been working on it on and off for about four months now. I washed the IF, PSU and audio decks in hand washing soap and warm water, with plenty of pure tap water wash off, then dried them in the clothes airing cupboard for about two weeks. I took great care not to get the IF transformers wet, but other than that the chassis and components were all cleaned and came up beautifully. I was amazed by the amount of dirt and grit washed off into the bowl after the initial cleaning.

Last weekend I stripped the RF deck of its transformers and painstakingly dismantled and cleaned every face of every paxolin cheek in each transformer. I remember Nolan saying that he found the deposit on these surfaces to be conductive, so I didnt want to take any chances here!

I used a QTIP (Cotton bud, here in UK) to clean inside each coil former and around the ceramic caps. I used methylated spirit for this work, taking care not to get too much on the coils themselves. I used a fresh cotton head for each face so as not to cross contaminate from one piece to another.

During the RF deck cleaning I found the wrecked 2-4MC antenna transformer. It had me foxed as I could not get at the fixing screw on that particular unit It was obscured by debris inside the can. When I finally got the transformer off the chassis I found the remains of three slugs and the broken former lurking inside. Totally useless!

The RF deck was washed with kerosene, and thoroughly cleaned. The metal was perfect under all the dirt that had built up on it. The deck is a Collins, as are most of the transformers. I re lubed the moving parts and used Molyslip, applied with a Qtip on the sliding faces and bearing surfaces of the slug racks.

On re assenbly I straightened all the slug springs . I didnt have any talcum powder to hand at the time so I have left applying talc until later, if at all.

A major worry was the coax relay. It was very badly tarnished and showing powdery corrosion in places. I guess that my radio had its back to the sea at St Juliens, as the rear of the set has taken the brunt of the corrosion and dust ingress

One of the coax relay coils was open, so I decided to strip the relay, clean

and rebuild, which I did today.

I used Goddards Silverdip, which is a silver jewellry cleaner available from supermarkets here in UK and possibly internationally.

I dumped the silver parts into the liquid and scrubbed them with a toothbrush.... the Silverdip has magic properties and restores a clean silver finish to most parts after about five minutes immersion. (BTW it is only about A32 a bottle, enough for about 4 R390s). So having rewound the magnet for the whip antenna channel and re assenbled the relay parts, I now have a pretty good looking coax relay at the back of my set.

I also changed the selenium (?) rectifier for the relay supply, as I found it had one poor leg. I guess this might be why one of the relay coils has gone open in the first place. I replaced it with a silicon equivalent, using the old rectifier mounting bracket for the new one. I added a 100volt 100uf electrolytic across the dc side of the relay rectifier. I found that this reduced the hum from the relays when they are energised. A tip worth noting!

I recapped the audio deck and added 47uF 400 electrolytics beneath the chassis to the audio decoupling components. What an incredible uplift in audio output and quality.....Definitly worth doing that on any set with 30year plus elecs in it.

The EAC IF deck seems ok, so no recapping there yet except for the dc blocker berfore the Mechanical filters...just a precaution! I used 0.01 2kV disc ceramic as it was to hand and fitted in easily.

I was hoping to report the repair of the 200kc Calibrator crystal, but alas that was not to be..... The crystal was loose inside the HC6/U can, and therefore the calibrator would not lock. I opened the crystal and attempted to resolder it to its mounting posts. I used a heat gun and LMP solder Anyway, my attempt failed as the crystal now oscillates at 275kc. I guess it has cracked under the heat. I thought it was a long shot any way!

So, in finishing the receiver is working well on all excepy the 2 to4 MC banbs, but without a calibrator. The PTO needs stretching, but I will tackle that next week. In the mean time the rig is back in my shack and I am listening to it for a while!

More updates later.

Date: Sat, 01 Jun 2002 19:48:51 -0500
Subject: Re: [R-390] Cleaning Chassis and rebuliding -Long
From: blw <ba.williams@charter.net>

Yes, there was some good discussion on oxidation....maybe last year. I think we even debated how to clean tube pins. I think the main point is that anything liquid will leave some film behind when it dries. Tape manufacturers recommended alcohol to clean tape heads when recorders were very primitive in the late 60's. A few layers of dried alcohol was enough to prevent recording and playback in some cases. I always try to use a soft eraser first to burnish and clean the metal surfaces. Then, DeOxit is applied to finish up the job. If I had to use a substance to cut through crud or corrosion I would clean the metal the best I could, wipe dry, use the eraser to polish the metal surface clean, and then apply DeOxit. DeOxit is the only thing I want between metal to metal contacts.

From: <plmills@attglobal.net>
Date: Mon, 3 Jun 2002 05:36:23 -0500
Subject: [R-390] need DOD manual site info

Hello, I lost all my bookmarks in switching to a new computer a few weeks back. Would someone be so kind as to send me the URL for the Defense Department manual site?

Date: Mon, 3 Jun 2002 05:58:20 -0500 (CDT)
From: Dave Merrill <r390a@enteract.com>
Subject: Re: [R-390] need DOD manual site info

http://www.logsa.army.mil/etms/find_etm.cfm

From: "John Saeger" <john@whimsey.com>
Subject: Re: [R-390] Capacitors
Date: Tue, 4 Jun 2002 23:54:48 -0700

Chuck Rippel wrote: Don't get to "enthusiastic" replacing parts, you may do more harm than good. O.K. I think this settles it. I've replaced C553. I'll leave it at that for now and proceed with caution. Thanks!

From: "Don and Diana Cunningham" <wb5hak@prodigy.net>
Subject: Re: [R-390] capacitor analysis
Date: Wed, 5 Jun 2002 06:49:40 -0500

I don't post much on this reflector, just soak up the "wisdom", but be very careful "spraying" DeOxit all over things. In my dealings with the older rigs, I use a syringe and pinpoint where I put DeOxit a drop at a time and have much better success. DeOxit WILL swell phenolic (bakelite, whatever you call the material in most of the switch wafers) and ruin these switches!!! The syringe also helps put just a drop in tube sockets, etc. Just an observation from experience.

Date: Wed, 05 Jun 2002 11:03:50 -0400
From: tbigelow@pop.state.vt.us (Todd Bigelow - PS)
Subject: Re: [R-390] capacitor analysis

I'll echo exactly what Don has said, from first hand experience. The saying 'a little goes a long way' is applicable here. What I've gone to doing even on ceramic wafer switches is to take a paper towel or small cloth, wet one small area with a burst od DeOixt red, then wipe the contacts until clean. If they're in an inacessible area you're sometimes left with having to spary, but be very careful to shield other areas. Always use the 'L' setting as it saves liquid and prevents blasting everything in sight. As well, try making a swab by wrapping the end of a long, narrow screwdriver or similar and proceed that way. Caig offers swabs, but I have good luck using Q-Tips and making my own swabs, then just spraying a bit on the ends. Same thing with paper for cleaning relays.

An order of supplies arrived last week and includes a can of CaiLube(blue can). Unfortunately the rig I'm restoring has sealed pots, but I'll use it soon on something else to get some idea how it compares to DeOxit for controls. CaiLube says it's made specifically for moving contacts/controls, lubricates and cleans. BTW, someone mentioned having the problem of a swelled wafer switch from DeOxit and used a different chemical to remove it. Can't recall what it was - mineral spirits? Acetone?

Date: Wed, 05 Jun 2002 11:38:10 -0400
From: Jim Brannigan <jbrannig@optonline.net>
Subject: Re: [R-390] capacitor analysis

I have a cantankerous pot in an old Heath SWR bridge. De-oxit fixed it for a while..... Cai-lube seems to have done it...time will tell... I use their dropper bottles....the spray gets all over....

From: "John KA1XC" <tetrode@worldnet.att.net>
Subject: Re: [R-390] capacitor analysis--deoxit
Date: Wed, 5 Jun 2002 19:52:15 -0400

Todd, that was probably me, amongst other things I treated a 390nonA IF bandwidth switches w/the 5% Deoxit spray which got into the moving phenolic sections, then I used an alcohol based electronics cleaner from VIP automotive supply to flush it out. Then I dipped a toothpick into the Deoxit and applied it just to the electrical contacts. I'm not sure if the phenolic actually "swells", it seems more like it "rubbed" with the Deoxit. After I flushed it out the recovery seemed instantaneous, it definitely moved better when dry. Acetone is one of my favorite solvents but is too strong to use as a "bath" cleaner; I use a commercial pump bottle which

dispenses just a little bit and then wet a Q-tip with it. Mineral spirits works good as a general cleaner, but takes longer to dry.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Date: Thu, 13 Jun 2002 08:33:02 -0500
Subject: [R-390] Clutch question

My "new" R390A has something I've not seen or heard about before. The clutch spindle has a "stop" collar on it. This is apparently designed to stop the clutch at a certain depth. Is this "stock"? I think it has the splined set screws in it which made me think it might be original equipment. I seem to recall the manual saying the knob should be set to provide a given amount of clutch travel, but I don't recall anything about a stop collar. Has anyone seen anything like this before?

From: G4GJL@aol.com
Date: Thu, 13 Jun 2002 12:46:28 EDT
Subject: Re: [R-390] Clutch question

My Blue Streak has that too... two off 8 point bristol set screws to hold it in place. My other 4 sets don't have these.

From: "Chuck Rippel" <R390A@R390A.com>
Date: Wed, 19 Jun 2002 12:23:10 -0400
Subject: [R-390] RE: Yike! & Restoration Thoughs

> > Of course, famous names don't hurt. (Soon Rick 'n Chuck will be demanding
> > royalties, heh heh.)

I thought I'd offer some comment on the restoration process as seen by one who does it. It may shed some light on the process and differences in approaching it.

> It won't be Rick at Miltronix..... he just completed a refurb on my Motorola and
> in fact it's on the way back as I write this.
> Rick has ceased doing his complete restoration.... no more cosmetic work
> like cleaning and painting at all. The main motivation for him to cease this is
>that he finally realized that he was loosing his ass with all the time

consuming
> cosmetic restoration.

I don't know why, its not that hard although is _time consuming_. That said, I had a good friend of mine who was a Cordon-Blu educated Chef tell me once that you "first feast with your eyes then with the pallet." I took his comment to heart; how can one feel good (in this case) about a refurbed radio if it's a dissapointment to look at? I guess the difference is that Rick is running a business and does his receiver work to put bread on the table. On the other hand, I have a very different philosophy. I want each radio to pass a personal spec rather than approach this as solely a business venture. I have what was, a new from the box R390A receiver on hand. A few of you who may have visited may have seen it. I like each receiver I complete to certainly perform like that one and also come as close to looking like it as possible. If it takes 2 weeks or a month, so be it. The unfortunate side of that is that I must keep this crazy waiting list. The neat side is that I have people fly into our rural airport to pick their radios up or drive down. The last person who picked a radio up here was about 4 weeks ago. He left with tears in his eyes (no kidding).

> You couldn't really charge for the necessary time as not too many people could >then afford your work. He said he'll still do complete repair and electronic >restoration as the turn over is faster.... but that's it. Too bad... I couldn't even >talk him into repainting my front panel or knobs and I had the cash.

Ricks absolutely right. Howard Mills, W3HM who does a good deal of Collins "St. James Gray" gear restorations and I once sat down and calculated what we made before taxes. It's right about $5-$7/hour. And thats ok too. Howard and I both feel that its better to return given piece of equipment back as we would personally expect rather than something less Neither of us run "radio factories" prefering to approach the effort as an oblique kind of art, if you will. I document the repair process, the test results and supply a rather substantial booklet with each radio. I would like each owner to treat the completed radio as sort of an heirloom. Lord knows, properly done, an R390A will remain useable for several more generations. There are phases in restoring a receiver that are a real pain in my butt. In order, they are:

Refinishing/relettering a front panel
Refinishing/re-lining the knobs
Rebuilding the filter caps (mostly 'cause the technique I use is sort of dangerous)
Building the solid state ballast tube replacement modules.

Rather than make a partial effort, I am going to maintain my level of detail

and even increase it where possible. That includes things like painting knobs, replacing all the front panel hardware with new Mil-Spec Stainless, offering front panel re-paints/re-letters on engraved panels and putting new elements in those confounded filter caps. Plus all the other things that seem to eat up my evening radio time.

> This auction is what really set him off I think. Something about $750 for a
> full refurb that then gets turned around on eBay and sells for $1900 +/-....

I can't blame him; it bugs at me at times also. However, when its all said and done, it's not my place to try and dictate what a private owner does with his equipment. However, I won't knowingly re-do a radio or radio(s) for known "dealers"/chronic resellers, unless they represent its for their own private use. Its just "one of my things," I suppose. I remember getting a note from the "Radio Finder" about 4 years ago esentially asking me if he could be a "dealer" for my work. I declined for the reasons above. A contrast between the level of work I choose to deliver and v/s Rick does is neither bad or good. Its just a difference in philosophy. Rick is a decent person and you don't have to wait as long to get a radio done through him. In contrast, I would never take my efforts on as full time work as I am sure my personality would quickly religate what I do to rote work and the quality would surely suffer. However, there is a patience trying wait (which I deeply appreciate from those who endure it). Best

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From: "Chuck Rippel" <R390A@R390A.com>
Date: Wed, 19 Jun 2002 12:57:20 -0400
Subject: [R-390] Oooops...

<snip> The name tag problem is fairly common. Tags were swapped for inventory control or at depot. Hank Arney did make repro tags that were supposed to be of good quality. Maybe he will contact you if more are available. I guess you could check the back of the chassis and see what manufacturer and contract number you find. You can check the AF deck and power supply
easily for manufacturers. That will give you some idea of what components are there for starters. It was common to throw in whatever component was on the shelve at depot, so don't be surprised to find a mix of manufacturers. <snip>

From: "scott" <polaraligned@earthlink.net>
Date: Mon, 24 Jun 2002 06:30:08 -0400
Subject: [R-390] Silver solder

>Is silver solder recomennded for any of the joints?

I have just re-capped the AF module. There are so many mechanical grounds in this set!! What makes it worse is the fact that the chassis is aluminum. Aluminum oxidizes and makes for poor connections. Aluminum wiring in a building is an electricians dream--lots of service work. A special compound is now required for aluminum connections. Why should this radio be different?? Boy it just looks like a lot of intermittent and hard to trace problems in the making. I am loosening all pertinent connections....applying Deoxit....then re-tightening. Would seem foolish not to while each module is on the workbench getting rebuilt.

From: "Jim Temple" <jetemp@insightbb.com>
Subject: Re: [R-390] Silver solder
Date: Mon, 24 Jun 2002 10:05:28 -0400

I have seen several recommendations for silver solder on joints in the "signal path" in the RF deck. I have not applied it, and my signal is fine, but it could improve if I take the time to do it.

On grounding points... Many faults disguise themselves as component failure when they are in reality a component that has lost it's ground. Reestablishing the ground will cure the majority of suspicious components, in my experience. Also, take the time to re solder joints that look suspicious. Grounding points and deterioriated solder joints are the cause of almost all faults in this radio, in my experience.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Silver solder
Date: Mon, 24 Jun 2002 09:10:16 -0500

Yeah, a radio designed like this probably won't last more than 50 years at the most...

Date: Mon, 24 Jun 2002 15:01:20 -0400
From: Norman Ryan <nryan@intrex.net>
Subject: Re: [R-390] Silver solder

Loosening mechanical grounds, dabbing on a bit of DeoxIT, and retightening is sufficient IMO. Look out for varnish under fasteners. There won't be further elecrolytic action unless the radio is operated in a location like St. Julian's Creek. Ordinarily the tubes' warmth will keep dampness in check.

Silver solder is useful for the RF deck, but be aware of its high melting temperature. It's sufficient simply to desolder signal path connections with a solder sucker and resolder lightly with good quality 63% tin rosin core solder. Clean off rosin right down to Teflon insulators with Q tips dipped in

suitable solvent. DeoxIT the plug-in coil contacts and the tripod-like clip under the adjustable capacitors.

Do the above once every half century! :-)

From: John Kolb <jlkolb@cts.com>
Subject: Re: [R-390] URM-25D recap.

HP 410's are general purpose VTVM's, measuring AC and DC volts and resistance. They are fine for measuring high voltage levels such as transmitter outputs. They don't measure real low voltages however. The later models of the HP 400 series of AC voltmeters, 400E, etc, are pretty flat to above 5 MHz, and go down to 1 mV full scale on the most sensitive ranges. The other choice for low levels is the Boonton 91 or 92 series of RF voltmeters, which are both wide freq range and sensitive. If the URM-25 output level is only set measured at a single freq, I'd use the 400E and measure it at about 1 MHz. Using a sensitive meter such as the 400E would let you check the attenuator output at several points, not just max output.

Date: Mon, 24 Jun 2002 15:25:55 -0400
From: Jim Brannigan <jbrannig@optonline.net>
Subject: Re: [R-390] Silver solder

The only time I used Silver Solder in a radio was to connect a BNC to a circuit board in an HT. Flexing of the antenna kept breaking the tin/lead connection, silver fixed it. With a good mechanical connection the strength of silver is unnecessary..... and the additional heat to solder it undesirable.

From: "Dan Martin" <dmartin@visuallink.com>
Subject: Re: [R-390] Silver solder
Date: Mon, 24 Jun 2002 18:32:05 -0400

You know, you can >read< something over and over and intrinsically accept it as valid but it's not until it happens to you, in your own experience, that you really believe it. I'd known of Jim's admonition above on deteriorated solder joints for years and always kept a low level look-out for them. It wasn't until I began to experience a rash of odd problems with my '67 EAC recently that I finally experienced it first-hand. To make a long story short, an assortment of .5-8 mHz peculiarities, including obvious AGC and sensitivity issues got me to take out the RF deck. I had no AGC at the grid of the first mixer and got infinite from the grid pin to ground. Ah. open resistor, I thought. R208, 231 or 232 have gone open. Nope. Checking each one individually showed they were fine. Finally, after repetitive checks over and over, I had continuity all through the AGC line ... except at one terminal joining two resistors together - R231 and 232, as I recall. It was fine in and fine out, but open at the solder junction. Laid a soldering iron on

it and added a touch of solder and - perfect! All was well. Funny thing is, this was my personal 390A of several years, in immaculate condition and gone over both by me and Chuck. The solder joint just opened one day. Like - that! It >does< happen! I always understood it. Now I believe it!

Date: Mon, 24 Jun 2002 19:08:35 -0500
Subject: Re: [R-390] Silver solder
From: blw <ba.williams@charter.net>

Do the tube pins too, and work them in and out of the tube socket a few times. Do all plugs. I did the pins on the crystal too. Did the antenna relay. A tiny bit of DeOxit went in the balanced antenna input plug. The change in the radio was very noticable.

From: Normiehall@aol.com
Date: Mon, 24 Jun 2002 20:09:18 EDT
Subject: Re: [R-390] Silver solder

Dan has me wondering. The most common solder sold in parts houses when I was buying same was 60/40 Ersin multicore which worked just fine for most all electronic repair and construction use. On all of our Tektronic equipment, however, we were cautioned not to use common electronic solder but the solder contained on captivated little plastic spools within the equipment. I don't recall now what its composition was but believe it may have had silver included. Does anyone have a better idea about this?

From: "scott" <polaraligned@earthlink.net>
Subject: Re: [R-390] Silver solder
Date: Mon, 24 Jun 2002 20:32:05 -0400

It does have a silver content Norm. The reason silver solder is needed is that the ceramic was made solderable by firing silver onto it. Ordinary lead solder will "eat up" the silver making it no longer solderable. The idea is that the solder is partially saturated with silver so that little of the silver from the ceramic strip will dissolve into the molten solution. There doesn't have to be a lot of silver in the solder to prevent this from happening , 3% is what Tek supplied, but overheating will still destroy the solderability.

From: "scott" <polaraligned@earthlink.net>
Subject: Re: [R-390] Silver solder
Date: Mon, 24 Jun 2002 20:36:11 -0400

Thanks Dan, I was referring to 2% silver solder in my initial post. It works just like regular solder. I can hardly tell the difference when using it. I just thought with so much silver plating in the receiver, that maybe there was a need for it on certain connections.

From: "scott" <polaraligned@earthlink.net>-
Subject: Re: [R-390] Silver solder
Date: Mon, 24 Jun 2002 20:37:38 -0400

Hmmmm..... maybe I should consider touching up all joints. Good post Dan.

From: "Greg Werstiuk" <greg_werstiuk@msn.com>
Subject: RE: [R-390] Silver solder
Date: Mon, 24 Jun 2002 22:34:12 -0700

It did. As you may recall, Tektronix used white ceramic terminal blocks for component/wiring interconnect. The solder points on those terminal blocks included silver (and possible other metals) to create the bond to the ceramic. The use of "regular" solder could dilute/deplete the silver to the point of terminal block failure.

Date: Tue, 25 Jun 2002 07:22:14 -0400
From: Glenn Little <glittle@awod.com>
Subject: RE: [R-390] Silver solder

THe solder used by Tektronix was a silver bearing solder. It contained 2% silver. This can be bought today as 62/36/2 alloy solder. It is very close to Eutectic. The silver keeps the metalization on the ceramic terminal strips from being absorbed by the solder. The silver bearing solder is also required when you do surface mount soldering. Capacitors and resistors have metal deposited on ceramic. The silver is required to keep the creamic to metal bond from breaking down. Ersin makes some very good solder. They used to make (may still do so) a solder called sav-a-bit. This had some copper in the alloy. Before the days of plated soldering iron tips, we had to file to tip to get its shape back after the solder induced erosin of the tip. The sav-a-bit solder was to prevent this erosion. There are many alloys of solder and many types of flux. When soldering to a circuit board, I use a water soluable flux. I never use this solder for connectors. This flus has to be washed from the connection a short time after the soldering operation, or it will cause corrosion. The more common rosin flux attracts moisture and becomes sticky trapping dust and other particles. This contaminates the joint and leads to leakage. A very bad problem in high voltage and VHF circuits. Hope that this helps a little.

Subject: RE: [R-390] Silver solder
Date: Tue, 25 Jun 2002 07:50:00 -0400
From: "Veenstra, Lester B." <Lester.Veenstra@comsat.com>

Yes, as the rational was the silver loaded solder would not leech out the ceramic standoffs with u shaped solder cups that Tek used for component

tie points.

From: "Chuck Rippel" <R390A@R390A.com>
Date: Tue, 25 Jun 2002 10:41:39 -0400
Subject: [R-390] Silver Solder

>Is silver solder recomennded for any of the joints?

Yes. I silver solder all the connections in the signal path.

>I have just re-capped the AF module. .....

I use a mating compound called Dow-3 on critical connections. Its a bit old and I am sure they have a substitute by now but it seems to have workedfine.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Date: Tue, 25 Jun 2002 09:48:32 -0500
Subject: [R-390] Flux Solvent Question

On the subject of soldering, what is an appropriate solvent to use to remove excess flux?

From: "pete wokoun, sr." <pwokoun@hotmail.com>
Subject: Re: [R-390] Flux Solvent Question
Date: Tue, 25 Jun 2002 06:15:14 -1000

flux remover.... ;-) cheaper alternative I like is a trichloroethane spray, now getting hard to find, but still available in some auto supply stores as an electric motor and brake cleaner. I just do printed circuit boards tho, don't think sockets or connectors need it in most applications.

Subject: Re: [R-390] Flux Solvent Question
From: Richard.McClung@Dielectric.spx.com
Date: Tue, 25 Jun 2002 09:36:17 -0700

The GREEN alternative (and one that doesn't give nice squeaky clean results like the trichloroethane, or Freon) is to use the water soluble fluxes....

Date: Tue, 25 Jun 2002 13:17:44 -0400
From: Glenn Little <glittle@awod.com>
Subject: Re: [R-390] Flux Solvent Question

It depends on the flux. Most flux that you will run into is RMA (rosin mildly activated). This can be removed with a flux cleaner specifically

formulated for to job, or by denatured alcohol. This is not the 70% that you get at the drug store. You might be able to find 91% at the drug store. THis is fine. You can also get denatured alcohol at the paint department of your local store. If you get into a bind, Vodka or everclear from your local spirits shop also work fine. If the flux is unknown you mighr want to try water first. There is a no-clean flux that requires special treatment to remove. If you start to see a white liquid when you apply alcohol, you have a noclean flux. Do not go any further with the cleaning unless you want to get the correct chemistry or you want to use lots of alcohol. I usually tilt the board against something on the bench with some paper towels under the edge of the board. I then apply alcohol at the top of the board with cotton swabs. This lets the flux saturated alcohol collect on the paper towels. I continue with the alcohol bath until the board is no longer sticky. Hope this helps

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Date: Tue, 25 Jun 2002 14:49:10 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Silver Solder

Now that this has been brought up,..... The T-368 owners have found that the past problems with the interlocks are eliminated by the use of the same oxidation inhibitor that electricians use on aluminum wire. The sintered zinc particles break through what oxidation is there and the parafin carrier keeps further oxidation from happening. May be better than De-oxit on ground connections?

Subject: Re: [R-390] Silver Solder
From: Richard.McClung@Dielectric.spx.com
Date: Tue, 25 Jun 2002 16:15:37 -0700

Here at work we use ALUMA-SHIELD for all of our aluminium antenna connections. ALUMA-SHIELD CAT # 21059 For aluminum cable connections; contains fine zinc particles which break through oxide film on cable strands upon compression of connection; assures a low resistance contact and seals out air and moisture. Manufactured by JET-LUBE, INC. for THOMAS & BETTS CORPORATION, BRIDGEWATER, NJ 08807

From: "Drew Papanek" <drewmaster813@hotmail.com>
Date: Wed, 26 Jun 2002 17:16:22 -0400
Subject: [R-390] Flux Solvent Question

Isopropanol will certainly work for cleaning the module chassis but I've had good luck with blasts of hot water and a small paintbrush to remove the dirt. After blowing the water out with a hairdryer, I set the module about 1 ft under a 100 watt reflector fixture lamp. The module heats up to a temperature somewhat hot to the touch and I leave it that way to dry out overnight. Others on this list use WD-40 and a rag, WD-40 followed by

water, or water and a mild detergent followed by a good rinse. Some even claim to have put their modules in the dishwasher.

From: N4ue@aol.com
Date: Wed, 26 Jun 2002 20:28:05 EDT
Subject: [R-390] (no subject)

I have used a conductive grease made by Nye Co. It has fantastic conductivity. It is a carbon/synthetic compound. We used it in IBM production of a round shaft / tangential contact, (both gold). Because the power supply was a constant current variety, we had lots of problems with the contacts. However, the grease fixed all those problems. Unfortunately, it's about $60 an oz. Anybody want the part #? ron

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From: "Huether, Carl x7985" <Carl.Huether@skyworksinc.com>
Subject: FW: [R-390] Flux Solvent Question
Date: Tue, 25 Jun 2002 14:02:09 -0400

Isopropyl alchohol is OK if the flux is reasonably fresh. For old dried on residue, acetone works well. We use both at work on microwave PC material. The assemblers also use TECHSPRAY "AMS GENERAL DUTY FLUX REMOVER".

At home I use GC "FLUX-OFF". As with any solvent test it first as some plastics may be affected. One thing NOT to do is use any cleaner such as Simple Green, Super Clean, Scrubbing Bubbles and the like around HV. It will result in HV breakdown, particularly on phenolics. I learned this the hard way when I tried cleaning a SB-200 power supply board.

Flushing with alcohol or water didn't help since the product was absorbed into the pheonolic. With any solvent or cleaner, have plenty of ventilation and wear gloves/eye protection as appropriate.

From: "Bill Smith" <billsmith@ispwest.com>
Subject: Re: [R-390] Flux Solvent Question
Date: Wed, 26 Jun 2002 20:11:29 -0700

Very interesting regarding Simple Green et. al. I have used Fantastic with good success, and ammonia with glass cleaner as a rinse on big rigs. I don't know what I used to clean (poison?) a Johnson edge-wound coil, but later tested it after I couldn't get it to resonate and found the graphite-colored insulator material was conductive. Possibly 409, Pine-Sol, or one of the bubblies you refer to below. I could measure continuity with an ohm meter. Using the original pieces as models, the three insulator bars were reproduced with lexan plastic. Must say the result looks sharp and of course works well.

From: "Greg Werstiuk" <greg_werstiuk@msn.com>
Subject: RE: [R-390] Silver solder
Date: Wed, 26 Jun 2002 23:33:15 -0700

Glenn - Thank you. Good overview of solder choices for some of our typical applications. Another good reason for using water soluble flux is the elimination of the solvent chemicals typically otherwise required. The easiest cleaning solvents were fluorocarbon based, hazardous to the environment and now banned. They also weren't so good for the plastic used in electrolytic and other capacitors.

Date: Fri, 28 Jun 2002 19:52:22 -0400
From: Scott Bauer <ody@radicus.net>
Subject: [R-390] looking around for r390-a

I have been dreaming of an R390-A for years and decided it was time to ask a question or 2. I am sure these have been asked thousands of times here but I just got on the list. I have seen ads from Fair Radio and was wondering if anyone can tell me of their experience with Fair Radio. I am also hoping to find out if there is a better 390-A to look for. Like one made by Amelco verses Motorola of maybe one made after a certain date. Or are all of them as good as another? I will be looking for one within a month or so and any help will be greatly appreciated.

Date: Fri, 28 Jun 2002 20:25:45 -0400-
From: Norman Ryan <nryan@intrex.net>
Subject: Re: [R-390] looking around for r390-a

Hi, Scott, There are R-390A's and there are R-390A's. Not so much the different makes, but the condition of the set you contemplate owning. All makes of new or repaired sets were supposed to measure up to standard before shipment. Bear in mind that, as a modular built rig, most don't have their original modules much less name tag. Take stock of a couple of things-- your skills and your budget. A radio needing TLC costs less than a pristine one. Although you might get lucky and find a cherry unit cheap! Fair Radio are nice to deal with. Even if you have problems with a "used, repairable" unit, they'll try to make good. Their pile is getting smaller with no more in prospect. eBay is another source, but it would be helpful if you have a buddy on this list to help assess pics and ask the right questions. R-390A's are not showing up at hamfests with much regularity nowadays and chances of finding one on the curb in your subdivision are practically nil. (Hey, the latter happened once to Ed Z!) So, do you like hands on work such as fixing up or homebrewing? Willing to learn? Tube stuff is lots of fun to work on compared to solid state stuff. Parts are still available one way or another. Download the Y2K manual (free) from the R-390A

website. If you have the basic alignment gear (signal generator and a meter), access to a tube tester, you could become as avid as any maven on this list. Go for it. Do a biopsy on your wallet, then throw caution to the winds!

Date: Fri, 28 Jun 2002 21:24:24 -0400
From: Scott Bauer <ody@radicus.net>
Subject: Re: [R-390] looking around for r390-a

Hi Norman, Thank you so very much for the input. I was hoping to hear nice things about Fair Radio and I will buy from them if nothing comes up local. Guess I better hurry up and get one before they are gone though. Luckily I do have access to a nice signal generator and have pretty good skills but have done very little work on tube gear. It is never too late to learn. Thanks again for the very nice input.

Date: Fri, 28 Jun 2002 18:29:34 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] looking around for r390-a

The 1967 contract from Electronic Assistance Corp is the newest run of them in any quantity. They will have the newest capacitors and best wiring. Best to get all EAC modules if possible. BUT, the fact of the matter is that they aren't that available anymore, so as beggars we shouldn't be too choosy. Don't even ask about the accompanying transmitter, the T-368, they just aren't available!

Date: Fri, 28 Jun 2002 21:27:13 -0500
From: Jerry Kincade <w5kp@swbell.net>
Subject: Re: [R-390] looking around for r390-a

They are available on rare occasion, Joe, but are getting pricey unless you just get lucky. I just got my Crosley-built T-368C a couple of days ago. 700 compact pounds of pure man's transmitter. Heaviest transmitter *per cubic foot* ever built, I suspect. Has an incredible amount of large iron packed tightly into a surprisingly small cabinet.

Date: Fri, 28 Jun 2002 19:34:42 -0700
From: Dan Merz <djmerz@3-cities.com>
Subject: Re: [R-390] looking around for r390-a

Scott, let me relate my limited experience. I wanted one of these for about 15 years and was delayed in my quest by buying a 392 at the urging of a very experienced ve ham who was into military stuff. I wasn't disappointed - it had all the gadgetry and worked well - but the 390a still lurked in my mind - and I finally bought one about 2 years ago - a late model EAC - I paid

a little over $400 via ebay - I know the price of a radio depends on how patient you are - hamfests around here seemed to produce a limited number and their price didn't seem to ever hit the $200 that I always thought I'd find one for - so I lost patience even though I suspect there are a lot of these radios collecting dust, or leading a very sheltered life. I figured if it looked pretty clean and worked somewhat, couldn't go too far wrong - fortunately I ended up with a very nice set that worked very well after I replaced a mechanical coupler to the pto and pruned a winding in that module. There's plenty of info on this set, and this reflector has some top notch contributors and savy people, once a particular problem is identified. My experience with radios has been that each one needs something different and even an apparent basket case can be revived with knowledgeable effort- you'll probably pay a big premium to get one that is guaranteed to be fed and groomed to perform to the highest standards. In the back of my mind, I consider the 390A a modern radio compared to a lot of the radios that I have, so I didn't have any criteria from a collectors view of having an early one vs a late one. Without really knowing too much , I assumed that a later EAC model might have fewer things to fix as long as it looked cosmetically good, because the capacitors were newer and of later design. In hindsight, the front tag may or may not mean much about the various modules that are in a particular set. In mine, the front tag turned out to indicate what was inside as far as manufacturer. I have replaced only the obvious few caps so far, as recommended by the guru's of this domain. I think the only failed one I've found was the unusually physically small, big value cap in the cathode circuit of the audio unit, one of those that is reported to often be bad. I continue to be impressed with this radio. I must say that there is probably no substitute for seeing a radio up close before buying it, or second best, buying from someone you trust and can talk to. I did quite a bit of corresponding with the ebay seller before deciding to compete in the bidding. I wouldn't say he was a 390 expert but he answered my questions in an honest way. I would say his shipping expertise was marginal for a heavy radio, and the radio fortunately suffered only minor bending at the rear which I straightened. Fair Radio is a reputable place - I have no idea what you get for your buck on their 390A sets today - if I bought one, it would only be after talking to their rep on the phone to get a better idea. I think the heartbreak of buying an older radio is finding corrosion that you didn't expect and finding it's more than superficial. The widespread pride I see from 390A owners indicates to me that the particular model or contractor may be less important than condition of the radio, though I speak from limited experience. I'll be interested to hear if there are strong opinions on this subject, good luck in your quest, Dan.

From: "Jim Shorney" <jshorney@inebraska.com>
Date: Fri, 28 Jun 2002 22:10:26 -0500 (CDT)
Subject: Re: [R-390] looking around for r390-a

FWIW, I just bought mine two weeks ago from a local ham, virtually sight unseen. No nameplate, worn front panel, but complete. I mentioned I had been looking for one, and he made me an offer of an extra he had for a good price. I went over there with cash in hand, never having seen the radio. Did I care what shape it was in? Only to a point. What I cared about was that it was a 390A, it was complete, and I trusted the seller. Bottom line.

From: "scott" <polaraligned@earthlink.net>
Subject: Re: [R-390] looking around for r390-a
Date: Sat, 29 Jun 2002 05:59:41 -0400

Hi Scott. (Hey, nice name). I purchased my 390A very recently on e-bay. It cost me $580, but it is a really sweet one. VERY clean, intact, unaltered, original meters, cosmetically excellent. It just needs the usual re-capping. I am rebuilding this and it should look and perform like new. It is a '63 Teledyne contract. These later contracts are more desirable than earlier ones. It is impossible to tell for sure just by the label as they were often switched around. My unit came with a Collins tag. I think Fair Radio wants $550 for their checked units so this was a pretty good deal in comparison. I got lucky as when I bought it, I knew nothing about them. You can get a good deal sometimes on e-bay but you have to be careful. I just spent $500 on a 390 non-a and it is a piece of crap. If I had seen it in person, I would never have bought it. Ask a LOT of questions to the seller.

Date: Sat, 29 Jun 2002 06:25:53 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] looking around for r390-a

First, all radios we made to the same specification. Short of a very few spec busts which are uncommon, and after 40 years of aging, I don't think one brand is necessarily better than the other with the possbile exception of the 67 EAC. These were the newest mass produced radios, and I find more of these that have not been through a depot than other makes. If you want to have a radio that performs well for a reasonable cost, I'd suggest you get a service manual and become acquainted with the various posts and sites which folks have built to help with alignment and service. If you find a sound hull, it can nearly always be brought up to peak cond. with a bit of TLC. These radios are very robust and hard to break.

Date: Sat, 29 Jun 2002 10:15:27 -0400 (EDT)
From: "Paul H. Anderson" <pha@pdq.com>
Subject: Re: [R-390] looking around for r390-a

Some differences exist, however. The slug rack rollers seemed better on earlier units. RF decks on earlier units have ceramic wafers. Someone with

more general experience can tell which models have which. Be careful to remember that there are two EAC contracts - everyone has mentioned the 67 EAC, but there was an earlier 60(?) EAC contract where there would be some differences. But the main point is, after 40 years, they're mostly facing the same problems - leaky audio filter caps, under AF deck electrolytic cap, maybe not so not mechanical filters (recall recent thread about the goo in them).

> If you find a sound hull, ... I agree 100%. They are amazingly robust - a testament to the design and manufacturing of these units. One other thing - a dirty unit is not necessarily a bad unit - just be careful that what you're looking at isn't hiding corrosion. The best unit to spend your money and time restoring is one that will look great when you're done, and that means the least amount of corrosion and physical damage. Even in spite of corrosion and physical damage, you can still usually repair them.

From: "Jim Shorney" <jshorney@inebraska.com>
Date: Sat, 29 Jun 2002 12:14:14 -0500 (CDT)
Subject: [R-390] update

Had a few minutes to kill, so I pulled the IF chassis from my 'new' 390A (actually found a spline key in my toolbox that fits). It's stamped 'Motorola Inc.', SN 2362. Also stamped MOD.1 on the top of the chassis. Can't see any smoked parts, that's good. Sniping some of the good tube shields on epay. Caig's web site sez Deoxit has a 1 year shelf life. Has anyone noticed a decrease in effectiveness with old stuff? My bottle is a couple years old... Think I'll flip the rig over next and see what crawls out. Won't really get cranking on this till after summer camp next month.

From: "Jim Shorney" <jshorney@inebraska.com>
Date: Sat, 29 Jun 2002 12:59:09 -0500 (CDT)
Subject: [R-390] this is interesting

Found a small metal disk (washer?) about 1.25 inches in diameter laying in the bottom of the R390a. There is a wear pattern on one side near the outer edge, and a small hole in the middle where it is apparent on the other side that it was fastened to something with a screw. I can't grok where it belongs. Anyone have a clue? The power supply has the solid-state rectifier mod. SN 2327. Saints preserve us, it looks like all the modules in this thing may be original. Time to go out and play in the heat.

Date: Sat, 29 Jun 2002 12:41:14 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] this is interesting

> Found a small metal disk (washer?) .....

Part of tuning lock or calibration clutch thingus? '390's have a number of round things with holes in the middle.

> The power supply has the solid-state rectifier mod.....

Whoaaah! I think you're supposed to perform ritual incantations and consume special fluids. Especially as you've already mentioned saints, and so on.

Date: Sat, 29 Jun 2002 13:50:55 -0700 (PDT)
From: John Kolb <jlkolb@cts.com>
Subject: Re: [R-390] looking around for r390-a

> But the main point is, after 40 years, they're mostly facing the same problems -

The mechanical filters with "goo" problems are only a particular series of Japanese Kokusai brand filters - I haven't seen anyone report problems with decomposing foam in Collins filters although there may be problems with some of the early Collins filters in rectangular cases that used standard rubber O-rings for support. None of this applies to the F455N series of filters used in the R-390A's.

Date: Sat, 29 Jun 2002 15:45:18 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] looking around for r390-a

> .....The slug rack rollers seemed better on earlier units.....

Not true, Paul, The rollers on the Motorola RF deck don't turn! They just slide, the EAC rollers roll! Also, the slug racks don't have a shaft that goes all the way across like the EAC racks do.

Date: Sat, 29 Jun 2002 19:55:55 -0500
Subject: Re: [R-390] update
From: blw <ba.williams@charter.net>

I dunno about this shelf life thing as DeOxit is supposed to work for years and years. This probably should be disregarded like those pesky date stamps on food. Have you ever noticed that beer doesn't have that stuff stamped on it? Watch out for any spiders when you flip things over. All old radios have at least one resident spider somewhere. Most are dead, but you never know. (at least they don't carry the Hanta Virus)

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>

Subject: RE: [R-390] How to finish a front panel (more)
Date: Tue, 2 Jul 2002 09:04:48 -0500

Lots of guys seem to like Rustoleum, but I'm not that fond of it. I have used some spray cans and got some very good results. I had Rustoleum yield some bad orangepeeling that I haven't gotten in other brands.

The black worked okay on the knobs for my first R390A, but the gray didn't fare as well. Could be something I was doing wrong.

I think I'm going for a powder-coated front panel this time (if I can afford it!).

Date: Wed, 10 Jul 2002 16:02:20 -0500 (CDT)
From: Dave Merrill <r390a@enteract.com>
Subject: [R-390] Mc/Kc Knobs - Fair Radio

https://www.fairradio.com/0390-kn.htm I don't believe these were in the 2002 catalog.

Date: Wed, 10 Jul 2002 17:18:00 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Mc/Kc Knobs - Fair Radio

>https://www.fairradio.com/0390-kn.htm

NOTE: The ad copy claims these are also for the R-389. This is not true. For anyone with an R-389, the knob on that radio is a special version that is both bigger and incorporates a clutch mechanism to keep the unwary operator from damaging the motor driven drive mechanism or the totally irreplaceable PTO. Trust me. I matters. Roy

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From: "scott" <polaraligned@earthlink.net>
Subject: Re: [R-390] Mc/Kc Knobs - Fair Radio
Date: Wed, 10 Jul 2002 20:43:39 -0400

I do remember recently reading about a clutch in the handle. What is a 389 worth? I never see one of these for sale. My 390 is cleaning up nice Roy. I can't wait to have it finished so it can kick some 390A butt. :-) Fair Radio's knobs are nice, but don't look original because they have no casting marks. They are too perfect.

From: "scott" <polaraligned@earthlink.net>
Date: Thu, 11 Jul 2002 18:15:49 -0400
Subject: [R-390] Some interesting info.

I thought this was a really good post on cap longevity. It makes me wonder if my grandkids will be able to keep all my old radios running. Check it out below.

> ..... I have always replaced the leaky waxed paper caps in vintage radios with >polyester caps thinking that they will last forever. But is this true? Has any
> estimate been made of their lifetime?

> Does anything last forever?

and continued with anecdotal evidence of the longevity of modern film capacitors. He then concluded:

> Beings the film is a relatively pure substance, free from
> internal degradation, I believe only extreme heat would
> lead to destruction. They would essentially have to melt
> and then short out as opposing plates come in contact
> with each other or the melted plastic shorted through
> from electrostatic stress and physical distortion. I
> think your leakage worries are over for the next
> millenium or two.

Having spent most of my career involved in manufacturing polyethylene terephthalate polyester (PET, Mylar® is DuPon't's variety), polypropylene (PP) and polytetrafluoroethylene (PTFE, Teflon® is the most common variety), and been involved in a few research projects on other newer materials occasionally used in capacitors such as polyphenylene sulfide (PPS), polyethylene naphthalate (PEN), and cyclohexane dimethanol modified polyester (PETG), I think I can address this issue. I also am familiar with polystyrene (PS) and polyphenylene oxide (PPO) materials. Of these, the PS and PTFE capacitors tend to have specialized uses and are not often found. The PPS and PEN materials are relatively new and I expect to see more of them in high temperature applications. The PETG material was investigated for film capacitors at least 30 years ago and found to have some advantages over conventional PET, but Eastman management decisions prevented further development. It is being looked at again today. So this leaves the conventional PET and PP materials for most of the film capacitors we can find today. **Polypropylene** is a good dielectric material with quite low losses at higher frequencies, buts its low temperature rating limits its application in many circuits. The lifetime of polypropylene capacitors should be exceptional as long as they are not overheated. **Polyester capacitors** have greater dielectric losses, especially at high frequencies, but having a higher dielectric constant than PP and a higher temperature rating they are probably the most popular film capacitor material today. Their lifetime is probably somewhat less than

polypropylene, but the term "forever" means different things to different people. Moisture will eventually react with the polyester structure to decrease its polymer chain length. It will also react with the heavy metal catalysts (typically antimony) to form ions which will increase the leakage in capacitor applications. The effect will be seen with wrapped foil capacitors long before it is seen with those whose electrodes are metallized onto the film (the aluminum metallization retards the diffusion of moisture into the polyester).

>From a practical viewpoint, even wrapped foil polyester capacitors will certainly outlive those reading this message - that is, if they are kept relatively dry and not overheated. Metallized polyester capacitors will last much longer. My guess is at least a few hundred years. Somehow I cannot be convinced to worry about what might happen to a Boatanchor a millennia from now!

Electrolytic capacitors are an entirely different story. They need moisture to function (normal room relative humidity is fine, but storage under exceptionally dry conditions will shorten their life). The so-called dry electrolytics are not really dry, they contain a paste that needs some moisture to remain electrolytically conductive.

Carbon composition resistors certainly do age, but the modern thin-film resistors have good lifetimes.

Tubes do lose vacuum, especially the softer glass receiving tube varieties. But these generally do not need quite as hard a vacuum as transmitting tubes. Most large transmitting tubes use borosilicate glass which is better than the soda-
lime glass found in small tubes.

Probably the fastest aging things in our old radios are the **transformers** with paper insulation, and the vinyl insulation on wires. Keeping everything cool will help more to prolong the life of this old gear more than anything.

73, Barry L. Ornitz WA4VZQ ornitz@tricon.net

Date: Thu, 11 Jul 2002 19:02:56 -0400
From: Norman Ryan <nryan@intrex.net>
Subject: Re: [R-390] Some interesting info.

Hi, Scott, Thanks for passing this on. VERY enlightening. Barry Ornitz is one
smart guy. This is good material for the R-390A FAQ pages. Al T., are you reading this?

From: Al Tirevold <tirevold@mindspring.com>
Date: Sat, 13 Jul 2002 20:43:41 -0400
Subject: [R-390] R-390A Y2K-Release 2

The next release of the ongoing R-390A Y2K project is ready! Lots of small errors have been corrected and clarifications added. A separate errata list documents the corrections and their reporters. The key drawings are now available for printing as a separate document. A (very) small amount of additional material has been added.

Those nasty black-and-white photographs have not been replaced (...yet). If someone has the means to produce clear color photographs to replace them, I would be happy to handle anotating and replacing the existing black-and-white ones. The file sizes are larger than in those in the Release 1 manual, so the chapters are available for download individually, rather than as a whole manual.

The Y2K-R2 link: http://www.r-390a.net/Y2K-R2 Enjoy!

I welcome any forther corrections and suggestions for additional material. I'm planning to expand the manual to include additional material in new chapters, including some from the -35 document. There's lot's of great knowledge out there - let's get it gathered, typeset and published!

If anyone has the capability to reproduce figure 6-36 so that it would be readable, I sure would like to hear from them! I have been unable to produce an acceptable replacement using Visio software, but that may be due to a lack of skill on my part. I'm still looking for some R-390A reference material. If anyone has a copy of the following, I would appreciate getting a copy so I can place it on the R-390A FAQ web site for the benefit of everyone.

U. S. Navy NAVSHIPS 0967-063-2011, Radio Receiver R-390A/URR Manual
Supplement, 1972-Feb-18

U. S. Navy NAVSHIPS 0967-063-2012, Radio Receiver R-390A/URR Manual
Supplement, 1974-Aug-01

U. S. Navy NAVSHIPS 0967-063-2013, Radio Receiver R-390A/URR Manual
Supplement, 1974-Aug-01

U. S. Navy NAVSHIPS 0967-063-2014, Radio Receiver R-390A/URR

Manual
Supplement, 1974-Nov-01

U. S. Navy NAVSHIPS 0967-063-2080, Radio Receiver R-390A/URR Changing
Terminals to "AN" Type, 1964-Nov-30

Thanks, Al

Date: Sun, 14 Jul 2002 12:05:11 -0500
From: "William J. Neill" <wjneill@lcc.net>
Subject: Re: [R-390] R-390A Y2K-Release 2

I have originals of each of the Navy publications you are seeking plus the following you may not be seeking:

0967-LP-063-2040 R390A Technical Performan Standards
0967-LP-063-2060 Field Change to Technical Manual
0967-LP-063-2070 Line Output Terminals Modification
0967-LP-063-2110 R390A Internal Heat Reduction
0967-LP-063-2111 R390A TM Change
0967-LP-063-2112 R390A TM Change
0967-LP-063-2120 R390A Reduction of Internal Interference
0967-LP-063-2140 Installation of Diode Load Test Jack

I think I can find these publications relatively quickly as I have all of my R390A publications (DA, USAF, and USN) in one binder.

From: Al Tirevold <tirevold@mindspring.com>
Date: Tue, 16 Jul 2002 20:26:35 -0400
Subject: [R-390] R-390A Y2K-R2 - in ONE BIG FILE!

You asked for it.... all 16.7MB of it!! It does include navigation from the table of contents pages. The files containing individual chapters do not have navigation, to reduce the filesize.

The Y2K-R2 link: http://www.r-390a.net/Y2K-R2/index.htm
Enjoy!

Date: Mon, 22 Jul 2002 11:18:51 +0200
From: "Bryce Ringwood" <BRingwoo@csir.co.za>
Subject: [R-390] OT Wrinkle finish front panels

Sorry to be slightly OT - Has anyone any idea how to whiten the lettering on an engraved front panel finished in a wrinkle-finish ?

Date: Mon, 22 Jul 2002 06:16:57 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] OT Wrinkle finish front panels

Use a fine tipped artists brush and acrylic.

From: "scott" <polaraligned@earthlink.net>
Subject: Re: [R-390] OT Wrinkle finish front panels
Date: Mon, 22 Jul 2002 09:54:00 -0400

And keep some water and tissues handy to clean any "excess" off panel. Good thing about the acrylic is that if it is not coming out to your liking, just wash it off.

From: <plmills@attglobal.net>
Subject: Re: [R-390] 328 and 387 Lamps
Date: Tue, 23 Jul 2002 07:34:57 -0500

Mouser electronics has them on page 126 of their latest catalog. Call 800-346-6873.

606-CM327 .50 for 1-9 .43 for 10-100
606-CM387 .47 for 1-9 .40 for 10-100

From: "Steve Goode" <goode@tribeam.com>
Subject: Re: [R-390] R-390A Y2K-Release 2
Date: Tue, 23 Jul 2002 17:21:31 -0500

I have finally had time to download the release 2 manual and would like to thank everyone who made it possible. In my new copy page 6-91 has in big red letters "need picture". The old copy had the RF gear train explosion. Have I made a mistake in the download or do I need to download an additional file?

From: Al Tirevold <tirevold@mindspring.com>
Subject: Re: [R-390] R-390A Y2K-Release 2
Date: Tue, 23 Jul 2002 18:50:28 -0400

Nope, Steve, you're not seeing things. The picture in the Y2K-R1 manual was barely (un)useable, so I didn't try to reproduce it this time.

I now have a very fine detailed scan from Miguel Bravo that I am working on getting split to two or three pages that is a LOT easier to read. Things are happening (when I'm home...)... Keep an eye out for further enhancements.....

Date: Tue, 23 Jul 2002 16:26:15 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] Manufacturer of R390A

The frame and modules could have all been made by different cos., or all the same one. The best way to check the frame is to:

a. look on the back and see if it is stamped there I'm so good at pointing out the obvious). EAC did this and so did Motorola. Some others did not, like Collins.

b. check the label on the counter. It will usually match the maker, unless it says COURTER PRODUCTS, in which case your frame may be Stewart-Warner, but no guarantees.

If the frame has one fuse it is likely an early Collins (or Motorola if it says so, did Mot make some with one fuse, anybody??). Each module will have its own info. They are all pretty easy to check except for the RF deck which is a bugger. You'd need to remove the modules to look, except for the power supply and xtal deck which you can see without removal.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Manufacturer of R390A
Date: Tue, 23 Jul 2002 18:35:18 -0500

Yes, Motorola made one-fuse chassis...frames.

From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] 390 NON-A HELP
Date: Sat, 3 Aug 2002 10:06:53 -0400

Hi Scott: It's possible to make some use of the schematic in the non-A manual on the LOGSA site if you're in a hurry. It prints too small as a whole page, however you can zoom in, then use the "graphics selection tool" in the Acrobat reader to pick sections to blow up for printing selected parts of it. You click on that graphics selection icon -- furthest to the right on the toolbar with the default settings. Drag a rectangle over the part of the schematic you want, then place the cursor inside the rectangle, right click and choose print from the popup menu. You'll need to click on the checkoff in the print dialog bos that says "expand small pages to paper size". Then OK. Unless you figure out some way to line up one selection on the next -- not easy, it won't be possible to print a set of pages on the exactly same scale so they line up on each other. However, you can make a bunch of close ups, whereby each one covers about as much of the schematic as you need to look at at a time.

Date: Mon, 05 Aug 2002 14:53:00 -0400
From: rbethman@comcast.net

For a myriad of connectors, resistors - (1/2 W, 1 W, 2 W) - Capacitors at reasonable prices, try: CCarvell@aol.com This is Clarence Carvell. I just visited him and his parts supplies. He has just about ALL you could want or ask for. He's trying to sell off over twenty years worth of collection of parts and other items. I picked up an HP 410B, some 1 and 2W resistors and misc. other items from him. A very fine gentleman!

From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] R390/Solid State
Date: Fri, 9 Aug 2002 09:42:32 -0400

> <snip> The R-390's follow the standard Collins receiver electrical design. The
>big difference is the ingenious mechanical tracking.

Yes, but that's not the half of it. To most of us, the R-390's represent more than just a clever clockwork. They represent the pinnacle of mid-20th century technology, a combination of mechanics, the very tops of the hollow state, permeablility-tuned and "modular serviceability" arts. A key objective was to develop a true digital readout before it was really practical -- as evident by, yes, all those gears and cams, but also the PTO AND the coils. Officially, there's only maybe one "solid state" item as original equipment, but it's virtually guaranteed to fail, smoke and stink eventually, so it doesn't count. ;-)

> Tube to SS conversions have not been too successful, <snip>

Well, there ya' go. It's like the mountain climber who climbs the mountain because "it's there". However, when a climber says he plans to go up the wrong side of the wrong mountain, from whence no man has returned, we brethren are duty-bound to dissuade him every which way we can. Think of it as a public service. Awright, there's also the matter of tradition, which can be dangerous to mess with, provoking unrest amongst the masses. Judging by the rapier wit of Mike's reply, I'd say we did our duty. He may well proceed with his quest, but better conditioned and toughened up for the task. In fairness, there may be some good basis for such a project. While most of the tubes are still available at reasonable prices, there has been some indication that time is taking its toll with leakage, etc. and a lot of these tubes have been shipped around repeatedly increasing the possibilty of internal damage to filaments and shorted elements on NOS supplies. So, it might be a good idea to cover the bases. If it becomes impractical (expensive) or impossible to keep these going 100% hollow state, truth be known, most of us would revert to solid state at least on a

stage-by-stage basis to keep them running. However, I would strongly recommend, Mike: Keep your R-390 intact as a working reference. Pick up a junker, and/or some spare working or non-working (cheap) modules, and work with those. While Fair Radio doesn't have any more non-A's, they do have parts not listed in the catalog and others have odd parts and modules they could supply. For some modules, it makes more sense to start from scratch with a clean Bud chassis arranged to drop in -- such as the audio/VR module. A solid state version can be much smaller, leaving room for new "enhancement" modules -- product detectors, synch detectors, and even (forgive me Great Engineer in the Sky) DSP. The remnants of the audio module would just get in the way -- that part wasn't anything special performance-wise and sandbags the audio response. What others? Maybe just the xtal calibrator, but it's fairly small to start with. Maybe the PTO, if you can whip up a synthesizer yet keep the noise out. Another approach is the one-for-one "solidtube" thing. I suspect that's a tall order and if possible, might run as much as $20-30 per unit, if possible. Not particularly attractive until the tubes approach that price, but who knows?

>Good luck with your project and please keep the community informed on your progress.

Amen on that one -- just as long as you don't wreck any good '390's in the process or we'll sic a bunch of sophomores on ya'. <WHACK! SMACK!> No, no ... It's your radio, do what you want with it. I'm a bit conflicted on this issue, and now I'm bleedin', so gotta go.

From: DJED1@aol.com
Date: Fri, 9 Aug 2002 18:27:17 EDT
Subject: Re: [R-390] R390/Solid State

Hi Mike- I've been reading the mail, but in the interest of bringing up your ratio of serious replies- I'll offer a few opinions: I'm also an EE (not yet retired). I converted an old Super Pro to solid state back in the 70s. In that case, the objective was to reduce the drift. It did OK, but no other improvement that I can recall over the original radio. I eventually gave it away, and it was likely scrapped. As others have noted, this conversions used dual-gate FETS, which are harder to find than tubes. I've had a low-mileage R-390A for about 25 years, but the thought has crossed my mind about improvements. Tube life has not been an area to improve, I don't think I've replaced more than 4 tubes in 25 years (and I've got enought spares for another 50 years). So no good reason to change there. I thought about improving the frequency readout- it sure is impressive to set my new solid-state receiver to the nearest 10 Hz. I concluded, however, that 300Hz is good enough for any use I would have, tho I'm still thinking about how to set each band so that you don't have to calibrate each time. So no strong reason there, tho it might be nice. As one of the other posters noted, you

can buy or make an external readout for the PTO. Still needs to be set to each band. In terms of sensitivity and strong signal performance, the R-390 can only be equalled by a few commercial solid-state receivers (if you've got $20K for one). so probably a minus for any solid state substitution. Same for drift- almost negligible despite the temperature rise because of the tube heat. Not as good as newer solid-state, but no great need for improvement with drift of a few hundred Hz. Finally, the greatest weakness is the lack of SSB detector. This really needs improvement! I compromised on this one- I built a solid state product detector and AVC that connects to the radio's IF output, and audio and AVC terminals on the back of the radio. This allow seamless operation of the radio in SSB, using all of the front panel controls. Just a little box on top of the radio. And no holes in the radio, which I assume will fund my grandchildren's college education someday. The one drawback to the product detector is that I need to manually offset the BFO for sideband selection, thus I need to recalibrate when switching sidebands. I'm now working on a new version with some surplus 100 KHz filters, which will allow sideband selection without recalibrating. Once I get that done, I think it will be close enough to perfect for my purposes. However, if you launch into some work- keep in touch. I'm still looking for the solution to get the crystal oscillators exactly on frequency.

From: "Michael Young" <myoung76@bellsouth.net>
Subject: Re: [R-390] R390/Solid State-|
Date: Fri, 9 Aug 2002 18:40:04 -0400

I already built the outboard SSB detector. Two Mech filters I was able to pickup, 455kc USB and LSB. So I had simultaneous dual sideband all in a minibox. Connected to IF output. Fast Attack, slow release. Have had that for 15 yrs. Direct frequency readout with out requiring band change "messing" is a real desire. I think AADE may have something that will work.

Date: Sat, 10 Aug 2002 08:36:52 -0400
From: James Miller <JamesMiller20@worldnet.att.net>
Subject: [R-390] Reasons NOT to Solid State a 390

1- Dynamic range of a tube receiver typically better than solid state. Tubes run at high voltages, solid state devices run at low voltages, hence in general tube front ends have much better dynamic range. Better strong signal handling capability.

2- Resistence to EMP and Static Discharge. These days, don't laugh, it could happen. Watch the news. If you survive the burst, you're 390 will still work. Your $4000 Icom radio probably won't. Also, in general a tube rig will be less suscepitle to static discharge. During Desert Storm, the

high tech solid state radios would be damaged by static discharge on antennas caused by sand storms. They had to rush in some KWM-2 tube rigs as backup. So much for solid state.

3- Design incompatibility - The unique capabilities of the 390 depends heavily on very high impedance tube circuits. The AGC is an example. The multiple stages of preselector and mixer tuning were carefully designed, mechanically and electrically, for high impedance tube circuits. Solid state is typically lower impedance, even FETs. If you replace the front ends with solid state, your preselector and mixer tuned circuits may not have the same Q and will probably not be as sharp in bandwidth. Hence, even more susceptibility to out of band strong signals and intermod.

4- Noise floor - Assuming you also upgrade the LOs and PTOs to solid state PLL circuits, your noise floor will get worse due to phase noise from the PLL's.

5- Why bother? <snip>

Date: Sat, 10 Aug 2002 09:50:04 -0400
From: JAMES T BRANNIGAN <jbrannig@optonline.net>
Subject: Re: [R-390] Reasons NOT to Solid State a 390

> 1- Dynamic range of a tube receiver typically better than solid state.....

At one time that was true, but not in the last 20 years.

> 2- Resistance to EMP and static discharge....

If I survive an airburst, the least of my problems will be the state of my radio.

>Also, in general a tube rig will be less susceptible to static discharge. .....

That has less to do with the radios than the Army's penchant for fighting the last war. I'm surprised the Infantry wasn't issued parkas and skis.

> 3- Design incompatibility - The unique capabilities of the 390 depends
> heavily on very high impedance tube circuits. The AGC is an example.
> The multiple stages of preselector and mixer tuning were carefully
> designed, mechanically and electrically, for high impedance tube
> circuits. Solid state is typically lower impedance, even FETs. If you
> replace the front ends with solid state, your preselector and mixer
> tuned circuits may not have the same Q and will probably not be as sharp
> in bandwidth. Hence, even more susceptibility to out of band strong
> signals and intermod.

Finally, a reasoned argument.

> 4- Noise floor - Assuming you also upgrade the LOs and PTOs to solid
> state PLL circuits, your noise floor will get worse due to phase noise
> from the PLL's.

When you hook an antenna up to an HF radio, atmospherics will mask all of that. The noise floor is the broken thermostat in the neighbors house.

> 5- Why bother? If I want a solid state radio, I'll go buy one designed for solid state devices.

Also, a well-reasoned argument.

From: "Bob Camp" <ham@cq.nu>
Subject: Re: [R-390] Solid State R-390, Why Not?
Date: Sun, 11 Aug 2002 18:06:49 -0400

There is a closely related thread that comes up from time to time. More or less it runs "what can you do to improve an R-390A". Needless to say it also creates quite a bit of traffic when it comes up. To really get things going you need to combine the two threads. What's right about a '390 - the tuned front end, the IF filters, The nice big knobs and dials, the dual audio outputs. What's wrong with a '390 (compared to say an RF-590) - Frequency stability, dynamic range, harder to tune from 5.8 to 6.2 MHz, not as easy to use on SSB What's commonly done to a '390 - upgrade the AGC and audio Assuming the objective is to "fix what's wrong" *without* getting in trouble:

1) The gain distribution of the radio is based on stuff that has a lot less gain than the solid state stuff you can get today. A simple conversion puts way to much gain in front of the IF filters. I suspect that getting the dynamic range up to modern standards will take more effort than it's worth.

2) The impedance levels of *everything* are way higher than what you would use with solid state parts. This starts with the RF coils and runs right through the audio transformers. This is true both in terms of the real part of zin and zout as well as the capacitances. Getting all the RF and IF stuff to track with a lot more C padding it all will be a pain. If you retain the high impedance coils getting the feedback capacitance under control will be a major undertaking.

3) To improve the frequency stability you need a different arrangement for the crystal oscillator section and the PTO. Simply putting trimmers on the

crystals would make the radio a bit more user friendly. Mechanically this is a messy process. If you replace the PTO and crystal deck with a synthesizer the interface issues will be at least as messy. The stuff that's easy to fix is all in the audio module. The stuff that has all the trouble above may not be worth it. Audio modules are a dime a dozen out there. Taking a junk audio module and fiddling it around is rarely an item of discord on the list.

So here's what I'd do to an audio module:

1) take care of the ballast tube issue, *maybe* run a jumper or two to a tube socket or two.

2) Put in a couple of real audio stages (two 600 ohm, one 8 ohm)

3) Put in a real regulator for the high voltage(s)

Assuming you start with a junk module you have taken care of about 80% of what can be done and it's pretty much reversible if you swap back the original module.

From: "Bob Tetrault" <r.tetrault@attbi.com>
Subject: RE: [R-390] Solid State R-390, Why Not?
Date: Sun, 11 Aug 2002 17:21:38 -0700

Dynamic range is pretty hard to beat:
IP3=+10dBm at 10kHz separation
IP3=+20dBm at 100kHz separation (the difference is in the tunable front end)
4dB noise figure on all bands.

One can buy receivers with better IP3 numbers, but they don't have a 4dB noise figure. It's debatable whether or not anyone can use 4dB, since it's commonly thought that the HF noise level is 10+dB, but that isn't always the case...and we watch and wait for those openings... One could experiment with pushing the distortion levels even further down, but it requires pushing the tubes harder since the standing current determines their threshold of distortion. Turning up the juice means they'll exhaust the cathode emission sooner. Having extra modules does give anyone the option to play all they want. I've heard that ome people have replaced the first two mixers with 7360 designs; this is a double balanced tube mixer designed for SSB detection and generation. Rumor has it that they are noisier than the 6C4W, but I've never seent the numbers or methodology. How much it improves the front end is also anecdotal. There was a considerable body of literature about similar mods to the 75A4, since that receiver was/is(to some, even now) considered one of the best DX'ing receivers around. Again, my exposure never got beyond the anecdotal level,

though I'd relish a review of all that was published on that topic. If memory serves, there was quite a lot in QST and CQ back in the 60's and early 70's. Anyone got any numbers on this mod? The drawback to modifying an RF deck is the RF deck, as anyone who has ever taken one out will attest. But let's remember that there were 50K of these made, and while there are an uncounted number of them that were lost, stolen, spindled, stapled and mutilated, modifying one is a drop in the bucket. Imagine what a great exciter a 390 would make! Imagine a pushbutton where the diode load is so that you could zero-beat a carrier. pot-stirring in Portland,

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Date: Mon, 12 Aug 2002 10:50:21 -0400
From: tbigelow@pop.state.vt.us (Todd Bigelow - PS)
Subject: Re: [R-390] R-390 and Jagrolets

My guess is that the vast majority of list users share similar interests and therefore, a similar desire to preserve what we have and not destroy it for our own pleasure. I don't know anyone on this list who'd tell someone what they could or couldn't do with their personal belongings, but most of us would weigh in with reasons not to alter a fine piece of work. Hey - you could buy the Mona Lisa if it was for sale and paint a mustache on her, because it would be "yours" per say. Would that make it right? Depends on your definition of right.

Mike is probably clear now on the fact that the R-390 list is a user/restorer/afficionado list and not a solid-state tips and projects list. I don't doubt that at some point we'll be glad for his expertise and the expertise of other 'sandmen' in helping us overcome things like ballast tubes, rectifiers, and whatever other component ends up being the next 'difficult to replace' item needed to keep the radios running. This group currently spans views from: "gotta be all tubes, even the ballast, crystal ovens on, stock shiney tube shields" to "willing to accept Les' and Chuck's witchcraft ballast ideas and maybe IERC shields" to "solid state rectifiers, ballasts, and other 'better' tube substitutions and we don't need no stinking tube shields!". I myself draw the line at drilling holes or anything else irreversible, but I'm not against plug in substitutions. I even keep the original shiney shields in a bag labeled for any radio I substitute IERC shields in, just in case. I would just hope that as Bryce mentioned, we all give some thought to the modifications we make and think about someone else having our radios in the future. Not unlike caring for the land for future generations: no need to go to either the extreme of living in caves to stop building, or to the other of dumping toxic sludge in your neighbor's pool(unless they really asked for it). Enjoy your radios, use them as you see fit, and be mindful of the future and the wonderful opportunity that you have in owning(really using temporarily) such a fine piece of history. There's a very good possibility that someone not yet born or even thought of would love and appreciate the same opportunity. I really need some

offspring....

Date: Mon, 12 Aug 2002 11:12:27 -0400
From: Ed Tanton <n4xy@earthlink.net>
Subject: Re: [R-390] Can I stay?

One of two (the other being the ballast/etc) places where most of us will concede SS is OK. I won't even use SS rectifiers, but there are jobs that SS can do as well or better. Few and far between... but extant.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Can I stay?
Date: Mon, 12 Aug 2002 10:30:21 -0500

It works quite well. After using the R390a for a while, though, I find I can tune SSB well enough without it. Also, I like having all the controls in one place. Running the outboard detector makes it necessary for an outboard amp. I should investigate a method of routing the output back into the audio amp in the R390a. That would be a nice solution.

From: "Bob Tetrault" <r.tetrault@attbi.com>
Date: Tue, 13 Aug 2002 18:20:54 -0700
Subject: [R-390] Dynamic Range Measurements

Developing the data (retrieving the 390a from a friend, unpacking from the recent move, bringing 'all systems' online) is simply out of the question until perhaps next summer. Some of you will groan and perhaps bark, but the caravan moves on.

The best thing for all concerned is to get your hands on a recent ARRL Handbook. All the techniques, measurement 'philosophy' and discussion is there. The 2000 Handbook is good. The 1995 or '98 Handbook is frankly better and has a discussion of the Minimum Discernable Signal (MDS) sensitivity test and the Input Intercept test by none other than Dr.Ulrich Rhode, whose
family owns Rhode & Schwarz. He has cogent arguments for how he does the tests. This portion of the Handbook is not fuzzy, not "tune for minimum smoke," but completely supported by the strictest engineering rigor. The actual data collection is not rocket science, though good experimental technique requires scrupulous attention to detail. Things like double shielded cables and well shielded instruments are fundamental. Getting a substantial attenuator with -130dB of leakage is not trivial. Mine is a Weinschel, with return losses of -25dB from DC to beyond 1.3GHz (the limit frequency on the network analyzer at work). Building a return loss bridge with similar matching and 40dB isolation will occupy some evenings, though you needn't attempt going beyond 150MHz.. Luckily, the Handbook

has a discussion of this aspect of receiver measurements. It is, quite easily, the best $25 bucks you could spend, other than that pallet of BA's you stumble over at some geeks yard sale...

From: "Bob Camp" <ham@cq.nu>
Subject: Re: [R-390] Dynamic Range Measurements
Date: Tue, 13 Aug 2002 22:41:39 -0400

The other problem is that having done the measurements you then have to convince the world that you did them right. Getting 120+ db of isolation between any two things is a matter careful technique. The equipment isn't much of a problem and the tests are pretty straightforward. If you look at what the ARRL uses none of it is very fancy stuff. The thing you hope is that they do it right each time.

Having the time to haul everything out and run the tests is a bit of a problem. Having enough time to run them on enough stuff to be sure you are right when you run them is a bigger problem. About the only way to be sure you are doing everything right is if all of your data matches published information.

As an example - if you talk to Bob at Sherwood Engineering about their R-390A data he more or less comes back with "that was from quite a while back and it may not be as accurate as the more recent data". At least that was his statement about two years back when I asked ...

Again none of this is any kind of knock on what anybody does or does not do. There are a lot of people out there that can run these kind of measurements. The point is that in order to be believed you need to do more than just one or two tests on one radio.

All that said if somebody wants to set up to do all this I'd be happy to help out. At the very least I can probably calibrate a lot of the stuff you would be using.

Date: Sun, 18 Aug 2002 19:50:37 -0500
From: Marshall <mmdues@hal-pc.org>
Subject: [R-390] Fair Radio Sales New Location

Hello Group, I just returned from my 40th high school reunion in Flint, Michigan, and flew up there in my homebuilt airplane, a Van's RV-6 kit plane. On the way up, I decided to stop in Dayton, Ohio, to visit the Air Force museum. Upon leaving there, I noticed I had to fly directly over Lima, Ohio, where Fair Radio is located, and decided to return there after my reunion in Flint. While in Flint, I called Fair Radio and asked for Dave, the R-390 guy, and was told he

is no longer with Fair, but another fellow by the name of Gary Clements (or Clemmons) was the current R-390 guru.

I asked about the possibility of getting an R-390A bench checked on short notice and he said he might be able to help me and invited me to stop by. It took me a little over an hour to fly to Lima, OH. The airport is exactly three miles due east of Fair's new location in the old Wolohan's Lumber facility on St. Johns rd, so I got the free loaner car and drove over. Gary met me and had already had a '390A on the bench, but it had an AGC problem. He started swapping modules until it came alive, and them he began working on several other minor problems. He took a few minutes to give me the nickel tour of the new facility and allowed me to take pictures with my new digital camera, and went back to work on my radio. This was during his lunch hour! I wandered around like a kid in a candy shop, taking pictures of lots of neat stuff.

I saw at least eight pallets of R-390As with 24 radios on each pallet, plus some more pallets that had less than 24 radios on them. I also saw lots of R-392s, some T-195 companion transmitters to the '392, and about 25 or so R-648/ARR-41s. About 4 p.m. Gary had my radio ready to go, and he came out to the airport and helped me lift it into my plane. (I had to remove the copilot's seat and stow it in the baggage area and we put the R-390A on the seat floor beside me and secured it down with the seat belts). I had to do this to keep the weight and balance within reason for control and trim purposes. I took some pictures of the radio while airborne. (It was an admirable passenger!)

The flight back to Houston, TX was, as always, very enjoyable, except for one startling moment while encountering a B-52 eight engined bomber at 13,500 feet over southwest Arkansas. I managed to get to photos of him as he passed less than a half mile and less than 1,000 feet below me. I will try to post the pictures of Fair Radio and the R-390A (and the B-52) on one of the Photo Sites as soon as possible. Will advise where and when. This ran too long, so I'll close and report more later. 73 Marshall M. Dues - WB5MYO

Date: Mon, 19 Aug 2002 17:21:46 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: [R-390] Knurled Nut Wrenches (was: Off Topic Request)

>I am looking for the VACO part number (is that the correct manufacturer?)
>for the nutdriver hand tool that is desiged for use with 15/32-32 knurled
>nuts. These are the decorative front-panel knurled nuts that hold 1/4"
>collars or phone jacks.

Here's what I got when I e-mailed Techni-Tool about the wrenches: "Part# 388WR014 is $16.95 and delivery is about 2 weeks. The item is on backorder. Part# 388WR016 is discontinued and there is no sub. Any questions please call me @ 610-940-3707. Thank You, Shannon Hornberger"

So it looks they still have the one type. I suppose I should order one before they're all gone. Happy Holidays, all!

Hi again, Quick update: I just ordered the knurl nut wrench from Techni-Tool, but a couple caveats. One: the minimum order is $30. Ok, no problem. I ordered two of them. Two: the part is on backorder, but should ship in about 2 weeks. I spoke with Shannon on the phone and she's ready for you guys to start placing orders. Good luck!

Oh, *THOSE* knurled nuts - the one's I try to install with pliers and end up leaving big circular gouges in nice front panels, as well as damaged and deformed nuts (altho the mentioned technique of tightening the nut behind the panel helps). Will definitely have to get one in also. They do have a web site http://www.techni-tool.com/ with a few items to possibly fill out the $30 min. I'm a little suprised Antique Radio Supply hasn't thought of (or thought it would be profitable) stocking those.

Date: Tue, 20 Aug 2002 01:45:38 -0500
From: Marshall <mmdues@hal-pc.org>
Subject: [R-390] re: Fair Radio Sales Photos

Hello, all, I just posted 20 pictures of Fair Radio and my newest R-390A on a site where you can view the pictures in a slide show, or individually. Go to:

http://members14.clubphoto.com/marshallm620050/879221/guest.phtml

You don't need to be a member of this site because I can share albums with others. Let me know how this arrangement works out. This is still rather new to me.

From: "Mike Hardie" <hardiem@intergate.ca>
Date: Thu, 22 Aug 2002 19:55:31 -0700
Subject: [R-390] Question - 9 Pin Plug

Does anyone know a source for a couple of nine pin plugs? (Same layout as base of 9 pin minature tube.) I've tried making one from a dud tube but been unsuccessful in two areas, breaking away the glass envelope from the base and soldering to the pin tops. Does anyone know any "sneaky" techniques?

Date: Fri, 23 Aug 2002 03:07:28 +0000
Subject: Re: [R-390] Question - 9 Pin Plug
From: Philip B Atchley <ko6bb@juno.com>

Yes! Take a 9 pin tube socket, 9 pieces of stiff wire cut to length. Poke a wire into each hole of the socket, making sure the wire is large enough gauge to make bood contact. Coat the entire surface of the tube socket with a good Epoxy material (or hotglue though it's not as strong). The solder lugs of the tube socket then become the attachment points for any wires etc you wish to connect. This will work for all 7 pin, 9 pin, nuvisotr, compactron or even octal sockets (with appropriate wire size). If the ears of the socket get in the way cut them off with a file or other means.

Date: Thu, 22 Aug 2002 23:29:39 -0400
From: Albert Santangelo <ve3ajm@sympatico.ca>
Subject: Re: [R-390] Question - 9 Pin Plug

ElectroSonic in Toronto used to distribute 9 pin tube socket plugs made by Armaco Electronics of Vancouver B.C.. It has been a few years since I got any from them, but I believe Armaco is still in business. Hope this may be of some help to you.

From: "Glen Galati" <eldim@worldnet.att.net>
Subject: Re: [R-390] Question - 9 Pin Plug
Date: Thu, 22 Aug 2002 21:20:32 -0700

Amphenol once made a 9 Pin blue plug that had a rubber boot, because I have "ONE" that was used as a test or shorting plug. I just made a check of my parts bins and only have a few of the 7-pin type like that used to connect accessories to amateur radio transceivers. There may be a 9-pin type that I've not seen before. I'll put a pix up on our web site to see if anyone else out there can help identify a source or if they have a few in their junk box. Probably a little later this evening.

Date: Fri, 23 Aug 2002 09:48:41 -0600 (MDT)
From: Richard Loken <richardlo@devax.admin.athabascau.ca>
Subject: Re: [R-390] Question - 9 Pin Plug

> ElectroSonic in Toronto used to distribute 9 pin tube socket plugs made by
> Armaco Electronics of Vancouver B.C..

Armaco is or was the Russ Mack Company and they were importers (never made a thing themselves) from Japan from back when it was an insult to say "made in Japan". They imported good stuff and bad stuff and you never

knew which one you would get. I read an article on Armaco once and they said that Russ could speak Japanese well and went over there to negotiate on his own behalf. Nothing much has changed, today we have "Mode" brand imported connectors and I bought some N connectors with their name on them that were unqualified junk. But I was a "Made in USA" bigot before I bought those connectors anyway.

From: "Biddle, Richard" <s-biddle@ti.com>
Date: Fri, 23 Aug 2002 11:37:08 -0500
Subject: [R-390] Re: Question - 9 Pin Plug

Sneaky method number two also works for other types of connectors:

Take some 1/4" or 1/2" thick Plexiglas sheet. Cut to the desired shape. I use a band saw or Dremel-Tool depending on how big the connector needs to be. Heat up an old tube base just warm enough to make a mark on the Plexiglas. A little glue holds the pins in place. As far as a cover goes, there are vinyl dust covers for different size connectors or plastic covers for pipe that will fit. Depending on the size of connector required, the pins used for the DB style computer connectors make a pretty good fit and they can be male or female. I have also used this to make new inserts for Cannon connectors.

Date: Sat, 24 Aug 2002 22:51:22 +0000
From: Philip B Atchley <ko6bb@juno.com>
Subject: [R-390] They followed me home <GRIN>.

Well, today Don and I drove up to Palo Alto and picked up our R-390A's. Both turned out to be EAC units from the FR-36-039-N-00189 (E) Contract. SN's 6137 and 3715. I haven't fired em up yet as I believe in the old adage, "Haste makes waste", especially in regards to old tube gear.

QUESTION 1: Seeing as how these units have the rectifier tubes in place, how high do I need to bring the Variac before they will start conducting enough to start forming the caps, at least some? They are both in good condition, with meters, all covers and so forth. The #3735 "looks" much nicer on the front panel, has IEC tube shields, regulator tube etc. As I haven't pulled them yet, I'm not sure if all the modules in either unit are original or not. BOTH units have the 26Z5 rectifiers in placerather than sand-state devices. Not sure how good they are. Don has already told me that I can pick-N-choose modules to make myself a 'Best' set as he know mine will get a lot of use.

QUESTION 2: One unit has what appears to be a Collins PTO, the other a Cosmos unit. Assuming they both work well, which one should I put in "my keeper"? I intend to run both units up and give them a thorough checkout

before doing a complete re-cap. They were supposed to both be playing when put in storage two years ago, though he said both had problems on certain bands.

From: DCrespy@aol.com
Date: Sun, 25 Aug 2002 09:37:32 EDT
Subject: Re: [R-390] They followed me home <GRIN>.

Phil, a few notes (I hope will supplement Barry's good advice):
>
> QUESTION 1: Seeing as how these units .....

You can reform the caps outside the unit. I think this is easier, especially for the plug in caps found in mil receivers. Let the cap charge through a 10 to 30 K , 5+ watt resistor, connected to a 200 to 300 volt DC source. If you watch the voltage across the cap. It will rise very slowly as the cap reforms. Leave it on this rig for an hour or so. Then discharge it, plug it in and fire up the rig. BE VERY CAREFUL, A CHARGED CAP IS VERY DANGEROUS (experience based advice!).

> QUESTION 2: One unit has what appears to be a Collins PTO,.....

Cosmos can be externally adjusted for linearity. Collins requires a special fixture to set up the "corrector stack". I'd go with the Cosmos, long term.

> I intend to run both units up and give them a thorough checkout before
> doing a complete re-cap.....

Regarding recapping. If the radios used Black Beauty plastic encased caps or their Brown equivalents, then I'd go ahead an replace them. I find some of them cracked allowing mosture to screw up the paper dielectric. If they are the metal and glass versions, I've had yet to find a bad one. Frankly, in either case, in my R-388 / R-390A (and other Collins) restorations I have had more trouble with defective postage stamp micas, than with the coupling/bypass caps most folks replace. Look for bad mica caps anywhere they are in the B+ line (in plate circuits). Regarding trouble with certain bands, you got some great advice from Barry on this. Check the band crystals, their connections and their trimmers. Also, if the problem is all bands below 8mHz, it is the crystal oscillator on the RF deck.

From: Gary Gitzen <gfgitz34@gitznet.net>
Date: Mon, 26 Aug 2002 17:33:19 PDT
Subject: [R-390] 9 pin plugs/headers

I noticed a recent thread on 9 pin plugs/headers, and a few suggestions on how to kludge them up using tube sockets and extender wires. I may have a

better solution. A while back a local surplus electronics outfit had a bin with lots of bakelite 9 pin plugs, complete with screw-on bakelite cover, as in "plug for a cable which won't get moved very often. I'm using these for the diodes I used to "soiled state" the 26Z5s in my 390A, and also to provide a bypass for the ballast, since I'musing 12BA6s for the PTO and BFO. So what's my point? I want to see how much interest R-390X owners might have in these plugs/headers before I drive over to see if they have any remaining. Cost would be moderate; shipping would probably be more expensive. If you're interested in maybe five 9 pin plugs at reasonable cost, please let me know.

Date: Mon, 9 Sep 2002 15:33:47 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Lubricant for R-390A/URR

It sounds to me like the dial lock plate is rubbing on the lock mechanism. I use Marvel Mystery Oil on my transmission gears, seems to work well. Sounds like you need to clean the hardened white grease off the gears first though.

Date: Thu, 12 Sep 2002 22:04:50 -0400
From: "John L." <larry.asp@sympatico.ca>
Subject: [R-390] Help Adjusting Bandswitch Needed

My R 390A bandswitch switches nicely on all bands except it will not switch into the first postion - that is 500kc - 1000kc band (lower BCB). Is there an easy way to fix this without taking the radio apart? Thanks in advance for you help. de Larry VE3RF.

From: "scott" <polaraligned@earthlink.net>
Subject: Re: [R-390] Help Adjusting Bandswitch Needed
Date: Fri, 13 Sep 2002 06:34:54 -0400

Are you sure it works properly on all other bands? Did you verify proper frequency on other bands? I sounds like it just needs adjustment, if not, you have a problem in the Geneva drive and need to disassemble to find out just what is going on. My rebuild pictures that I recently sent out has detailed bandswitch setting info. If you need one I can send it to you. I think Don is supposed to put them on his website. Someone has offered to put them into PDF file to make viewing and downloading easy. Maybe we can get the PDF file on a website also so all can download them if needed.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Help Adjusting Bandswitch Needed
Date: Fri, 13 Sep 2002 08:05:42 -0500

Are you saying it will not go to that position or does it go to that position and the radio is dead at that point? Depending on which symptom, it can mean different problems.

Date: Fri, 13 Sep 2002 17:33:29 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Help Adjusting Bandswitch Needed

It sounds to me like the pin on the Geneva drive is hitting the stop too soon, it needs an alignment. Don't turn too hard it can bend the pin! You should be able to observe the pin while turning the MC CHANGE knob from the bottom of the radio, this would tell you for sure.

From: DAVEINBHAM@aol.com
Date: Sat, 14 Sep 2002 18:02:17 EDT
Subject: [R-390] Oldham Coupler Springs and ReCap kits

A little white envelope arrived in the mail today from that gentleman and scholar, Al Solway, way up there in the cold, frozen North. The envelope contained 3 dozen springs for the Oldham couplers used in out favorite radios, the R-390(A)'s. I am gonna keep 3 of 'em for my own use. The rest are up for grabs.... almost free. Send me an SASE, preferably of the padded persuasion and I will send you 3 of 'em as long as the supply holds out. When they are gone, they are gone. Thank you, Al.

Send your padded SASE to :
Dave Holder- SPRINGS
820 South 29th. Street
Birmingham, Alabama 35205-1004

Remember the discussion about a month back about using PayPal for ReCap kits ? You guys voted 9 to 1 for PayPal. Well, guess how many kits I have sold using PayPal ? Exactly 1 to the guy who first suggested it. Unless PayPal sales increase to at least 50% of all sales, I will discontinue using PayPal on November 1. As of today I am reducing the premium for using PayPal from $5 to$3. Is anyone confused ? If you want to use PayPal, you ADD $3 to the regular price. ReCap kits are still available by mail ONLY at the old prices. I currently have 10 in-the-can kits and 16 under-the-chassis kits in stock for immediate shipment. Well, almost immediate 'cause I am gonna try to slip off and go fishing for a couple days next week.

Date: Sat, 14 Sep 2002 16:04:01 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Oldham Coupler Springs

I am the other half that Al sent springs to. Same deal as Dave, Send SASE

padded I am going to buy 200 from Al to make more available. I will include the springs with the Oldham coupler disc I am selling for $47.00 mailed. Just for the springs, send the SASE envelope to

Dan Arney c/o Global Pack & Mail
21315 Saticoy St. Unit R
Canoga Park, CA 91304-5685.

From: "Michael Young" <myoung76@bellsouth.net>
Date: Tue, 24 Sep 2002 14:26:34 -0400
Subject: [R-390] Panel Labels

I know this is off topic, but would appreciate the experience of the folks on this forum. Can any of you point me to information regarding using a laser printer to make labels for electronics panels? Kinda like do your own decals or rub-ons?

Date: Tue, 24 Sep 2002 19:26:19 -0500
Subject: Re: [R-390] Panel Labels
From: blw <ba.williams@charter.net>

.....using a laser printer to make labels for electronics panels?

Check Hobbytown or any RC model shop. Modelers make their own decals if that is what you want to do. Also, there was a foil type of product just for laser printers at one time. I forget the exact process now, but you can print on it while this sheet is sandwiched with a normal sheet of paper. The heat transfers the foil type of material to the paper. I guess you could substitute regular paper with clear material such as that for clear address labels.

From: "Bill Smith" <billsmith@ispwest.com>
Subject: Re: [R-390] Various R390 issues
Date: Sat, 5 Oct 2002 17:09:46 -0700

> Hello all, and thanks in advance for the help! I have some more questions
> on the R390A:
>
> 1. I have seen many of you write up the use of Orange Drop caps to replace
> the Vitamin Q, etc., paper stuff. These caps have radial leads. In the
> Allied catalog is a vendor called ASC which offers axial-lead 400V
> metallized polypropylene caps with full temp rating at 105 degrees C.
Any
> reason why I couldn't use these as alternatives to the Orange Drops? A
0.1
> mfd 400 V cap is 0.328 diameter x 0.813 length...would seem like a pretty
> good fit, but before I fall off the table and run down that path I was

> wondering what the rest of you thought.

First, are you sure the Vitamin Q's are bad? The VitQ caps in the R-390 here appear to be in excellent condition. Just ran across a can of Vitamin Q parts, NOS, but don't yet know the values, etc. Regarding the caps you located, they sound great. I get similar caps from Bob's Antique Radios, though apparently they are made in Taiwan. Some people prefer all-American.

> 2. I have a case of sticking meters. They are original equipment. I have
> read that the original meters have radioactive material in them.

I don't think all do, but if the needle and scales look "orange" or "burned" they are radioactive.

>Is it a coating on the needle to make it read in the dark, or ???

Yes, the needle and scale markings used to glow green. The phosphor is long spent, but the radium used to excite the phosphor is still quite active and will be for the next 20,000 or so years.

>Is it possible to disassemble the meters to correct the sticking? Any other suggestions here?

Meters in general can be disassembled, and, with thin strips of adhesive tape, particles in the meter movement can be removed to eliminate sticking. The R-390 meters can be disassembled but you need to be very cautious that you don't inhale any dust or material from inside the meter.
>
> 3. Other than cosmetics, is there any particular reason why I should rebuild the large electrolytics?

Not sure which you are talking about. The power supply is probably ok (big oil-filled 4mfd or so cap). The AVC capacitors (2 x 0.1 mfd) are also oil, and have a high failure rate. I have rebuilt one of mine by gutting it and placing a 0.22 mfd polyester mylar inside. The other rests disconnected.

>I am considering building an assembly to plug in
> in place of the caps, but it won't be a pair of round cylinders (so there
> will be a bit more room to work). Comments or suggestions here?

Not sure why you need a plug-in assembly.
>
> 4. What kind of connectors are used on the coax cables between modules?
> Looks like an anemic BNC (grin). Reason I ask is that the insulation has
> cracked on a couple of the coax cables going to the IF assembly, and I see

> some repair work in the future (sigh).

Think the best bet is to recover and reuse the old connectors. They are hard to find.
>
> Thanks again for the help and advice. It's a wonderful receiver, and works
> great with my Valiant II.
>
> Dave Maples, WB4FUR
>
There are others who are much better equipped to advise you than I, hope they leave comments.

Date: Sat, 5 Oct 2002 18:55:27 -0700 (PDT)
From: John Kolb <jlkolb@cts.com>
Subject: Re: [R-390] Various R390 issues

Believe they are called "MB" connectors. I've got a number of adapters here with a straight "MB" connector on one end, a couple of inches of coax, and a male BNC on the other. $2.00 each + postage. The straight MB's should recycle easily. The right angle MB's are more difficult as the end cap has to be unsoldered. John

---

From: DCrespy@aol.com
Date: Sun, 6 Oct 2002 09:41:39 EDT
Subject: [R-390] Re: Various R390 issues

Dave, I agree with all of Bill's (AB6MT) comments and would add a few...:

> 1. I have seen many of you write up the use of Orange Drop caps to replace
> the Vitamin Q, etc., paper stuff.

I would replace just the black (brown) beauties and the dc blocking cap for the mechanical filters. Like Bill, I also have had excellent luck with the vitamin Q caps. 3 Radios, no failures. Like my Dad always told me (and I never listened), "If it isn't broken don't fix it". Be careful on the new radial lead caps, as some of them (body of the cap) are easily damaged with a soldering iron.

> 2. I have a case of sticking meters. They are original equipment. I have
> read that the original meters have radioactive material in them.

I have openned these kind of meters (radioactive) twice. After thinking it over, I never will again. I can't say how big the health risk (cancer) is, but is it really worth the $50 you're saving?

> 3. Other than cosmetics, is there any particular reason why I should rebuild
> the large electrolytics? I am considering building an assembly to plug in
> in place of the caps, but it won't be a pair of round cylinders (so there
> will be a bit more room to work). Comments or suggestions here?

Look for signs of leakage or residue around the gasket at the base of the plug in cap. If it is clean there, the cap is probably good. On the plug in assembly, I did one of my radios this way. Works well. Be careful that you get plug-ins that will sit square to the chassis. Most relay shells do not. To Bill's point, you could just wire them to an octal plug or old tube base and shink wrap (or not) the assembly! One other health note. On radios of this vintage, I don't like openning anything with oil in it (PCBs).

Date: Mon, 7 Oct 2002 13:32:09 -0700 (PDT)
From: "KC8OPP Roger S." <kc8opp@yahoo.com>
Subject: [R-390] Non A Front Panel

I picked up another R-390 last month at a local hamfest, was listed as a parts unit. The owner indicated that it had a bad RF deck. Well all the parts were there, including the meters and ID tag, plus all the tubes. As luck would have it, the bad RF deck was a burnt resistor and a mis-aligned band switch. There are other minor problems but now the radio plays and will be on the bench this winter for a complete going through. The big problem is the extra hole in the front panel. It would seem that a previous owner installed an on/off switch for something. The switch is gone but the hole remains. Anyone out there have an extra Non-A front panel they would consider parting with? Does not need to be refinished, I can do that. But would like it to be engraved and straight without any extra holes. Any suggestions for plan "B"? I have thought about having a machine shop mill the hole round and press a plug in. Not really interested in filling the hole with putty or things related. Thanks for your time and let me know what you may have, even a real "parts" rig.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Non A Front Panel
Date: Mon, 7 Oct 2002 15:39:54 -0500

You might consider having a plug of a slightly smaller diameter than the hole made of the same thickness aluminum sheet and then having it MIG-welded front and back. You could then smooth the welds and fill any tiny pitting with JBWeld or some other filler. It might be a more mechanically solid plan than a pressed-in plug in such a thing panel. It would not be easy, but it would be solid. I think this would require a pretty experienced welder as you could potentially warp the panel if you're not careful. Just a

thought,

From: "scott" <polaraligned@earthlink.net>
Subject: Re: [R-390] Non A Front Panel
Date: Mon, 7 Oct 2002 17:53:21 -0400

You in the NJ area? I can weld it for you. If not, find a shop that has TIG welding capability. They can fill the hole right in with new material. You need a competent welder though, the panel will warp easily if an idiot trys to weld it.

From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] Non A Front Panel
Date: Mon, 7 Oct 2002 19:35:41 -0400

I know you indicated that you're not interested in filling the hole with putty or things related, but considering the alternative (welding, etc.) I dunno ... I've used products like plastic aluminum (Duro) with success. Once you fill it, allow to cure, and sand -- looks nearly like a metal fillin -- because that's what it is (aluminum powder with a binder). After refinishing, which is what you plan anyway, the paint makes it disappear altogether. You'll find that some spare panels need filling anyway -- for nicks and spot corrosion. That type of detailing is best done with pink body filler. So, unless you find a near perfect replacement, you may well end up with more "plastic" than using Plastic Aluminum or JB Weld on what you have. Of course, the other alternative is to make use of the hole and install something there -- a do-nothing switch for future use, an extra jack --maybe to connect a counter to the PTO for checking calibration, diode load connection, one of those round snap-in caps used to seal up extra holes, etc. (Temperature probe?) On the other hand, it's convenient to have a spare panel to refinish while keeping your R-390 intact until the newly refinished one is fully baked, cured and ready to install at your convenience, rather than have the radio "faceless" for the duration. (I can rationalize nearly anything ;-)

From: "Jon & Valerie Oldenburg"
<jonandvalerieoldenburg@worldnet.att.net>
Subject: Re: [R-390] Non A Front Panel
Date: Mon, 7 Oct 2002 22:06:40 -0500

If the hole is next to the BFO knob it's probably from The Navy Diode output jack mod they did to facilitate quick alignment checks for rack mounted units. If you really wish to fill it go to the local hardware store and get some aluminum repair rods from the welding supply area. They melt using a standard propane torch. back the panel with a steel plate & heat the area & fill it in. After filling it down use auto body putty to fill in the scratches. I

have used the same method with 80/20 lead solder to fill holes in steel panels (Hammarund Super Pro !) with good results also. Jon AB9AH

Date: Thu, 24 Oct 2002 12:12:06 -0400
From: tbigelow@pop.state.vt.us (Todd Bigelow - PS)
Subject: Re: [R-390] Solid State Mods

I guess we know whose house to visit this halloween! Seriously though, Don is right in what he says here. I'm one of the users who speaks up against mods *only* if they are irreversible and destroy a piece of history no longer being manufactured. I'm not at all against mods that extend the life of a radio or replace otherwise-unobtainable parts to bring a rig back to life. I realize that some enjoy the 'challenge' of trying to improve a good design or to do it their way, and I'm not one who'd prevent it if I could - I'd merely discourage the destructive part, that's all. I'm against adding holes or anything really that involves a Sawzall or air chisel. There are some who don't even want you to disturb a solder joint or change a single component! Talk about the opposite extreme. If you totally gutted and rebuilt an R-390 with all new technology, it would no longer be an R-390 receiver. And if you refuse to put power to it for fear of frying a component, it becomes a paper weight(big 'un!), and no longer an R-390 receiver since it doesn't receive.

I think it's not only good that we can find ways around rectifiers, ballast tubes, or anything else that goes bad, it will become more and more important and necessary as time goes by. However, if you want a solid state R-390(or other old BA), why not just find an empty chassis and panel, then mount a RatShak receiver behind it? Saves a lot of time! It just seems wasteful to me to try to make a tube set into a transistor set when it wasn't meant to be and others already exist. That's my argument against 'mods', not all-encompassing by any means. One of the most interesting threads I recall related to trying other tubes in circuits, which grew out of the 'trying the same tube in a different stage' thread. I like the mods like clipping pins off a tube (12BA6?) and using it to replace the 3TF7 after swapping out the PTO tubes. There are some really good ideas out there which require no major rig surgery.

Okay, okay....so maybe I still feel a tinge of guilt now and again over the old command set receiver I 'modified with numerous improvements'(irreversibly hacked up) in college. It still works, it still uses tubes, and it gave me a far greater appreciation for original designs and owning/using historical artifacts. Back then I was willing to replace the dynamotor with a 115v power supply and add a few controls. Now I want to use them as designed, that's part of the fun for me. I have plenty of other radios that will plug into the wall. If you think solid stating a power supply is fun, try locating all the pieces for a complete ARC-5 or ART-13 set up.

They used to be available cheap, now they're hard to find in unhacked shape. Expect the same for R-390s and other currently 'plentiful' radio gear.

Just don't mention Dr. Locklear's ballast mod tricks - we already know he's a witch.....

From: "Kenneth Crips" <w7itc@hotmail.com>
Date: Sat, 26 Oct 2002 12:01:54 -0600
Subject: [R-390] tools

What do you call the nut driver that fits the slotted retaining rings that are used on pot's, and toggle switches, etc. and where can I find such a tool. I am tried of using the wrong tool on these rings.

From: "Kenneth Crips" <w7itc@hotmail.com>
Subject: Re: [R-390] Very Nice 390A, Hope You Are Sitting Down
Date: Sat, 26 Oct 2002 18:25:07 -0600

Museum quality indeed, My EAC R390A/URR looks nearly that good and it is unrestored, phooey and double phooey!!! By the way the tool I was looking for is called a blade spanner. I found them here...http://www.micro-tools.com Thanks for the other links they went in to my books marks, good sources.

Date: Sat, 26 Oct 2002 20:59:55 -0400
From: rbethman@comcast.net
Subject: Re: [R-390] Very Nice 390A, Hope You Are Sitting Down

Looks are everything - NOT! Ken - yours MAY look as good, BUT I DOUBT it is up to the standards of one of these GOVERNMENT FINANCED complete REBUILDS. Wonder how much the government put into these, ESPECIALLY since it became a HOT time-line issue. Impending/actual war, and state-of-the-art reduced to fried circuits. Harris Corp STILL insists that it was "poor filter maintenance" that was at fault. They STILL refuse to acknowledge that the talcum powder like desert sand created such static charges, that when blown across an antenna it fried the IFs. Same problem in Afghanistan! This looks to be one of the 500 that Uncle Sam COMPLETELY restored to ORIGINAL condition for Desert Storm.

I'd STILL like to be able to afford it! It would be in THIS Shack PDQ! I'd also like a source for the C603 C606 caps that Uncle put in them during the restoration. Eventually these wonders will hit the market. Hopefully in a more affordable range. Makes you wonder - Which warehouse, WHERE, are all of these resources kept? Bob - NODGN

From: R390rcvr@aol.com
Date: Sat, 26 Oct 2002 21:01:12 EDT
Subject: [R-390] # of fuses

The 1st four contracts were all single fuses rigs. The 0014-PH-56 Motorola contract switched to 3 fuses at #2683. Randy

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From: "Walter Wilson" <wewilson@knology.net>
Subject: Re: [R-390] R-390A needs fixing
Date: Fri, 1 Nov 2002 05:43:08 -0500

> Does Rick Mish have a web page or other contact info? .....

http://www.dxing.com/r390/r390.htm

Date: Sat, 02 Nov 2002 08:18:03 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] [Fwd: [Fwd: REF: FS ITEMS]]

This is a correction to my original post. I still have R-39XX and other parts for sale.

KC/MC Knobs new CNC machined out of 6061 aluminum and powder coated $30.00 ea. For all R39XX including R-391.

Large clamps new made out of 6061 with screw, nut & washer 7.00 ea. for KC/Mc knobs

Locking pins for R-391 and ARR-15 long & short. new 15.00 ea.

R390/391 new green gears made out of stainless 45.00 ea.

Oldham couplers disk with 3 springs new stainless 12.00 ea.

Tags for all R39XX contracts plus other with S/N of YOUR choice/ R 274, SP 600 freq. plates, EFJ Desk, RACAL 2274, CV/591/1722/1728, 391 channel plates & R-388 27.00 ea. 51J? plus S/N, Caution, LS-206 and others

Meter gaskets new die cut rubber 2 for $1.00 with any order

75A-4 audio mod plate 6.00 ea.

R39XX top and bottom covers. New gold alodined $55.00 set or 30.00 ea.

I am having covers made for R-388 price ???? TBD.

R-390A Utah RF deck cover plate new alodined/silk screened 15.00 ea.

R-390/391 RF deck covers alodined and silk screened 30.00 ea.

R39XX 15 small knobs stripped, powder coated and 13 filled 70.00 set

SX-88 new panels powder coated & silk screened 330.00 ea.

SX-88 new bezels CNC 6061 aluminum and powder coated 250.00 ea.
Have 2 panels and 2 bezels left.

R39XX panels stripped powder coated, silk screened, filled Check for $$

32V-3 & KWS-1 panels re-finished Check for pricing.

Cabinets stripped and powder coated Check for pricing
Any welding, hole plugging surface finishing etc to be determined
All items are plus shipping USPS Priority mail with confirmation in most cases.
Payment Hams with current address in QRZ.com personal checks Prefer USPS money orders. If Pay Pal please add 2.5% as the above prices are fairly tight.
Please mail payments to my shop address:
Dan Arney
c/o Global Pack & Mail
21315 Saticoy St. Unit R
Canoga Park, CA 91304-5685

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Date: Tue, 19 Nov 2002 08:32:37 -0600
Subject: [R-390] Wiring harness clamps needed

Does anyone know if the wiring harness clamps and their rubber inserts are available anywhere? These are the ones that that are used to secure the harness to the front panel and the frame. I have a radio where these clamps disentegrated over time and when I cleaned the frame and harness, they simply crumbled to nearly nothingness. Perhaps these are still available new?

Date: Tue, 19 Nov 2002 07:24:29 -0800
From: Craig McCartney <craigmc@pacbell.net>
Subject: RE: [R-390] Wiring harness clamps needed

I have seen them new, in assorted sizes, at a local distributor called HdB Electronics. I think I bought a few and if I can find them I'll get the

manufacturer's data. However, HH Smith comes to mind.

From: Buzz <buzz@softcom.net>
Subject: Re: [R-390] Wiring harness clamps needed
Date: Tue, 19 Nov 2002 09:13:49 -0800

Barry, I've got some NOS, MS cable clamps available at:
http://www.lanset.com/buzz/misc/hardware/clamps.htm
All prices are plus shipping from 89506.

From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Wiring harness clamps needed
Date: Tue, 19 Nov 2002 17:22:25 -0600

What you are probably looking for are called "Adel Clamps" They are used extensively in the aircraft industry...some have teflon inserts others rubber, some are aluminum others stainless...they come in all sizes and should not be too hard to find! A Google search should turn up several sources!

From: "Greg Werstiuk" <greg_werstiuk@msn.com>
Subject: RE: [R-390] Wiring harness clamps needed
Date: Fri, 22 Nov 2002 22:21:01 -0800

As I recall, Richco manufacturers the metal+rubber or metal+plastic insert style. These days, the more common solutions are made from nylon and manufactured by Panduit Corp., among others.

Date: Sat, 23 Nov 2002 03:45:36 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Wiring harness clamps needed

Try Aircraft Spruce & Specialty. http://www.aircraft-spruce.com/
What you are looking for are MS-21919 clamps. "Loop type cushioned aluminum, alloy clamp for tubing or conduit. Cushion (non-fuel resistant) is bonded to surface and edges of clamp. Cushion assures tight fit and eliminates vibration, thereby preventing line abrasion." They have a Griffin, GA and a Corona, CA location. There is a -XX, where the XX is a number that determines the inner diameter. I did NOT see a minimum order requirement! The cheapest size is $0.40, and the most expensive is $4.95 for a 3"

From: "Ed Zeranski" <ezeran@concentric.net>
Subject: Re: [R-390] Wiring harness clamps needed
Date: Sat, 23 Nov 2002 10:06:24 -0800

What # clamp are you looking for? I have several sizes, black rubber over metal cable clamps. Red Rubber is hi-temp.

Date: Thu, 5 Dec 2002 14:58:22 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: [R-390] Electric Radio on the web!

http://www.ermag.com/index.cfm

Date: Thu, 05 Dec 2002 22:43:21 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Electric Radio on the web!

Some two years ago now the publisher of Glass Audio, Audio Amateur and Speaker Builder ceased publication of the three separate magazines and combined them into one called Audio Electronics, bublished bimonthly for $28 a year (6 issues).
Circulation Department
P.O. Box 576
Peterborough NH 03458
603-924-9464
or fax 603-924-9467 for charge orders or: audiotech@top.monad.net

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Date: Thu, 5 Dec 2002 23:10:14 -0500 (Eastern Standard Time)-
From: Helmut Usbeck <vze2gmp4@verizon.net>
Subject: Re: [R-390] Electric Radio on the web!

No. Glass Audio, Speaker Builder and Audio Electronics are now combined into one pub called AudioXpress about two years ago.

Date: Wed, 11 Dec 2002 14:03:48 -0800 (PST)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] ID of 390 Manufacturer

Repro tags are available from Fair Radio. Make sure you measure the holes where the tag goes. The longer tags were on the early Collins and Motorola. You can usually tell who made the RF deck (tends to stay with the frame) of the radio by looking at the dial counter. It will likely say "Veedor Root" and one other maker on it (this is not foolproof, however). Some makers stamped the back of their frames (Motorola, Stewart Warner, EAC) while others did not (Collins). Keep digging and more info will surface. Look at all the modules.

From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] Military Manuals,.... again.
Date: Sat, 14 Dec 2002 18:28:17 -0500

Joe I had no problem just now testing some downloads. However, when I just did the first one, I got a warning message that the certificate didn't agree, but clicked to accept it. Maybe your browser isn't prompting for that. Or.... What browser are you using. I've only had good results with Netscape. I generally use IE, but have to use Netscape on LOGSA and BAMA. What's the N??? -- I think NTIS site you mean. I thought you could only look up manual reference numbers to order hard copy. Are there downloads on that also?

Date: Sat, 14 Dec 2002 20:32:32 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Military Manuals,.... again.

My links to the Logsa place are not on this computer. I sent that link a while ago to Brad Thompson (copy to him) - maybe he can dig it out and let us know what it is. NIST = National Insitute of Standards and Technology, one part (the major part) of The Technology Administration of the U.S. Department of Commerce (about 3500 people) <www.nist.gov>

NTSI = National Traffic Safety Institute (appears to be part of the U.S. Department of Transportation, though the web site says nothing about that.)

NTIS = National Technical Information Service, *also* a part of The Technology Administration of the U.S. Department of Commerce (about 150 people). <http://www.ntis.gov/>
Roy (NIST employee)

From: "Michael Melland" <w9wis@charter.net>
Subject: Re: [R-390] Military Manuals,.... again.
Date: Sat, 14 Dec 2002 20:00:31 -0600

LOGSA link below.....http://www.logsa.army.mil/etms/find_etm.cfm

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Date: Sat, 14 Dec 2002 19:12:45 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Military Manuals,.... again.

I GOT IT!! It didn't work AT ALL with MSIE 6.0 Had to use Nutscrape, even then it crashed several times. Not much of a way to tell if its done downloading. Thanks for the help,

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Date: Sat, 14 Dec 2002 19:16:35 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Military Manuals,.... again.

I didn't have to log in, only one manual came back as needing a password, that was one manual for the AN/URM-127, for some reason! I didn't try any commercial stuff, oh, well, back to logsa, I need some more manuals.

From: "Miguel Bravo" <miguel_bravo@telefonica.net>
Subject: Re: [R-390] Military Manuals,.... again.
Date: Sun, 15 Dec 2002 11:13:41 +0100

My trick with LOGSA and microploff 6. If you, in the search result page, try to download with right click and "save as", will not get the manual don't wonder how many times tries to do. You must open any of them with double-left click. Then the security message appear, say yes and then cancel the opening of the pdf in the browser. Now you can download all what you need from the A directory with the save as (right click) button. It work like a champ.

From: "Kenneth Crips" <w7itc@hotmail.com>
Date: Sun, 15 Dec 2002 16:20:20 -0700
Subject: [R-390] government addresses

<snip> http://bp.fed.gov/
This is the master phone book for the US Government.
There are web addresses listed here as well.

Subject: RE: [R-390] Military Manuals,.... again.
Date: Mon, 16 Dec 2002 12:40:36 -0800
From: "David Wise" <David_Wise@Phoenix.com>

Works ok here with IE5.5 128-bit. I was holding off on upgrading. Joe's comment might make that permanent :-) OTOH, I can't download much of anything from BAMA with IE5.5 . I use LeapFTP instead.

From: "Kenneth G. Gordon" <keng@moscow.com>
Date: Mon, 16 Dec 2002 13:41:55 -0800
Subject: RE: [R-390] Military Manuals,.... again.

I.E 6.0 works fine for me. However, on BAMA, when moving to the directory containing the file I want, I have to click "Refresh" at least once to see the files. After that, it works fine.

From: "Mark Richards" <mark.richards@massmicro.com>
Subject: RE: [R-390] Military Manuals,.... again.
Date: Mon, 16 Dec 2002 17:56:22 -0500

I just went through a series of e-mails with LOGSA's help desk regarding

access, as in order to download manuals, I needed a "mil" e-mail address. It seems that this is not available to us civilians. This system must be extremely insecure.

Subject: RE: [R-390] Military Manuals,.... again.
Date: Mon, 16 Dec 2002 15:13:43 -0800
From: "David Wise" <David_Wise@Phoenix.com>

Note that some manuals are restricted. I tried it here on a couple of public files; worked fine.

From: "Giles Gant" <bgant@bellsouth.net>
Date: Sat, 21 Dec 2002 05:59:20 -0600
Subject: [R-390] trouble shooting the 390A

Hi all, My 390A was working just fine when I took it out of service about..... 15 yrs ago. I placed it on the back porch and there it sat untill last week. Brought it in the house, plugged it up and no signal. It has plenty of white noise. I can raise and lower the volume with either the RF or AF gain control, just no signal. I am guessing one of the I.F. stages is missing an osc. freq. but since I don't have proper test gear I can't be sure. Will someone please hazzard a guess as to what the problem may be? Possibly someone else has experienced the exact same problem. TIA for any helpful brainstorming. BTW, I do have a RF signal generator on the way. I also have a VTVM so I am hoping with these two pieces of equip. I can get my beloved rcvr working again.

Date: Fri, 27 Dec 2002 16:04:15 -0500
From: Albert Solway <asolway@sympatico.ca>
Subject: [R-390] Soldering Fine Wire

Thank you all who responded to my fine wire soldering problem. There were many. I will attempt to explain the original problem again. Then my adaptation of your suggestions which resulted in a successful repair.

I am sorry for not getting back sooner. I got an email from Greg yesterday asking if I got any responses or any info on the aspirin method question I posted.. This woke me up and I realized that if you ask questions and get responses then you should share this info with everybody.

I am in the process of restoring an SP-600-J-3. I was replacing one of the BBODs in T1. A fine wire going form L52 to a terminal was broken. There was not enough wire remaining to reach the terminal. I attempted to splice the fine wire to length of solid lead wire. This was not successful because the insulation on the fine wire inhibited soldering of the wire. Attempts to melt the insulation with a soldering iron did not work. It resulted in

burning the wire and more wire being destroyed. I tried the aspirin method but this resulted in a plastic like material being deposited on the wire. The amount of wire remaining was sufficient for one more attempt at a splice. Another failure would result in replacing the entire T1 transformer. Availability would certainly be a problem. This was when I decided to ask for help.

Several responded with variations of the same technique that were specific to a particular problem. The main point that was made was that only uncoated aspirin should be used. I used a COATED aspirin. This was the cause of the plastic like coating that was deposited on the wire. USE UNCOATED aspirin only.

My procedure for the above problem is only a variation of the suggested techniques. The transformer fine wire used in L52 mentioned above was approximately 40 AWG with a nonsolderable insulation. The remaining L52 lead was to short to reach the terminal that it was originally attached to. A length of solid bare tinned wire about 0.020 in diameter was attached to the terminal and soldered in place. The bare tinned wire was used as a splice for the fine 40 AWG. Tweezers were used to wrap the fine wire 4 turns around the bare wire. An uncoated aspirin was broken in two. Using tweezers the aspirin was held under the wire to be soldered. A soldering iron with solder applied to the tip was held in contact with the wire above the aspirin. The soldering iron was moved back and forth two three times. The residue from the aspirin soldered area was cleaned by scrapping lightly with an Xacto blade. The area was cleaned with Isopropyl alcohol (IPA). The aspirin soldering/cleaning operation was repeated a second time. A light coating of solder flux was then applied to the area and then resoldered. The result was a good and well wetted solder joint. I dissolved some baking soda in water and rinsed the splice with this solution. The splice was then cleaned thoroughly with IPA.

Bill Smith indicates that the acid in the aspirin may eventually attack the wire. This a valid comment. Rinsing the splice with the baking soda to neutralizes the acid. This is not my idea but one that I found on the internet at the the following site. I downloaded their Wire Info Software. Lots of good info on magnet wire including soldering of nonsolderable fine wire insulation. http://www.wiretron.com/magnet.html

BTW Google is a very effective search engine. There is all kinds of info on magnet wire out there. The SP-600 T1 is now fully repaired and looks good. Will finish the recapping and the other necessary repairs in a month or so.

Date: Fri, 03 Jan 2003 10:56:12 -0500
From: Jim Brannigan <jbrannig@optonline.net>
Subject: [R-390] Dial Lamps

Is there a source for the R-390A dial lamps?

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Dial Lamps
Date: Fri, 3 Jan 2003 10:00:00 -0600

Mouser, for one, has them, but I believe they're readily available from several other sources as they are a rather common lamp. www.mouser.com

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Date: Fri, 03 Jan 2003 11:14:41 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: RE: [R-390] Dial Lamps

If you want to pay a bit more for them contact Bulb Direct:
<http://www.bulbdirect.com/Original/home.shtm>

Date: Fri, 03 Jan 2003 11:29:34 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: RE: [R-390] Dial Lamps

Here is a bit more info from my files: MicroLamp
<http://www.microlamp.com/> lists the following 328 series bulbs:
Unfortunately, there's no prices nor are there any specs save the bulb type - T13/4, volts - 6.0 and amps - .20. I cannot find any listings on their web site today. You are invited to email them.. (click the light bulb if you see one.. gawd their site is useless!)

Here are variants of the lamps in the R-390 A

328

Original bulb
328AS10

A longer life

(

different filament materiel same volts same amps.)
328AS15

A longer life

(

another filament materiel same volts same amps.)
328R

The rugged one. less light same volts same amps.

In the past Al Solway <beral@videotron.ca> has offered some 328's for sale, I don't know if he has any left. Bulb Direct <http://www.bulbdirect.com/Original/home.shtm> lists only the 328 at $1.05

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Dial Lamps
Date: Fri, 3 Jan 2003 10:33:14 -0600

Did anyone ever try the LED direct replacements? I remember a thread a few years ago about this. Rather expensive I think, but cool.

From: "Jerry Kincade" <w5kp@direcway.com>
Subject: Re: [R-390] Dial Lamps
Date: Fri, 3 Jan 2003 10:43:58 -0600

Funny this should come up. Just yesterday I walked into a local bulb emporium in Oklahoma City, asked for #381 lamps (supposed to be the long-life version of #328) and lo and behold they had both 328's and 381's in stock. I bought out their stock (10) of 381's at 62 cents each, don't know how many 328's they had. Check with specialty light bulb specialty suppliers. These bulbs don't seem to be all that rare. BTW, Newark has them for around $7.00 per 10-pack on their website, don't know if they were actually in stock. I hope the 381's are what I think they are, which is a 6.3v (instead of 6.0v) long-life non-ruggedized 328. Guess I'll find out this weekend when I plug them in.

Date: Fri, 03 Jan 2003 11:51:28 -0500
From: Jim Brannigan <jbrannig@optonline.net>
Subject: Re: [R-390] Dial Lamps

Thanks all, I found them in the Mouser catalog. Will just have to wait until I have a few things to order....

Date: Fri, 03 Jan 2003 11:53:56 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Dial Lamps

Al Solway reported earlier: "...the 381 lamp which is the high MTBF (20,000 hrs) version of the 328 lamp (1000 hrs MTBF)...The 381 is not quite as bright as the 328. This is only apparent when they are side by side."

From: "Jerry Kincade" <w5kp@direcway.com>
Subject: Re: [R-390] Dial Lamps
Date: Fri, 3 Jan 2003 10:52:13 -0600

Amen, Barry - I'd also love to have some specifics from somebody who has adapted the display illumination to use either green (or even better orange) diffused-lens LED's.

I'll bet a coat of flat white paint on the inside of the dial cover would reflect a nice, even-colored glow on those white dial numbers, and they would show up great on their flat black background.

How cool would that be? For the coup de grace, add a tiny little pot (inside, of course) to control the LED brightness! :-)

Date: Fri, 03 Jan 2003 12:14:03 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Dial Lamps

The LED's work and they aren't all that expensive these days. Digikey has some *very* bright ones for a couple of bucks each. Compared to say a R-1051 there's a lot of room in a R-390A to mount a couple of them and a dropping resistor. The main issue is the same one we keep chasing all over the place here. They are DC parts so you have the possibility of RFI when you put them in. Running two back to back still gives you a non linear load. Anything non-linear and you get crud.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Dial Lamps
Date: Fri, 3 Jan 2003 11:23:27 -0600

At the rate I've been using my R390A (or any radio gear for that matter) these days, my 328's will potentially last forever so I don't really need to worry about this...sigh... Aside from the RFI issue, I was thinking someone made direct replacements; the dropping resistor is built into the unit. Was I mistaken? Perhaps not the 328?

From: Buzz <buzz@softcom.net>
Subject: Re: [R-390] Dial Lamps
Date: Fri, 03 Jan 2003 10:39:45 -0800

Listers, I've got a limited quantity of new 328 bulbs .25 ea. or 5 for a buck, = plus another buck for the puffer pack envelope and postage.

Date: Fri, 03 Jan 2003 14:43:37 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Dial Lamps

There was a thread a while back about taking a dead light apart. You then installed a dropping resistor and a small LED in the base. The net result was a half wave rectifier and a test for the reverse breakdown of the LED being > 10 volts. The main problem mentioned was that the LED used was a narrow beam type and it didn't light up the window as well as a pilot light.

From: ToddRoberts2001@aol.com
Date: Fri, 3 Jan 2003 16:34:19 EST
Subject: Re: [R-390] Dial Lamps

Mendelson Electronics have several interesting T 1-3/4 lamp based high-intensity multi-chip LED's @ 40 cents each. They are rated 6VDC @ 35ma and come in RED, AMBER or GREEN colors. They come already mounted in a T 1-3/4 midget flange base for drop-in replacement. Don't know if they would operate from 6.3VAC but would be fun to experiment with! Go to www.meci.com and click on their LED Listings.

Date: Sun, 05 Jan 2003 10:43:32 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] IF deck caps

.....find a 560 ohm 2W carbon Rippel resistor! ....

A wire wound 5 watt also works just fine on the audio deck. Since it's Sunday Radio Shack might have them.

From: "Mark Richards" <mark.richards@massmicro.com>
Date: Sun, 5 Jan 2003 12:50:48 -0500
Subject: [R-390] Gear Clamp - stripped screw?

Has anyone ever encountered a gear clamp cap screw that appears to be stripped such that the spline wrench does not grip properly? This is in a particularly difficult area to get at - this is the large gear that to the right of the turns counter and the clamp is in a very tight space between the gear and the next panel. I am considering blasting - but would like to get some opinions and suggestions before I do something drastic. Anyone have any suggestions?? Is it possible to chisel away the nut? For the group's information, I just received a beautiful set of spline wrenches made by Xcelite (ordered through Techni-Tool (www.techni-tool.com). The part

number is 99Ps60. Also, found a set made by GC #5028 Hex and Spline Wrench kit - that has the exact size for the R390. The Xcelite kit is professional grade. The GC is cheaper and are only small right-angle steel tools.

From: "polaraligned" <polaraligned@earthlink.net>
Subject: Re: [R-390] Gear Clamp - stripped screw?
Date: Sun, 5 Jan 2003 13:39:12 -0500

I had one like that. Try using regular hex wrenches. Try US and metric sizes. See if you can get one to fit. Tap the wrench into socket head. I found a size that caught enough meat to get the screw out. If not, a long drill bit and drill the screw out. I think I would avoid chiseling, but if you must (eeeek!), the aluminum clamp is probably easier to crack than the screw.

From: "Ronald Davis" <RDavis24@carolina.rr.com>
Date: Mon, 13 Jan 2003 14:51:27 -0500
Subject: [R-390] Resistors for the R-390A and beginner help

Im getting ready to start working on one of my R-390A's and im wondering if anyone has a part number list for all the resistors? Sure would save alot of time if someone had all the mouser numbers in a excel spreadsheet for all to use. I have a recap kit coming, but what is the deal on the resistors, does everyone just replace the bad ones, or is it worth it to replace them all. This radio is going to be home use rig and I want it to be in perfect shape. Got to get my a small tv/vcr for the shop so I can watch the videos while im working on the rig, my memory is not to good anymore hi. I have a nice Hammarlund HQ-170A with Hammarlund speaker that I would trade toward a R-390A or R-392? Anyone interested? Email for pics

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From: "Merle" <lal@metrocast.net>
Date: Wed, 15 Jan 2003 10:16:00 -0500
Subject: [R-390] Needed !

I am in need of a couple of items to finish up my R-390A I was unable to purchase these from either Fair Radio or American Trans Coil, if anyone on the list might have the following please let me know what you want for them and I will send along the funds !

The little cover for the terminals where the 110 volt power cord attaches

The short cable that goes from the IF deck to the rear panel (about 6 inches long with the connectors on it.)

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>

Subject: RE: [R-390] Needed !
Date: Wed, 15 Jan 2003 09:23:19 -0600

Check with Dave Medley for the AC power cover. He has a website, but I'm not sure what it has changed to lately.

Date: Wed, 15 Jan 2003 07:54:01 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Needed !

I make the AC power covers. $7.50 Mailed.

Date: Thu, 16 Jan 2003 08:03:27 -0600
Subject: Re: [R-390] Resistors, SSB
From: blw <ba.williams@charter.net>

> .....splicing in new component using small copper tubing sleeves .....

The copper tubing sleeve idea seems interesting. When I was recapping a Fisher receiver a few of the new parts did not have leads long enough to reach the original terminals. I have a thicker piece of wire on the bench for wrapping lead wires around. I make about 4 good coils on the ends of the new part, squeeze the coils tightly together with needle noses, and slip the coils over the original wires. Then, once the fit looks good, I crimp the coils over the original wire before soldering. When I replaced old caps in a Bogen amp I had a few places where new caps were not long enough. I had some places where I could solder in a terminal strip to the chassis. I used those to tie in original wires to the strip and then attach the new parts. I like this approach better than splicing.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Date: Thu, 16 Jan 2003 09:39:27 -0600
Subject: [R-390] Front panel silk-screening

Anyone know where I can get just the backside of some panels silkscreened? These are engraved panels and I plan to have them powder-coated and then the backsides silkscreened. I found one place that will do it, but they charge the same to do the back as they do to completely refinish the panel. I was hoping to find a place that would do just the back and price accordingly.

Date: Wed, 05 Feb 2003 13:26:16 -0500
From: K2CBY@aol.com
Subject: [R-390] OT Tech Manuals - Army Logistics site access

A previous posting (some time in Jan 03) on this site recommended Army

Logistics Agency (www.logsa.army.mil/etms/find-eln) as a source of downloadable tech manuals for current (or at least more recent than R-390A vintage) military equipment. A visit to the site disclosed that it was passworded and access is apparently availible only to military personnel and government contract employees (which I am not). I am looking for a service manual for the AN/USM-223 Multimeter, which is certainly not classified material and is listed in the "logsa.army" site catalog. Does Army Logistics (or anyone else) have an open site where this material can be downloaded.

Subject: RE: [R-390] OT Tech Manuals - Army Logistics site access
Date: Wed, 5 Feb 2003 10:44:21 -0800
From: "David Wise" <David_Wise@Phoenix.com>

Into the breach again, Miles. It looks forbidding, but don't get scared off. You can download all manuals except the restricted ones. You'll know when you hit one of those, the black helicopters will come :-)

If you start directly from www.logsa.army.mil, click "Enter", then "Publications and Forms", then "ETMs Online", then "I accept", then "Enter the site".

Date: Wed, 5 Feb 2003 12:58:19 -0600
From: r390a@enteract.com
Subject: RE: [R-390] OT Tech Manuals - Army Logistics site access

On a "Search Results" page, as you run your mouse over the PIN,TM Number or title, the file name will appear at the bottom of your browser. If it's in an 'A' directory, then anyone can download it, otherwise an account is required. To the best of my knowledge, ordinary hobbists like ourselves do not rate accounts. I believe you need to be on a US-domain to d/l even the 'A' items.

Examples:
https://www.logsa.army.mil/etms/data/A/006287.pdf <- Okay
https://www.logsa.army.mil/etms/data/D/006286.pdf <- Account needed

It's a mystery to me why some manuals are not in the 'A' group as the equipment may be purchased readily on the open market and often original manuals can be found on eBay. Go figure.

From: "Drew Papanek" <drewmaster813@hotmail.com>
Date: Tue, 18 Feb 2003 13:30:47 -0500
Subject: [R-390] Plastic Window

Dave, Depending on size and thickness needed, a good source for window

plastic is from CD jewel cases. Sometimes these are available in tinted colors also. The best situation is to get one from those useless trial internet access CD's.

Date: Tue, 18 Feb 2003 13:46:29 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Plastic Window

I assume this is about the plastic window for the Veeder Root counter. If so, Dave Medley may have some. The plastic from CD jewel cases is rather brittle. If you're not a purist, you can make decent replacement dial "glasses" from blister packaging. Some is much thicker and clearer than others, so pick 'n choose. You just cut it with a pair of scissors. Once in place, it looks like what's supposed to be there. It will never break or crack. OK, if a bulb is right on it, maybe it will melt, but not likely.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Plastic Window
Date: Tue, 18 Feb 2003 13:08:16 -0600

Modified microscope slides make good replacements for R390A VeederRoot windows.

Date: Tue, 18 Feb 2003 11:13:57 -0800 (PST)
From: Randy Zelick <zelickr@biohazard.pdx.edu>
Subject: RE: [R-390] Plastic Window

In case anyone does want to use a microscope slide, I have an infinite supply of them. Any SASE (padded) that come my way will be returned with a few specimens at no charge.

Date: Tue, 18 Feb 2003 14:17:26 -0500
From: "Ray V." <w2ec@attglobal.net>
Subject: Re: [R-390] Plastic Window

I don't have one here to try but I seem to recall someone saying once that a lab microscope slide works fine for the veeder root counter with no modifications needed. Anybody out there with a lab slide they can try?

From: "Bob Tetrault" <r.tetrault@attbi.com>
Subject: RE: [R-390] Plastic Window
Date: Tue, 18 Feb 2003 11:20:43 -0800

You could say, " I have a Sagan of them... Millyuns and Billyuns ...

From: <plmills@attglobal.net>

Date: Tue, 18 Feb 2003 14:18:57 -0600
Subject: [R-390] R-390A glass window

The glass measures 3 inches by 3/4 inch. Since it is held in place by clips and the ends, the 3/4 inch measurement could actually go to slightly over an inch and the glass would still fit. Just be careful not to lose those clips that hold the clamping fingers in place.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] R-390A glass window
Date: Tue, 18 Feb 2003 15:02:43 -0600

If memory serves, a microscope slide is 1" wide. The curvature of the inside of the escutcheon was such that the slide did not lay flatly against the window opening. I think I trimmed about 1/4" off the side with a glass cutter.

From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Plastic Window
Date: Tue, 18 Feb 2003 18:27:09 -0600

I am not sure if this is about the R-390 counter or the SP-600 question a few days ago about a dial window.. The discussion about the Veeder Root counter reminded me of a thread a few years back (the good ole days when I got 30 or 40 posts a day to look forward to) where it was suggested that a cut down Microscope slide was an excellent replacement window for the counter. Haven't tried that but it sounds like a winner to me! Ahhh for the good ole days...

Date: Tue, 18 Feb 2003 19:13:25 -0600
Subject: Re: [R-390] Plastic Window
From: blw <ba.williams@charter.net>

You aren't talking about the days when we could tell a joke or two, are you? Ah yes, the good ole days. I remember the Veeder Root threads too. It was the microscope slide replacement that was talked about.

Date: Wed, 19 Feb 2003 18:54:24 -0600
From: windy10605@juno.com
Subject: [R-390] R-390A progress

Thought I'd send a note of where I'm at with the receiver. It's a long note so just delete if you're not interested. I'm going to put the repair scenario on my web site with pictures later. 73 Kees K5BCQ
* * * * * * * * * * * * * * * * * *
Bringing another R-390A back to life... R-390A purchased at a local

swapmeet. Always wanted one because of the performance reputation and the amazing mechanicals. Serial #26xx manufactured by EAC (a division of Hammarlund) per 1967 contract. All the component serial numbers are roughly the same as the unit serial number when you consider yield off a typical electronic sub assembly manufacturing process.

Cabinet #40xx
RF deck #44xx
Gear train #38xx
IF deck #43xx
Osc deck #41xx
Audio deck #32xx

The individual selling it said: "he was absolutely NOT going to take it back home", "it had very low audio", "it didn't work right .... might be a bad tube" (....sure it is), and had two loose cables (repair effort ?). I detected a level of frustration and he was quite happy to sell it to me. Replugged the loose cables and powered it up on a Variac, nothing unusual, glad to see good B+ (power transformer is OK). Dug around in the junkbox for a 600 ohm to 8 ohm transformer and actually found one. Sure enough, very low audio with both the RF and AF gain fully advanced. Tested all the tubes (all good), borrowed a manual, and later downloaded the excellent Y2K R2 version. Found the two jumpers on the back for remote AGC and RF Gain missing. After making some from aluminum scrap, there was plenty of audio noise, but still no signals. The mechanicals are impressive but several of the slug racks would cam up and stick. Greased all the bearing points with a little white grease and still had two which sometimes stuck. Removed the two slug racks and cleaned the slugs and the inside of the coil forms of all residue. They all now follow the cams. On the advice of several R-390A experts, pulled the electrolytics and rebuilt them with new internal parts before they went bad (been there, done that, didn't like it). Found some square aluminum cans with octal plugs to use.

Measured the 2nd oscillator and TP E402 is low, but when connecting the scope ground, tripped the GFI. Found the chassis to be slightly AC "warm" and was informed by several people that R-390As trip the sensitive GFIs we have today. Replaced the AC filter with a 3A junkbox unit which has an IEC 320/13 connector. Made an aluminum adapter plate (no extra holes, reversable). Had to relocate the bathtub capacitor a few inches to make room, again no new holes. Shaved a little plastic off the mating AC cord plug to allow full insertion. Works great, no more tripped GFI, no more AC "warm" chassis.

The 2nd oscillator levels are -2.5V to -8V at the TP and will require further investigation but you should hear "something". Tried all the bands and frequencies. Looks like the 1-2Mhz band "works so-so" but nothing else.

You can barely hear the calibration signal with RF and AF gains advanced on the other bands.

Time to take the unit apart because I want to add all the proactive changes and improvements anyway. For a complex receiver, it was easy to disassemble the modularized unit .....even the RF deck. Most difficult task is to get the Bristol wrenches to bite (almost an interference fit). Made a "long" Bristol from a section of fiber rod, drilled a hole in it for the small end of the Bristol, and attached it with two small cable ties ...works well. Start checking the various sub assemblies for bad capacitors, changed resistor values, etc .... can't find any values outside 10-15%.

Proactive circuit changes:
Dallas Langford's two diode SSB enhancement
Chuck Rippel's change C-327, C-553, C-531, C-547, C-549, C-609
Add a "no holes" adapter to use the balanced input connector for higher sensitivity

Experimented around with the 2nd oscillator, changing values, better 6AK5, power it up on the bench and am not able to get -4V to -11V levels at the E402 Test Point (six bands are above -4V). Maybe it's sluggish crystals. Four of the crystals have one pin which is very loose. Pulled the four sockets and replaced the pins (one came out in two pieces the others had no spring action). Noticed that the registration of the number tape, at the front of the deck, is "off" by a little more than 1/16" to the left. Since the 32 switch contacts are very closely spaced, I put an alignment mark on edge of the hole to allow proper alignment in the future. Noted the min/max capacitance position of the trimmers since you don't want that to be the peak. All have two peaks ...OK.

Checked all the cables by wiggling them while measuring continuity and found one intermittent ....P-218 (one of the loose cables when I got the unit). Turns out the center pin is not soldered to the wire. Easy to fix but the radio is not intermittent, it's dead.

While examining the RF deck a gear fell out. Took a while to find out where it goes. Guess what ? ....it's off the RF bandswitch shaft which is "fixed" in the 1-2Mhz position. The gear clamp is busted and a new one ordered from Fair Radio. Ordered one of their reproduction top and bottom cover sets too.

Time to decide which mica caps are to be replaced because many of them "fail" at 500V in the "mica" cap position on the Heathkit IT-28 capacitor checker. On my IT-28, the eye closes at roughly 0.1uA for the "paper/mica" cap position which is a little on the sensitive side (an Eico capacitor checker I had, closed at 1.5uA). So here is a better way: after determining

that the voltage settings on the cap checker are "close", insert a digital uA meter in series with the leads and read the real leakage at the specified WV. The C327 mica (Chuck Rippel says it's a problem capacitor) read 2.5uA ....clearly a bad mica. I replaced it with another mica because it's part of a tuned circuit and disk ceramics move around too much. Most of the mica capacitors which closed or started to close the eye on the IT-28, read less than 0.1uA at 500V ...perfectly good. One more bad mica (also used at B+ levels) was C286 which measured 4.0uA leakage. That one will hose up the bias levels at the 2nd mixer. Received the gear clamp and re-installed the gear on the bandswitch shaft (glad I'm not a neurosurgeon) . Now the bandswitch is operational. Checked cam alignment in the 7+000 position, looks "OK". A little light lubrication since you can access everything while it's apart, some contact cleaner, and put the unit back together. Had to make a tool for installing the Osc deck "third screw" if you-forgot-to-install-it-before-mounting-the-front-panel. Powered it up ....Nothing !!

Not even the Broadcast band. Found that the Osc deck tube was not lit. Power at the Osc deck plug is OK, turns out the RF choke in the tube filament lead opened up. Fixed it and tried again ....Works !! Tuning was very stiff ...found the dial lock was not installed into the front panel detent, putting pressure on the disk. A spot check of alignment looks good so we'll use it a while and get familiar with what else needs looking into. The tuning is still "too stiff" and I think the source is the VFO. The S-Meter acts "very damped" and the AGC does not respond as it should for the three positions. Listened to some 20m SSB and a few European SW stations using a 20ft piece of wire on the floor. Nice Receiver, but I guess you guys knew that.

From: ToddRoberts2001@aol.com
Date: Thu, 20 Feb 2003 04:07:49 EST
Subject: [R-390] Stiff Tuning on R-390A / R-390A progress

If the tuning feels very "stiff" on the R-390A you might check to make sure the bushing where the tuning shaft comes thru the front panel is not binding against the shaft. The bushings were made to be adjustable by loosening the large nut on the backside of the bushing assembly.

Over the years I have run across several R-390A radios that had this problem of very stiff tuning when turning the Kilocycle knob. In every case a misaligned front-panel bushing was the cause. I suspect that was one of the reasons the radios I have were put up for sale! Also make sure the shaft has lubrication where it comes thru the bushing.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Date: Thu, 20 Feb 2003 13:07:30 -0600
Subject: [R-390] Bristol Screws for R390 Knobs

A few weeks ago, I sent a post telling about a guy who has some Bristol-drive set screws for the R390[A] knobs. I ordered a couple of sets and it turns out these are not the correct thread size. They are close, but not quite right. They were advertised as #8-32 but I don't think that's what they are. I haven't measured either screw yet, but I have a feeling these most likely are a metric size that is very close to #8-32. At any rate, if you are thinking of ordering these for your R390, they won't fit! My apologies, but I was led to believe these are something they are not. Needless to say I will be contacting the seller.

From: "Constanten, Carl P." <CONSTCA@mail.northgrum.com>
Subject: RE: [R-390] Bristol Screws for R390 Knobs
Date: Thu, 20 Feb 2003 17:21:54 -0800

Barry -- R-390 knob setscrews are 8-36 (UNF size)

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Bristol Screws for R390 Knobs
Date: Fri, 21 Feb 2003 06:31:18 -0600

Carl, Last night I measured them with my screw pitch gage and, sure enough, they are #8-36 UNF. I should have checked that out before I bought these. They are #8-32 UNC as advertised so I have no one to blame but myself.

From: R390rcvr@aol.com
Date: Wed, 26 Feb 2003 08:32:44 EST
Subject: [R-390] Anodizing knobs on R-390?

Good day all: Can the zinc alloy used for the R-390 knobs be anodized? It would be nice to have a more durable finish than paint. The other question has to do with repairs to the ears inside the main tuning knobs. We all have seen knobs with the ears broken off. Someone on the list used to do a repair, which I believe involved sleeving the knob to replace the ears. I can't find my old emails on the subject. Does anyone remember the details, or have a lead on the subject?

Date: Thu, 06 Mar 2003 21:11:34 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] T-368 HF AM Transmitter.

>does anyone have ....reflector for ...BC-610 & T-368 Transmitters?

There is a mail group on Yahoo for T-368's. If you buy one you really should join that group. The input (posting) address is: T-368_bc-

610@yahoogroups.com but if you go to Yahoo.com and poke around for news groups you will likely find out how to subscribe. (I was added by the fellow who runs it.) Roy

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From: "federico" <l.baldi@www.dottorbaldi.it>
Subject: Re: [R-390] Engraved front panels on R-390(non A)
Date: Fri, 7 Mar 2003 09:18:23 +0100

I agree with Ed, also in the Viappiani book on R-390 & R-390A is written that mostly of the R-390 were silk screened instead of R-390A that have engraved front panels except for the rigs manufactured from Motorola (silk-screened). Federico IZ1FID

> To my knowledge, all of the R-390 (non A) were silk-screened
> (Collins/Motorola). Even the early R390A's were silk-screened
> (Collins/Motorola). I think the engraving started with Capehart,
> Imperial or Stewart Warner in the late 50's. Hence forth, they
> were all engraved....That's my story and I'm sticking to it...

Date: Fri, 7 Mar 2003 11:16:04 -0500 (EST)
From: "Paul H. Anderson" <pha@pdq.com>
Subject: Re: [R-390] Engraved front panels on R-390(non A)

Ditto again - 4 R-391 panels, 2 R-390 (non A) panels are all engraved. Very interested to hear more about Federico's silk screened 390 non A panel, though. It could well be a very early production R-390 non A?

Sometimes you have to look real, real close to see if it is really engraved versus silk screened. R-392 panels only rarely seem to be engraved. All but one of the ones I've seen seem to be silk screened. Too bad, as it makes them more difficult to restore to perfection.

Date: Sat, 8 Mar 2003 04:46:41 -0800 (PST)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] 390A Drawings, was Engraved front panels

As far as the 390A goes, the revision from silk screened to engraved is on the drawings I believe. I think most were actually stamped, not engraved, but the Fowler rigs were engraved with a rotary tool.

From: "Bryan Stephens" <mail08458@pop.net>
Subject: Re: [R-390] Engraved front panels on R-390(non A)
Date: Sat, 8 Mar 2003 08:51:10 -0500

I have a R-390(non A) that is silk-screened, but it was remanufactured through Tobyhanna depot in the late 1970's.

Date: Mon, 10 Mar 2003 12:16:59 -0500
From: tbigelow@pop.state.vt.us (Todd Bigelow - PS)
Subject: Re: [R-390] 390A Drawings, was Engraved front panels

.....revision from silk screened to engraved .....I think most were actually stamped, not engraved, but the Fowler rigs were engraved with a rotary tool.

I used to think they were all stamped myself (before the Fowler rigs), but recently when I was going through a manual for a Collins mixing console it specifically refers to the engraved labels. Stamping sure would be a lot faster, but maybe engraving produces a cleaner letter or less distortion to the metal? This has to be related to the Bristo/Bristol wrench issue....

Date: Mon, 10 Mar 2003 16:26:25 -0600
From: Don Reaves W5OR <w5or@comcast.net>
Subject: RE: [R-390] 390A Drawings, was Engraved front panels

So what kind of machine was used to do engravings? I'm familiar with the badge engravers used at conventions and 'fests to engrave names in plastic. Is that what Tom means by 'rotary tool'? How much set up time and expense would it be to take a silk screened panel and engrave it? Lets hear from you machinists.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] 390A Drawings, was Engraved front panels
Date: Mon, 10 Mar 2003 16:34:42 -0600

I believe they used a Pantograph. It is very much like the engravers you see used for badges. They use a similar machine at places that do engraving for jewelry. It is a time-consuming process, but it does do a good job. I have a panel from a frame of unknown manufacture. I stripped it down to the bare metal and, under an eye loupe, you can see the rough surface that is typical of an engraving process.

Date: Mon, 10 Mar 2003 15:31:47 -0800 (PST)
From: John Kolb <jlkolb@cts.com>
Subject: RE: [R-390] 390A Drawings, was Engraved front panels

I'm not a machinist, but I used to watch them engrave dials for the frequency knobs of Wavetek function generators - individual to match the pot exactly. A pantograph was used
<http://www.ies.co.jp/math/java/geo/panta/panta.html>
with a rotary cutter to duplicate characters from a stencil. Once you get a pantograph that would handle 19" rack panels, you would then need a

stencil set with the proper font.

Date: Mon, 10 Mar 2003 23:47:26 -0500
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: [R-390] wire list

Is there a wire list for the R390A published anywhere? I am looking for the color of the wires, the wire gage and the lengths of each color to build a R390A. I am trying to weed out some of my scrap wire an want to save what I might need for restoration of my R390As.

Date: Mon, 10 Mar 2003 22:58:58 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] 390A Drawings, was Engraved front panels

THEY WERE STAMPED

Date: Tue, 11 Mar 2003 09:14:50 +0200
From: "Bryce Ringwood" <BRingwoo@csir.co.za>
Subject: Re: [R-390] 390A Drawings, was Engraved front panels

Stamped ? - Nice job then. Mine looks exactly like the panels I get made for my instruments - done on a rotary engraving machine. There are plenty of outfits here who do that. OT - I once tried getting a front panel engraved using photosensitive chemicals. The result was OK, but not as nice as the rotary engraver. The letters weren't cut as deep. Somethng you can do at home. - Bryce

PS Don't dry the photoresist in the XYL's oven.

From: "Miguel Bravo" <miguel_bravo@telefonica.net>
Subject: Re: [R-390] connector with broken pin R-390A
Date: Tue, 11 Mar 2003 14:38:30 +0100

> Miguel, I have had this happen... Since all of the pins on J-620 are in use you >have to create an extra pin... This is easy to do... Find pins 9 & 10 on J-620.. Then >you unsolder them from J-620 and solder them together and tape the joint... >Now you run a wire from pin nr 1 on P-120 to pin nr 10 on P-120.. Now you >take the wire to J-620-1 and C604 and connect it to pin nr 10 of J-620... Now >your radio works with either audio module... Simple... 73's WALLY K5OP

Simple?, You have been thinking a lot. Thank you. But then this module can only be used in this radio?. What I want is the possibility to put a new pin instead. I don't know if the pins are removables as in anothers connectors are or, murphy watching, they are molded together.

Subject: RE: [R-390] wire list
Date: Tue, 11 Mar 2003 10:35:59 -0800
From: "David Wise" <David_Wise@Phoenix.com>

The color coding (but not the gauge or length) is documented in the Y2K manual. See Figure 6-35, "Main Frame Wiring Diagram".

Date: Sun, 16 Mar 2003 09:34:34 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] looking for parts

This may be redundant but you might try Fair Radio. I have gotten "parts grade" IF's from them in the past. They may be willing to sort through the pile to come up with one that's in better shape than the rest.

Date: Sun, 16 Mar 2003 10:39:08 -0500
From: R390rcvr@aol.com
Subject: [R-390] 1960 EAC tag with A at end?

Good day all: I have just acquired a 1960 EAC with 714A as front tag #. The rear panel is 741. Does the A signify a reproduction tag, that someone had made to match the rear panel? It looks very good. I haven't seen this contract before, but have seen a lot of others, and it looks original. I pulled the filter cover, to see if this might be one of the rigs with the Clevite(sp) filters, but just regular Collins. I have dropped a note to Tom Marcotte, but would welcome input from anyone with thoughts on the subject. Thanks Randy Stout

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Date: Sun, 16 Mar 2003 13:54:29 -0500
From: R390rcvr@aol.com
Subject: [R-390] Tag number dyslexia

Had a bit of dyslexia while typing. Both the front tag# and rear panel #s are 741, with the A added to the front tag.

From: R274C@aol.com
Date: Sun, 23 Mar 2003 14:20:28 EST
Subject: Re: [R-390] Re: R-390A tag with A on it - field mod

The "A" indicates that a modification was done at the Depot (or in some cases) the Field Level.

Date: Tue, 25 Mar 2003 12:27:37 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Half moon guard?

>What is the "half moon guard"? I have wondered what the 4 tapped holes >around the KC knob are for.

I am not certain, but I think that a half moon guard is a mythical accessory. It attaches to the front panel by any good means (one such means being four dabs of ukumpucky) to prevent the noble "Half Moon Syndrome" from occurring. This syndrome was most often found among radios used by spook operators. They would tune from frequency to frequency, three shifts a day, 7 days a week, for years on end. The paint near the tuning knob would wear through in a half moon shape. I can't locate a picture of such a radio but one of my radios shows the effect quiet dramaticaly. I think it is the Collins R-390A S/N 17 from contract 375-P-54. I am NOT about to repaint that panel. To me it's a badge of long continuous service, a mark nobly won and proudly displayed.

Date: Sun, 30 Mar 2003 08:02:43 -0500
From: K2CBY@aol.com
Subject: [R-390] Re: WTB: Small Parts

If you have no luck elsewhere obtaining Oldham coupler springs, try W. M. Berg, Inc., Long Beach, New York. Their website is www.wmberg.com and there is an on-line catalog. They make and sell Oldham couplers in a variety of sizes along with precision gears and a pile of other hardware. Caveat: This stuff is very high quality and EXPENSIVE when bought off the shelf.

Date: Wed, 16 Apr 2003 15:43:09 -0400
From: tbigelow@pop.state.vt.us (Todd Bigelow - PS)
Subject: [R-390] BAMA download question

Okay, sorry for the cross post but I'm hoping someone can help me figure this out. I'm trying to download a manual from Ken's BAMA site and having trouble. It's listed with a .djvu (dejavu?) file type, which sounds like something from the distant PC past. I've tried saving in in different formats, but then I get a message saying 'file type not readable.....or possibly corrupted....". Has anyone else run into this before? Thanks - de Todd/'Boomer' KA1KAQ

Date: Wed, 16 Apr 2003 15:49:42 -0400
From: "James M. Walker" <chejmw@acsu.buffalo.edu>
Subject: [R-390] Re: [Milsurplus] BAMA download question

Search google for djvu, that takes you to the site with the plugin, for downloading. Download it, install it, then go back to BAMA and double click on the file it brings up the plugin reads the file and show the info

contained therein. I don't remember the URL for djvu sorry.

Date: Wed, 16 Apr 2003 16:05:56 -0400
From: tbigelow@pop.state.vt.us (Todd Bigelow - PS)
Subject: [R-390] Re: [Milsurplus] BAMA download question - Thanks!

Wow, talk about service! Many thanks to everyone who responded. I 've downloaded things from BAMA before with no problem, but it's been a while since I read the homepage. Followed a link right to the product I wanted, then rapidly became confused. For some reason I thought this was a really old file type - cold swear there was a dejavu product back in the early/mid 90s maybe like java? *shrug* Anyhow, thanks again to all. It certainly pays to read *and* stay informed.

Date: Thu, 17 Apr 2003 17:33:42 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] BAMA download question

The DjVu file format is enabled with a browser plug-in that you can download from the bama site. At the website access point,
http://bama.sbc.edu/
Look for "To Print and View BAMA Manuals You Need A Free Viewer" and click that link. The viewer's direct link is: http://bama.sbc.edu/viewers.htm
This page has links to the folks who create the thing. You can get a companion utility to create the files also. DjVu files are normally quite a lot smaller than comparable .GIF or. JPG files, as I understand.

NOTE:
When viewing DjVu files in your browser and wanting to PRINT them, do NOT use the browser's print button.. but use the special print icon in the plug-in's toolbar. Have fun! Roy
---
From: "Bill Smith" <billsmith@ispwest.com>
Date: Thu, 17 Apr 2003 21:02:15 -0700
Subject: [R-390] Fw: [K6BW] Some helpful radio hints

Ideas from one of the K6BW members, a California Ham club. They sound good to me.

----- Original Message -----
From: "Josh Heide" <kd6kml@interx.net>
To: "HWA QTH Reflector" <k6bw@mailman.qth.net>
Sent: Thursday, April 17, 2003 6:20 PM
Subject: [K6BW] Some helpful radio hints

> Here are a few things I have found over the years. Hope you find

something
> useful here. Maybe some others here can pass on some helpful hints.
>
> 1. If the display of your HT or mobile has been slightly scratched, try
> polishing it with Brasso metal polish.
> 2. Use a small length of surgical tubing or automotive vacuum line as
> extention for small knobs. Makes them muich easier to grasp and turn. I
> learned this one from the Sheriff's deputies in Napa.
> 3. Use the same tubing as shaft couplers to provide insulation on things
like
> variable capacitors. This will also allow for some offset betwees the
shafts.
> 4. To really clean up glass that has a dirty film on it that won't come
clean
> by other means try using a product called **"Bar Keeper's Friend"**. Works
really
> well on the car's windshield to remove road film.
> 5. To lubricate the gears and other mechanical parts of the older military
> radio equipment (R-390, R-1051 and such) **I use a mixture of Marvel's
Mystery**
> Oil and Mobil 1 synthetic gear oil mixed in equal amounts. Really keeps
the
> parts operating smoothly and does not gum up.
> 6. To clean the mechanical parts of the above mentioned radios, go to an
> automotive paint store and get some wax and grease remover. This is
used
> before painting to clean the surface. It will not harm most painted
surfaces.
> I have not had any trouble with it bothering the lettering or laquer on the
> coils and chassis of my R-390. It will really cut through the old hard
> grease. (**PPG number DX-330)**
> 7. To lubricate coil forms to allow the slugs to move freely, like in the
> rack on a R-390, carefully clean the coilform and them dust it lightly with
> **ground mica**. This is available from gun shops with a good selection of
> reloading supplies.
> 8. A reat product for all around corrosion prevention and lubrication is
> called **Corrosion-X.** It is available ar marine supply houses. I use it on
> everything from guns to autmotive to electronics. It can be used on jsut
> about anything. If applied to the end of a piece of coax when the
connector
> is put on, water will not migrate into the cable if it becomes exposed to
the
> elements.

Date: Mon, 21 Apr 2003 11:23:28 -0700
From: "David Wise" <David_Wise@Phoenix.com>

Just to clarify the expected behavior of Dial Lock, Zero, Antenna Trim, and the carrier meter:

1. The Dial Lock mechanism squeezes a clamp against a disc attached to the KC knob. As you turn Dial Lock clockwise, it will become harder and harder to turn. At the same time, the KC knob will also become harder to turn, quickly getting to a point where reasonable force will not turn it at all. As the knob is rotated clockwise, the shaft it's on screws itself into the panel, and at some point the skirt will hang up against the retaining nut. While painstaking adjustment will get it to hang up at exactly the point you should stop turning, I don't think it was Collins' intent that anyone bother. You simply "know" how tight to turn it. If the knob abruptly stops turning with the KC knob still free, the mechanism is either out of adjustment or broken.

2. The Zero mechanism disengages a clutch in the frequency readout. Like Dial Lock, it gets harder and harder to turn as it's tightened down and will eventually hang up. Sometime before it's unreasonably tight, motion of the KC knob should no longer cause the frequency display to change. At this point, the KC knob is still tuning the radio as before, but the readout is disengaged. If you started with the readout on a 100KC boundary, you can line up the radio
with the calibrator's 100KC marker. Because each band is controlled by a different crystal*, you may have to do this every time you switch bands.

* With some exceptions; it's too technical for this post.

3. The antenna trim control goes around and around; there's no end stop. At the factory they put a dab of paint on the shaft to help you replace the knob after removing it.

4. The design of the carrier meter circuit is such that it does not display a "fake" high reading when the RF GAIN control is retarded. This is not due to any magical balance of opposing currents. The tubes that drive the meter are simply not under control of the RF GAIN pot. If there is no signal input, the meter should be 0 regardless of RF GAIN. If there is signal, the meter will go down as RF GAIN is retarded.

Even without signal, you may see a shift in the carrier meter when you switch between MGC and AGC. This is because the AGC line is clamped to ground by a pair of fairly poor diodes, namely, the suppressor grids of two of the IF amps. Working against this is a weak pullup to B+. The result may be anything from ground to a volt or so positive. On the other hand, MGC grounds the line hard. Adding a 1N914 would minimize this effect.

Finally, you may get a carrier reading in MGC mode on very strong signals. This signifies 4th IF overload and is a deliberate characteristic of the meter circuit design. 73, Dave Wise

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From: "Bill Smith" <billsmith@ispwest.com>
Subject: Re: [R-390] Best ballast tube resistor (*and customizong your R-390*)
Date: Mon, 12 May 2003 23:28:20 -0700

That sounds like a great idea, Jim. There are lots of tubes around, and so what if they don't quite operate at the right voltage as long as they operate ok. You can probably also eliminate drift by adjusting your control. I might try that on mine. I don't have any space left on the front panel, so think I'll use a screwdriver slot type and won't need a knob. It should fit just below the Line Meter switch.

I couldn't find a right meter for my set, so I used a larger meter. It is easier to read anyway. I had to carve a little out of the washer underneath one of the handles, because the meter bezel bumped into it and unfortunately, the saw slipped when I was expanding the meter hole, so there is a little "air" on that side of the meter, but I used larger sheet metal screws and one of them holds it down real good.

I didn't like the on-off switch, so I drilled another hole right above the frequency readout and put in a toggle switch. Also, the calibrator isn't very good, and my PTO isn't very linear anyway, so I drilled another hole just below the function switch and mounted a rotary switch with 100kHz, 10Khz and 1Khz positions. I put in a transistor crystal calibrator kit, mounted it right on back of the front panel. It only took one screw to mount it. A neat trick is to cut up a piece of innner-tube and put it under the circuit card so the parts don't make contact with the panel. I tried using a flat-head screw to mount the card so it would look "original" but I don't think it was worth the effort, cause it is real easy to make the mounting hole too big. Its hard get it just right anyway, but it holds ok. It shouldn't be too tight, or the card stops working. I don't know why.

The mechanical adjuster lets me tune to an exact zerobeat now on most of the dial, but sometimes I have trouble telling which zerobeat is which.

Unfortunately, I can't turn off all of the calibrator, so some of the signals I hear in the radio have a squeel to them now. But the dial light I put in the panel just below the bandwith switch looks great in the dark, even if it makes the set hum a little. I made real short wire connections from the guts in the radio to the front panel, too. They were a bear to attach from underneath but they finally made good contact.

On the back, I didn't like the antenna connectors, so I drilled holes and mounted a SO-239 plug and connected it right to the antenna coils. Something needs fine tuning, though, because the Antenna Trim adjstment doesn't seem to work anymore. I'll have to try taking turns off the coils to see if that helps.

I also mounted a T/R relay on the back. There is a lot of room to mount whatever you want. Be careful when you drill, though, because there are wire harnesses and parts right on the other side of the back panel. I wonder why they made the set that way. Gees, it is really easy to drill into something when you are making a hole.

I've heard you can soup up the set with some more modern tubes, but I haven't found step-by-step instructions yet that I can follow to let me make the modifications. I hope one of these days a good article will be published on Internet or in a magazine. The radio works pretty well except on the higher frequencies and a preamp should help there. Of course it would be better to modify the front end instead. Good luck with your radio. What are you planning to do to it next? I'm just about out of bare spots on mine.

From: "Terry H. Burroughs" <tburr@dixie-net.com>
Date: Wed, 21 May 2003 19:40:13 -0500
Subject: [R-390] Interesting and Unique Parts/Hardware Source

Just wanted to pass along to the group a source for many unique parts, materials, products, and services, from Small Parts, Inc. I recently received a catalog on a very handy CD in PDF format. Haven't looked it all over yet. They also have website at www.smallparts.com. I have never seen so many unique materials, and products from one source. If you happen to be searching for something special to solve a unique hardware problem, in an R390 or other project, you might find it among the products they offer. Just wanted to pass this along in case it might help someone. Terry.

From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] Any help for a beginner?
Date: Mon, 26 May 2003 14:00:40 -0500

Well, I hope someone else will give you their order for doing things. I am not all that procedure-oriented. I'd try the set, find problems and fix what's broke. I would not attempt to refinish the front panel, because I could not make it look as good as it is now. Clean it, sure. But you didn't mention practicing your mechanical skills. You can do a pretty good job of degreasing and re-lubing without major dis-assembly. OTOH, you can screw up the set forever if you forget any detail. If I had several R-390A sets and wanted to do a teardown and rebuild just because it felt good, I'd pick the worst set and make it my practice set. Begin by removing the Audio, PS,

and IF modules, then remove the front panel. But first, get a pencil and pad and an ice cube tray or an egg carton. As you remove things, write down what you did. Put any loose hardware into compartments for each step. This will make it possible to replace everything just the way the manufacturer intended it to be built. You can't tear a set down, clean and replace everything, and still remember how you took it apart - especially if you are also working to someone else's schedule. I have ice cube trays and muffin tins full of parts from equipment I have opened just to look at it. By the time I got around to putting the thing back together, I had the parts but I couldn't remember what they were for.

>"I want to do it right the first time."

That is a noble goal, but quite impossible for a complete tear-down of something as complex as an R-390A. Sort of like sitting down at a piano for the first time and playing an unfamiliar piece of music perfectly. Plan on making mistakes, and plan on practicing. Plan on your practice set never becoming fully operational to factory specs. But the second set has a better chance.

From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] Any help for a beginner?
Date: Mon, 26 May 2003 15:40:19 -0500

Darn, I forgot to mention springs. If you have ever opened some mechanical device and had a spring fly out, maybe taking other bits with it, then you know what I'm gonna say. One of the best reasons to practice is that the R-390A is full of springs - on gears and Oldham couplers, slug racks and others. Use the drawings to find those springs in the set, make notes about how they are installed and what is attached to them. Do this before you pick up the pliers. If you don't, there is one more R-390A that will not go back together properly.

From: "Michael Young" <myoung76@bellsouth.net>
Date: Mon, 26 May 2003 16:50:11 -0400
Subject: [R-390] R390 cover screws

What size screws are used for the R390 top and bottom covers? Seems as though I have lost them....

Date: Mon, 26 May 2003 20:51:48 -0500
Subject: Re: [R-390] Any help for a beginner?
From: blw <ba.williams@charter.net>

Good advice, Bill. And, good questions Ronnie.

I would suggest taking out the AF deck first. It is easy to get to and just about everything is sitting there in the open for you. I need to do the same thing you are considering, plus rebuild another AF deck that is the cause of blowing the fuse about half the time I turn it on. The board of resistors will be easy to replace for starters. I plan to replace everything rather than testing endlessly as something is wrong somewhere. I'll enjoy the project if I take my time with it. I plan to recap it too, of course. In the end I should have a good AF module and be ready to do my other one in the working Motorola PH-56. I'll only replace the resistors in the module that is shorting somewhere.

After doing these two decks I'll be ready to start on something else...again doing it slowly and trying to make it enjoyable. I think one deck at a time is a good way to approach the whole job. Look at the Y2K manual and get an idea of the equipment you need. The video also gives you advice. You can't have everything on day one unless you are real lucky.

Another good way to start to know your way around the radio is to clean all of the connectors, tube pins, and crystal pins. I did that a few years ago and it is an interesting way to start poking around inside. Everything got a bit of DeOxit after cleaning. It was like getting a new radio when I finished.

Date: Tue, 27 May 2003 01:00:56 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] R390 cover screws

I don't see any other replies on this so I'll jump in. As I recall, and I'm pretty sure, they're 6-32's round head philips. If you can find pan-head, that might be nicer. You can probably use 1/2 inch in most places except a few where there's something right behind a panel edge. Maybe 3/8" is a good compromise. Make sure they're stainless steel -- no plated screws on '390's puhleeze!

Date: Tue, 27 May 2003 04:03:43 -0700 (PDT)
From: "KC8OPP Roger S." <kc8opp@yahoo.com>
Subject: Re: [R-390] Any help for a beginner?

Well, for what it is worth, I will add my 2 cents worth here. FIRST.....if it's not
broken.....Don't fix it!!! Your first goal should be to get the radio operating, maybe not 100% but at least usable for some local AM or shortwave listening. This will get you familiar with the rig and let you enjoy it as you learn its operations. Start with the power supply, all other modules need it. Repair any obvious damaged and burnt components then verify proper voltages and currents.

Second, work on the audio section. This is the human interface section, it all ends up here for the operator to enjoy. Again only fix what is necessary to get it operating, there will be time later to enhance and buff. At this stage even a good cleaning can wait, but removing large clumps and cleaning all sockets and connector pins is good.

Third, the IF deck. Same as the audio, get it working for the short term. You may uncover problems at this stage and these should be fixed as you go. A complete re-cap is a good thing, but only after the rig is working.

Now you decide what is next, the PTO or crystal oscillator. Both are needed by the RF deck which will be the last sub-chassis to work on. Follow the manual and search the web for help.

When you have the radio working it is time for the cosmetics and enhancements and these can be done as you see fit. I think that having an ugly working radio is much better than having a pretty non-working one.

Good luck. You have a large project ahead, but one that can be accomplished and be very rewarding in the end.

This order is my opinion, others may disagree but this works for my R-390's (non A). YMMV! Currently I have 2 in the rack for day-to-day operation and one on the bench going through the above repair order. I just noticed you have R-390A's, but this order should work for you.

It sounds like you have more than one, if so keep one for seed. Something will come up and having one complete to see where a part goes or a harness routes
to is a good thing. Have fun, work carefully, and save the cosmetics for last.

From: "Tom Bridgers" <Tarheel6@msn.com>
Subject: Re: [R-390] R390 cover screws
Date: Tue, 27 May 2003 09:54:58 -0400

Barry is correct on all points, except length is 1/4 inch. And while you're at it, go ahead and get the lock washer, and regular washer that goes with the #6 screw. Then you'll have the radio back to as issued! And finally, I've found the company, Small Parts, to be a great source, a t reasonable prices. McMaster-Carr is also a good source, so I've heard on this list.

From: "Drew Papanek" <drewmaster813@hotmail.com>
Date: Tue, 27 May 2003 16:16:33 -0400
Subject: [R-390] A help for any beginner

"I am getting ready to start restoring one of my R-390A's and have some

questions."

<snipped> You have a big advantage in that you have more than one unit. If none are presently functional, you can swap modules/ tubes to isolate faults to subassembly level and get a receiver working. With a working receiver, you can then restore another unit one module at a time and use working receiver to test modules (thereby catching any mistakes) as you go.

"... plus tearing down everything possible for cleaning."

Having that assembled RF deck to use as an example while reassembling another is of great help. Y2K manual and other resources on r-390a.net are quite good also.

"I plan to paint the front panel last, and I want to make a nice wood cabinet for it also."

Maybe Mr. Arney could strip/powdercoat/fill your panel while he is doing those steps as part of his CNC engraving process for other panels. A fan with air filter would be a worthwhile addition to wood cabinet.

Date: Fri, 06 Jun 2003 19:43:54 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] NON-A Truth Revealed (was Hi)

OK, OK, my previous post was a bit of a crock. I only just now got clearance to reveal the truth. "Non-A" is in point of fact, the accurate, official designation for the original "R-390". An NSA memo, previously labeled "Top Secret" has just been declassified to the point where I am permitted to reveal some of its contents. Back in the late 50's, a encoding/decoding device which I'll refer to as the Clyde-Bedeiter-Box was developed which went between receiver and teletype machine. Initially these were deployed by NSA to decode secret messages paired up with R-390A's at the receiving end. However, there was a problem. The IF module with the mechanical filters rang and caused extra letters to be inserted in the decoded text. As it turns out, the stray letters almost always inserted were "A's". This caused confusion in the interpretation of the messages. Someone had an idea -- try the original R-390 with L/C filters. It worked. At that time, NSA officially designated the original design as the "Non-A". The double entendre was entirely intentional. After all, the R-390(blank) was effective in removing the extra "A's". This is also the reason for the appearance of some modified R-390A's with the non-A IF deck fitted in. They did not want to draw too much attention to calling too many "Non-A's" from the field. Some hybrids were given an entirely new number. Meanwhile, unbeknownst to NSA and CIA, the Soviets had replicated the Clyde-

Bedeiter-Box (CBB) and also the R-390A by the very early 60's. Naturally, they chose to duplicate the later version of the receiver and could not afford to make up any of the original more expensive design. When they intercepted US coded messages they were confused and distracted. Some KGBers thought there was something to the pattern of "A's" -- the content of the real message. In some cases, they assumed the transmissions came from the Italian embassy. (think about it). This was of crucial importance at several points in cold war history, particularly during the Cuban Missile Crisis. Hence, it is also a known fact that the original, officially (though secretly) designated NON-A saved the world from thermonuclear demise. Print this email out on rice paper and be sure to chew well before swallowing, just in case the memo gets reclassified and I disappear. Barry (w/Nomex suit, flak jacket, deep in bunker)

From: "Phil Atchley" <k06bb@elite.net>
Date: Wed, 25 Jun 2003 19:29:01 -0000
Subject: [R-390] She's a real beauty!!

Hi. Howdy R-390A fanatics and "Barries" of all flavors. Well that expected R-390A arrived at my door today. I can only say one thing about it. SHE'S A BEAUTY! The man said that it was cosmetically nice and, except for the audio module had all EAC modules. Well, inspection shows that all the modules including the audio one are EAC, or at least have EAC stamps on them. The back panel is also EAC and it has a very nice engraved panel. So far as I can determine, the entire receiver is EAC "EXCEPT" for the tag on the front that says Collins. I suspect the tag was missing and somebody stuck that one on it. The PTO is Cosmos (ugh), everything including the gear train is spotlessly clean (some dust of course). It has all the black tube shields (not the heat dissipating type), rectifier tubes, AND THE BALLAST tube! This receiver is definitely about the nicest "unserviced" one I've ever seen. It does play though S meter response seems to be down from what I'd expect. But then I didn't have a lot of antenna on it (5 feet of wire). I figured that since the man I got it from had powered it, up a quick checkout wouldn't hurt anything. BUT, it won't be powered up again till I have gone through it end to end with a fine tooth comb, replaced the capacitors (especially electrolytics) and checked all the resistors etc.

The CV-979 Case: DEFINITELY a class act. It is as shiny as the day it was pulled out of the box (which I understand wasn't all that long ago). Not a scratch on it that I can see. I was told it was a CV-929 but then none of our eyes are what they once were ;-) (Is there even such a critter as a 929)?

I REALLY think that this one is going to have to be a "keeper". I've said that before but though I've had some nice ones, none of this caliber! It's almost a shame to pull the modules as that is sure to scratch some green paint off the screws <GRIN>.

I may eventually try to swap the Collins Tag (SN 4563) for a '67 EAC tag. Yes, I know it's only a vanity thing. But hey, shouldn't a set of this caliber be "correct" in even the little details?

From: "Forrest Myers" <femyers@attglobal.net>
Date: Wed, 25 Jun 2003 16:14:15 -0400
Subject: [R-390] Purple Power and Proud Owner

I've gone through the R-390A/URR I bought from Don Reaves last Sunday and have learned a lot. The receiver is basically very sound. I have decided not to power it up again until I replace a couple of capacitors in it and am now doing some checking and cleaning. The name plate was missing and the number 557 was written where the name plate belonged. All the modules I've check are made by Capehart and have an order number of 21582-PC-61 . This includes the IF, AF, Crystal Osc, and Power modules. The PTO and BFO are both made by Progressitron. The two diode tubes are still in the power module. The ballast tube is in place. There is no diode load jack. From the above information, I've decided the unit was built by Capehart but have no idea as to when. I built a 600 ohm speaker yesterday out of an old speaker from a Ford pickup and some scrap plywood. Used a transformer supplied by Don Reaves. I sanded the speaker box to where it was almost smooth and applied lots of gray paint. Doesn't look bad at all. The price was right too. Today, I decided to clean up the top and bottom covers. Found some stuff called "Purple Power" on the shelf and gave it a try. Really amazing stuff. It cleaned the covers almost instantly with no scrubbing at all. Took off all the dirt and various other marks without a problem. Purple Power is made for removing road tar from cars but does a great job on R 390A covers. Don't know if it will work on Non-A covers or not.

Date: Thu, 26 Jun 2003 08:12:15 -0400
From: Gord Hayward <ghayward@uoguelph.ca>
Subject: [R-390] Purple power and proud owner.

> The name plate was missing and the number 557 was written where the name
> plate belonged. All the modules I've check are made by Capehart and have an
> order number of 21582-PC-61.

I have a Capehart unit (#505), same order number. When I took the name plate off to rewire the pilot lamps the number was written underneath as well. It sounds like yours is a slightly younger brother! Mine has a Porgressitron VFO and an EAC IF deck. The rest is Capehart. I replaced the electrolytics and the mechanical filter coupling cap before I put any

power to the radio.

From: "Walter Wilson" <wewilson@knology.net>
Subject: Re: [R-390] Repaired 390 non a
Date: Sun, 29 Jun 2003 08:33:03 -0400

Hank, Thanks for the vote of confidence. But your statement about me "considering backing out due to not being able to get the price for his time and effort" is not really correct. Yes, I am slowing down the pace of restoration work, and my waiting list is currently closed. But that's because I decided to stop the waiting list until I work off some of the backlog (which was about 16 months when I closed it). I've always done the R-390A restorations primarily for the enjoyment and satisfaction of bringing an old receiver back to life. I had allowed myself to accept too many restorations at too fast a pace, and some of the enjoyment was fading. So I've slowed down a bit, spending a little longer to complete each restoration, scheduling a little time for restoration of my own receivers, as well as having more time for other activities. I'm currently working on an R-391 I picked up from Don Reaves. I've been enjoying the work on the autotune mechanism, and I think I've solved most of the "problems" with this rig, although there is still a total restoration in its future. The fascinating thing about this old receivers (R-390A, R-390, R-391, etc) is that they are a lot of fun to work on, can almost always be brought back to life, and each one seems to hold its own challenges. Some need PTO work, others have AGC problems, others have bad components or even bad cabling, some have had unknown modifications performed, there's always a few out-of-spec resistors, and various other challenges. To be honest, I actually enjoy the more challenging restorations because the satisfaction at the end is much higher than if I started with a unit that was already in good shape. Walter - KK4DF "Do what you enjoy, enjoy what you do."

Date: Sun, 29 Jun 2003 07:13:55 -0700 (PDT)
From: <jlap1939@yahoo.com>
Subject: [R-390] Re: Repaired 390 non a

Friends, I believe when you are at the level of professional equipment, basically mil spec made for a purpose in constant and daily use, which outperforms may mean many different things, including the use the rec/trans set-up is put to... While the 390a came into being in a conf. setting with a commit, in a move to cut the cost of each unit, it would seem that some desirable features did in fact go missing, and such is in fact the case. Yet in other areas the changes were successful. The improved RF tube does not attain the level, in my opinion, of the dual tubes in the non a, but, along with a few other changes, did make the radio less susceptable to very strong transmissions in the area..which I believe was one of the aims in the changes. The "a" sure runs a lot cooler.... But in fact, you will NEVER get

your 390A to sound as "nice" as the 390 non a...But it is even better than the 390 for SSB, if you follow my method...That's simply a result of the mech. filters...right?? It was an attempt to duplicate the 390, that the RA17
came into being (I think, rt?)...Is it a better radio? I NEVER liked any telefuken (? how do you spell that?) I used. But they will perform. But I used a custom Harris in a field prob, and it was great as well In addition, when the Germans designed the EK-07, they did it based on an early PLL unit, a big plus, it would seem to me, (except maybe for you techs, when you have to "fix" one...). I do know that the people that have experience with the EK-07 swear by it... but...how do you keep it running, if you have trouble.. So whats the best radio? You might remember that E.H. Scott was designed to prevent ALL emmision from a rec, with its wonderful thumbscrew covers on everything. It must have worked pretty well...they supplied a lot in the really "old" days.. So whats the best radio? Can you kick the newest from the great manu. of ham radio gear? Some swear by Omni... I'm just "blowin in the wind" here, but do believe for
my use when I was in, the 390/ AND 390A were great radios for gen. purpose... After all you could even entertain the troops with them..(Many advocate the point that that is what they were really intended for, with the line output and amps. commonly used with them in general listening..) (Anybody know for sure..?? I don't...) Still believe this list is the best... Regards, John (JLAP)

Date: Sun, 29 Jun 2003 16:46:28 +0200
From: Heinz und Hannelore Breuer <hbreuer@debitel.net>
Subject: Re: [R-390] Re: Repaired 390 non a

The company name has nothing to do with the four letter word which I hear at least once per minute if I watch a movie on HBO etc. while I am visiting the US. The company name is Telefunken and FUNK which is WIRELESS is part of the name, but I guess you already know this.-

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Date: Sun, 29 Jun 2003 08:48:04 -0700
From: hankkarn <hankarn@pacbell.net>
Subject: Re: [R-390] Repaired 390 non a

Walter, Seems that I missed or did not get all of the facts with regards to your slowing down. Sorry about that. Hank

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Date: Sat, 05 Jul 2003 10:57:37 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] New 390A owner & fan
>
> Having recently realised a long ambition to own a R390A receiver .....

Yes -- as a rule, we're very nosy about other folk's '390's. Eventually we'll have live web cams running 24/7 with multiple channels with channels like -- Newly arriving '390's being unpacked (suspense), Full-Blown Recapping (intense) , Full Gear-Train Teardown, Cleaning & Reassembly (higher intensity), Mechanical Synch and full Electronic Alignment (cerebral), Panel & Knob Refinishing (fine arts 'n crafts), Modifications (horror), Demodification (redemption), Actual Reception Performance (sports), and so on ....

> It is a Motorola built one from order 14 - PH - 56 serial No 564. It has a
> screen-printed front panel in excellent condition and the whole set is
> pretty clean and shiny for going on 50 years old.

Just don't compare it to the inside of that PC you bought six months ago. They catch more dust than those HEPA air filters. <snip>

Date: Wed, 09 Jul 2003 11:59:34 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] RE: R-390-A Engraved Panels

The status of the work is they are now being engraved and I will have them for filling this weekend and the rear of the panels screened the first of the week. Then shipping I hope by Wed. the 16th. Sorry for the delays. NOTE!!! The plan is to fill all with white. If you notify me by Friday the 11th I will fill the CAUTION wording statement with red as some have requested. I had to wait for a new batch of powder as the other batch was too old and when shot it looked like hell warmed over this color is very very close to the original ones. They are masked on the rear at the contact points and 2 dots on the meter for the different ground points. I had to run nearly all of the panels through the time saver, some of them several times. About 3 of them should have been scrapped due to corrosion, dents and half moon. So what sent me you are getting back as they are all marked. I got charged $75.00 for the time saver labor and materials. I only had to have tig welding on one of them which was paid for in advance.FYI the 30 odd people that said they were going to have the engraving done Only 18 came through with their money and word.You live and learn Thanks to all who participated and none of the delays were of my doing.

From: "Forrest Myers" <femyers@attglobal.net>
Date: Fri, 11 Jul 2003 15:01:14 -0400
Subject: [R-390] Name plates

My r-390A was manufactured by Capehart. It did not arrive with a name plate and I've been looking around for a Capehart plate but haven't come across any. However, I did find a picture of one on the web. Had a bright idea, why not make one? Figured I could fix up the image of the name plate

from the internet and use it to photographically reproduce one. I thought I'd use the methods used for photo etching printed circuit boards. The main difference would be that I
wouldn't want to etch the metal away but just make it black. Does anyone on the list know what chemical would be used to cause aluminum to turn black? Would it have to be done with electrolysis? Any help would be appreciated.

From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] Name plates
Date: Fri, 11 Jul 2003 15:45:05 -0400

I had the same thought, due to an experience I had the first time I rolled my own PC board a few decades ago. I figured the etchant was supposed to dissolve copper so it would be OK to use an aluminum pie plate. NOT! The etchant has a much greater appetite for aluminum. I'll never forget it --- <pour><silence> ... sizzle! (WOW, this stuff works fast!) followed by a WHOOSH! and a big cloud of acrid smoke. The copper on the board was yet untouched, but the bottom of the pie plate was gone. Actually, most of the tags are embossed, with the black area etched or stamped down and filled with black paint. If my accidental aluminum-etch method would work, then you can apply resist ink or transfer to what will be the lettering (raised raw aluminum) and leave the other areas exposed. I suppose the back should be resist-inked over also. Just dip the piece for a few seconds and take it out. If not enough, dip it again. Then clean off all the echant and resist ink, and fill the etched down area with black paint. Squeegie off the excess paint to exposed the aluminum lettering, then finish off with some fine grit sandpaper after it dries and cures. Or -- get yourself a repro tag from Hank Arney.

From: jrg.dk3ng@t-online.de (Joachim Groeger)
Date: 11 Jul 2003 21:17 GMT
Subject: [R-390] Dittmore- Freimuth 390-A - Information wanted

Among the three 390's I own is a Dittmore-Freimuth, Serial# 55, Contract DAA B05-68-C-0040 It is unusual in that it has a five digit seven-segment LED frequency readout mounted in place of the mechanical V-R counter. The first two digits (tens and unit Megahertz) are not driven by the electronic counter but appear to merely represent a voltage derived from a multi-turn potentiometer mechanically coupled to the range switch.

The counter is encapsulated in a small metal box mounted directly to the front panel in the position normally occupied by the V-R counter mechanism. The orginal black counter cover to the front panel has been retained. The whole affair seems to have been purpose designed and has a professional appearance. I have heard rumours of a small batch of

Dittmore-Freimuth receivers having been fitted with electronic counters under a special order but have never seen a report of an actual sighting.

Anyone able to shed some light on this mystery, thank you very much in advance.

From: Llgpt1@aol.com
Date: Fri, 11 Jul 2003 17:27:20 EDT
Subject: Re: [R-390] Dittmore- Freimuth 390-A - Information wanted

All the 1968 Dittmore-Freimuth Corp. R-390A's were manufactured by EAC, the mechanical filters were manufactured by Dittmore.

Look here http://www.r-390a.net/faq-var.html for more info on your variant.

Date: Fri, 11 Jul 2003 20:34:22 -0400
From: Jim Brannigan <jbrannig@optonline.net>
Subject: Re: [R-390] KPH broadcasts

It is interesting when you look at the timeline..... In 1912, with the sinking of the Titanic, "bleeding edge" technology, spark CW, was mandated for all ships at sea. Tube CW followed, SW and LF broadcast flourished from the 30's to the 70's. In the 40's, 50's and 60's SSB HF was used for overseas telephone calls. Huge HF stations dominated the East and West coasts. Satellite, cable, internet has made the medium obsolete. BBC, Germany, Albania, Moscow, etc. are shadows of their former selves.

Now we are reduced to using very sophisticated MF, HF radios to listen to "Rush" This has to be the shortest term (life span) for a major technological break-through in history. In 2003 LF, MF and HF is the domain of hobbyists. I wonder what then next 20 years will bring.

From: <Tarheel6@msn.com>
Subject: Re: 8-36 stainless-steel hex-socket setscrews used in the R-390A Knobs
Date: Tue, 22 Jul 2003 20:42:54 -0400

McMaster-Carr's service and delivery is superbly fast. They shipped the same day I ordered the set screws (yesterday), and my order arrived today. If I didn't see it with my own eyes, I wouldn't believe it. McMaster-Carr is fast, Fast, FAST!!!!!!! I don't own stock in the place; I'm just a VERY satisfied customer.

From: Llgpt1@aol.com
Date: Tue, 22 Jul 2003 20:53:11 EDT

Subject: Re: [R-390] 8-36 stainless-steel hex-socket setscrews used in the R-390A Knobs

I have dealt with them for many years from work. They are a great one stop source for many, many items.

Date: Tue, 22 Jul 2003 22:17:54 -0500
Subject: Re: [R-390] Ostermans' book
From: blw <ba.williams@charter.net>

Amazon has them for $24.99 new, and used starting at $21.00. If you order one other item I think you get shipping free as it has to be over $25....if that is still going on. There are 3 books by Fred at Amazon.

From: Kammer George D Contr SMC DET 11 /MCL
<George.Kammer@cisf.af.mil>
Subject: RE: [R-390] Ostermans' book
Date: Wed, 23 Jul 2003 06:40:03 -0600

Good morning, all! I don't know anywhere near enough to contribute to this forum, but use it as a primary source of information and education from you experts (and I MEAN that!). But I was able to clean up the link below when it didn't initially work, so with my best 73's to all, try this:
http://www.universal-radio.com/catalog/books/0003swl.html

Date: Sat, 26 Jul 2003 20:47:42 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] RE: ENGRAVED R-390A panels

Well gang there is light at the end of the tunnel. After Murphy's umpteenth visit they are now filled and if Murphy will hide out through Monday I will get the panels in the UPS. After absorbing the cost of running all of the panels on the front side to get rid of 99% of the defects and to protect the identity of the panels on the rear. they were not run on that side. In the process of running the panels some of the due to very MINOR thickness some of the had to be shimmed up more than once. The run time increased considerably. They had to stop , insert shims, lock down and run again. Some of the fillings maybe a little light due to the CNC had to be changed at some points for each panel. Time + money. The engraving is to the drawing PERIOD. I just hope all of you can accept the results as I lost a lot of time on this deal and can assure you for sure I made nothing on the this total fiasco. This is due to the fact about 15 people that had said they were going to participate flaked out. So all I can really say is what you see is what you get. Without going into all of the gory details of the CNC problems, along with the powder coating screw up due to only doing the front side, We had to have the rear side silk screened, due to the overspray from the front, it

was to rough, so it had to be wet sanded, silk screened again, baked and the silk screened with the original rear panel markings. Anyone that wants to refill or have some for other jobs what I used is Liquitex Acrylic artist color Titanium White single pigment.2 fld. oz tube cost about $6.00 and should be able to do about 200 panels Hi. Sorry for all of the delays.

From: ToddRoberts2001@aol.com
Date: Mon, 4 Aug 2003 21:22:42 EDT
Subject: [R-390] Engraved R-390A Front Panels Look Great

Wanted to let the group know that I received the R-390A front panels that I sent Hank back in May/June that he had arranged to have done for us and they look great! The lettering looks very nice and crisp and the paint finish is excellent. I know I had sent Hank some pretty shopworn looking panels and they turned out really first class. These will make some really sharp-looking radios! Thanks again Hank! 73 Todd Roberts WD4NGG.

Date: Tue, 05 Aug 2003 08:19:44 -0400
From: wwarren1@nc.rr.com
Subject: Re: [R-390] Engraved R-390A Front Panels Look Great

I agree with the complimentary sentiments already posted. My panel came back in great condition, and I love it. Mine was a silk screened (thus originally non-engraved) panel for a Motorola '56 contract (S/N 117X) radio. The radio had been stored on it's back in a garage for several years and had collected dirt and paint spray from the odd jobs the former owner did. It came back from Hank with a great gray background, crisp lettering, and excellent silk screening on the back. 10,000 thanks Hank for taking on this chore for the fraternity. Tom, W4PG

PS: I went by the NSA Cryptography Museum at Ft. Meade, MD, about two weeks ago. Just inside the door is a display of a Motorola '56 contract, S/N 1411, single-fuser, silk screened panel just like my S/N 117X when I bought it from Charlie. They also had a SP600 on display plus about a dozen Enigma machines. I didn't know the USA had that many Enigma machines at all. But then I saw another 3-5 Enigmas at the Smithsonian Museum of American History on the Mall. Interesting.

Date: Wed, 06 Aug 2003 13:04:03 -0400
From: Kim Herron <kherron@voyager.net>
Subject: [R-390] F/S Xcelite Bristol driver sets NIB

I haven't posted this here before (I don't think), but I thought that I would let be known that I'm ordering more Bristol (spline) driver sets for a number of people that wanted them. The Xcelite number is 99PS-60 The shipping has forced me to increase the price a little bit but The price is still

cheap by comparison. $46.00 shipped in the lower 48 states. I'm going to be ordering next week, so if you'd like a set, let me know and I'll get them coming for you. I can also get the Allen driver sets (99PS-40) for $2.00 more ($48.00) shipped as well.

From: "Mark Richards" <mark.richards@massmicro.com>
Subject: RE: [R-390] F/S Xcelite Bristol driver sets NIB
Date: Wed, 6 Aug 2003 12:46:53 -0400

I own a set of these and I can vouch for them. The shafts are a bit long, which made me a little nervous that they might snap under the strain of a stuck screw, but this has never materialized. They come with a slick case to keep them organized. This is a very nice set.

Date: Thu, 7 Aug 2003 12:43:50 -0400 (EDT)
From: "Paul H. Anderson" <pha@pdq.com>
Subject: Re: [R-390] F/S Xcelite Bristol driver sets NIB

In the R-390, R-390A and R-392, all should be #10. In the R-391, each autotune has one #11 adjusting screw. When field replacements are done, other screws may have been used. I found #11's in an R-392 that I worked on, for example, as well as allen screws.

From: "Dennis L. Wade" <dwade@pacbell.net>
Date: Sun, 17 Aug 2003 13:54:12 -0700
Subject: [R-390] Initial progress and Questions

Over the last week or so I've had my Motorola R-390A with EAC SSB mod running and baking. I've been getting acquainted with it again and getting a feel for its performance in preparation for installing Dave's re-cap kit. Some observations: First thing I did was test the tubes on an emission tester. Several were clearly weak, namely V 601, 602, 604, the 6U8 in the product det. module, V509 and V206. Mechanically the radio feels very nice, although a bit dry. I dabbed a little oil in some critical places which helped things until I drop the panel and have more room to work. No binding or sticking of slug racks were noted. Everything turns nicely. The LSB (only) side of the BFO in the SSB mod doesn't oscillate. USB works fine. (I pulled it to take some pics for a couple of listmembers, so it could be a broken wire from handling or the crystal..not much else in there). And now, some questions: Having not identified any critical problems (other than the SSB module), I'd like to take some baseline measurements of sensitivity so I can make comparisons of before and after re-capping. My objective is to make repeatable measurements that are comparable to what others have done. What is the preferred method of getting the generator signal into the balanced input of the radio? I can build a pi network with a 50 ohm input and a 125 ohm output and a balun to balance it to the radio,

but it this necessary or overkill? The generator is a Measurements Model 80 with calibrated attenuator and 50 ohm output.

Re-capping: There are three caps in the RF deck that are in the re cap kit: C256, C275 and C309. 256 and 309 are part of the crystal oven and seem to bypass the heater. C 275 bypasses the regulated +150. I'm very leary of pulling the RF deck especially since there doesn't seem to be any other reason except to replace those caps. How important are these guys in the scheme of things?

VFO endpoint: Where is the best place to put a frequency counter to check endpoint and linearity? And while we're on the topic of counters..where is the best place to pick off the BFO frequency?

And finally..the requisite silly question: When I drop the front panel and check that the cams line up with their respective marks..am I going to be able to see everything I need to without further disassembly? Front and rear?

Although I've been tinkering around for longer than I care to admit..this is the first radio I'll be getting into so deeply. I'm sure I'll have other questions as things pop up.

Date: Mon, 18 Aug 2003 10:28:27 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] OT: Low-voltage tubes

.....a HP 3528B here in a few days....without manual.....

Try: <http://www.logsa.army.mil/etms/welcom1.htm> There may be a trick to getting non-"account-holders-only" manuals, but I forget what it is..

Date: Mon, 18 Aug 2003 18:37:52 -0500
Subject: Re: [R-390] OT: Low-voltage tubes
From: blw <ba.williams@charter.net>

Thanks. I found and downloaded the parts manual without logging in. The -12 manual, which must be the operators manual, requires the login info. The HP 3586B is an AN/USM-490 for the Army, and the manual series is TM 11-6625-3087-x. There are the -12 and -24 manuals which I can't download. Interesting to find this out.

From: "Tom Chirhart" <sparks@codepoets.com>
Date: Tue, 19 Aug 2003 20:39:47 -0400
Subject: [R-390] WTT 7 pin R-390 series tube puller for 9 pin and

WANTED pair of Local and RF Gain knobs

New to the list. I have a spare 7 pin tube puller for the R-390 series, need a 9 pin to complete the pair. Anyone have one for trade? Also WANTED *tools for the rear of an R-391 *Local and RF Gain knobs for same. Want in like new condition or restored. Thanks 73 Tom K4NCG

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Date: Wed, 20 Aug 2003 09:32:20 -0500
Subject: [R-390] OT: Speaker update

I decided that with all the good advice I received from this list, I would attempt to repair my scratchy speaker. Here's how I did it.

1. Picked most of the felt from the center. Pulled some tiny flecks of speaker cone with it so decided to use a bit of solvent.

2. Wetted a cotton swab with finger-nail polish remover. Accidentally splashed about a thimble-full of solvent on the speaker cone in the process. Speaker cone became mushy and began to separate from the voice coil. Not looking too good at this point. Set speaker aside to allow "solvent" to dry.

11. Used clear finger-nail polish (didn't have any other appropriate cement) to strengthen the bond between cone and voice coil.

5. Attempted to push a piece of cellophane tape between the voice coil and magnet. Considered this equivalent to stacking marbles and decided not to push what little luck I had left.

A. Tapped speaker upside-down on desktop to try to dislodge trash in voice coil. Think I saw some small particles come out, but that may have simply been pieces of the foam cushion that were disentegrating as a result of step #3.

B. Used cotton-swab and compressed air (okay, I blew into it since I don't have a compressor) to clean anything else I could see in voice coil/magnet area.

9. Noticed scratchy sound no longer seemed to be evident. Connected to signal generator. Small buzz still evident at ~200 cycles. Added more clear finger-nail polish around center ring.

10. Connected speaker to R390A. Sounded fine.

12. Cut a round disc from a manilla file folder and "glued" it (with more finger-nail polish) to replace old felt center.

13. Connected speaker to stereo. Sounded great.

14. Used black Sharpie(r) pen to "paint" center disk so it isn't as visible through picket-fence grill in the Trans-oceanic. Looks great!

Many thanks again to the suggestions from this list. Hmmm. With this under my "belt", perhaps I can fix that sticking meter in my Hickock 651A...

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] OT: Speaker update - part dieux
Date: Wed, 20 Aug 2003 13:44:27 -0500

It appears I now have a new step to add to this procedure:

a. Go home at lunch the following day. Press speaker cone and hear the scratchy noise again...sigh. Perhaps this was moisture related - it worked before all the solvent had fully evaporated. Not sure. It may still play acceptably, but it seems that rubbing is back although not quite as loud as it was. Looks like I'll probably just find a good replacement.

From: "Bill Smith" <billsmith@ispwest.com>
Subject: Re: [R-390] OT: Speaker update - part dieux
Date: Wed, 20 Aug 2003 19:26:33 -0700

Did the fingernail polish shrink and warp the cone? You can try shims and the water treatment, but the problem may be that the fingernail polish will continue to shrink and warp. I have run across at least one very contorted cone which had been repaired with some clear plastic substance. It was literally curled. Had quite a time removing it - think it took laquer solvent or methyl-ethyl ketone, or both.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] OT: Speaker update - part drei
Date: Thu, 21 Aug 2003 09:25:02 -0500

Well, the saga ended last night. Without going into the gory details, the speaker lost its magic smoke (don't ask -- it was ugly). Kind of sad because according to the stamped date on the cabinet, the radio just turned 50 in May. Sure wish I could hear some of the cool things that probably eminated from that little cone over the past 50 years. Thanks for all the advice and encouragement. I'll have to find some fitting place to honor the shell of the old warrior.

Date: Fri, 22 Aug 2003 10:33:21 +0100 (BST)
From: g4gjl@btopenworld.com

Subject: [R-390] R391 tuning lock Keys

I have a problem with some repro tuning lock keys I recently acquired. They appear to be too short to reach the threaded innards of the auto tune mechanism, but as I have never seen one of the keys previously, Im guessing (hoping) that this is the problem. Would some kind list member with an R391 take one of the keys out and measure its length for me. I need to know the dimension from under the handle, nearest the front panel, to the tip of the key shaftwhich engages with the autotune mechanism. Also does any one know the thread size used on the keys? I tried to find a mating nut from the junk box, to help me identify it, but could not get any nuts to fit. Im sure it will be a UNC size, just dont know which one!

From: <sparks@codepoets.com>
Subject: Re: [R-390] R391 tuning lock Keys
Date: Fri, 22 Aug 2003 7:50:09 -0400

Peter, you may have the locking keys from the CU 286/FRR-33 coupler, they are approximately 3/4 inch shorter than the locking keys on the R-391. I'm new to this reflector but I think I'm correct. I have both the coupler and 391 and found that the coupler locking keys were shorter.
Tom K4NCG

From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] R391 tuning lock Keys
Date: Fri, 22 Aug 2003 09:07:43 -0400

If you got those tuning lock keys from Hank Arney, it's possible he shipped shorter ones he made up for the R-105/ARR-15 aircraft receiver. He made up a batch based on dimensions I supplied. The keys are identical except for the length and the R-105 keys are too short. If the length is right, there may be something wrong with the mechanisms in your R-391, but that's much less likely -- would have to be the same thing on both of them. In the '391 manual, there are some sideways references to variations in design. It sounds like there were undocumented production changes. I suppose it's possible that your unit is different, but the most likely scenario is the first one -- R-105 keys. If so, get back with Hank to exchange for the right ones.

Date: Fri, 22 Aug 2003 05:16:19 -0700
From: hankkarn <hankarn@pacbell.net>
Subject: Re: [R-390] R391 tuning lock Keys

Tom, You are correct my 286 keys are 2 3/4" vs 3 5/16" versus the ARR-15 keys 1 13/16" that I sent to Pete by mistake. I make both sizes but not the 286. The long ones could be cut to size. The shaft is knurled and a press fit to the knob end.

From: ToddRoberts2001@aol.com
Date: Sat, 23 Aug 2003 11:35:19 EDT
Subject: [R-390] Lifting Heavy Radios

I recently took delivery of a Lift Hand Truck to help with lifting and moving some heavy boat anchor radios. I am very pleased with how the lift works and it will make handling these radios much safer and easier. Anyone who has tried lifting an R-390A up to the top of a 5 ft. rack knows that can be a dangerous and back-breaking task. The Lift Hand Truck makes doing that a breeze. If anyone is interested I have posted a few pictures showing the unit lifting an SP-600 VLF receiver in its cabinet up to a table in my AOL storage area. There are a series of 8 pix. You can go to this address :

http://members.aol.com/toddroberts2001/Lift-1.jpg
http://members.aol.com/toddroberts2001/Lift-1.jpg

Copy and paste or type in the address if it does not come thru as a link. To view the other pictures type in a different number after the word Lift- as in /Lift-2.jpg, /Lift-3.jpg etc. up to the number 8 at the end of the address.

The unit I bought has a steel frame, the lifting plate is 20" x 20" so it is just the right size for lifting R-390A's and other table-top size boatanchors and the lifting capacity is 500lbs. It will lift 500lbs up to a height of about 5 feet using a hand crank and it is small enough to easily maneuver around a house. I bought mine from Advanced Handling Services and the price was $369.00 . You can go to their catalog at advancedhandling.com, click on their catalog window, type in Light Lift Hand Trucks in their search window, then click on the link that shows up and you will see it in their listings. 73 Todd Roberts WD4NGG.

Date: Sat, 23 Aug 2003 11:52:57 -0400
From: Jim Brannigan <jbrannig@optonline.net>
Subject: Re: [R-390] Lifting Heavy Radios

Very interesting and certainly better than the "brute force" method. A question. How did you coax the nice looking SP-600 off the lift and on to the table?

From: ToddRoberts2001@aol.com
Date: Sat, 23 Aug 2003 12:00:55 EDT
Subject: Re: [R-390] Lifting Heavy Radios

> Hi Jim, hope the pictures came thru OK. You can see in the pictures that the
> lift is on wheels, so once you get the radio the same height as the table

> top you just roll it right up to the edge of the table and slide the radio onto
> the table. Sure turns a backbreaking chore into an easy task! 73 Todd
> WD4NGG

Date: Sun, 24 Aug 2003 13:57:50 -0700 (MST)
From: Richard Loken <richardlo@admin.athabascau.ca>
To: R390 mailing list <R-390@mailman.qth.net>
Subject: [R-390] R-390/URR light bulbs

I am far from the radio and the manuals.
So, which light bulb does the R-390 use?
The R-390A uses 328 6V bulbs but I will bet money that the R-390 does not. 327?

From: ToddRoberts2001@aol.com
Date: Sun, 24 Aug 2003 16:24:22 EDT
Subject: Re: [R-390] R-390/URR light bulbs

Answer - The R-390 uses the #327 28V bulbs.

Date: Mon, 25 Aug 2003 13:59:42 -0400
From: Bernice & Al <bernice@videotron.ca>
Subject: Re: [R-390] R-390/URR light bulbs

This is a copy of what I sent to Richard Loken yesterday. I should have copied it to all but did not. I will add that these bulbs are all available in the U.S. from Mouser at about $0.50US. The # 327 is a 28 Volt bulb with an MTBF of 4000 Hrs. The Qtys mentioned are what I have available. "This should answer your question.

Lamp # 328, 6.3 Volts, 0.2 Amp, MTBF 1000 Hrs. For the R-390A. Qty 12 .

Lamp # 381, 6.3 Volts, 0.2 Amp, MTBF 20,000 Hrs. Qty 8 . I used these on my R-390A.

Lamp # 387, 28 Volts, 0.040 Amp, MTBF 7000 Hrs. Qty 30. Used on my R-390.

If you need a few let me know. Can't remember what they cost me. If you are interested let know and I will find out for you. BTW I was born and bred in Alberta more than 66 years ago. Born in St Paul. All my relatives live in the province."

From: Jhowings@aol.com
Date: Mon, 25 Aug 2003 19:58:47 EDT
Subject: [R-390] Pilot Bulbs R-390/R-390A/R-391/R-392

Just to complete the bulb disertations, my R-392 uses a #313, 28v bulb, however the #327 would work.

From: "Tom Chirhart" <sparks@codepoets.com>
Date: Wed, 10 Sep 2003 21:15:45 -0400
Subject: [R-390] Wanted Tube Puller for R-390

All you R-390 fans out there, does anyone have the large 9 pin tube puller that mounts on the upper left/rear corner of the R-390 series? I have a nice spare 7 pin available to trade or?

From: Jhowings@aol.com-
Date: Fri, 12 Sep 2003 22:08:53 EDT
Subject: [R-390] R-1051C

Anyone familiar with the R-1051C HF RX ?

From: Llgpt@aol.com
Date: Fri, 12 Sep 2003 22:22:28 EDT
Subject: Re: [R-390] R-1051C

The same as the R-1051B with the exception of a black faced front panel. Used by the U.S.A.F.

Date: Sat, 13 Sep 2003 12:31:24 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] R-1051C

> Anyone familiar with the R-1051C HF RX ?

Yep. It's the R-1051B, with a different front panel. I have an R-1051B here, as well as an R-1051H and numerous boatanchors. There _is_ an R-1051 mailing list; the submission address is <r-1051@mailman.qth.net>. You can subscribe from the webpage at <http://www.qth.net>, and the archives are available from that page, too.

Date: Fri, 10 Oct 2003 11:48:44 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] R-390a coax

>Looking.....RG- number for the mini coax on the R-390a receivers

RG-162

> also looking for the number of the or name of the mini type bnc

> connectors that are used "MB"

Both available at RF Connections: www.therfc.com

>Oh hell how about the number for the adapter from mini bnc to normal bnc.

Can't tell you that one.

Date: Sat, 11 Oct 2003 09:30:32 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] RE: FS SP-600 cover set

I have come with good design for the SP-600 series receiver to go along with my R-39XX parts. I have no way to post pictures so if you look you know where for 3052700380 you will see 4 pictures of the set.The top attaches with 4 6-32 screws into PEM nuts on the cover.They will be ready for delivery starting Oct. 20th. The reflector members pricing direct is $67.50 per 2 pcs set plus S&H 10.00 and if paid by Paypal please add 3.5% to the total. Any and all request from you know where results in the higher price. Please respond direct.

From: "pete wokoun, sr." <pwokoun@hotmail.com>
Date: Sun, 16 Nov 2003 14:03:58 -1000
Subject: [R-390] R390A schematics

You probably all know about the R390A Y2K manual. The Y2K manual is already in its second release. This endeavor was undertaken by several dedicated 390a enthusiasts: Al Tirevold, Barry Hauser, and myself. I volunteered redrawing the schematics and sketches into a hopefully, more easily read format using standard-size paper. The originals were done using Visio and converted into the manual's PDF format that you download to save a lot of file space. Well, file compression is functional, you do get the information but it distorts the drawings a little.

What I have available are the originals, updated and presented in their original Visio format. If you have Visio they will download into good-looking drawings where circles are round, junction dots are clearly visible, and text stays readable in its intended fonts and doesn't run over into adjacent lines. If you don't have Visio, you can download a free viewer from Microsoft. They will open in your browser window where you can view and print them.

I also measured the DC current levels on the various B+ lines going to the different modules using an HP428B Clip-on DC Milliammeter. These values were added to Fig. 5-11 (Power Distribution Diagram) from the Y2K

manual. This new diagram is called Power Distribution Current Levels and is included as an additional troubleshooting aid.

These visio drawings are available from my website:

http://www.qsl.net/kh6grt/page4/r390aschematics/r390aschematics.htm

They are available as self-extracting zipped files to save space. Just double click on them after downloading to extract the original *.vsd file.

I also have links to the Microsoft down-loadable Visio viewer and both Barry's and Al's websites that have the complete Y2K manual. This whole undertaking is my first attempt at creating a website so bear with me as I try to work out any bugs. Feel free to let me know of any errors you come across or tips on how the schematics could be improved.

regards, pete KH6GRT

From: "Sam Doughty" <sdman@cableone.net>
Date: Sat, 29 Nov 2003 03:52:21 -0600
Subject: [R-390] Deoxit?

Which type of Dexoit is the best to use on the 390?,and where to get it,

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From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] Deoxit?
Date: Fri, 28 Nov 2003 17:07:33 -0500

Probably the most useful overall is the 200 ml D5 spray can, which sells for anywhere between $8 and $12. It is the 5% solution, but with 20% cleaning agents. You can spray a small amount on a cotton or foam swap where spraying isn't a good idea. They also make very small "portable" cans of the D5 and small tube of the D100, which is full strength. Full strength refers to the protective coating it leaves. That formulation apparently has no cleaning action. You would only apply it after cleaning contacts thoroughly. There are also kits with a variety of their products, including Cailube which is for pots and ProGold. You can find more info on the manufacturer's web site which is

http://www.caig.com

They used to offer a 150ml pump spray bottle that was D20, or something -- intermediate. That would be a good choice, but I don't see it offered now. I haven't found many places locally to buy it. Microcenter, the big computer retailer, carries some of the line, but when I last went there, they didn't have the big D5 cans. Antique Electronics Supply carries it.

Radioshack.com used to, but I can't find it anymore on that site. Used to be one of the better prices, like $7.98. The mfr. lists some sources on the web site and you can order directly from them as well.

From: "Don Reaves W5OR" <w5or@comcast.net>-
Subject: RE: [R-390] Signal Generators (was: Deoxit)
Date: Sat, 29 Nov 2003 11:18:46 -0600

<snip> DeOxit.
For a while, you could find DeOxit on their web site in ten dollar sample kits, which was enough to cure several R-390s of oxidized contacts. They furnished an assortment of their products in 2cc plastic tubes in the kit. Part number 2C-SAMP. Included CaiLube (for pots) and R-5 (good for flashlight batteries). I just checked, they still have web specials, called survival kits (hehe). K2C is the closest match to what they used to offer. Still ten bucks. ww.caig.com

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Date: Mon, 01 Dec 2003 10:42:33 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [r-390] Wonderful R-390 pics

It appears that he removed the wiring harness and every thing else from the frame to clean and/or re-finish the thing. Quite an inspiration. I have two of them here awaiting restoration.

From: "JamesMiller" <jmiller1706@cfl.rr.com>
Date: Mon, 1 Dec 2003 17:06:52 -0500
Subject: [R-390] WTB R390 Dial Lamps

I now need a few dial lamps for the 390a. Are these commonly available (like auto or flashlight lamps)? Any for sale on the list?

From: "Frank Styron" <W4CWA@nc.rr.com>
Subject: RE: [R-390] WTB R390 Dial Lamps
Date: Mon, 1 Dec 2003 17:33:02 -0500

Check Mouser (www.mouser.com) and look for part number 606-CM328. 93¢ ea.

From: "Sam Doughty" <sdman@cableone.net>
Date: Wed, 3 Dec 2003 01:33:31 -0600
Subject: [R-390] Bristol Wrenches

Is there a source where wrenches/tools can be found to work on the 390?

Date: Tue, 2 Dec 2003 13:47:28 -0600

From: Dave Merrill <r390a@rcn.com>
Subject: Re: [R-390] Bristol Wrenches

http://www.mcmaster.com/ search for 'Spline Key Wrenches' which should take you to pg 2652. At the bottom are the individual wrenches or sets. You really only need the six-flute 0.096" size. The long-arm variety is helpful when removing/replacing the Mc/Kc knobs. Just ordered a set last week to use on some HP knobs. Came in two days, but then again, their warehouse is only 30 miles from here. YMMV. McMaster-Carr has no minimum order.

Date: Tue, 02 Dec 2003 13:43:43 -0600
From: Jerry Kincade <w5kp@direcway.com>
Subject: Re: [R-390] Bristol Wrenches

http://www.acespilotshop.com/pilot-supplies/tools/Xcelite-99-ps-60.htm

Lots of other places to buy this set, too. Don't know if this is the best price, but it's pretty decent. This is the best set of Bristols out there, and pretty much the standard.

From: "RJ Mattson" <rjmattson@hvi.net>
Subject: Re: [R-390] Bristol Wrenches
Date: Tue, 2 Dec 2003 14:51:50 -0500

Here are a few places for bristo/spline wrenches:
http://www.hmcelectronics.com/index.html
http://www.mcmaster.com/

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Bristol Wrenches
Date: Tue, 2 Dec 2003 13:53:06 -0600

There are also inserts for the 1/4" (Vaco style) handles for the Bristol drives. I really like mine as it is nice and long and having a handle grip is nice.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Bristol Wrenches
Date: Tue, 2 Dec 2003 13:55:47 -0600

Yes. These are the ones to which I was referring. Thanks, Jerry. I said Vaco, but Xcelite is the brand I was really trying to recall.

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Bristol Wrenches

Date: Tue, 2 Dec 2003 13:57:47 -0600

...and just to clarify: If you already have the handle, you can get just the one size driver needed for the R390 by itself for around $6.00.

Date: Tue, 02 Dec 2003 19:35:28 -0500
From: Kim Herron <kherron@voyager.net>
Subject: Re: [R-390] Bristol Wrenches

Just so everybody knows, I stock these sets and for $10.00 less than there advertised here. I'm waiting for the next order to show up so if your interested in a set, let me know and we'll get you taken care of. Kim Herron1-616-677-3706

From: "Ronnie Davis" <rdavis24@carolina.rr.com>
Date: Mon, 8 Dec 2003 10:07:32 -0500
Subject: [R-390] Capehart Update and questions?

Well I finally got a chance to take a look at my Capehart R-390A. It has been a long time since I looked at it, and did not remember anything except the bad Function Switch. Well it is in worse shape than I remembered. Someone has put a SO-239 antenna connector on the back, but it was installed in a way that I can put the original back on and it will not hurt the rig. They took the plate off the antenna coupler and removed the old one and then used the original holes to hold the new one on the back. I have a used antenna coupler that I'm going to install and make it original again, so that should fix that problem. One problem I have that I did not know I had, is that someone has done a "mod" to do away with 3TF7 ballast tube. I have not had time to look and see exactly what was done, but I'm sure it works, and that some kind of mod was done. Is it safe to do away with the ballast tube, or should I say, what is the best way to do away with it? Also, the entire rig is going to have to cleaned very good, cause it is very dirty, gear train full of grease, dirt every where and the front panel is going to have to be redone. So I have much more work to do than I thought I would have to do. Is there a place that I can post pics of the rig, before and after photos for all to see, or should I just make my own website? Thanks for the help in advance.

From: "Byron Tatum" <bjtatum@evl.net>
Date: Tue, 16 Dec 2003 12:56:33 -0600
Subject: [R-390] Gear Clamps, Oldham Couplers for sale

Have for sale 3 of these assortments of Oldham Couplers / gear clamps :
Contents of each assortment are-
1 each of .89" OD Olham Coupler for .18" shaft, 1 extra center piece, with gear clamps

4 each of 1" OD " " " .25" " , 3 "
" " , with gear clamps
2 each of 1" OD " " " .30" " , integral gear clamps
12 each of gear clamps with .305" opening
3 each of gear clamps with .425" opening
If these are of any usefulness in your repair work my price is 40.00 per asst.
These are removed from Collins built 1950's era Air Force gear, T-217 / T-218 series.

From: "Alex Kosman" <alexx@techunix.technion.ac.il>
Date: Sun, 11 Jan 2004 13:43:55 +0200
Subject: [R-390] help

I am looking for service manuals and or schematics of:
HP 8656B signal generator 0.1-999 Mhz
MICROTEL SG 811 signal generator 0.01-40 Ghz
WILTRON 6407 RF analyzer 1-1000 Mhz anybody can help?

From: "Steve Hobensack" <stevehobensack@hotmail.com>
Subject: RE: [R-390] help
Date: Sun, 11 Jan 2004 19:11:18 -0500

w7fg has the Wiltron manual for a price. http://www.w7fg.com/manual.txt
I struck out on the HP & Microtel . I tried A G Tannenbaum, BAMA,
Hi Manuals, ManualMan. Maybe there are others.

From: "Kenneth G. Gordon" <keng@moscow.com>
Date: Sun, 11 Jan 2004 16:30:14 -0800
Subject: RE: [R-390] help...manuals...

Try "Manuals Plus" on the web out of Salt Lake City, Utah. I have found manuals for everything I needed in the test gear line from them. You might want to call the lady there. She is most helpful and VERY patient.

Date: Thu, 15 Jan 2004 17:43:21 -0800
From: Mike Hardie <mike46@shaw.ca>
Subject: [R-390] Question, Replacement of Coax "Jumpers"

The module to module coax cables in my project R-390A are broken and cracked. Does anyone have information on the type of coax used and the removal/re-connection of the end connectors?

Date: Tue, 20 Jan 2004 08:35:40 -0800
From: Mike Hardie <mike46@shaw.ca>
Subject: [R-390] WTB: Bristol Set Screws

Does anyone know of a source for replacement set screws for the R-390A knobs?

From: "Dan Arney" <hankarn@pacbell.net>
Date: Tue, 20 Jan 2004 09:06:16 -0800
Subject: Re: [R-390] WTB: Bristol Set Screws

McMaster-Carr has all sizes and types. In their catalog as spline wrenches.

Date: Tue, 20 Jan 2004 13:00:40 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] WTB: Bristol Set Screws

NOTE:::!!!!! R-390 knob setscrews are 8-36 (UNF size) Eight-Thirty SIX. (NOT 8-32)...

Have you tried McMaster-Carr: http://www.mcmaster.com/ (I can't find any spline type set screws in their catalog.)

Or: the Bristol Wrench Company:
Apparently now part of the Bristol Tool Company)
http://www.bristolwrench.com/
Send them an email.

Or see their drivers offered at: http://www.mgs4u.com/bristol.htm
This place may be able to supply the setscrews)

Fax: 503-371-9662
Mail: Bristol Wrench Company
PO Box 4317
Salem OR 97302
email: info@bristolwrench.com

Small Parts in FL may have them:
http://www.smallparts.com/ But I can't find them in their on-line catalog

Here is a reported source, but I cannot find the spline screws in their catalog pages.

From: "Dan Arney" <hankarn@pacbell.net>
Date: Tue, 20 Jan 2004 10:33:09 -0800
Subject: Re: [R-390] WTB: Bristol Set Screws

I have several thousand set screws.

From: "Bill Hawkins" <bill@iaxs.net>
Date: Fri, 23 Jan 2004 13:34:03 -0600
Subject: [R-390] Modification Work Orders

Went to James Moorer's site to look at the manuals, while I was at a meeting that had corporate high speed access. One of the listings was for a manual scan that had three of four MWOs, missing #3. It was only 180 MB so I tried it. An hour and 200 MB later I had a scan of TM11-856A. On Moorer's page, both the link to the R-390 with MWOs and the R-390A point to the same place, the 390A manual. Guess I will order the CD. Can I get a copy of the MWOs without downloading 200 MB? Regards, Bill Hawkins

P.S. Interesting to see the reference to the Engineering Report "floating" around the net. I'm probably the guy that OCR'd the report and turned it loose maybe 10 years ago. Sent a copy to Al Tirevold, too. Amazing how the net loses attribution, no? Maybe it's just as well ...

From: Barry Hauser
Sent: Wednesday, January 21, 2004 6:08 PM
To: Vic/Johanna Culver; R-390 List
Subject: Re: [R-390] What have I got here???

You can download manuals from several sites. One is at http://www.jamminpower.com/main/r390.jsp James Moorer's site.

Be careful to choose those that are for the R-390, not R-390A.

From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] Modification Work Orders
Date: Fri, 23 Jan 2004 14:46:00 -0500

Hmm. Did I botch one of the links? I'll check it out. I did upload both the 390 and the 390A manuals, both in the "old" versions and the "new" versions, but I may have been asleep when I put the links into the web page. It seems to happen a lot these days. If anybody has MWO #3 that I could borrow and scan, please let me know. Sorry for the slow download speed, but I can't stand those crappy low-res scans where you can't read the fine print and the half-tone images are all black. Maybe we'll all have T3 lines someday (and I'll have to upgrade my server!).

From: "g4gjl" <g4gjl@btopenworld.com>
Subject: Re: [R-390] Bristol Spline Tool
Date: Mon, 26 Jan 2004 20:44:43 -0000

> Are the Bristol Spline #6, #8, #10 the same as a Torx... <snip>

They are very different and you should not attempt to use mismatched drivers as they will fatally damage the screw sockets. (Either way round) The best Bristol drivers commonly available are Xcelite (Pronounced zi-light) ...Get them from Mouser, Digikey or local equivalent tool store. You will need a handle type99-1 and at least a driver type 99-66 for most 390 stuff. There are other drivers which will be useful for the smaller and larger Bristol sizes, but I have found this is the most common size.

From: "Lee Bahr" <pulsarxp@earthlink.net>
Subject: Fw: [R-390] New Guy
Date: Fri, 30 Jan 2004 11:39:15 -0600

Thanks so much for your detailed help and info. It makes a lot of sense. I will do what you say. I did order a cap kit but will only install C553 initially. I will also initially rebuild the filter can caps if necessary. Your post will be of great help and I'll follow your procedure. This gives me a plan and some insight as to many unsuspecting initial pitfalls for a "new guy" working on a R-390A. I am an experienced ham and have worked on a lot of boat anchors, so I am not a complete novice.

That said, I have never been inside an R-390A. I will go slow and cautiously. When I rebuild a radio, I do whatever I can to do it right. I don't like cobbling up a radio and I try to duplicate original design and use original type parts as much as possible. I am aware of "black beauties" and the leaks in old design paper caps due to moisture mixing with acids in the caps old paper. I know the pitfalls of trying to use old deformed electrolytics and how old carbon resistors go up in value. I don't like cutting corners to save a nickel but I am not willing to spend big bucks for terminal strips or wire that report to give "better sound and clarity"! In short, I understand a lot about restoring things, but, the things you pointed out specific to an R-390A is of particular importance and interest to me and any other "new guy" tackling his first R-390A. I initially was just going to reply to you direct bypassing the list, but now that there are other "new guys" on here, I decided my comments to you might be of some benefit to them as well.

Two last comments. 1. I ordered a cap replacement kit and front panel hardware package from Walter Wilson a couple of days ago and he has informed me my kit is on it's way. I think he got it out within hours of me ordering it from him. 2. I have used and have MANY of the yellow 400 and 600 volt caps sold by Mouser and Antique Electronic Supply. I've used them without hesitation rebuilding Hallicrafters and the like type equipment. I have never experienced a failure using them. That said, for some reason, I want to recap my R-390, when the day comes, with orange drops. I guess a high end rig ought to have high end capacitors. Besides, bright orange with Teflon spaghetti around the leads looks impressive!

They look great next to my Y2K-R2 manual in its impressive new 3 inch blue binder sitting on the desk right next to my R-390A. (OK, maybe I can get to believe green wire gives better tone and bass response then yellow wire)! Anyway, this radio, the orange drops, and the Y2K-R2 manual next to me make me look smarter then I really am! Thanks again, Miles, and to others who have given me good advice over these past few days.

I'm going to sign off now and go read my Y2K-R2 book I downloaded the other night. (It took a full cartridge of ink and a stack of paper 3 inches tall to print it out).

From: "Osamu Hazawa" <pomerol@mocha.ocn.ne.jp>
Date: Sat, 31 Jan 2004 06:21:17 +0900
Subject: [R-390] Remaking mini-BNC cable assembly

I'm going to remake so-called mini-BNC interconnect cable assemblies as they are hardened and cracked. As I could not find the impedance of the cable in The 21st Century R-390A/URR Reference (Y2K-R2) so far and the manual calls for RG-187 at "Table 5-4 -Test Cable Data", I assume the line impedance is 75 ohm. Is it correct and is RG-187 the best alternative for the stock cable?

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Remaking mini-BNC cable assembly
Date: Fri, 30 Jan 2004 15:26:44 -0600

I believe RG-179 is the correct cable. From some older posts I have, it fits in the mini-BNC connectors and the RG187 is just a bit large to fit.

From: ToddRoberts2001@aol.com
Date: Sat, 31 Jan 2004 01:59:36 EST
Subject: [R-390] William Perry Co. To The Rescue

Recently I was needing a pair of the oddball power connectors for the R-392 receiver. As others on the list have suggested, I contacted the William Perry Co.in Louisville, Ky. about the connectors. He said he was out of them at present. He had some similar connector bodies on hand but the threaded bolt in the middle had the wrong threads. He said he would have to engineer some new center bolts that have a very unusual thread to fit the R-392 socket. About a week later he had some ready to go and needed my address. A few days later the connectors arrived and look perfect, with a receipt to send payment. What a nice way to do business. Thanks again to Bill Perry for the hard-to-find connectors and to the kind folks on the list who recommended him. 73 Todd Roberts WD4NGG.

From: "Don Reaves W5OR" <w5or@comcast.net>
Subject: RE: [R-390] wrong part in RF deck found
Date: Sat, 31 Jan 2004 09:31:18 -0600

Hmmm, That one sounds familiar, Tom. Is there a Navy diode load mod on the the front panel? Red, yellow or white socket? If that one came from me, I can help you trace its lineage a little. It came from Omaha Nebraska. I found it and two more in a tall rack, in Ladd's radio store, back in the late eighties. Mr. Ladd would only take cash for them so I had to scramble around to several Omaha banks to cash enough checks to buy them. They came home in the back of a pickup with camper shell during a blinding snowstorm from Omaha through Iowa and Missouri. 4WD and a rack full of R390 ballast makes snow driving fun. How they got to land locked Omaha is the mystery. Perhaps they came from Elkhorn or Navy Mars. As I recal Mr. Ladd got them from a local ham.

From: "Don Reaves W5OR" <w5or@comcast.net>
Subject: RE: [R-390] R-391/URR (MOD) - Direction Finder Set AN/FRA-44 --- Receiving Set AN/FLR-7
Date: Sat, 31 Jan 2004 10:57:12 -0600

Clay, after some thought about your question, this is what I would do.

First, document what you know about the unit. Apparently you've made good progress and have assembled stories and references to its origins and history. Thanks for sharing that information.

Secondly, I would take pictures of the current configuration, with extra detail of the changes from the stock configuration, and preserve those pictures along with the other documentation you've found. Its fairly simple to save web pages, documents and digital pictures to CD. Maybe even convince a list member who has a 390 page to include some of that on his site.

Third, restore the unit back to its original 'as shipped from Collins' condition. You should be able to find spare IF decks and whatever else you might need since there is so much in common with the R390. The R391 is a fine performing radio, and your stated goal of having an AM and SWL everyday working receiver is certainly reasonable and attainable. There are several members on the list who have R-391s so help is at hand.

By doing 1 and 2 above, you've documented and preserved a bit of history, however esoteric it might be, and by doing 3 you've put the receiver back to work. Otherwise, with a countermeasures type bandwidth it isn't much fun to listen to.

From: David Hallam <dhallam@RapidSys.com>
Date: Sat, 31 Jan 2004 18:18:16 -0500
Subject: [R-390] Resistance Measurements and Trouble Shooting

Here is a question from someone who is trying to learn this trouble shooting business. After circuit resistance measurements have been made, at what point do you say that there is a problem and start checking individual components? Is it (5%, (10%, (20% of the value stated in the manual, or ? I realize that the circuit under consideration makes a difference; some obviously have to have closer tolerances than others. The item under consideration is a Hallicrafters HT-32B transmitter. I don't think resistances in say the audio circuit would have to be as tight as the balanced modulator, for instance. Or am I wrong? What is a good place to start?

From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Resistance Measurements and Trouble Shooting
Date: Sat, 31 Jan 2004 19:06:09 -0600

I would look at what the predominant resistor tolerance is in the circuitry. For the Halli's 20% might be pretty standard. For a piece of Mil equipment I would expect no greater than 10%. I would use that as my reference while going through the checks. I think a circuit analysis would also be in order....you need to know what you are measuring in there and try to get under the bottom and break it down to more individual components when you find a resistance measurement that is out of whack from what the book says to expect. I have found that many of the high value resistors are effected the most by their age. Also if there are still all the old BBOD type caps in the circuit the resistance measurements will most likely be effected. (ugly red tiny chief caps in the old Halli's)

Date: Sun, 01 Feb 2004 08:41:09 -0500
From: Jim Brannigan <jbrannig@optonline.net>
Subject: Re: [R-390] Resistance Measurements and Trouble Shooting

A few things to keep in mind. The charts in the manual are representative of all the radios and not unique to your particular radio....The type of meter in use will affect the voltage readings. A high impedance VTVM will give more accurate readings than a VOM and some DMM's have low impedances. Also, bear in mind that many of the components are +/- 20% of the stated value. Ideally, you would want to record the voltage and resistance measurements when the radio is operating properly. This would provide a unique reference against a future problem. Since many boatanchors are received in less than "pristine" condition we have to make a lot of assumptions. First, I check the power supply voltages. If the manual says that the plate supply should be 300VDC and you measure 290VDC, than

expect all the plate voltages to be down 10%. I create an Excel spreadsheet, in the same format as the voltage and resistance tables. The values (or adjusted values, as above) are entered into the appropriate cells. The measured values are entered below them. In adjacent cells I create a formula to "Test" the entered values. I use "Plus error" or "Minus error" messages as appropriate to indicate a value out of my defined parameters. This gives me a picture of the whole table and is useful for spotting trouble areas.

Date: Mon, 02 Feb 2004 09:59:29 -0800
From: "W. Li" <wli@u.washington.edu>
Subject: Re: [R-390] Resistance Measurements and Trouble Shooting

>A few things to keep in mind.....

Jim is quite correct in his suggestion. Our units are different, but they theoretically should be within 20% of the published voltage/resistance measurements. Measuring these values are facilitated by using 7- and 9-pin tube extenders (sometimes found at hamfests) and a good quality long VTVM probe tip. If you also enter the published values into your spreadsheet, anomalies are easy to spot. One operation that must be done (but is oft forgotten) is to set all the panel controls exactly as called out for in the manual, as they affect our measured values. This exercise may sound tedious at first glance, but the effort will pay off if and when our units act up or die on us.

From: "Drew Papanek" <drewmaster813@hotmail.com>
Date: Mon, 02 Feb 2004 19:17:45 -0500
Subject: [R-390] RE: ReCapping R-390A

You are mostly recapping individual modules; that divides the project into a series of smaller subprojects none of which is very large. A module can be recapped in reasonable time and the radio placed back in service; another module can be done at another time. Removal of the BFO can in the IF module makes access to several capacitors there much easier. Make a notation of the connection points for the can's 3 leads. Resistors can be checked and replaced as needed; quite often they drift out of tolerance (usually upward). Wei-i Li comes to the rescue with his "Pearls of Wisdom"; a categorized collection of postings to this forum over the years. Go to r-390a.net, references, pearls of wisdom for much more information on recapping and other topics. Fascinating and Absorbing!

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Subject: RE: [R-390] Filter pins
Date: Fri, 6 Feb 2004 08:26:57 -0600

> Seems like somewhere there would be some 9 pin plugs??? <snip>

I think Antique Electronic Supply sells them. www.tubesandmore.com
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Date: Fri, 06 Feb 2004 11:37:23 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Filter pins

>where I can get a male 9 pin plug. <snip>

Carefully score a 9-pin tube near the base with a glass cutter. Then warm it in hot water and dunk it down top first in ice water. The thing will cut nicely. (At least that's what I predict!) Then remove the innards, smooth the glass edge with a silicon carbide sharpening stone, or "sand paper". Solder (use flux if you need to) your connections to the remaining pins. Use epoxy creatively with a piece of aluminum tube cut in half, and you are in business.

Date: Fri, 06 Feb 2004 21:59:01 -0600
From: b w <ba.williams@charter.net>
Subject: Re: [R-390] Museum Quality R-390 Non-A on the E-Place

I have a PH-56 Motorola that has been a champ for over 10 years now. The front panel is scratched up, the knobs are chipped badly, and the Megacycle change knob has a peace symbol scratched in the center circle by some GI. It has an ASA sticker on the back panel. I decided to not do a thing to the appearance. It looks too real as is. I always wonder what bored soldier scratched that peace sign in the paint. On the other hand, I have a 67 EAC that I am going to repaint and clean up cosmetically. Still, I'm pretty sure which one I will feel most at home with when all is done and they sit one on top of the other. I'm sure not going to polish VFOs and black tube shields. the other other Barry
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Date: Sat, 7 Feb 2004 01:40:18 -0600
From: Dave Merrill <r390a@rcn.com>
Subject: Re: [R-390] Museum Quality R-390 Non-A on the E-Place

The side panels of the R-389, R-390 and R-391 are painted grey, not anodized like the R-390A.

From: "Cecil Acuff" <chacuff@cableone.net>
Date: Sun, 8 Feb 2004 17:28:31 -0600
Subject: [R-390] Cloth wire preservation and Soviet Mil Stuff

Hey folks, I have a question that I though I would field to the group since I know many of you not only work on R-390's but many other various makes

of boatanchor receivers. I have a rough old tube receiver that has great potential. It has cloth wiring. It looks as though the cloth is showing signs of deterioration. One of the IF cans were removed when I got the receiver because of a problem in the can... turned out both of the mica caps were leaky and one of the IF coils open. I had picked up a spare set of IF cans so I set out to replace the thing. The wiring was a mix of cloth and rubber insulated wire. Why they used different I don't know. The rubber insulated wire was crumbling. The cloth was coming apart where it had been manipulated to unsolder the connections in the chassis. I opted to replace all the wires with modern plastic insulated wire. It doesn't look original under the chassis but will function fine.

My question: is there a way to preserve the existing wiring in the chassis from further deterioration. The wiring that is original and not pulled around on much is still intact and the cloth still providing it insulating properties but I would like to do something to preserve it if it can be done. I just don't really know what one might do to minimize further deterioration.

I keep all my old radios in a humidity and temp controlled environment and that should help... For the record it's an SX-28A...In it's original cabinet and with its matching speaker.

The previous owner, who is now deceased, was well along in recapping the receiver. The job needs to be checked and finished. I am in the process of removing a 2nd IF can to replace it's wiring and check the internal components. The wiring has come apart because I think the previous owner had removed that can at some point as well.

I think it will make a nice addition to the R-390's and SP-600's when finished.

On another topic...does any of you fool around with old Soviet Military stuff. Do you know someone that does. I have accumulated some parts that came out of some old Soviet Comm. vans that might be of use in maintaining that type stuff. It's all NOS parts and is in my way and needs to find a new home. I also have a couple pieces of test equipment and 2 real nice Soviet mil. Morse encoding\decoding keyboards that were installed in a couple of the vans. They work once I converted the power supplies to 120VAC.

A lot of this stuff is marked with the C.C.C.P. markings...making them interesting Cold War Relics. Sorry for the ramblings for those of you not interested in this...just wanted to make use of the best technical resource I know of on the web.... the folks on the R-390 list!

Date: Mon, 09 Feb 2004 20:18:56 -0600

From: b w <ba.williams@charter.net>
Subject: Re: [R-390] Cloth wire preservation and Soviet Mil Stuff

Interesting stuff, so don't worry about the topic police. Glad to hear about projects like this as I have a few of them going on around here too. You can buy the cloth type of wire covering in different colors. I've used it a lot in some places. It looks pretty new, but if you desoldered the wiring and replaced it with this covering it would all look pretty good. The SX-28 is worth it if you care to put in the time. The transformer wires could be done by unsoldering one end, slipping the cloth sleeves over the wire, and resoldering....if doing it all was the goal. New cloth sleeves would preserve the original wiring. Sounds like a good project,

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From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] EAC R-390A parts needed
Date: Tue, 17 Feb 2004 12:05:38 -0600

The slug rack cover is commonly also called the Utah cover. I guess because of it's shape. Fair radio sales www.fairradio.com had those a while back. They also can sell you a set of tube shields...I would imagine only the silver ones. If you are looking for the IERC shields, which are recommended, you may be able to pick up a set from Walter Wilson. I don't know if he sells that stuff separately or not! Hope that helps...

From: "Dan Arney" <hankarn@pacbell.net>
Date: Tue, 17 Feb 2004 10:52:15 -0800
Subject: Re: [R-390] EAC R-390A parts needed

I make all of the covers and have them for sale and furnish the R390A covers to Fair. I also have some silver tube shields and tons of R-390A parts that I am sorting through at present. No I do not have list together yet. just about any part. Hank KN6DI

Date: Tue, 17 Feb 2004 21:35:19 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] EAC R-390A parts needed

I find it extremely interesting that after Collins designed these GREAT radios and they were built to work 24/7/365 with covers, shields, adverse operating conditions, voltages all over the scale, vibration and i could go on forever. Then the radios became available to to public domain, then all of a sudden a whole new bunch of WANNABEE redesign engineers come up with all of these far out theories and solutions to further their case or mostly their pocket books to sell the SS replacements for a perfectly working ballast tube or to enhance the audio, which is fine. It was not designed to be concert hall performer. It was designed to listen some of the

worst signal reception signals in the world for the state of the art at the time. Covers and shields were there for a reason. The Spec's say how and where the radio was DESIGNED to OPERATE. The enhancements help to some extent.

We all remember our (lost somewhere in the Louisiana swamps) Nolan Lee and his radio that ran over 7 years 24/7 with out a 3TF7 failure and with voltage fluctuations up and down with covers on and all shields in place with it meeting the same spec's (period)

Recap yes. align yes, then plug and play and pass it on to first your born still running. IF IT WORKS WHY FIX IT???? My .0002 worth.

Date: Wed, 18 Feb 2004 14:11:08 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] EAC R-390A parts needed

The first thing we ALL need to keep in mind - It is the OWNER'S prerogative to do what THEY wish with THEIR radio. Whether WE agree or not. It is indeed THEIRS. I have both a '52 Collins R-390A/URR and a '67 EAC. I'm NOT about to modify them. Repair as needed, replace the notorious BBODs, and maintain them - YES! I've even built a wood cabinet without ventilation ability. Still works GREAT. If anyone wants to change things? Go for it! It is YOURS!

Date: Thu, 26 Feb 2004 05:22:32 -0600
From: Dave Merrill <r390a@rcn.com>
Subject: Re: [R-390] ? BRISTOL WRENCHES

>Hello to the group,
>Does anyone know what size Bristol wrenches are needed to
>disassemble a R-390A ? I need to remove the front panel,
>shaft clamps and gear train.

You really only need the six-flute 0.096" size. The long-arm variety is helpful when removing/replacing the Mc/Kc knobs. McMaster-Carr is one source (no minimum order):
http://www.mcmaster.com/ search for 'Spline Key Wrenches'

From: "Ron K8FG" <k8fg@comcast.net>
Subject: Re: [R-390] ? BRISTOL WRENCHES
Date: Thu, 26 Feb 2004 18:58:25 -0500

Thanks to the Group fo the info, it's like www.mcmaster.com it is.

Date: Sat, 20 Mar 2004 08:22:12 -0600

From: John Seboldt <k0jd-l@seboldt.net>
Subject: [R-390] Hi to list

Greetings to all, just saw the list on the qsl.net list of lists and thought I'd say hi. Have been playing with an R-392 for about 2 years now, in fair condition, and working pretty well with only a little workout of the switches. Got all the manuals in .pdf from various online sources, so someday may open it up further. Only annoying quirk is that it cuts out completely on occasion, and can be brought back to life by tapping on or near V204. I know it's not the tube since I've swapped it, and a squirt of Caig DeOxIt in the socket doesn't help either. Haven't yet had the courage to figure out how to get into that top deck area, and have only done a cursory reading of the manuals to figure out how - looks kind of involved. Someday... meanwhile some discreet tapping is enough.

Date: Sat, 20 Mar 2004 10:31:07 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Hi to list

Welcome aboard! We need some new action around here. Well, y'see, the R-392 was made for rough service -- to ride on the back of a jeep alongside it's companion transmitter. It's also waterproof even in use, with the proper caps and connectors in place. One listmember tested this in his bathtub a couple of years ago. The good news -- they float. The bad news -- face down. Anyway, the thing is designed to be jostled around, so if you mounted on the back of your jeep, you'd never notice the intermittent as the "tapping" action would be automatic. Seriously though, many of these are in very good shape because they either didn't see much use and/or they're fairly well sealed and clean inside. That in addition to the heavy dose of MFP coating has kept them well preserved. It seems as though your intermittent is either a failed solder connection or a loose screw -- or one where there has been some light corrosion or chemical reaction due to dissimilar metals, etc. The solder connection can be good to start -- not a cold solder joint -- however trace amounts remaining impurities or rosin inside the joint can cause it to go intermittent, open up, or even turn into an accidental component -- resistor, capacitor -- or even a semiconductor (diode, not LSI chip) as one listmember reported. Refreshing the joint is the fix. Also, many have traced such problems to basic hardware -- screws 'n nuts -- particularly those that have grounding tabs and tube socket mounting points which are often used as grounds. I don't know if that module has captive nuts (pressed into the aluminum) or separate ones. What you might try doing is gently backing off the screws that mount the V204 socket - so that you don't lose friction if there's a separate nut & starwasher under them, then tighten firmly. Might also be another screw nearby. Worth a shot. If that doesn't do the trick, the next most likely thing is a solder joint. Also try unplugging and replugging any connectors.

I assume you cleaned the other tube sockets as a tap in one spot can affect something a few inches away and be somewhat deceptive. Hope this helps.

From: David Hallam <dhallam@RapidSys.com>
Date: Mon, 22 Mar 2004 07:48:33 -0500
Subject: [R-390] MFP

The modules in my R-390 are marked MFP. I thought that had something to do with Motorola since Motorola manufactured my receiver. After reading some exchanges here, I am not sure. What is the significance of the MFP markings on the modules?

From: "B Riches" <bill.riches@verizon.net>
Subject: Re: [R-390] MFP
Date: Mon, 22 Mar 2004 08:10:06 -0500

I think it means that the modules have been fungus proofed.

From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] MFP
Date: Mon, 22 Mar 2004 09:00:15 -0500

It means Mildew-Fungus Protection or Moisture-Fungus Protection -- or "preventative" and it's basically an amber/yellow/golden varnish with some nasty ingredients, like mercury compounds. (Remember mercurichrome, the painless iodine?) Basically seals out the flora and includes some micro-weed killer mixed in. So, don't eat the stuff or breath it in. (Yeah, and you radio-fetish folk best not lick or sniff these things.) Treat it as you would that contraband bottle of chlordane you kept in the garage for some future occasion. It's necessary to scrape or wire brush it away when soldering joints, so be careful when doing that. Most of this stuff has remained intact, but can flake if corrosion manages to develop underneath it. If necessary, use a vacuum (with filter bag, not bagless) to clean off any loose coating and leave the rest of it alone.

Date: Mon, 22 Mar 2004 09:44:30 -0600
From: Dave Merrill <r390a@rcn.com>
Subject: Re: [R-390] MFP

I have a Motorola R-390A which has MFP applied, but none of my EACs from late contracts have MFP. I don't recall seeing MFP on any units made in the 60's which makes me wonder if they stopped using it at some point.

Date: Mon, 22 Mar 2004 12:28:18 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] MFP

The modules MAY not be marked, BUT there may be or may have been an MFP stamp on the chassis. My '67 EAC has a stamp on the back of the radio, although it is very faint.

From: "Schluensen" <schluensen@freenet.de>
Subject: Re: [R-390] MFP
Date: Mon, 22 Mar 2004 18:01:38 +0100

I also have a 67 EAC (Serial 2283) - there is no "MFP-Stamp" - but this coating is well known by old army stuff...

From: "g4gjl" <g4gjl@btopenworld.com>
Subject: Re: [R-390] MFP
Date: Sun, 28 Mar 2004 13:20:15 +0100

I have EAC 68 #2033 and there is no MFP on the set any where

Date: Wed, 07 Apr 2004 15:15:12 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] TEST EXTENDER CABLES

>Should one purchase the R390A Test Connectors kit to make up a set of test
>extender cables sold by Fair Radio p/n #390A-CON for $59.95?

My opinion: Many fine radios have been fixed up just FINE without the convenience of the test cables. They help if there are some odd problems, such as intermittent shorts or the like. But with a sharp eye to the voltage and resistance tables, and careful thinking about the test points, and possibly the use of a couple of socket extenders, you can solve most any problem. Now if it is your job to work on them all day long, as folks did in the service, then test cables save a lot of time.

From: "Michael Murphy" <mjmurphy45@comcast.net>
Subject: Re: [R-390] TEST EXTENDER CABLES
Date: Thu, 8 Apr 2004 08:42:52 -0400

I wish Fair would have made fewer extender cable kits and saved all of those R390A Audio decks that they cut up. Every time you see modules missing connectors it usually means that somebody got a great set of extender cables. On the other hand, buy one of the audio decks or other modules missing the connectors for cheap and restore them using the extender kit!

From: "Don Reaves W5OR" <w5or@comcast.net>

Date: Wed, 21 Apr 2004 09:12:06 -0500
Subject: [R-390] R-390 distant cousin?

John, K4OZY, found and adopted an unusual Collins Navy contract receiver at a hamfest. It is an R-627, part of URC-8. He is seeking more information, and a manual or schematic. It shares some characteristics with the R-390. To me it looks like a cross between an SRR-13 and an R-390. Anyone know about these radios? Reply to me or the list, I'll forward to John. http://www.jptronics.org/radios/Collins/R627

From: "Scott, Barry (Clyde B)" <cbscott@ingr.com>
Date: Mon, 26 Apr 2004 11:35:32 -0500
Subject: [R-390] DeOxit question

I notice there are two DeOxit products from Caig: 5% and 100% solutions. I don't see any explanation as to which one is best. I assume the 5% solution is diluted with other chemicals and is "weaker" than the 100% solution, but I don't know if the 100% solution might be too harsh for some applications. I have the D5, but was wondering if the D100 would be better. I need to get some CaiLube and was thinking about getting some D100 but didn't know if it would be any better for general cleaning than the D5. Any comments?

From: "Barry Hauser" <barry@hausernet.com>
Subject: Re: [R-390] DeOxit question
Date: Mon, 26 Apr 2004 13:29:16 -0400

The D-100 is for treating contacts that are already clean -- it has no cleaning properties -- just protection from oxidation and some degree of lubrication. D-5 has only 5% of the "protectant" component but has "20% cleaning" power". Caig explains this somewhere on their web site but you have to dig a bit for it. Under most circumstances, what you want is the D-5 -- because most of the time, we're trying to clean and remove oxides from switch contacts, tube pins, etc. It leaves enough of the 5% behind after the cleaning solvent evaporates to do the trick. Of course, if you really want to do it up, you can apply a miniscule amount of D-100 after cleaning the contacts with D-5, but it's probably overkill.

You might use D-100 prior to fitting critical connectors together which are either already clean or new. However, in that situation, you might want to go with their Pro-Gold.

Another of their products is very good--CaiKleen RBR. It's excellent for restoring old grommets, rubber feet, seals (like the one on the URM-25's), and resurrecting grungy old power cords and interconnection cables. The best value is the 354 ml. screw-top can. Seems a bit pricey at just under

$17, however, I use it often and I still have half a can after 3 or 4 years. The stuff is highly aromatic intense citrus smell and can be a bit overwhelming. Works best on a rag or paper towel -- I don't think I'd want to spray the stuff. Makes you lose interest in orange juice for a while. I found a similar product by MG Chemicals in a little clear/brown plastic bottle -- "Rubber Renu" -- 100 ml. I think I paid about $3 for it. I don't know if it's quite as potent as Caig's. At first, on some rubber items, it can look like you've ruined the thing. The rubber may pucker and look like it's come down with a case of the pox. But after a short while it reforms -- clean and more pliable. Excellent for restoring rubber test leads, which tend to pick up grime to the point where it's hard to tell the red from the black. Just use a small amount on a rag and draw the wire through with some pressure. Do that repeatedly, turning the rag until the lead is clean. Be sure to allow plenty of time for air drying. Afterwards, the test leads will be like new -- pliable -- which is why the good ones are rubber-covered in the first place.

Date: Sun, 16 May 2004 12:23:33 EDT
From: ToddRoberts2001@aol.com
Subject: [R-390] Audio Pots R-104, R-105

If anyone is interested I have a few brand-new manufacture of the hard-to-find Log-Taper 2.5K Line Gain and Local Gain Audio Pots used in the R-390A for sale. These are made to original Mil-specs - 2-watt RV4 style, carbon composition, 1/2 inch long flatted shaft, 2.5K Log-Taper, and they have the locating tab that fits into the small hole on the backside of the front panel just like the original pots. Price $15.00 each plus $3 should cover first class shipping for one or two pots.

Date: Sun, 06 Jun 2004 06:18:48 -0400
From: "Drew Papanek" <drewmaster813@hotmail.com>
Subject: [R-390] R-390a's, they ain't scary...

(snip) If one were to believe all one reads on this list about potential problems with the R-390A and relatives, one would believe that the sky was about to fall in! Many of us are obsessive-compulsive types trying to "optimize" the radio or "fix" something that never was really broken. Remember, the radio was designed to be serviced by some grunt having the I.Q. of a potato peel and still perform excellently. Even highly dilapidated R-390a's work very well. When you nit-pick like the rest of us you will need psychiatric meds to cope with the radio.We pill-poppers got started out as new users just like you, except we got carried away.... Try to overcome your fears and make friends with the radio. As with any old electronics (your BC-348 included) beware those old paper and electrolytic caps. Toss your new "friend" a little oil and perhaps a tube or two once in a while and just enjoy.

Date: Sun, 13 Jun 2004 23:30:33 -0600
From: "Kenneth" <w7itc@hotmail.com>
Subject: [R-390] LED replacements

The below link has what I think are LED replacements for the two 328's in the dial.

http://www.led.net/datasheets/Pages/fsn_nsn_qualified_based_leds/67b.htm<http://www.led.net/datasheets/Pages/fsn_nsn_qualified_based_leds/67b.htm>

Date: Sun, 13 Jun 2004 23:38:26 -0600
From: "Kenneth" <w7itc@hotmail.com>
Subject: [R-390] Not sure if this was sent.

If I am not mistaken the link below has a drop in replacement for the 328's in the R390A dial

http://www.led.net/datasheets/Pages/fsn_nsn_qualified_based_leds/67b.htm<http://www.led.net/datasheets/Pages/fsn_nsn_qualified_based_leds/67b.htm>

Date: Thu, 17 Jun 2004 21:25:17 -0300
From: "fev" <fev@ciudad.com.ar>
Subject: [R-390] R390A

Hello, I bought here in Argentina a R390A manufactured by Collins. It works good, maybe not so good like I suppose it must work , but my question now is how smooth must be the tuning , in my case is a little hard and I get a little tired tuning it if I compare it with other like the TS830 or the old SX100 I have. It is posible working on it to obtain a nice tuning or it is like it is? The second problem I see or feel is that it had some play in the mechanismus to tune, is posible to adjust that or this is not posible? Maybe my question are stupid but if one of you say me that is possible to make the tuning better my sicological energie will be stronger to start with the restoration of this receiver. Thanks in advance for your comments and sorry for my not good english. 73´francisco viegener LU3eec

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Date: Thu, 17 Jun 2004 21:19:24 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] R390A

Compared to most radios the R-390 takes more effort to tune. The drive system for the rf and if tuning slugs creates a significant load on the tuning knob.

Lubrication and cleaning of the gear train and the tuning rack mechanisms can reduce the amount of drag. A full blown tear down of the gear train can sometimes do a lot of good. That's a lot of work. I would not recommend it if you only have one radio. Having a second one handy when you reassemble the radio is *very* useful. There should be no noticeable backlash in the tuning system. In other words when you turn on the BFO and tune a carrier it should not have a "dead spot" when you reverse the direction of tuning. Some apparent feel of mechanical "slop" in the tuning system is normal. The spring driven slug racks are the source of most of it.

As long as the tuning shaft from the tuning knob to the PTO is in good shape you should be able to tune a signal very well. This includes CW signals through the narrow filter. If that is a problem then I would take a look at the coupling between the PTO and the tuning shaft. There *should* be a spring on the coupling. If the spring is missing then you will have a bit of a dead spot when the tuning direction is reversed. A spring from a ball point pen can be used to do a quick fix of the problem. An intermediate fix on the tuning system is to pull the RF deck out of the radio. You than then do a much better job of cleaning the gears and tuning racks. It's not as good as a full tear down. It is a lot less trouble than tearing the whole gear train apart. Before you do any significant work on the radio I would recommend getting a manual and reading it carefully. There are several good ones you can download from the internet. People also sell them if you prefer a printed manual.

Date: Thu, 17 Jun 2004 22:00:56 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] R390A - Re: Hard Tuning

One common cause of hard or stiff tuning in the R-390A is a misaligned front-panel bushing for the main tuning shaft. First remove the main-tuning kilocycle-change knob. Then take a large crescent wrench/adjustable wrench and loosen the large hex-nut that holds the tuning shaft bushing in place. Loosen it just enough so that you can turn the whole bushing freely. See if that frees up the stiff tuning. If so then re-tighten the large hex-nut to secure the bushing in place - make sure the tuning shaft still turns freely after you do this, and apply a drop or two of oil where the main-tuning shaft comes through the bushing. I have seen several R-390A's that had very stiff tuning due to a misaligned front panel bushing. After aligning the bushing the tuning became easy and smooth as silk. I believe I got some very good deals on a couple of R-390A's that had this problem but the seller didn't know how to fix it and probably thought there was something major wrong with the tuning being so stiff. This is just a starting point. There can be many causes of hard or stiff tuning but always best to check the simple things first. 73 Todd Roberts WD4NGG.

Date: Thu, 17 Jun 2004 21:25:17 -0300
From: "fev" <fev@ciudad.com.ar>
Subject: [R-390] R390A

Hello, I bought here in Argentina a R390A manufactured by Collins. It works good, maybe not so good like I suppose it must work , but my question now is how smooth must be the tuning , in my case is a little hard and I get a little tired tuning it if I compare it with other like the TS830 or the old SX100 I have. It is posible working on it to obtain a nice tuning or it is like it is? The second problem I see or feel is that it had some play in the mechanismus to tune, is posible to adjust that or this is not posible? Maybe my question are stupid but if one of you say me that is possible to make the tuning better my sicological energie will be stronger to start with the restoration of this receiver.

Date: Fri, 18 Jun 2004 09:19:35 -0500
From: Paul Bigelow <pbigelow@us.ibm.com>
Subject: Re: [R-390] R390A

The R390a will always take a bit more effort to tune than any receiver with an encoder or a simple VFO. With some rebuild work and lubrication, the R390a can be made a bit easier to tune. The play noted during tuning could be the result of improperly set backlash gears or the oldham coupler may be worn. If the olham coupler is worn, it may be possible to reduce play by sandwiching some tough, thin, plastic wrap between the coupler and its mate, thus filling up the small gaps. Carefully adjusting the beveled gears for the Veeder-Root mechanical readout can reduce the play in that mechanism.

Date: Fri, 18 Jun 2004 10:58:39 -0400
From: JMILLER1706@cfl.rr.com
Subject: Re: [R-390] R390A

There is also a spring on the Oldham coupler, set between two posts protruding from the two halves that sandwich the coupler. If this spring is missing, backlash will be very noticeable. If the coupler is sandwiched too tightly, PTO instability can result as you tune due to excess pressure on the PTO shaft. My manual says there needs to be 1/32 inch gap between the coupler and the two sandwich halves (whatever you call them), so that the coupler is free to move slightly.

Date: Sat, 19 Jun 2004 08:50:01 -0400
From: "Forrest Myers" <femyers@attglobal.net>
Subject: [R-390] Mini BNC

Does anyone on the list have a source for the mini BNC connectors as used in the 390A? I found a source for the rg-187, Skycraft in Orlando, but no luck on the connectors.

Date: Sat, 19 Jun 2004 13:53:30 -0500
From: "Terry O'Laughlin" <terryo@wort-fm.terracom.net>
Subject: Re: [R-390] Mini BNC

What do you need? I have a box of them I have been intending to post for while. Male-Male cables, Male-BNC to Male mini BNC cables, panel mount female, cut ends with male or female.

Date: Sat, 19 Jun 2004 14:41:49 -0500
From: "Terry O'Laughlin" <terryo@wort-fm.terracom.net>
Subject: [R-390] mini-BNC relays available

I also have a few mini-BNC coaxial relays. Three mini-BNC connectors (common - normally open - normally closed). They are small, about a 1-1/2" base and 1-1/2" high and I think the coils 117 VAC. These are high quality units removed from Watkins Johnson control units that handled 1 GHz signals. $5.00 each plus priority postal shipping.

Date: Mon, 21 Jun 2004 08:59:45 -0500
From: "Laird Tom N" <LairdThomasN@JohnDeere.com>
Subject: [R-390] RE: LED replacements

Anyone tried these yet? My experience is that LED's have very directional lighting (i.e. straight out the end). May pose a problem if "side light" is needed.....

Date: Mon, 21 Jun 2004 11:18:40 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] RE: LED replacements

Just apply fine sandpaper to the front of the LED. Roy

Date: Fri, 25 Jun 2004 22:51:56 -0500
From: "Lee Bahr" <pulsarxp@earthlink.net>
Subject: [R-390] HiRes R-390A and Addendum plus SP600-JX Video Tapes

I got the above tapes from HiRes a couple of days ago and have been viewing them. (I'm about halfway through). I'm glad I got them. So far I've learned a lot from them and feel more comfortable dismantling my radios after viewing the tapes. (At least I know what will not get me into trouble). I was very fearful of the gear train timing. I know this wont be a problem if I leave that in place and I can still remove the RF deck without disturbing

the timing. All I have to do is note the dial frequency and keep the PTO at the same place. (Tape suggests 7.000+ which is 8.000 Mhz. Tape says even if I move the PTO I can still easily get everything synced again).

I have not viewed the SP-600-JX tapes as yet. I just started the R-390A ADDENDUM tapes. From my technical expertise and with the tapes, I think I can get through this with my 3 receivers. I think I have enough test equipment to do most things. Not all, but most. I don't think the tapes will make me an expert on these radios but they sure educated me to the point I think I can logically work on them without screwing things up and efficiently work on them. All in all I am very happy with the tapes.

Would I like some things described better? Sure. Some of the verbiage could have been clearer and some of the steps were vague. You need some expertise to understand some of the vague verbiage. (For example: you are told to use grease at some points. I would have liked to have been given a brand and part number. You see a hand with a wand in the radio and you don't see the meter scale being looked at while adjusting a slug). This is OK for a tech type person, but your grandmother is not going to be able to follow the process.

These tapes are not totally doing A,B, C thru X, Y, and Z without knowing the concept behind the process. You need to know what you are doing. Tuning this radio is not like building a Heathkit. All in all, I am very happy I purchased the videos. I know enough about restoring old radios to have these tapes be a big help to me in restoring my 3 R-390As. Just don't expect them to make a tech out of a person who has never worked on a radio up until now. I guess that was not their purpose anyway.

Date: Fri, 2 Jul 2004 13:02:48 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] Good Company to Make Panels

I visited a company today on a work related visit that would be perfect for front panel manufacturing. The company is Begneaud Manufacturing in Lafayette, LA (www.begno.com). They specialize in laser cutting and etching. The computerized machines I saw today could make a 390A panel in about 60 secs. They laser cut the overall dimensions from a large sheet, then laser cut the holes, and finally they laser etch the markings. They have a CAD department. All you have to do is provide them with a drawing and get out of the way. They have breaking equipment also, and do lots of work in stainless. My company uses them to manufacture stainless panels for industrial use. They could make tube radio or stereo frames in a snap from stainless, copper or Al. As it turns out the owner was my neighbor. Never knew he had all this. They also have free lunch on Fridays. Dan, you should look them up!

Date: Mon, 5 Jul 2004 20:45:13 -0700
From: "Dave Faria" <Dave_Faria@hotmail.com>
Subject: [R-390] R-390 History

This may be a futile exercise but, I would like to trace the history of my 390a, 390, 391, 392, and 388. If its possible back to the duty stations. Anyone know how to do this?? It would be an interesting exercise. Yep I'm retired - sorta Thanks for your thoughts before hand

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Date: Mon, 05 Jul 2004 21:49:55 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] R-390 History

I suspect that at least with the 390 and 390A the question will come up "what's my radio?". With the ones I have here it's the odd one that actually has the numbers on the front and rear panels matching. That said if you want to go for it the archives must have all the darn paperwork that transfered the radios from point to point. The same archives probably have the normal unit inventory documentation as well. In both cases the information you are after is going to be buried in with a whole bunch of other stuff. You should be able to get access to
it but boy will it take time. More or less:

•

Radio has serial number, so we know when it was made. There must be a record of it going from the factory to a depot.

•

Depot records should exist and show who it was sent out to.

•

Unit inventory should confirm that they had the radio.

•

Since the unit no longer has the radio there must be paper that moved it out of that unit.

•

I

f you can find 20% of those records you are doing *very* well.

•

The national archives have a web site so you can at least look into what's involved in researching those records.

Date: Tue, 6 Jul 2004 00:48:01 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] LED lamp replacement and Fake Ballasts

Lee brings up a point, though I know it was tied to the humor thread rather than to the technical part of the thread that died horribly long ago... A while back there was a company selling cheap cheap little fm radios with fake tubes in it. Each tube had a dim orange LED so it would "glow" I suppose if we were bored, we could do the same thing with a "ballast replacement" resistor, just wire the LED in parallel with appropriate dropping resistor and rectifier diode since it is AC. Stick some sort of diffuser in the top of the tube shield (so the glow is *dim* from the top of the shield) and replace the tube shield as normal. This would actually be practical in that it would indicate an open filament in either the BFO or PTO tubes..... Hmmmm.

Now to the light replacement idea -- When I get the 390A back together that is strewn around the room, I'm going to replace the dial lamps with white LED's so I'll not have to ever replace them. Already did it on the "spare" 390A, and it works well - *very lightly* sand the tip and the front half of the LED to "frost" it a bit to diffuse the light. Superbright red LEDs might look good too.

UV leds make the meters glow *brightly* but I don't wanna take a radioactive meter apart to install one inside!

Date: Tue, 06 Jul 2004 10:49:28 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] LED lamp replacement

Well I guess I run the risk of getting thrown off for mentioning this but the issue with the LED lamps is more or less the same as some of the solid state ballast replacements. (duck and run for cover ....). When you convert AC to DC to run the LED's the current is only going to flow in short little pulses when the AC waveform is higher in voltage than the DC turn on point of the LED. The pulsing of the current creates noise clear up into RF. The R-390 was not designed to be shielded against this sort of thing going on inside the radio. If you decide to go the LED lamp route I would suggest that a separate wire routing power for the LED's would be a good idea. Then come up with as quiet an AC to DC conversion as possible and stuff it off in the power supply module. At least that way it's as far from the IF and RF as

possible. Just for the record, yes I stole that idea .... The nice thing about the LED's is you can get an awful lot of light out of them these days. I have an R-1051 with an LED conversion in it that works very well. The illumination angle coming out of an LED is more narrow than the angle of light coming out of the bulbs we normally use. One solution to this is to do violence to the front end of the LED. The other is to run multiple LED's. If you get your DC off of the 25 volt AC line then you can put quite a few LED's in series .... Since the bulbs for the 390 are still commonly available and fairly cheap I'm not sure I would do all this work on a 390. If and when the bulbs get into the $40 a bulb category like the R1051 bulbs then we'll have a bulb replacement thread on here that goes on and on forever.

Date: Tue, 6 Jul 2004 10:10:42 -0500
From: "Don and Diana Cunningham" <wb5hak@sirinet.net>
Subject: Re: [R-390] LED lamp replacement

The truly nice thing about LED's is that you don't have to convert AC to DC to run them (or am I missing something, after all, they ARE diodes????).

Date: Tue, 06 Jul 2004 11:36:19 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] LED lamp replacement

If you do that then you have two items to worry about. The LED's have a reverse breakdown voltage and you now have a half wave rectifier. That gets you right back into the chopped current = RFI problem. If you run them in reverse parallel pairs then the breakdown voltage is not an issue but you still only run current through them when the voltage is above about 1.6 volts on the diode.

Off of a 6.3 volt AC supply having no current for 1.6 volts is a fairly large amount of chopping. You are right back to the RFI issue. I know all this sounds a bit like witchcraft but the R-390 is particularly vulnerable to the problem. The designers simply never considered there would be a source of broad band RFI *inside* the radio. The other gotcha is that it is such a sensitive radio that you can hear crud with it that other radios would simply miss in the noise.

Date: Tue, 06 Jul 2004 12:08:24 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] LED lamp replacement

Instead of LED's, best bet is probably the long-life version of the standard replacement bulb. I think there's a reference on it and some list members may know offhand what the number is. As I recall, there is quite a bit of difference in the hours spec. and not that much difference in price.

Brightness may be a bit lower, though. Anyone know?

Date: Tue, 6 Jul 2004 14:59:50 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Re: LED lamp replacement

I have not noticed any noise since replacing the bulbs with LEDs. I think I even put the scope to the line feeding them as this was mentioned before on another list a while back. My dial light replacements are fed with a series resistor followed by a diode, followed by two LEDs in series. There is a 1 mf cap in parallel with the pair of LEDs.

There are now three junctions in the mix and the possibility of noise either by radiation or by propagation along the filament line. I may simply have overlooked any noise, I may not have actually been looking for it. I honestly don't remember, I've slept since then. Maybe a study is called for here, when I do the LED's on the current room-strewn receiver, I will make and record actual noise/ripple measurements. But before the RX gets done, I have to reassmble the Johnson Valiant, and before it gets done, I have to put a Transworld back together, so it may take a while.

Date: Tue, 6 Jul 2004 20:23:14 -0500
From: "Cecil Acuff" <chacuff@cableone.net>

Strange thing about my R-1051 LED conversion...no two seemed to come out the same....even though the same LED's were used and installed the same way....never did figure that one out....worked well though and was much cheaper than trying to put the original lamps in. I agree with Bob though...I have seen the R-390A lamps available at the local electronics supply house...readily available...and cheap....relative!

Date: Tue, 06 Jul 2004 22:18:44 -0400
From: Bernice & Al <saglek@videotron.ca>
Subject: Re: [R-390] LED lamp replacement

> Instead of LED's, best bet is probably the long-life version.....

Lamp # 328, 6.3 Volts, 0.2 Amp, MTBF 1000 Hrs. For the R-390A.

Mouser 606-CM328 $.93

Lamp # 381, 6.3 Volts, 0.2 Amp, MTBF 20,000 Hrs. For the R-390A.

Mouser 606-CM381 $1.27

Lamp # 387, 28 Volts, 0.040 Amp, MTBF 7000 Hrs. For the R-390.

Mouser 606-CM387 $.47

Hope this helps. Use the #328 my R-390A. Must be close to 4000 Hrs on them.
About 900 Hrs on the R-390 with the #387.

Date: Tue, 6 Jul 2004 22:35:24 -0400
From: "JamesMiller" <jmiller1706@cfl.rr.com>
Subject: Re: [R-390] LED lamp replacement

Tom Bridges Tarheel6@msn.com was selling lamps some time back.
Packages of 10. Reasonable price.

Date: Tue, 06 Jul 2004 22:36:12 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] LED lamp replacement

There are also a couple of other alternatives. The ones you list are by far the most common. I have always gotten mine from Bulbs Direct on the net. Never thought to check Mouser for them. If anybody is looking for the even longer life but far more dim (= not a lot of use ...) alternatives I can probably dig out my notes.

Date: Tue, 06 Jul 2004 22:51:32 -0400
From: Bob Camp <ham@cq.nu>
Subject: [R-390] Bandwidth

Hey, that R1051 you put the LED's in is still running nice and bright. It came up here earlier today as a matter of fact ! I totally agree that either modes one or two are far to be preferred to mode three which is what we often get here and on a lot of other lists as well. <snip>

Date: Tue, 06 Jul 2004 21:29:16 -0700
From: Buzz <buzz@softcom.net>
Subject: Re: [R-390] LED lamp replacement

I have 328 bulbs for sale at 12 for $2.00, postage included. Email me if you're interested.

Date: Tue, 6 Jul 2004 22:26:47 -0700 (PDT)-
From: John Kolb <jlkolb@cts.com>
Subject: Re: [R-390] Re: LED lamp replacement

While there may be a possibility of RFI generated by the LED's or (blasphemy) solid state diodes, I'm more curious about the light output. The

light out of LED's is rather directional - how well do they work in the R-390?

Date: Wed, 7 Jul 2004 04:17:26 -0400
From: "JamesMiller" <jmiller1706@cfl.rr.com>
Subject: Re: [R-390] Re: LED lamp replacement

I prefer the "soft" on and off times of filament lamps over the instantaneous on-off of LEDs. My filament dial lamps sort of "ramp up" when they come on, which is the true behavior that should be observed in this genre of radi? . Ever drive behind a car with those obnoxious LED brake lights, especially the Cadillacs?, They flash on instantly... no soft warm up time. It's grating on the nerves.

Date: Wed, 07 Jul 2004 17:02:34 +0200
From: "Bryce Ringwood" <BRingwoo@csir.co.za>
Subject: Re: [R-390] Re: LED lamp replacement

The LEDs I have cast an eerie bright whiter than white light - very unpleasant. I guess you could use a ballast tube to soften the start up time*. Have any of you had RFI from a filament light ? Some sort of weird RF can be generated between the filament and metallic deposits on the glass envelope in old lamps. So I'm told.

Date: Wed, 07 Jul 2004 11:24:09 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Re: LED lamp replacement

That's the little known process of a monode turning into a diode. It does it all by itself. No physicists needed.

Date: Wed, 7 Jul 2004 10:40:06 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Re: LED lamp replacement

Put a big electrolytic in parallel with them...that should do it!

Date: Wed, 7 Jul 2004 11:49:07 -0400 (EDT)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: Re: [R-390] R-391

The R-391 is a pretty straightforward beast to get running if nothing serious is broken. Like Barry says, dried grease is the biggest problem. The locking keys are available from Hank Arney. You can also make them, but it requires a little bit of care to make sure the business end is right. The R-391, like other autotune or motor tune Collins radios, have slip clutches in

them that are intended to let the motor drive keep turning while the tuning mechanism stops against a pawl. What happens is the grease in these seize up, so instead of slipping the clutch, the gears grind and the bearings next to the motor get mashed to a pulp. Actually, if your receiver is like the one I worked on, it can tolerate a _little bit_ of that, but not much. Unless you know the autotune has been used in the last few years, it is probably better to remove the tuning unit and soak it in solvent for awhile. I soaked mine in kerosene for a week, which also helped the other problem, which is grit in the mechanism. The third problem I ran into is that the motor brushes readily wear out, so it will not work, or frequently stop. Others have reported problems in the control relays, although mostly I suspect this would be dirty contacts. I haven't found a good source of parts, although the basic autotune and drive motor is used in multiple radios, like possibly the T-195. I believe the CU-286 uses the same tuning mechanism exactly as the R-391. The spare motors I have I got from Fair Radio, and are almost certainly from T-195's, but may be strong enough to run the R-391 autotune mechanism. BTW, as always, I'm looking for a restorable C-974, a CU-286, and a PP-629.

Date: Wed, 7 Jul 2004 12:16:52 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: [R-390] It _WORKS_!

Last night I finally had the time, inclination, clear workspace, and tools to try to get my R-390 (Collins, great restoration by Mish) up again. It had Just Stopped Working a few months back, and things were not conducive to my getting into it until now.

Symptoms:

No audio out, no carrier level meter deflection on any band, even with a signal generator as input.

So I got the -20 and -35 manuals out, heated up the scope and 8640B, opened the critter up, and ran through the problem determination checklist:

- no response to any signal on the antenna connector;

- good response to 455 KHz modulated with 1 KHz on the IF strip input jacks;

- OK response to RF on the test point at the output end of the RF module, but not at the other end.

Conclusion: Probably something in the RF module.

Found the tube extenders (a battle all in itself, after I cleaned up the garage), pulled the middle tube, put it on the extender, and ... the radio worked! Left _EVERYTHING_ else just as it had been, replaced the tube, and it _still_ worked. I spent the rest of the evening cruising around, listening to hams, refining my SSB tuning technique, and having a good time.

It probably was oxidation on one or more of the socket contacts and/or the tube pins. That's my story, anyway, until it quits again. It's easier to shoot a solid bug than an intermittent one.

Date: Wed, 7 Jul 2004 14:22:49 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] OT: LED tail lights, white LED physics

According to USDOT and such, they are supposed to be annoying. Apparently the instant on feature cuts as much as a quarter second off the response time that would otherwise be spent getting an incandescent filament lit to full brightness. A quarter second is a long time as accident response goes, and can mean the difference in avoiding an rear-end or sliding under the vehicle in front of you.

That being said, as far as LEDs for running lights, the red is too "spectrally pure" and is way hard on my eyes too. I tend to agree on the white LEDs being somewhat "harsh" since they tend to have a blue shift to then. Indeed all should, the white LED is manufactured from a blue or UV LED die, which is then doped with a mixed spectrum phosphor-like material. The effect is not unlike that of a florescent lamp. The harshness comes from the blue or uv/blue that is emitted as the phosphor doesn't do much to block it.

Date: Wed, 07 Jul 2004 20:36:36 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] It _WORKS_!

The magic of tubes strikes again. I have chased this sort of thing on a "goes out every month" basis on a couple of radios. Here's what I finally started doing: Find a piece of wire or a tool that's roughly the size of a tube pin. A quick pop in and out on each of the tube socket contacts will give you a fast idea if any of the contacts are loose. One neat thing to use is an old soldering tool that looks sort of like a straight dental pick. They threw me out of Weapons Spec. soldering school before they got to that part of the course so I never did find out what you really use that thing for or what it's called. I ground down the end of the gizmo so the body is about tube pin diameter. Sometimes the darn sockets just seem to give up. Depending on the construction you may be able to bend them back to life, you may be able to pop them out of the socket (rare) and replace them, or you may have to

replace the socket.

Date: Wed, 7 Jul 2004 21:01:56 -0400
From: "Dave Maples" <dsmaples@comcast.net>
Subject: RE: [R-390] OT: LED tail lights, white LED physics

All: Not to mention that the replacement cycle for the LED lamps is measured in years and years as opposed to standard incandescent bulbs. In the commercial radio business (Nextel) we are seeing more and more tower lights move harder and harder toward LED technology. It's way more reliable than xenon strobes. I don't think I'd want to be in the incandescent business much longer. Methinks that before I die in 20-30 years it's going to be well on its way out.

Date: Wed, 07 Jul 2004 21:04:25 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Re: LED lamp replacement

Assuming you really want to go this way here's the basic data:

Page 1333 in the online Digikey catalog (www.digikey.com) has a number of high intensity LED's. They come in several colors and in white.

The voltage drop on the colored ones is a little under or a little over 2 volts depending on the color. The white ones have a voltage drop of 3.6 volts. If you run them off of the 25 volt AC supply you will have about 33 volts DC to work with. If you drop about 1/3 of the supply across the series resistor then you get 22 volts on your string of LED's. The resistor is sized to give you 20 to 30 ma through the LED's. Eleven volts and 25 ma would get you a 440 ohm resistor. 390 and 470 are the closest standard values. A one watt size should work ok. The value will take a little fiddling to get the voltage right. I would start at about 390 and work down to about 180 ohms. From there on it's a matter of picking a color and figuring out how many of them add up to 22 volts. If say 11 orange LED's does not make sense then the resistor size can change to match the new load. A full wave bridge of 1N4148's to convert the AC to DC and maybe a 10 uf 35 volt cap across the stack of LED's completes the project. The resulting circuit looks like:

Four diodes in a bridge, AC ends to the 25 VAC filament line and to ground. DC ends to the resistor and diode / 10 uf cap combination. LED's all go in series with each other.

That may not be clear enough to follow along .... sorry about that.

Date: Wed, 07 Jul 2004 21:19:27 -0400

From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Non_A

Well as one wimp to another (my 390 not an A has not made it to the disassembly stage after several years ...) here's what I would do: If you have an ohm meter handy the ballast tube is something you can ohm out. Either you have something less than 50 ohms between pins 2 and 7 or the ballast tube is dead. At this point you at least *know* weather it's the ballast tube or not. As long as you have the ohm meter out check the filaments of the VFO and BFO tubes. If either of them go out you have the exact same symptoms. I'm working off of a 390A schematic so you might have to adapt that a little. Now for the hard part ..... you still have to make the decision whether it's the ballast tube or not ....I would go ahead and pull and clean the RF deck plug in coils. The risk of damage is small and cleaning the contacts can eliminate some really flaky problems that are a *true* pain to figure out. Cleaning the gears while the deck is easy to get at also makes sense at this point. Past that it all depends on how brave you feel ..... David Medley is still around so there is a safety net if you run into something weird ....

Date: Wed, 7 Jul 2004 21:50:05 -0400 (EDT)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: Re: [R-390] Non_A

Paul - since it sounds like you have only one R-390, it might be a slight bit harder to get it going (not having other modules to swap to see what works and what doesn't). However, it will help to figure out what you want to accomplish.

You mention it being apart ready to clean - that's one thing, the other thing is that it didn't work before you took it apart - no signals on any band. If you're not so confident about your ability to repair, it might make sense to get it back together and try and see what is working and what doesn't. There are a bunch of things to check to get the basic things going, for example the B+ voltage measurement point should be around 180V when operating (and if it is 180V, then I think three tubes are working - the ballast, the VFO tube and the VR tube(s)). If not, then you find out why B+ is wrong, so you check resistance to ground, see if there is a short there, and also check the VR and ballast tubes.

The ballast really isn't a big deal - I like having them, but they aren't of any great practical use to the hobby users, because we don't usually use them on battleships.

Anyway, after making sure you've got B+, then you listen to what you can - see if you can hear any audio at all (even clicking when turning the limiter

switch on), or if you get a hiss with the RF cranked to the max. That helps tell you if the audio deck is working.

On the R-390/R-391, I found the voltage regulator circuit for B+ to be the biggest pain in the backside. The 6082 tubes just fry the unholy crap out of the bottom of the audio deck. Check the 47 ohm resistors under there and under the power supply to make sure they're close (if well used, they're probably toast).

I've got one audio deck that just frustrates me to no end - I've replaced all components in the VR circuits, and still don't get 180 volts. Other decks I've repaired responded well to the new 47 ohm resistors.

Dive into it - ask questions - we'll help!!!

Date: Wed, 07 Jul 2004 21:00:29 -0500
From: bw <ba.williams@charter.net>
Subject: Re: [R-390] It _WORKS_!

Rub those pins with a soft eraser and then DeOxit them all.
Do all connector pins and the crystal pins. It will sound like a new radio.

Date: Thu, 8 Jul 2004 09:44:41 -0400
From: "AI2Q" <ai2q@adelphia.net>
Subject: RE: [R-390] Non_A

Hey Paul, the R-390 is a very straightforward receiver to repair. If you have the manual, go for it. Pull the RF deck, remove the slug racks, and pull those beautiful RF coil sets (each can uses sub-mini silver-plated banana plugs that fit into mating banana jacks on the RF deck). Then squeaky clean and lube to your heart's content. My R-390 went through a burn-to-the-ground house fire and then a 25 year stint in an outdoor shed before I did a restoration. BTW, I opened up each and every RF coil on my set, inspecting the innards and cleaning out carbon residue from the fire. The Q-doped coils inside were impervious to fire, heat, moisture, spider nests, etc. and all were in FB shape internally. Also, I had no green gear on my set (and still don't), but I was able to mechanically align the RF deck as per the manual info. No problem. It's not as difficult as some folks contend. Don't be intimidated by the R-390. It was meant to be serviceable.

Do be methodical.

Date: Thu, 8 Jul 2004 06:52:23 -0700 (PDT)
From: "Richard M. MC Clung" <wa6knw@sbcglobal.net>
Subject: [R-390] Re: AN/FRA-86

First you will notice a series of holes on the front panel around the MHz and KHz controls and under the chassis there are two added plates between the front panel and the front frame. These were to support two motors used to select the MHz range and to sweep thru the KHz range. Besides the receiver there was a Panoramic Indicator, a Teletype Converter, a Signal Classifier, and a Computer. This system was used to intercept Soviet RATT Traffic.

Date: Thu, 8 Jul 2004 19:30:38 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] high dollar r-390a

I thought all R-390A panels were painted on both sides with some silk screening on the rear to identify various parts locations. This one is either bare or treated as the other aluminum parts are. (alondizing?) Maybe it was painted up to be black... I am thinking about doing one that way myself....I like the black look but didn't expect them to be so valuable.... Les used to own one that looked just like the one on the bay...cabinet and all...I've seen the pictures.... Who'd you sell that one to Les?

Date: Thu, 8 Jul 2004 20:57:02 -0400
From: "B Riches" <bill.riches@verizon.net>
Subject: [R-390] Black R390-a

There is a dealer outside of Philadelphia that has a black r390a and the meters are illuminated. He sells vehicles, old test equipment and had a bus full of old blue stripers. Anyone have his name??

Date: Thu, 08 Jul 2004 21:25:42 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Racal RA17L repairs

For some reason unknown to all the R-390 even though it is of the same vintage as the RA.17 does not seem to suffer quite as badly from the carbon composition resistor problems. We have our crummy black beauty capacitors and they have their resistors *and* capacitors. I don' know if the Brit's just bought cheap resistors or if it's something else.

Date: Thu, 8 Jul 2004 21:30:02 EDT
From: AB3L1@aol.com
Subject: Re: [R-390] Black R390-a

If I remember correctly, he is Peter Graves or something like that. On the E place he is "Radiograveyard". Lives slightly north of Philly. Howard Mills also does the black panels and usually doesn't paint the back either. The back of the panel in the Ebay sale looks to have a brushed finish which

throws me a little bit as usually the panels get bead blasted before the paint job.

Date: Thu, 08 Jul 2004 21:46:27 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] high dollar r-390a

There actually was an agency that liked their 390's painted black. There was a thread about all this back 4 or 5 years ago. I can't remember if it was CIA or NSA that thought black front panels looked cool back in the 1970's. Of course the color *could* be the result of a particularly dramatic electrolytic capacitor failure.

If the cabinet is "virgin" it should have a marking panel or decal on the top. The fact that the seller is not showing the top of the cabinet suggests to me that the magic marking is missing. It's looking more and more like a re-paint job.

Date: Sat, 31 Jul 2004 11:41:19 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] what is it?

> Hi gang--there's an EAC up on Epay right now. On the back of the radio it
> has some attachment in the center I've never seen. What is it?

It's a bit tough to see from the pictures. Judging by the stuff on the front of the radio I would bet that it's been worked on fairly heavily by a ham. Certainly the replacement meters are a bit interesting. I can't even tell from the pictures weather the modification chassis has transistors plugged into it or Nuvistors ... I don't think the modifications have increased the value of the radio any ....

Date: Sat, 31 Jul 2004 11:56:30 -0400
From: "John KA1XC" <tetrode@comcast.net>
Subject: Re: [R-390] what is it?

Hmm, good question. (BTW it's item # 5712724918) My guess it's some type of audio distribution or amp setup. Visible on the left are a wire pair going to the Local Audio output terminal, and there appear to be a few 1/4 inch phone jacks and also RCA type jacks on phenolic insulators, which is a way to reduce ground loops. (Could be Nuvistors or transistors too but I'll stick to the RCA guess) The round green transformers on top are about the right size for line-levels, and the round thingy on the far right might be another connector or possibly an old style power transistor. Could be some additional connections under it that we can't see. Also another couple of things going on, there's a nicely done C to SO-239 minibox adapter, and

extension cables for external meters which appear to be connected via those blue wire nuts on either side of the rear of the front panel. There seems to be an endless variety of custom modules and hang-on gizmos for these radios, saw quite a few of these unknowns a few years back when perusing the piles at Fair Radio.

Date: Sat, 7 Aug 2004 16:14:24 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: [R-390] Ovens and Synchronization

Lets talk about the crystal ovens in the 390A. I seem to remember it is common practice to not use them anymore for the sake of longevity. My R-1051 experience is that one can't do without the oven in the Frequency Standard because without the oven the stability the 1051 is known for goes down the toilet. The crystal in the oven was designed to work at a specific temp to be stabile. There is a nice flat spot in the curve up around 85C

Is this not the same with the crystal deck, calibrator xtals and maybe to a lesser degree the PTO in the 390A?

Looking in the Y2K manual it seems recommended to fire them up a few hours before an alignment but then go back to the practice of turning them off for our day to day ops....seems that would negate the alignment. Wouldn't one be better off doing the alignments in the state one would normally operate the radio?

I am at the point in my R-390A ownership that I am starting to get technical with the 390A now that time presents that opportunity. As a result I guess I'll be asking some of the typical beginner questions.

Coming to a post near you: How does one go about putting a radio back together where everything is totally out of mechanical and electrical sync!

I pulled the whole IF deck apart for complete cleaning....4 years ago. No problem on getting everything back together just need some starting point for getting everything re-synchronized. It was a nasty blue striper...won't know it once it's complete....it cleaned up very nicely. The gear train is separated from the IF deck chassis and all that is separated from the xtal deck.

Gear train works like a swiss watch....love that Mobil 1

Date: Sat, 07 Aug 2004 18:20:08 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Ovens and Synchronization

The crystal ovens in the R-390 and the R1051 are different beasts. The 1051 oven standard is designed like a modern OCXO. The crystal inside it is cut so it is very stable at the oven operating point. The oven in the 1051 is designed so it is very temperature stable. Unfortunately none of this is true of the crystal oven in the R390 series of radios. From talking to the guy who did the design of that part of the radio it was known to be a stop gap solution at the time. The main reason for it's inclusion was a requirement for modest stability at temperatures well below freezing. The crystal oven in the R390 swings in temperature over something like a 10 degree C range in normal operation. A fairly normal room should be stable within a degree or two for quite a while. Since the oven cycle time is in tens of minutes the oven is definitely a poor choice for basic temperature stability. The crystals in the R390 are not specifically cut for oven operation.

This is a good thing since we don't turn the ovens on. In order to optimize them for an oven environment you cut the crystal so it's upper turn temperature is approximately at the oven temperature. Since there is a tolerance on the cutting process it is hard to do anything more than get them close to the oven temperature. When you cut the crystals this way a side effect is to make their performance at room temperature worse than a normal crystal. The oven on the PTO is kind of the same thing. It does not cycle over quite as wide a range as the crystal oven, but it does cycle further than your room probably does. The issue with the PTO is coil form shrink. The hotter you run the PTO the faster the master coil shrinks. Eventually the coil shrinks enough that you can no longer get the PTO on frequency with the correction adjustment. There is an article in Electric Radio back a few years that goes into all this stuff. Strange but true I worked for the guy who is quoted in the article. At the time I worked for him he would just barely admit working on the PTO's ....

Finally, when you turn on the ovens on the R-390 you almost double the power in the radio. The oven in the R1051 is not as big a power hog as the ovens in the R390. When the heat in the radio goes up by that much the whole radio will get hotter. Unless you run some kind of fans to cool everything the result will be parts that run hot and wear out faster. Of course the fans would cool off the ovens which draws more power which heats up stuff more ... nasty cycle. One note - The ovens we are talking about are the ones on the crystal oscillator deck and inside the PTO. The plug in oven that has the calibrator crystal in it does not get turned off by the "oven on/off" switch. The plug in oven does do a good job, it does not pull a lot of power and it should be left running.One of the neat things you can do with a bunch of R390's (like say you just picked up a dozen of them ...) is to sort the crystals in the crystal oscillator deck. The closer you get to a matched set of crystals the less you will have to adjust the radio each

time you change bands. I still think they should have put tuning caps on the crystals. The reason they didn't : " Well we didn't do it because it wasn't in the spec". Darn Ft. Monmouth.

Date: Mon, 09 Aug 2004 11:02:42 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Ovens and Synchronization

> Lets talk about the crystal ovens in the 390A.

Ok, let's do.

>.....common practice to not use them anymore for the sake of longevity...

Yes, a number of people turn the ovens switch off. I seem to remember the ovens being described in the manual(s) as provided for *very* difficult temperature environments (like unheated places in the arctic.)

>My R-1051 experience ... without the oven the stability the 1051 is known
>for goes down the toilet.

But, but... do you NEED 10 cycles dial accuracy??

> The crystal in the oven was designed to work at a specific
>temp to be stabile. There is a nice flat spot in the curve up around 85C

The crystals may well be quite stable at whatever temperature they are at, but not as accurate as at the rated temparature. If the crystal temperature wanders up and down (with ovens off), the frequency may drift enough to cause trouble in *SOME* modes of operation: for instance mulitplexed RTTY reception with very narrow shifts. Do you do that with your receiver?

>Is this not the same with the crystal deck, calibrator xtals and maybe to a
>lesser degree the PTO in the 390A?

Yes, it is likely the same.

>Looking in the Y2K manual it seems recommended to fire them up a few hours
>before an alignment but then go back to the practice of turning them off for
>our day to day ops....seems that would negate the alignment.

I presume you mean run the ovens for a few hours before an alignment. I

would suggest you turn them off, leave them off, and do the alignment after a warmup with the ovens off. It might change the frequency alignment of the PTO a bit. But I would expect any such change to be well within the adjustment range of the zero set mechanism. If the end point spread changes too much, that is another story.

> Wouldn't one be better off doing the alignments in the state one would
> normally operate the radio?

Yes, I agree with this.

>I pulled the whole IF deck apart for complete cleaning.... I think you mean the *R*F deck.

>Gear train works like a swiss watch....love that Mobil 1

'Sounds like you are well on the way to having a better-than-new radio.. keep going!

Date: Mon, 9 Aug 2004 11:16:47 EDT
From: Llgpt@aol.com
Subject: Re: [R-390] Ovens and Synchronization

My 3 cents (inflation ya know) I don't use the ovens period! I have seen many stick in the on position and ruin a good PTO. Wally Chambers K5OP suggested many years ago to clip the wires and tape them to avoid the switch being "accidentally" turned on by a well intentioned individual.

Date: Mon, 9 Aug 2004 10:26:29 -0500
From: "Laird Tom N" <LairdThomasN@JohnDeere.com>
Subject: [R-390] RE: Ovens

From all that I have read over the years, I agree; don't use the oven. For the semi-purest. You can buy crystals for HR202 from mhelectronics that are designed for room temp. Although, the consensus is "why spend the extra money".....

Date: Mon, 09 Aug 2004 20:54:54 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] RE: Ovens

The calibrator crystal would be a bit tough to do as a "stable at room temperature part". The 200 KHz frequency is low enough that you can not do it as an AT cut in that holder. The HR202 oven is actually a pretty good little unit. It will hold a couple degrees during fairly major external changes. Since it's a plug in it's easy to replace if it runs away. It's not all

that different than the units you wold see in the older two way radio sets.

One interesting thing you could do would be to replace the first LO crystal with a room temperature unit and then replace the calibrator crystal with a cell phone TCXO and a digital divider. You would have a more accurate calibrator. What ever you did would fall into the category of easily reversible modification if it was all in a replacement oven plugin.

Next step up would be to phase lock the first LO to the TCXO.....As you pointed out "why spend the extra money".

Date: Mon, 9 Aug 2004 21:54:35 -0400
From: "Michael Murphy" <mjmurphy45@comcast.net>
Subject: Re: [R-390] RE: Ovens

I think the calibrator in the ART-13 uses an old FT-243 pin spaced 200 kHz crystal. No oven there! Plus they definitely are aged. My guess is that Fair Radio should have some. That ought to get you within a couple of kc after zero beating WWV! Bob was starting to talk about SL-cut crystals which are normally required to hit frequencies much below 1 MHz and are somewhat less stable than AT-cuts, hence the requirement for ovens etc..

Date: Mon, 09 Aug 2004 22:08:49 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] RE: Ovens

Well if we are going to get into the "pick one up while they are still available" thread ..... Back when I was in school surplus stuff was a lot more common than it is today. This was just after the invention of dirt. R-390's sold for $150 to maybe $200. Any way ... I wandered into a surplus house in Indianapolis Indiana of all places and here in front of me is a General Radio frequency standard. The thing was based on a double oven enclosure around a bar (not a piece a bar) of quartz. The chunk probably weighed half a pound. The whole thing fit nicely into a relay rack and had more than a couple of tubes. I suspect it was an orphan from the Crane Navy Depot. Talk about the perfect item to calibrate your R-390 with. Great big X cut bar standard. Here's the standard that was the standard for most of the 1940's and early 1950's. I wish I had picked the darn thing up. As it was I bought a model 15 teletype and checked it as luggage on the flight back home. It came out ok ...

Date: Sat, 21 Aug 2004 21:21:18 -0400
From: Dan Williams <drw@tennis.org>
Subject: [R-390] New to the list / My R-391 & those ELUSIVE Tools!

Greetings, Name here is Dan - KG4WTL I am the proud owner of Collins R-

391 #169, it resides with me in Chattanooga, TN Why are the back panel parts Soooooo hard to come up with! ALL of mine are missing. Need both Tube Pullers, the Screwdrivers, and the Wrenches. Also still need the spare fuse cover.
The Huntsville, AL Hamfest netted me a Power plug and an Antenna C to BNC
adaptor today. I have been slowly restoring this old beast, been a long hard road! Have put 2 reproduction tags on the front (why are the tags always missing!) 2 new Reproduction top and bottom covers Reproduction covers on back. This receiver came out of an old out building and had been sitting on a pallet with a TON of other vingage STUFF, I brought it home (it was free for the hauling (almost soiled myself LOL)) and spent 6 hours cleaning it up inside and out, checked it over and plugged it in... (keep in mind it had been sitting in an unheated building for over 10 years!) and it worked! This is a testamonial to how rugged these radios really are, this one is a real performer, it will outdo my kenwood TS-520, my Yaesu FT-101, it runs circles around my Harris RF-350K!

Now, WHERE CAN I GET THOSE DARNED ELUSIVE TOOLS!?!?!?!????!!!!

Date: Sat, 21 Aug 2004 22:49:43 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] New to the list / My R-391 & those ELUSIVE Tools!

Well the tools are missing for a very simple reason. The first tech to get a hold of he radio who does not have a set grabs them and puts them in his tool box. The R-392 comes with the tools inside the bolted shut radio outer case. This makes the tools hard to snag without a bit of work. Most of these radios come out of the military with the tools still in place. Few of them make it past their first ham owner with the tools still there. I certainly never let a set get past me ....The tube pullers are fairly easy to find. They show up at hamfests and on auction sites from time to time. If you are not to particular about color there are places like Contact East that will sell you wrenches that are approximately correct. Good luck finding original wrenches
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Date: Tue, 07 Sep 2004 08:00:48 -0500
From: Jerry K <w5kp@direcway.com>
Subject: RE: [R-390] FW: [Hammarlund] need r-390a help

Chuck Rippel, WA4HHG. See www.r390a.com for details. Expensive, but he is the acknowledged master, and the best there is. Your receiver will be absolutely perfect when you get it back, but he usually has a significant waiting list.

Date: Tue, 07 Sep 2004 13:52:06 +0000

From: jonandvalerieoldenburg@att.net (Jon Oldenburg)
Subject: RE: [R-390] FW: [Hammarlund] need r-390a help

Chuck's work is great, but he is often quite busy. A friend here has used MILTRONICS, Rick Mish. I have spoken with Rick on the phone once or twice when I was stalled in a project, he is good also. He has a web site and offers various levels of repairs and restorations.

Date: Tue, 07 Sep 2004 10:48:18 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: RE: [R-390] FW: [Hammarlund] need r-390a help

(On finding someone to work on an R-390A): Howard Mills, long regarded as the master of the 75A-4 and other "Black Collins" radios, is now doing R-390A's also. "significant waiting list" also applies with Howard. It has been rumored that some of the R-390A's at Howard's place will emerge with black panels.
"Howard Mills W3HM" <w3hm@nfis.com> 304 876 6483

Date: Sat, 18 Sep 2004 12:53:09 -0400
From: "Don Heywood" <wc4g@knology.net>
Subject: [R-390] R390 Back Panel Outputs Corrected Copy

I have just received another R390 to restore for my collection (like we need more). On the back panel just above the pin straighteners and near the tool holders are two added female BNC connectors which were professionally added. Penciled near one is "PAN OUT" and the second has X UA IN with grease pencil. This radio reportedly came from an AFB in TX and was used in a "special" area according to the seller. I have an idea about PAN OUT, but could someone explain what the X UA IN note could mean. The cables are connected as follows: PAN OUT goes to the RF deck thru RG-58 to an SMA connection near the back left green screw.

X UA IN goes thru a small cap to a BNC TEE with the Calibrator output.

Date: Sat, 18 Sep 2004 12:57:22 -0400
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] R390 Back Panel Outputs

The XUA is a Rhode & Swartz (sp) synthesizer. This would appear to be a mod to stabilize the receiver. BTW, do you want an XUA??

Date: Sat, 18 Sep 2004 15:34:00 -0400
From: "John KA1XC" <tetrode@comcast.net>
Subject: Re: [R-390] R390 Back Panel Outputs Corrected Copy

PAN OUT = Panadapter Output, meaning it is a pick off for an input to a panadapter or spectrum analyzer, probably from a variable IF or fixed 455 KC IF.

X UA IN = eXternal or auXilary Unbalanced Input, meaning that it is used as an RF input to the receiver, probably at a high impedance point.

Be careful with this one, if it is directly connected to the calibrator input to the RF deck then it will be HOT with B+ (one of the quirks of the R-390).

Date: Thu, 25 Nov 2004 20:58:33 -0500
From: Bill Abate <wabate@dandy.net>
Subject: [R-390] Schematic

I found a pdf of the R-390A manual on the net but the schematic is cut up into 8 1/2 X 11 pieces. Does anyone know where I can DL a full size version of the two schematics?

Date: Fri, 26 Nov 2004 13:51:49 -0500
From: "John KA1XC" <tetrode@comcast.net>
Subject: Re: [R-390] Schematic

Check out James A Moorer's R390 page at his Jammin Power site, there are full size hi-rez schematics in the PDF file named TM-11-856A.wide.PDF which is the second one from the bottom in the R-390 literature section. It's a 32MB file but if you like R-390s then your used to big things. The schematic looks good even at 400% size!

http://www.jamminpower.com/main/r390.jsp

IMHO James deserves a big thankyou from everyone in the boatanchor community. His freely available high rez manual scans are obviously a labor of love and its his own dime hosting the bandwidth for all those huge files too.

Date: Sun, 26 Dec 2004 17:40:58 -0500 (EST)
From: John Lawson <jpl15@panix.com>
Subject: [R-390] 390() vs 390(A)

I have a nice old girl of a 390 that I purchased about six months ago. It needs a good chunk of TLC and some elbow-grease, but it's basically a working radio and it's in daily use. However, it arrived sans it's rating plate, and I have yet to do more with it other than hook it up and listen to it. I have most (if not all) of the pertinent docs and manuals, paper and CDROM, and this is my 3rd R-390 in the last 30 years.

My specific question is: is there a quick-and-dirty way to determine if one

has a 390() or 390(A) from examination alone? I'm just not up on the differences enough to figure this out all by my lonesome.

I'm just in the last stages of restoring my R-388/51-J [Collins, sn 258], and when the front panel comes back from Howard Mills I'll turn my attentions to the 390.

Date: Sun, 26 Dec 2004 15:56:47 -0700
From: Damon Raphael <w7md@gci-net.com>
Subject: Re: [R-390] 390() vs 390(A)

Check the position of the Antenna Trim control. It is top center on the 390A and middle row on the right on the 390

Date: Sun, 26 Dec 2004 17:00:18 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] 390() vs 390(A)

The R-390A/URR vs R-390/URR question is answered easily. Where is the antenna trimmer control on the front panel. If it's top center it's an R-390A. On the R-390/URR it's on the right side of the panel about half way up. It's that easy.

Date: Sun, 26 Dec 2004 18:18:52 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] 390() vs 390(A)

As we approach the new year, it is only appropriate that we, once again, contemplate the differences of the R-390A and the original version, the R-390, referred to in certain circles as the "non-A" for clarity's sake.However, this appelation tends to offend some on the basis of logic, and possibly some deep existential sensibilities. Further influencing the situation -- the two receivers are very similar -- but very different -- simultaneously.To tell the difference (given no tag or "nomenclature plate") the easiest thing to spot is the position of the antenna trimmer. If it's top dead center of the panel -- it's an "A". If not, not. There are some differences on the back panel -- the "A" has two terminals for the power cord with a metal cover if it isn't missing. The R-390 has a round, four-pin connector for a removeable cable. There are a number of other outside differences. While the conversion scheme is basically the same, there is not a single module which is directly interchangeable. While some tubes are in common -- like twin 26Z5W's for rectifiers, the famous 3TF7 ballast (if not subbed out), much of the tube lineup is different and the overall tube count is higher, including a pair of 6082 regulators in the R-390.

One of the differences of primary interest to most -- The R-390 has L/C filtering, no mechanical filters. The R-390A has four mechanical filters. In

the past, that has made the "A" version more popular -- and the fact that several times more "A"s were manufactured over the years from the early fifties, through the late 60's and a few in the 80's. R-390's were made in the early 50's, ending in '53, as I recall. There is a hybrid variant -- R-725? -- basically an "A" with a non-A IF deck.

There is also the R-391, which is basically the same as an R-390 with an electromechanical autotune mechanism added. There is an extra 8-channel knob, little window showing the current channel and special MC and KC knobs with locking keys. So ... which do you have? What are the other three?

Date: Mon, 27 Dec 2004 13:46:11 -0500 (EST)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: Re: [R-390] 390() vs 390(A)

Don't forget the R-389, which is about as much alike as it is different. The frame is very similar to the R-390 frame (maybe the same, I haven't looked real closely yet), and uses the same IF, AF and PS. Early R-389's used a PS with different output B+ wiring. Supposedly these were retrofitted so that PS's were compatible across the R-389/R-390 and R-391 (MOD-1, I think). The VFO and RF decks of the R-389 are very different, and there is a rectifier stack for producing DC for the R-389 tuning motor. Oddly, the R-391, which also has a DC motor for tuning, doesn't have the rectifier stack. There probably wasn't room, if I had to guess.

Date: Mon, 27 Dec 2004 14:29:10 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] 390() vs 390(A)

>Don't forget the R-389,The VFO and RF decks of the R-389 are very different,

An understatement!

>and there is a rectifier stack for producing DC for the R-389 tuning motor....

The auto tuning motors in the R-391 take MUCH more current than the tuning motor in the R-389. In the R-391, both the KC and MC setting mechanisms are moved by (separate) Motors and associated position setting mechanisms. The DC supply for that is external to the radio, and if I remember correctly, is about the same size as the radio itself. In the R-389, only the single tuning knob is moved, so the mechanical work (torque times rotations per minute) is much less. There is no presetting of frequencies in the R-389. The motor is there to assist the operator in

moving the many many turns (up to 50) from one spot in the frequency range to another.

Date: Mon, 27 Dec 2004 17:46:34 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] 390() vs 390(A)

> The auto tuning motors in the R-391 take MUCH more current ..... Not so .. only one motor in the R-391. I have two of the beasts. Each one has a single motor made by Hamilton Beach -- and when they're running, it sure sounds like a Mixmaster run amok. (OK, Mixmaster is Sunbeam or whatever.) The motor is located behind the panel at the lower left and drives a single shaft with three worm gears on it that runs horizontal across nearly the entire lower front. There are five major components -- The MC and KC positioners, the control module , a sealed relay, the single motor and an essential but not so major channel switch. The MC and KC positioners are identical except that the MC one has a detent on it. The Control Module includes a couple of wafer/rotary switches (some other stuff) and the indicator wheel with "1" through "8" on it which shows through the hole in the panel. There is a rather involved description in the manual of the logical steps. The whole cycle is triggered when the setting of the channel switch is changed from equal to the control module indicator to not equal. There are mating worm gears for the two positioners and the control module. The positioners consist of a stack of disks with indentations and mating spring-loaded pawls -- look like the guts of some kind of combination lock -- or maybe an old mechanical adding machine. Basically, there are 7 "memories" and one extra. When you manually tune the receiver (keys must be loosened/unlocked), you are changing the MC and KC settings for the channel that's showing in the window. One rule is to never operate the autotune with the locking keys unlocked. There is no electrical connection between the autotune system and the radio. The whole business meshes up to a standard R-390 RF deck. The aluminum casting behind the panel is special to provide mounts for the autotune components, motor gearing, plus protrusions in the casting with sintered bronze bearings ("oilite") for the worm drive shaft. In an R-390, there's mostly open space there. Originally, they hired Rube Goldberg to design the thing, but he couldn't work in such a small space. No room for the sliding pond, bass drum, pulley system -- let alone the chicken. ;-) The R-391's have the same round 4-pin power connector on the back panel as the R-390. Two are the AC, one ground, and the fourth one is for 24 vdc for the autotune motor. As I recall, it needs 3 Amps continous, but surges to something like 5, so a heavier supply is needed, and 7 or so isn't a bad idea -- maybe necessary. It may need more current if the disks and pawls are gummed up, the contacts in the sealed relay are sticking, and the thing tries to tune past the 10-turn stops and wreck the RF deck. It's possible that the original power supply was rated higher to provide DC to more

than one R-391, or an R-391 and a DC malted mixer. Anyway ... one motor -- whole bunch of other stuff, but just one motor.

Date: Mon, 27 Dec 2004 18:05:56 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] 390() vs 390(A)

Thanks for the clarification. I had some mis-conceptions. All the more reason to own one so I can learn the beast!

Date: Mon, 27 Dec 2004 19:06:47 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] 390() vs 390(A)

Well, if you get one, YMMV. Odds are the autotune doesn't work -- and it's not a good idea to try it before overhauling the thing, no matter how tempting. Most owners of '391's use them like 390's and have never powered up the autotune. So, they've been sitting for ages. The switch contacts in the control unit are probably oxidized, and the stack of pawls -- they're like a sandwich -- are all glued together by the petrified lube that is needed to be super-slippery for the thing to have snowball's chance to work in the first place. Also, the thing probably needs to be re-synched -- after it's overhauled. It is impossible to walk this gizmo through manually in steps, though you can put a bristol wrench in the synch adjuster, lock the knobs down and rotate it. However, it's not a complete simulation as the relay and control unit aren't doing their things. It's all hard-wired together -- including the relay -- no socket. So, having one offers no assurance of comprehending how it's supposed to work, let alone master. You have to walk through the manual explanation, and that's lacking. Actually, the equivalent manual section for the R-105 (ARR-15?) does a better job. The mechanisms are similar. The best procedure is to open up whatever you can, degrease, clean contacts, re-lube, see if things move, set the synch. Then, make darn sure that the channel selector is set to the same number as shows in the window. Lock the locking keys down tight.

Then apply 24 vdc to the 4th pin -- use an outlet strip to cut the supply if there isn't a handy switch. Then change channels --which will start the show. Even if it's working, you'll be startled at the noise and the gnashing of gears, slamming and banging. It is a wild experience the first time you see a '390's knobs turning by themselves. Both turn, then one stops, then the other turns. If it was past the point, it rewinds. After what seems like a few minutes (or hours), it will stop at some frequency. If it runs amok and tries to modify/remachine the 10-turn stop (to infinity), cut the DC. The thing's a puzzle -- what's that saying? -- an enigma, wrapped in a paradox -- never could get that right, either. There was supposed to be an R-391A, but there wasn't. I suspect it was partly because by the time they got around to

it, there was some field experience with the first one. Also, it needs the beefier geartrain of the original item. It's a good idea to take an 83 mg. aspirin about an hour before you start -- or a couple a' good snorts. It's scary. After we spend all the time cleaning, lubing, replacing broken clamps, synching, aligning, recapping, meditating over the ballast tube considerations, refinishing panels, re-stuffing plugins, etc. we have a tendency to treat these things with some delicacy and respect. The autotune mechanism doesn't know from that.

If it isn't working right or not synched up, it may well try to tune your '391 into the '389 range -- or to 2.4 ghz -- or maybe even 5.8 to listen into the new cordless phones. Yup, it'll wreck yer deck -- if the vibration doesn't kill half your tubes. (Make sure the filament in your ballast tube is nice and flexible before powering up.) Poll -- how many of you guys have R-391's with working autotuners? How many with non-working ones? How many unknowns? Actually, I think it was Paul who rebuilt his '391, right?

Date: Mon, 27 Dec 2004 21:40:13 -0500 (EST)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: Re: [R-390] 390() vs 390(A)

> Well, if you get one, YMMV. Odds are the autotune doesn't work -- and it's
> not a good idea to try it before overhauling the thing, no matter how tempting.

I agree!

> the knobs down and rotate it. However, it's not a complete simulation as
> the relay and control unit aren't doing their things. It's all hard-wired
> together -- including the relay -- no socket.

Fortunately, the two mechanical tuning mechanisms and the control relay in the center are three independent units. You can drop the front panel, remove the KC and MC mechanical tuning units and just work on the control relay alone until it and the motor appear to be working properly. The KC and MC units are nearly identical, but one is tapped for another screw, if I recall - I forget, but I think it is for the MC indent lever.

> So, having one offers no assurance of comprehending how it's supposed to
> work, let alone mastery. You have to walk through the manual explanation,
> and that's lacking. Actually, the equivalent manual section for the R-105
> (ARR-15?) does a better job. The mechanisms are similar.

It isn't too horribly bad, as long as you understand the failure modes (some of which you mention here).

> The best procedure is to open up whatever you can, degrease, clean contacts,
> re-lube, see if things move, set the synch. Then, make darn sure that the
> channel selector is set to the same number as shows in the window.

Personally, I'd suggest starting with the motor and relay first. You don't need to pull any wires. Just drop the front panel, pull the two tuning units from the KC and MC side, then see if you can use the channel changing to do something (anything) reasonable with the motor, relay and channel indicator. Put the tuning mechanisms back in only after ensuring that the slip clutch in it is free. From memory, I don't recall if you can do that easily. But making sure you've cleaned the whole mechanism of all crusty grease is a good step. I soaked mine for a week each in kerosene. If the slip clutch does not slip, then you will discover a failure mode of the 391, which is that either the gear driving the long cross shaft will strip (if the oilite bearings are loose enough), or you will start breaking things in the RF deck or both. If the slip clutch does slip, then you're a whole sight safer, because the unit is designed to slip to a) prevent damage, and b) allow for the tuning to work (it tunes both KC and MC down to the low end 10 turn stop, and the slip clutch starts slipping in each tuner unit - that happens in association with the control relay to "reset" the tuning to a known spot - at the low end of the 10 turns).

I can't recall exactly which cam it is, but if the KC 10 turn stops aren't aligned, then the mechanical tuning can drive the cam to a point where the clamp may break. I believe if the stops are correctly set for both the KC and MC mechanism, that there isn't anything the autotune can damage in the RF deck.

> Poll -- how many of you guys have R-391's with working autotuners?

Yup - got mine working - am working on another one. Basically, if your RF deck 10 turn stops are in alignment, and if the slip clutches are free, you can't easily damage your 391 autotune. You'll know for sure if your slip clutches aren't free by the horrible gear grinding noise as the motor gear tries to strip the long shaft gear. Paul

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Date: Mon, 27 Dec 2004 21:44:28 -0500
From: "Jim Temple" <jetemp@insightbb.com>
Subject: RE: [R-390] 390() vs 390(A)

I have a beautiful R-391, s/n 379, which I believe is one of the last made. It has the RF deck cans that are of the smaller dia slugs in the lowest bank that the later R-390's have. Since I obtained this unit, I have only tested it for power and have not got into restoring it yet. Any comments or advice

about the autotune mech will be greatly appreciated. Looking forward to seeing more scoop about the autotune mechanism.

Date: Sun, 26 Dec 2004 22:50:35 -0500
From: "Michael Murphy" <mjmurphy45@comcast.net>
Subject: Re: [R-390] 390() vs 390(A)

Before we leave autotunes: I have owned an ARR-15 /R-105 RX and an ARC-2 XCVR and they both had very nice (and similar) autotunes and tube lineups for that matter. My guess is that they were sisters; contemporary mid 40's designs. The late 1930's autotune in the ART-13 takes the cake though. When I set that thing loose, it is a wonder to behold. I have a converted SCR-522 aircraft rig which had autotune, but I ripped it out in favor of local controls. Anybody ever fired up one of those VHF autotunes with the 832's and butterfly capacitors spinning up??

Date: Tue, 28 Dec 2004 08:26:22 -0500
From: "kslu" <kslu@prodigy.net>
Subject: Re: [R-390] me radio ist bloken

Before shipping it off to someone it's probably worthwhile to do a few checks yourself. If Chuck completely restored it, it's unlikely to be a cap or resistor. I would pull the tubes in the audio section and make sure the pins are clean when you reinsert them. Then check all interconnecting cables in the same manner, twist and pull them off, check to see if there is any corrosion, and put them back on firmly. Depending on how many hours you've played the set since its rebuild, I'd just replace the audio tubes. Sending it off to anyone is going to cost some big change. If you don't have a tube tester, even a cheapy available at any hamfest or auction will at least give you a go/no go on the tubes. Also, a squirt of appropriate cleaner/lubrication on the switches wouldn't hurt. Good luck.

Date: Sat, 1 Jan 2005 17:11:13 -0800
From: "Craig McCartney" <craigmc@pacbell.net>
Subject: RE: [R-390] wiring harness for R-390A

American trans Coil had some for sale in the recent past; they were fairly complete as I recall. The URL is: http://www.atc-us.com/ At the moment I get no response there, however. I think I read that someone on the list (Barry?) took over from them. Perhaps he or someone more knowledgeable will jump in and help you.

Date: Sun, 02 Jan 2005 01:16:14 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] wiring harness for R-390A

You rang? My ears were burning .. ;-) Yes -- I have the ATC stuff at my place including the wiring harnesses. Saw the original post and went to look it up on the ATC site, but apparently it's down. I don't have the pricing handy, but they're fairly cheap. They include all the module plugs, but were clipped on the panel side -- no controls or switches as I recall. They're in pretty good shape. Let me know if that will work for you.

Date: Mon, 03 Jan 2005 08:48:07 -0800
From: Leigh Sedgwick <bipi@comcast.net>
Subject: [R-390] R-390 Videos - Subject Listings

A few days ago I asked if anyone had subject listings for the four R-390A videos plus the two R-390A addendum videos. Turns out I found the original subject listing that was supplied with the four videos and Floyd, from Hi-Res Communications, sent me a copy of the subject listing for the 2 addendum videos (big thanks Floyd - great service!). So I wanted to set the record straight and let people know that, indeed, subject listings are supplied with these fine videos. Thanks to all the replied to my query. Happy New Year to all!

Date: Mon, 3 Jan 2005 20:19:31 EST
From: N4BUQ@aol.com
Subject: [R-390] Need cable clamps

Anyone know where I can get some replacement cable clamps for an R390A? Almost every one on my latest rebuild have disentegrated. The aluminum oxidized(?) and the rubber inserts just flaked to almost nothingness. I think they make these for the aircraft industry, but not sure where I can get 3 or 4 nor am I sure of the size(s) I need.

Date: Mon, 3 Jan 2005 21:04:54 EST
From: Llgpt@aol.com
Subject: Re: [R-390] Need cable clamps

I believe they are called "Tinnerman" (spelling?) Clamps.

Date: Mon, 3 Jan 2005 18:16:32 -0800
From: "Brian Bjerkelund" <k7ais@msn.com>
Subject: Re: [R-390] Need cable clamps

I was an AF aircraft maintenance tech in a prior life and we called them Adel clamps.....not sure about spelling.

Date: Mon, 03 Jan 2005 18:25:38 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Need cable clamps

Brian, me too they are known as Adel clamps by Tinnerman. Hank
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Date: Tue, 04 Jan 2005 11:33:26 -0500
From: Sheldon Daitch <sdaitch@ibb.gov>
Subject: Re: [R-390] Need cable clamps

See http://www.racerpartswholesale.com/long24.htm for Adel clamps.
For Tinnerman, see: http://indexfasteners.com/product/tinner/pdfs/21-1.pdf
This might load faster, for other Tinnerman style clips:
http://indexfasteners.com/product/tinner/tinner.htm

Date: Tue, 04 Jan 2005 10:15:52 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] RE: Tinnerman Clamps Size

Any one ordering the Tinnerman clamps please specify the. They are small #2, Medium #3 and large #4. The number is stamped on the clamp under the Tinnerman name. 5 for $5.00 or 3 of each size for $10.00 mailed. NOS pliable rubber
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Date: Tue, 04 Jan 2005 14:24:42 -0500
From: N4BUQ@aol.com
Subject: Re: [R-390] RE: Tinnerman Clamps Size

Does anyone know what sizes are needed for the R390A harness? The ones in my latest radio disentegrated so badly that there wasn't anything much left of them to tell sizes. I don't know what size opening a #2, #3, or #4 will hold so I'm still not sure what to order. I assume a clamp capable of about 3/4" diameter would probably work, but the harness is different sizes at different places so there may be more than one size involved. I could get the assortment, but if I need four of a given size, then...

Date: Wed, 5 Jan 2005 01:21:01 -0600
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] Autotuners

"The worm drive goes through several sintered bronze Oilite bearings. These
are porous bronze bushings that were permanently lubricated. But, "permanent" generally assumes for the "life of the tool" or whatever, not necessarily 50 years going on another 50. Those bearings were pre-soaked in a special lubricant -- but I don't know what."

Sintered bronze is porous, but you can't relube it by soaking. You need to

pull a vacuum on it while it sits in a jar of light oil. But first you have to clean the old, gummy oil from the pores with the usual solvents and vacuum, then heat to evaporate the solvent. OTOH, soaking the bearing in solvent, heating it a bit (no smoke!) and then soaking it in, say, 3-in-1 oil will work for a while. The problem with soaking in air is that the air in the pores is not displaced, so not much can soak in.

Date: Sat, 8 Jan 2005 16:39:47 -0500
From: "JD Delancy" <w1jd@drix.net>
Subject: [R-390] R390a Refurnish

Who has the details (email, address, phone, etc) for the gent that does R390a refurbishment (Rick something)? Is he the only one? I remember hearing of a fellow in Ohio a couple of years ago, same one?

Date: Sat, 8 Jan 2005 17:20:33 -0800
From: "Bruce Hagen" <bhagen@msn.com>
Subject: [R-390] Re:Rick Mish

Rick Mish is in Toledo, Ohio at
36 E Manhatten Blvd 43608.
Company name is Miltronix. Great tech. Friendly and helpful.
Knows the product well.

Date: Sat, 8 Jan 2005 17:04:48 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] R390a Refurnish

Well there is Rick Mish, Chuck Rippel and Walter Wilson. Quite a selection to choose from. Maybe you can write a bid spec and bid it out! HA!

Date: Sat, 08 Jan 2005 18:37:21 -0500
From: "COL George D. Eveland, USA" <george-eveland@us.army.mil>
Subject: Re: [R-390] Re:Rick Mish

http://www.dxing.com/r390/mish.htm

Rick's website is above. I've got one of his reman'ed R-390 Motorola "project" radios--absolutely fantastic. Last time I talked to him, he was working several others--had two Collins non-A's.

Date: Sun, 9 Jan 2005 21:50:36 EST
From: N4BUQ@aol.com
Subject: [R-390] Silkscreening a back panel

Has anyone on the list ever tried restoring a back panel's lettering? I have

one that I'd like to scrub clean, have it alodined, and then the lettering redone. It has some corrosive streaks and spots that would look so much better if refinished. I hate to lose the lettering, but I don't know how to reproduce it.

Anyone have a "do-it-yourself" silksreening kit? By the way, I managed to straighten the back panel I have that was dented so badly. Just some strategically placed wooden blocks, a protective sheet, and a regular hammer did wonders for it.

Whatever dented left two small marks that won't come out, but it's hard to tell it was ever damaged. Now if I could get the other panel looking good too...

Date: Mon, 10 Jan 2005 16:16:03 -0500
From: "richard may" <rtmay@htn.net>
Subject: [R-390] Cleaning sub-chassis

Wonder if anybody can give me some tips on cleaning an R-390A sub-chassis. I want to clean a crystal osc module. I think if I remove the oven cover, the T-207 cover and remove the crystals, I can give this thing a bath.

I remember reading somewhere how this is done but can't find the article. The inside is pristine but the outside is really dirty. Any tips?

Date: Mon, 10 Jan 2005 17:12:51 -0500
From: JMILLER1706@cfl.rr.com
Subject: Re: [R-390] Cleaning sub-chassis

I wouldn't recommend a water bath, no telling what water will do to materials when absorbed. Just my personal preference. I use Q tips and "simple Green" diluted, then "Big Bath" degreaser spray, also removes moisture. You hear of people "bathing" or "dish washing" their old radios, but that's not my cup of tea.

Date: Mon, 10 Jan 2005 20:25:06 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Cleaning sub-chassis

There are three items on a 390A that probably are not a good idea to drown in water. The crystal enclosure, the PTO, and the plug in crystal oven. All have insulating material in them and will be a bear to dry out.

Opinions differ on the value of water dunk cleaning the rest of the radio. Personally I would advise against it. The metal chassis parts and

disassembled gears are fine to scrub and wash all you want. The modules full of electronics are not going to take a soak in water very well. You will not kill the radio this way - they have sat out in the rain and survived. It just doesn't improve them any. Most of the dunk cleaning was done back in the days of big open tanks of solvents. The EPA frowns on almost all of the things that we once used for this kind of stuff. If you are a part of the world where Freon or Tri-chlor is still legal then dunking might be a reasonable approach. I still would not dunk the stuff with insulation in it though. WD-40 or alcohol on Q tips seems to be the most common way to clean the modules. With the WD-40 you can get residue and the alcohol often contains water. In both cases less is better. Blowing the whole assembly off with compressed air is a nice touch once you are done. It will get trapped solvent out from under stuff and you have to get pretty wild before you will blow parts out of an R390 with an air hose

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Date: Mon, 10 Jan 2005 20:33:08 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Cleaning sub-chassis

I spray em down with a solution of Simple Green or 409 and work it around with a brush then wash it off with the water hose on fairly low pressure. You can then rinse it off with Distilled Water to deionize everything. Needs to be rinsed real good. Then lay the thing out in the bright sun for a couple hours in a dry spot. I guess on could also blow it out with a blow dryer and get the whole chassis pretty warm to bake out any moisture. Treat any contacts to some deoxit and reassemble. Works for me...

Date: Mon, 10 Jan 2005 21:48:07 EST
From: RIKKA3TXR@aol.com
Subject: [R-390] Cleaning chassis suggestion

RE;Cleaning chassis.... I'm working on my first ' 390a and was stumped with the same problem, tried every cleaner I could find, tried them ALL. My wife (N3MAR) handed me "Mr. Clean Brand" scrub sponges and a spray bottle of his Mean Green eqiv....Just apply, wait 20 seconds and wipe..I was amazed. It was the only thing that would remove tobacco crust. Try an old tooth brush with a bit of the spray on it and the chassis came out great. GREAT job on front panel that I thought was hopeless using the sponges... thank's to the XYL....KA3TXR

Date: Mon, 10 Jan 2005 23:49:05 -0500
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] Anyone know where I cann get some alodining done?

Don't bother. You can do it yourself. Get a bottle of Alodine 1201 and

Alumiprep 33. Clean the panel real well. Then clean it again with Alumiprep 33 and a scrubby sponge. Be sure and wear rubber gloves - the stuff is phosphoric acid and is quite nasty. Your alluminum will never look so shiney as when you finish scrubbing it in phosphoric acid. Rinse immediately with lots of distilled water, then paint with or dip in the Alodine for a few minutes. Rinse again with distilled water, let it dry out, and voila! One corrosion-proof finish. Watch the temperature - the solutions need to be room-temperature. The problem is getting the stuff. You can get it at www.aircraftspruce.com, but they will hit you with a $30 or so hazardous materials charge. You can probably find it locally at some aircraft shop or machine shop or professional tool supply.

Date: Tue, 11 Jan 2005 09:27:41 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Cleaning chassis suggestion

Tobacco "crust"? The tar deposits from smoke generally come off easily with many cleaners, though may take repeated wiping down. Are you sure you didn't strip off the MFP coating? It's of similar color, but very tough and usually has a gloss to it. Not particularly a good idea to remove it and it's somewhat hazardous when loose -- it's a varnish laced with mercury compounds and other nasty stuff. Many more times hazardous than tobacco tar with traces of nicotine. Not aware of any casualties though.

Date: Tue, 11 Jan 2005 07:15:27 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Anyone know where I cann get some alodining done?

You can use RD DEvil lye to clean it and rinse in plain old water then dip immediately in the Alodine for several minutes then into another bath of regular water.NONE OF THE PROCESSORS THAT I KNOW OR USE USE "DISTILLED WATER" It is a waste of money. I speak from experience and the several 100's of pieces that I process and sell all of the time. BE CAREFUL WITH THE LYE, it is cheaper than alumiprep and is caustic to about the same extent. Does as good or better. Hank KN6DI

Date: Tue, 11 Jan 2005 18:18:09 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Cleaning chassis suggestion

The effects of MFP removal all depend on how good you are at resisting the temptation to eat the removed varnish ....

Date: Tue, 11 Jan 2005 18:35:35 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Cleaning chassis suggestion

Actually the biggest issue with MFP is a bit more simple. When you do a repair on a MFP coated radio you often will have to solder an MFP coated solder joint. The stuff that burns off of it probably isn't very good for you. Of course neither are lead and rosin fumes ... Best bet is to remove the MFP before you hit the joint with the solder. That makes them look nice and pretty when you are done. Charred MFP in the solder joint is sort of ugly looking.

Date: Thu, 13 Jan 2005 08:55:22 -0500
From: KU4YP <ku4yp@verizon.net>
Subject: Re: [R-390] Re-R390 Putting a Cap on Caps

to change the pace,

i have never owned an r-390 (a) and am looking to purchase one this year. i found this list last year and have enjoyed reading the conversations from the list.

could someone offer a newbie some pointers on hwat to look for? i don't mind doing resoration work but want to start with a complete receiver so i can see what to replace. as i become more experienced i may tackle something like building one from parts.

the receiver will go with my dx-100 and other am transmitters. like many hams, i am also a swl and enjoy the broadcast bands.

so, any help anyone is will to give will be appreciated. i know you can buy r-390a's from with sub meters for $575.00. used repairable for $325. checked for $520.00. has anyone purchased from fair radio? or can someone suggest another source.

i know r-390's are for sale on the auction sites but from what i have seen, they have often been more expensive than one i can purchase from fair. i understand the manufacturer of the r-390 will have some bearing on it's price. maybe that's why most have been more expensive.

this is surely the well of knowledge for r-390s. your attention in this matter is appreciated.

Date: Thu, 13 Jan 2005 09:43:53 -0500
From: "kslu" <kslu@prodigy.net>
Subject: Re: [R-390] Re-R390 Putting a Cap on Caps

Hello and welcome to the list. I have dealt with Fair Radio and they really are good guys, I have never had anything but good luck with them. However, I have always used them for parts and not the whole radio. Since you have been thinking about this for a year or so, I wouldn't discount finding one "in the wild". Buying from a commercial source is a lot like going to the fish market for dinner versus getting one from a swap meet or local auction. Going on the hunt, armed with patience and knowledge is

probably the least expensive way to get one. There are also guys on the list who could probably help you out as well.

If you do start hitting the swap meets and auctions, I wouldn't walk away from a basket case if the price was right, most of us have parts and sub chassis filed away in our basements and garages. Since these sub chassis can be easily swapped out, my philosophy has always been, you can never have enough replacement parts or tubes. I have for instance about 40 complete sets of NOS tubes for the R-390A. I keep a list with me when I go to swap meets and when the price is right I grab them even if I don't need them. QRZ.com lists your address as Bartow, FLwhich, means the Orlando Hamfest is coming up and you'll almost certainly see one or more R390's / R390A's there. There's also a nice hamfest in Stuart as well as a few other places within a few hours drive. Personally I like to get there early and stay late, you'd be surprised how the prices drop on some of these heavy radios when it's time to pack them up. I particularly like my chances of a good deal when the XYL is helping pack up these radios as the show is breaking down and the crowds have dwindled. Anyhow, the best deals are those radios which are complete, dirty and not working. There is enough expertise on the list and through numerous websites that getting a complete, non working 390 to play is really quite reasonable a project. Let us know how you make out.

Date: Fri, 14 Jan 2005 08:45:04 -0500
From: "richard may" <rtmay@htn.net>
Subject: [R-390] Fair radio blue strippers

Mike. I would like to tell you my experiences with Fair radio. I bought a "Blue stripper" from them about a year ago. If you order one from them, expect about a three week wait before it is shipped. Gary at Fair explained to me that it takes this much time to get the radio up to their advertised "Checked out" condition. Here is what I found when I received it:

1. Broken wire on VU meter: Repaired.
2. Separated RF slug: found it in the can and expoxyed it.

3. BFO inoperative: BFO can replaced. Unit had been screwed beyond its limits.

4. Crystal Calibrator out of tolerance: Replaced crystal.
5. RF rack spring missing: installed spring to stop hangup (This could have

happened when shipped).

6. Electrolytic (C609) in AF deck charred: Replaced, common problem.
7. Frame bent. Replaced side panel and rebent back panel best I could.

8. Filter choke (L602) damaged: Replaced choke. (This happened when the chassis was damaged. Somebody used this thing for a football, probably at the disposal site).

In all fairness, Fair radio supplied the necessary parts free to repair the unit. I also decided, since I was there, to pick up some additional parts (PTO, etc). Gary gave me the run of the place to select the best parts. All sub-units have been removed from the unrepairable receivers and thrown into large bins. If you order an IF deck for instance, you probably will receive the unit with all connectors attached and undamaged. The reason it is advertised as "With no connectors" is because some of the have been cut off or damaged. My guess is that about 80 percent will be OK. Gary also told me that it won't be long before he will be in the parts business only. I saw only three pallets of receivers that were still sealed. My guess is about 125 left and that was last Feburary. Hope this gives you a better understanding of what to expect. If I had to do it again, I probably would buy a "uncheck, repairable" At least I know it will will turn on and receive at least one station. (His words). Good luck, Richard W8FCW, richardmay@hotmail.com

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Date: Fri, 14 Jan 2005 09:19:45 -0600
From: "Paul Staupe" <pstaupe@qwest.net>
Subject: Re: [R-390] Fair radio blue strippers

Now the secret's out. The last time I was at Fair, I was glad to see that they were providing housing for a bunch of old blue strippers in a warehouse in the back. All I can say is that I'm glad that there's a place for all those old blue strippers to stay.... It's sure a lot better to have a roof over your head....

Date: Fri, 14 Jan 2005 11:59:54 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] You call *THAT* cracked???

Now *this* is cracked!!! The screen *resistor*, if I remember correctly, was a crunchy black piece of carbon that glowed red with power applied. I think the cap sputtered a bit as well before it blew its brains out. It came out of an SP-600 a few years ago and I've kept it around to serve as a warning to others. :-P

http://www.fernblatt.net/miscpics/hellcap2.jpg
http://www.fernblatt.net/miscpics/hellcap1.jpg

Date: Fri, 14 Jan 2005 12:09:11 -0600
From: "Lee Bahr" <pulsarxp@earthlink.net>
Subject: Fw: [R-390] Fair Radio Blue Strippers and other Ramblings

How do you restore a blue stripper when it does not have an engraved front panel? Did you have the front panel re-silk screened or did you just replace it with an engraved front panel from another radio? Or have both methods been employed? Seems to me a radio with no meters and facing a re-silk screen process would get the project up into big bucks fast. (Maybe the blue comes off leaving a nice grey panel) I guess if you got lucky and got a blue stripper with an engraved front panel it would not be too bad a project if you had to repaint it. Missing meters really bugs me though.

Since getting interested in R-390As a year ago, I have been able to find 4 of them now and they were not too expensive. In fact, they cost me less then a blue stripper and they all have meters. ($75 to $250). I have not restored them as yet so I don't know what is totally facing me. I bought two replacement cap kits and a couple extra IF decks and a couple extra RF decks to get me going. Two of the R-390As were missing the power supplies but a member on here was kind enough to sell me two replacements at a reasonable cost. I also purchased the R-390A and SP-600 videos from Hi-Res. I also downloaded from the internet the manual. (It took 3 ink cartridges to do it)! (It's wonderful)! Now I need to start restoring before time runs out! (I am 67).

If I was going to start this quest all over again, I think I would approach it the same way as I have done in the past. Don't be to quick to buy but look around. Maybe I just got lucky, but I think finding a R-390A locally or within driving distance will probably provide a better project requiring less work for a better price. There are no shipping charges and you can see what you are buying. I guess if I bought a blue stripper I would want to restore it too as I am dumb enough to believe every R-390A should be restored, although not a project for everyone. It sure would be a great accomplishment to do this. You certainly would want to take a lot of "before" and "after" pictures to appreciate the project once completed.

The amount of knowledge on R-390As on this reflector is awesome.

Date: Fri, 14 Jan 2005 15:21:15 -0500
From: N4BUQ@aol.com
Subject: Re: Fw: [R-390] Fair Radio Blue Strippers and other Ramblings

The front panels can be re-silkscreened. I had my first one done that way. Looks pretty good to me. http://members.aol.com/n4buq/r390a/ There was a gentleman who did this, but he no longer does them. He sold the setup to someone else and I don't know if they still do that or not. I think Hank (on this list) does re-screening as well.

Date: Fri, 14 Jan 2005 15:34:04 EST
From: Llgpt@aol.com

Subject: Re: Fw: [R-390] Fair Radio Blue Strippers and other Ramblings

As does Howard Mills W3HM _W3HM@nfis.com_
(mailto:W3HM@nfis.com)
Les Locklear

Date: Fri, 14 Jan 2005 22:22:31 -0000
From: "Bill Mills" <millsend@alltel.net>
Subject: Fair Radio R-390A "Blue Strippers"

I have attended the Dayton Hamconvention the past several years and have made the trip to Fair Radio before the hamconvention. Last year, I was surprised that Fair Radio had not pulled a dozen of the receivers from their storage area and gotten them ready for sale. I spoke with the tech and he stated their policy was to pull, test, repair and align only after receipt of a sale order. While I was at Fair, I was able to poke around in the back storage area. Fair has cardboard boxes full of R-390A sub assemblies. Most are stacked 4 to 6 deep in the boxes. I purchased several assemblies to include a VFO and audio deck and had to go through the entire box to find assemblies that had cables, not damaged, etc. It will not be too many more years before Fair's supply of R-390A assemblies will be available. If you have the time and are in the Dayton, Ohio, area it will pay you to make a trip to Lima and a visit to Fair Radio Sales. Reserve several hours time to polk around in FairRadio because what they display in their catalog is a fraction of whan they sell. Good hunting. Proud owner of a R-390A Collins and Capehart

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Date: Fri, 14 Jan 2005 19:56:11 -0600
From: "Dallas Lankford" <dallas@bayou.com>
Subject: [R-390] Capacitor Replacers And Other Matters

<snip> I am in the process of posting much of my major work on R-390A's at http://www.kongsfjord.no/. So if you want to know what I have been up to lately, you can check in there from time to time.

Date: Fri, 14 Jan 2005 21:07:01 -0600
From: "Dallas Lankford" <dallas@bayou.com>
Subject: [R-390] R-390A Buying Tips

There are so many of those parking lot of doom R-390A's floating around (puns intended) that one should be extremely cautious about buying any R-390A's. For a long time I couldn't think of a foolproof way to identify them, so as not to get burned (or should I say rained on?). But duuhuhh. The answer is as plain as the nose on my face. Look at the capacitors dummy says me to myself! If it has a bunch of bright orange capacitors in the IF deck, there is a high likelihood that it sat in a parking lot for several years.

You might miss a few good R-390A's by culling the ones with the bright orange capacitors, but such is life. Or if it has a bunch of brown beauties with big cracks, especially with cracks painted white, then you know you have a loser. Be sure to bring an 8X loupe and look for microscopic cracks along the mould lines. Those are also losers. The capacitor replacers have done us fastidious R-390A buyers a wonderful service by helping to identify the ones we do not want. Also look for grit in all the nooks and crannies. It is really difficult to get all the grit out of a parking lot R-390A. And look closely at all the screws. If you see any rust, don't buy. The screws are stainless and can tolerate damp environments, but if you leave stainless out in the rain for a while, it will start to rust. I must admit that I did not think of all of these tips myself. And I would like to give credit where credit is due. But to keep the rotten tomatoes directed at me only, I have kept my sources anonymous.

Date: Fri, 14 Jan 2005 23:02:13 -0500
From: "James Miller" <JMILLER1706@cfl.rr.com>
Subject: Re: [R-390] R-390A Buying Tips

And don't forget the diodes to replace the flaky rectifier tubes' Or the surge limiter; Or the 10 turn pot to replace that poorly designed single turn meter adjust circuit; Or the PTO that has been torn down, rebuilt and linearized to within 50 Hz everywhere; Or the DISC ceramic caos that have been replaced anywhere they touch the AGC line and screens (yes, their dielectrics leak too)... added about 20 dB to signal levels. How far shall I go? Both of my 390As arrived as basket cases, practically dead. Now they will probably outperform 95% of the untouched museum pieces around And I have a couple of degrees in EE and Advanced Calculus, for what that's worth. But I didn't let that get in the way of truth and reality. Now let's put our Jacobians, Laplace transforms and matrix inversions aside and enjoy our valves.

Date: Fri, 14 Jan 2005 23:24:16 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Help locating surplus place?

I'm looking for a surplus place that was talked about off and on here on the list. I don't remember if it was ocean state or something that sounds similar, this particular place had tons of things, older meters and switches, etc. I remember folks fussing about them getting orders wrong and being rude with customers, but I can't remember the darned name! It's somewhere in NY or NJ I *think*. (heck, I'm not even sure where it is, but it's up in that direction.) No, it's not Fair Radio. I apologize for the vague description of the place. Please reply directly.

Date: Sat, 15 Jan 2005 00:36:35 -0600

From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Surplus Place Found!

It appears I was looking for Leeds Electronics. I suppose the name would sound a bit like Ocean State if you were drinking heavily.... Thanks to all that helped.

Date: Sat, 15 Jan 2005 02:56:24 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Surplus Place Found!

That's who I was going to suggest you were thinking of, but the "Ocean State" business threw me off the track. Located in Brooklyn. Web site is http://www.leedselect.com .. in case no one supplied the URL.

Date: Sat, 15 Jan 2005 11:17:52 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Searching for sockets tube extender 7 ,9 and 8 pins

I have not seen these as a standard item sold in stores for quite a while. They do often show up on the auction sites for fairly modest prices. If you have any local hamfests they are a better bet since you can actually see their condition. I have had good luck with the ones.

I have bought at auction but that may not always be the case. The socket side of these things can wear out. One alternative is to build some from scratch. Tube sockets and tube base sized plugs are required but at least you can find those new. It's a bit more work to do it this way. I'm not sure it's a whole lot more expensive.

Date: Sat, 15 Jan 2005 11:54:01 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Re: R-390 Digest, Vol 9, Issue 34

The R-390A/URR is a more exact name for the radio we refer to here as the R390A. The military manuals normally refer to the radio as R-390A/URR. When we get really lazy we call it the R390 and use R390(not an A) for the "other" radio.

Roughly every six to nine months we have a discussion about the inherent confusion between the R-390, R-390A, and R-390(not an A) terms. There is a document at www.designation-systems.net/usmilav/electronics.html explaining more than you would ever want to know about US military equipment designations. The URR designator is described in the section on the "AN system".

Date: Sat, 15 Jan 2005 13:08:56 EST
From: N4BUQ@aol.com
Subject: Re: [R-390] Searching for sockets tube extender 7 ,9 and 8 pins

I think Fair Radio (www.fairradio.com) has a set of them in a nice metal box. Kind of expensive, though, if you don't need all the sizes. I see these at the hamfest here from time to time. Perhaps someone else on the list has a source.

Date: Sun, 16 Jan 2005 17:01:05 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] RE: New R390A owner with some questions.

Congrats on your being a new owner of a couple of R-390A's. I probably won't be able to answer all of your questions fully but I can comment on a few.

The dead bands may be caused by problems in the Crystal Osc. deck. There is a cover on the top that contains the assortment of crystals and an associated heater. I would check to be sure all crystals are present and accounted for and are seated well. You may need to clean some of the sockets. Good thing is you have two radio's...always a recommended practice. You can barrow the crystals in question from the non-working radio and try them in the somewhat working radio. The next thoughts might be a dirty switch that selects the crystals. It is accessible from the bottom of the crystal deck. Not too hard to get out. Beyond that the posts of others will probably be of more help with the dead bands.

As far as the Sharp filter setting...my experience is that it has a bunch of attenuation in that position and it appears that the world went away when in fact more volume and better centering of the signal usually brings things back. It is possible of course that yours is broken. I've not seen that mentioned as a common problem area so I would have to refer to the schematic to form a game plan.

As for identifying your radio...that's a tough one. The tag may have come from anywhere. There are several suppliers of re-pop tags even. I would pull a few of the easy modules and check their markings...if you are extremely luck and they are all marked the same you probably have your answer. Sometimes you can see whose name is marked on the Veeder Root counter (mechanical digital readout mechanism) and tell the origin. I've seen Electronic Assistance Corp. stamped on the back panel and you can sometimes look for the inspectors stamps on the main chassis and tell a little from that. Some are marked SW, some EAC etc inside of some shape such as a triangle or a square. The ITT thing is a little unique though...you may have something there....another Helena Rubenstine (spelling?)

On my radio's I have just attached the green wire in your new 3 wire cord to
the nearest convenient place and the other two to where the power normally lands. Be sure not to plug into a GFI protected outlet as there are problems usually with leakage current that will trip those. Another story... Anyway...Good Luck and Welcome to the group!

Date: Sun, 16 Jan 2005 18:35:50 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] RE: New R390A owner with some questions.

Paul, The ITT tag sounds like an inventory property tag. Hank

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Date: Tue, 18 Jan 2005 13:12:00 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Help locating surplus place?

I think there was a place somewhere near Norfolk VA called Ocean State Surplus. I was never there. You might search the archives, but I'm pretty sure it was reported closed some time ago. There is still a place called Ocean State Electronics: http://www.oselectronics.com/

OCEAN STATE ELECTRONICS
P.O. Box 1458
6 Industrial Drive
Westerly, RI 02891
(401)596-3080
FAX: (401)596-3590
Order Line: (800)866-6626

They seem to have lots of neat stuff like genuine 2.5 mH plate chokes, ceramic coil forms, plug-in phenolic ones, and other goodies. I have no experience with them.

Date: Tue, 18 Jan 2005 14:19:59 -0800
From: "David Wise" <David_Wise@Phoenix.com>
Subject: RE: [R-390] RE: New R390A owner with some questions.

<snip> > I am in the process of downloading/printing the
> maintenance and operators manuals today. Any other
> documentation I should be thinking about acquiring?

If you're referring to TM11-856 or the other military equivalents, they are interesting historical references, but the one you really want is Al Tirevold's rework, known as the "Y2KR2", available along with other

fascinating material at www.r-390a.net . I particularly recommend the "Final Engineering Report", which covers the design choices that led to the R-390, and the "Cost Reduction Report", a similar work for the R-390A. But then again, I'm a designer by trade, and this is my favorite kind of technical reading. My response above about the sharp audio filter was gleaned from MIL-R-13947B, the original product specification, available at the above site. If you listen to AFRTS or other music on SSB, your VFO's frequency stability is critical. Unless embellished with a time-delay relay to cut it out after power-on, an inrush limiter may hurt this a bit, because as the first crystal oscillator oven* cycles on and off, the mains voltage at the power transformer bobs up and down several volts. Not trying to scare you off it, just letting you know. It's what started me on a solid-state ballast, which I'm sure this group has heard far too much of :)* This oven is enabled all the time, unlike the VFO and 2nd oscillator ovens, which are controlled by a screwdriver-operated switch on the rear panel. Never turn them on, unless you're in a tent in Antarctica. It's hard on the VFO. This too is mentioned in the above literature.

Date: Sun, 23 Jan 2005 15:15:18 EST
From: N4BUQ@aol.com
Subject: [R-390] Need help with an escutcheon

I have an escutcheon that is missing the machined "rivets" that hold the clamps that hold the glass in place. If I had a lathe, I could machine some replacements myself, but I don't have access to one. Even if I did have these, making the little spring-like holders would be a challenge. If I could get some replacement "rivets", I could fashion something to hold the glass in place.

Alternatively, I was thinking that if I could get some small screws (#6-32?) and have them machined to match the conical shape and rounded head, then I could use them to hold a "backing" frame as well. Using flat-head machine screws just looks wrong. Anyone know how I might solve this? I kind of hate to get an entire replacement escutcheon (although that would be nice), because if I can fix this one suitably, it will keep me from having another useless spare part.

Date: Sun, 23 Jan 2005 16:23:40 -0500
From: "John KA1XC" <tetrode@comcast.net>
Subject: Re: [R-390] Need help with an escutcheon

I've seen regular machine screws used in the dial bezel before; once painted they don't look bad. But if you must have the stock look, here are some suggestions:

-poor mans lathe - use a drill press and hand held mill file to round down a

cap head or other screw. Can even use a hand drill if you can clamp it to the bench.

-take an ordinary round head machine screw and fill in the slot with autobody filler; sand, and it's ready for paint.

Once you have a set of screws than it's easy to make a fastener from a hunk of sheet metal or plastic. Or you could take the easy way out and use a few spots of hot glue or epoxy to secure the window.

Date: Sun, 23 Jan 2005 17:10:24 -0600
From: Mahlon Haunschild <mahlonhaunschild@cox.net>
Subject: [R-390] Knob powder coating

I seem to recall a list subscriber mentioning recently that he had had his R-390A knobs powder coated by another list member. Would that person please contact me off-list with the details. I need to have the same thing done twice (maybe thrice) over.

Date: Tue, 25 Jan 2005 20:05:01 -0600
From: "Brad Huff" <huffb@avalon.net>
Subject: [R-390] soldering equipment

I'm new to the list although I've been an electronics hobbyist for many years. I'm looking to upgrade my soldering equipment from a common variety pencil iron to something more state of the art. What would you folks recommend that I purchase to work on the R390A modules? Most of my hobby activities deal with tube equipment and antique radios.-Brad

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Date: Tue, 25 Jan 2005 22:08:52 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] soldering equipment

I recently upgraded my soldering hardware to all Hakko. I picked up a nice used dual station that has a small tipped pencil iron and a large chisel tip iron. It's handy to have both available as some joints only need a little heat to work and others need quite a lot. Both are temperature controlled and they are fast heaters...they can come up to set temp from room temp in about 30 seconds or less.

I also picked up a nice Hakko desoldering station that makes quick work of unsoldering junctions buried deep in a chassis. It has a long tip on it like the irons. Makes working on the tube gear nice. All of it was picked up used on the auction site. Most of it comes out of production shops but is still in nice shape and parts are available quite readily.

I have used just about everything over the years....Weller, Ungar, Wahl, Pace.... guns, pencils. I like what I have now about as well as anything I have ever used. My second choice would be a temp. controlled Weller station. Pace is nice but most of their irons are little short stubby things and you can't reach down into the chassis with them. The are specialized for PC board work. I wouldn't hesitate to pick up a nice used outfit....probably won't spend any more for a used high end station than you would pay for a new low end station. Anyway....that's my experience....

Date: Tue, 25 Jan 2005 20:15:54 -0800
From: "Spence Barton" <ence-ack@rio.com>
Subject: Re: [R-390] soldering equipment

Let me second the endorsement of Hakko soldering equipment. I've had a Hakko temp. controlled iron for about 12 years and it's been a great performer every time I turn it on. Really a joy to use.

Date: Tue, 25 Jan 2005 23:47:02 EST
From: N4BUQ@aol.com
Subject: Re: [R-390] Need help with an escutcheon

Looks like I may have found a solution for this. Home Depot sells stainless steel button-head cap screws. A #6-32 seems to fit just great and since it is a cap screw, the tiny hex-socket is hardly noticeable - much less noticeable than a flat-head phillips-head screw. I plan to have the heads powder-coated the same color as the escutcheon and it should blend in quite nicely. A conical washer to match the countersink in the escutcheon would be nice, but I don't think it is entirely necessary. A simple backing plate to clamp the glass in place and I'm in business.

Date: Tue, 25 Jan 2005 21:05:00 -0800
From: "Leigh Sedgwick" <bipi@comcast.net>
Subject: Re: [R-390] soldering equipment

I picked up a new Hakko desolder gun for a "tune" at Fry Electronics and I don't know how the hell I have live without it so long. Makes replacing those caps in the R390A that you don't need to replace a piece of cake! I just do it for fun now

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Date: Wed, 26 Jan 2005 03:01:41 -0800
From: "ELDIM" <eldim@att.net>
Subject: Re: [R-390] soldering equipment

My first choice for soldering is the rugged WELLER WTCP STATION because of the wide variety of TIP choices. This System has a120VAC Primary to 24 VAC SECONDARY @ 2 AMPS Capacity . The pencil iron is

rated at 24 Volt/48 Watt and tip temperarture is determined by the tip temp that you select. This is marked on the bottom of the tip. i.s. 6, 7, or 8. There are three Temps 600, 700, 800 Degrees F, at least that is all I have ever seen. I think that you can still find a picture at www.el-dim.com I also use my station for desoldering using the old "convection" method along with braid wire and some flux to enhance the solder melt. If you have some excess or old coax, you can strip the braid out, flatten it-and it works great for pulling solder off the ole boat anchor terminals, etc. You also need to keep a pair of cutters handy to cut and discard the used braid that has solder. Of course you can use a solder bulb or soldr-xtractor, pul-it or what ever method you desire. I use my PACE Stations mainly for small ckt board work

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Date: Wed, 26 Jan 2005 11:11:32 -0000
From: "charles bolland" <ka4prf@peoplepc.com>
Subject: Re: [R-390] soldering equipment

Boy have I ruined so many circuit boards trying to desolder! I finally stumbled onto a desoldering tool that seems to work better than anything I've used in the past. It's the Radio Shack desoldering iron. Don't know the stock number, but it has a rubber pumping part on it which makes it easy to suck the hot solder off of the component. Anyway, it has help me a lot. Since I don't have three hands, it is easier to control. I have always wanted a cheap soldering stand that will hold my iron when it's hot while not being used. All the ones I have found were too light weight to stay on the table without toppling over. I finally figured out a good stand for my soldering iron. I use a coffee cup. I started out using a regular coffee cup, but found that didn't do the trick. Now I use one of those wide bottom cups that are made to stand while we are driving our autos. This type of cup holds me soldering iron without falling out and burning me. I am still working on a way to get another "hand" to use when soldering.

Date: Wed, 26 Jan 2005 09:27:36 -0600
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] soldering equipment

I'd pretty much decided to get a RatShack desoldering iron already; you just confirmed me in my intent. I tried a coffee cup and a glass ashtray as soldering iron holders, after I bought the new soldering iron from RatShack: it was so tip- heavy that I couldn't just put it down. My trusty old Ungar iron from the late 1950s and early 1960s, which put together some dozens of kits and projects, is handle-heavy, and so I didn't have to worry about a holder for it, but the tip is only good for soldering about *-acre at a time, and so is unsuitable for modern boards and projects.

The ashtray wasn't made of Pyrex, and broke from uneven thermal

expansion. The coffee cup wasn't Pyrex, either, but I decided that I wasn't all that comfortable drinking from anything that had had molten Pb alloy in it, however many times I ran it through the dishwasher. So I bought the RatShack "third hand", which has two alligator clips on universal joints attached to an adjustable bar, a magnifying glass[1], *and* a good soldering iron holder. This is about the second-best thing since girls, and not at all far in the ratings from sliced bread. [1] I don't need a magnifying glass! I'm only 58, and my eyes work Just Fine, Thank _YOU_! Ohhh ... I can see what I'm working on. *Cool*!

Date: Wed, 26 Jan 2005 10:37:15 -0800
From: "Bruce Hagen" <bhagen@msn.com>
Subject: Re: [R-390] Need help with an escutcheon

For the glass holders take a look in a shop that does commercial picture frames. You'll find that they have some spring metal clips about 3" long so that you can cut to size. You'd only need one and still have enough left for future use.

Date: Fri, 28 Jan 2005 13:33:55 -0600 (CST)---
From: jhhaynes@earthlink.net
Subject: [R-390] That power switch

What is the wisdom of the group on the snap switch that controls poweron the R-390A? Seems like I've seen some instructions for rebuilding it when it breaks. Is there any scheme to prevent it from breaking repeatedly? Like a spark suppressor network? Or use the switch to control a Triac?

Date: Fri, 28 Jan 2005 14:46:52 EST
From: DJED1@aol.com
Subject: Re: [R-390] That power switch

A permanent fix would be nice, but I got 40 years out of the first microswitch before it failed, and I found I could buy a new (NOS?) switch from Fair radio. I figure the new switch is good for another 40 years and I am not, so i stopped worrying about it. I also bought a spare for the kids to put in someday. I didn't undertake to try and disassemble the switch- it looks like it's not repairable.

Date: Fri, 28 Jan 2005 15:00:09 -0500
From: "richard may" <rtmay@htn.net>
Subject: [R-390] Wiring harness

Problem. I have a one fuse wiring harness I want to put into a receiver that was designed for a three fuse wiring harness. Has anybody ever tried this? Other than two empty holes I think it should work without any problems

but would like any input you folks can furnish. Thanks, Richard, W8FCW

Date: Fri, 28 Jan 2005 22:50:11 -0500
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] St Julien's Creek 390A on E-*ay

Notice the rear panel shot of this radio. What is the rectangular box on the back with three connectors on it? This is not in my manual. I have seen a number of units with this box.

Date: Fri, 28 Jan 2005 22:59:17 EST
From: Radiograveyard@aol.com
Subject: [R-390] Blue Stripe Box

Hi All; Having owned 134 of these "blue stripes" I can tell you the "box" on the rear is the Navy adaptation for the sets. The connectors are standard Navy for all receiver connections on boats. I just pulled a demilled 390A off a scrap ship 6 months ago and the configuration was identical. Many of the blue or yellow or white stripers were depot overhauls most with solid stated power suppilies. The recent one from the scrap boat was a Tobyhanna depot overhaul. Additionally most of the Navy units had the diode outlet pin on the front next to the phone jack.Pete
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Date: Fri, 28 Jan 2005 23:02:37 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] St Julien's Creek 390A on E-*ay

Those are Navy-type connectors on the rear panel. The receiver was probably set up for shipboard use. The Navy connectors are mounted in an aluminum enclosure that screws onto the back of a standard R-390A.

Date: Sat, 29 Jan 2005 16:52:21 +0100
From: "federico" <federico@dottorbaldi.it>
Subject: Re: [R-390] St Julien's Creek 390A on E-*ay

In my personal opinion this is an ex-US NAVY R-390A/URR, in the Navy Tech. Manual (that I have somewhere) you can see the modified connector box on the rear and in the front panel, near the headphone plug, the DIODE LOAD plug as you can see in item 6507294205. The semi-fixed potentiometer near the antenna trimmer is the CARRIER METER ADJUST potentiometer that usually stays near the GAIN ADJUST inside the receiver.

Date: Sat, 29 Jan 2005 23:39:26 -0700
From: "Kenneth Arthur Crips" <crips01@msn.com>
Subject: [R-390] A useful link

Here is a link I think you will find useful. this outfit make slides for rack mounted equipment. Having smashed my hands to many times extracting Boatanchors from my racks I am going to install some nice slide rails. Here is the link I hope it works. If it doesn't work the name of the company is: Johnson Brother's, Metal forming. IBM uses their products for their server racks.
http://www.thomasregister.com/olc/34352005/home.htm<http://www.thomasregister.com/olc/34352005/home.htm>

Date: Mon, 31 Jan 2005 15:59:35 -0000
From: "William G. Mills" <millsend@alltel.net>
Subject: [R-390] LS-206A Loudspeaker Assembly

The Radiomart LS-206 loudspeaker assembly listed on E-bay is not a stock LS-206. The orginial LS-206 and LS-206A loudspeaker assemblies did not have the carry handles. I was a U.S. Army Signal Corps Platoon Leader (2nd Lieutenant) of a HF Radio Platoon (Company C, 304th Signal Battalion) in Korea in 1962-63. My platoon had 12 each AN/GRC-26D radio trucks as well as the AN/MRC-2 HF radio system (HF receiver truck with racks of R-390A receivers and a transmitter truck with T-368 transmitters). Each rack of R-390A receivers had a LS-206 loudspeakers assembly. I purchased a LS-206A manufactured by Oneida Electronics Serial Number 21 from Fair Radio Sales several years past. The LS-206A was manufactured under a 1963 U.S. Army Signal Corps contract. Buyer beware when dealing with Radiomart.

Date: Mon, 31 Jan 2005 10:11:40 -0600
From: William J.Neill <wjneill@lcc.net>
Subject: LS-206A Loudspeaker Assembly and AN/MRR-8 as a side subject

So, LS-206(A)'s notwithstanding, where, pray tell, did the US Army use the AN/MRR-8 (containing four or maybe six AN/FRR-38's) radio receiving central sets?

Date: Mon, 31 Jan 2005 20:04:47 -0600
From: "Derek Cohn/WB0TUA" <vibroplex@mindspring.com>
Subject: [R-390] Pile of about 10 R-390As

It's seldom that I post to this group as I am not very learned about this radio but I learn more everyday by reading. I have come across someone with a pile (approximately 10) R-390As and I can get the best price if I buy the entire group. The seller would prefer to move these as a group. The purpose of this e-mail is to see how many people would be interested in these radios (and at what price) as I would be buying them solely to re-sell them to you guys. I could only

glimpse "stack" of radios but here's what I know:

* None have meters
* All are supposed to be complete
* Some are St. Julien's Creek veterans
* Some have a vernier BFO control
* The nametags I could read said Motorola

Now...If I were to buy them all and re-sell them, it would be "as-is", "where-is", with no returns, exchanges, etc. Though I am learning from you guys, I don't have the expertise (yet) to troubleshoot radios, especially this beast. I would not have access to parts so if a particular module would be DOA, I'd have to point you to the regular sources for parts. I would take a picture of each radio prior to offering it for sale and would confirm that all the modules were present.

I see that Fair Radio sells "Used Repairable" for $325.00.

What do you guys think? Is there enough interest in "the stack" that I should investigate this further. I'm not looking to get rich off of this but there is some trouble associated with hauling these out of a basement, dragging them home, and boxing/shipping an 84 lb. radio. If there is enough interest on the list, we can distribute these among ourselves without resorting to eBay. These radios are probably going on eBay if I can't make a deal for the stack. I have confirmed that there are *no* R-390s in the stack. What do you guys say. What would be a fair price you'd be willing to pay for a radio under these circumstances? Hoping to continue learning from you guys...

Date: Mon, 31 Jan 2005 21:56:34 -0500
From: <robert.boyd@sdc-dsc.gc.ca>
Subject: RE: [R-390] Pile of about 10 R-390As

I'm interested! These are obviously parts jobs. Fair Radio's used reparable @$325.- isn't much of a reference. I'd say $175-200.-/ea assuming complete and making noise would be in the ball park.

Date: Mon, 31 Jan 2005 19:26:19 -0800 (PST)
From: "Richard M. MC Clung" <wa6knw@sbcglobal.net>
Subject: Re:[R-390] LS-206A Loudspeaker Assembly and AN/MRR-8 as a

The Army utilized the MRR-8 in two place that I have seen and operated them.

1. Special Forces Signal Company Base Operations Platoons.

2. Long Range Reconnaissance and Patrol Company Base Radio Station.

Date: Mon, 31 Jan 2005 21:36:50 -0600
From: bw <ba.williams@charter.net>
Subject: Re: [R-390] R-390(/URR) ID

I have an A that came tagged as a Stewart-Warner. The front and rear panels,and p/s and audio decks are 1967 EAC. Believe it or not, a member from about 8 years ago had a 67 EAC tag and wanted to swap for the S-W. We were both happy.

Date: Mon, 31 Jan 2005 22:07:43 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Pile of about 10 R-390As

Maybe I missed something but there was not enough info provided to determine these radio's as "Parts" radio's and I might add that a parts radio, if that is what these are, should not be expected to power up and make too much noise I wouldn't think. Unless of course we are talking about the "clackity clack" noise one makes while spinning the tuning knob. The "Used Repairable" radio that Fair sells is bench checked and does receive a signal for the $325 they get! They also sell them "Checked" where they go somewhat deeper...but the price tag is a little higher. What else do we have as a reference.... What Derek is proposing is a fairly labor intensive, labor of love and at $200 or less and shipping as proposed he will be lucky to get out of the deal with his shirt on unless he gets the pile for $1000! Just my opinion though!

Date: Mon, 31 Jan 2005 20:51:18 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Pile of about 10 R-390As

As described. $150.00 would be pushing it. Plus shipping, etc., etc.,?????

Date: Mon, 31 Jan 2005 21:21:16 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Pile of about 10 R-390As

They should pay him to haul them out of the basement.

Date: Tue, 1 Feb 2005 08:04:08 EST
From: Radiograveyard@aol.com
Subject: [R-390] Pile of 390As

Hey guys one of the piles brothers just brought $175.00 on Epay what is a better price guide? If these are the normal "Blue stripers" they will be

missing all 5814s,meters, a few other tubes,mabe a knob or two, and the RF deck cover. They should have the solid stated power supplys. Probability of Cosmos PTOs high.Pete

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Date: Tue, 1 Feb 2005 08:38:54 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Pile of 390As

I didn't find that one after a search but did find a real ratty looking SJC rig that went for $215. I also found a fairly nice, clean Non SJC in Meridian MS that didn't sell but was bid up to over $300 and it included a spare VFO and manual. It's a fickle market.... Then there is the $3400 one....could have bought one directly from Mish for less than that I would expect. Derek mentioned that only a few of the 10 were SJC's. The military removed all the meters from Demiled R-390A's so that would be expected for any standard surplus radio. The others may be clean. I agree with what most have said about the pricing of the radio if it's an SJC survivor....a good bit more if it's not!

Date: Tue, 1 Feb 2005 09:50:32 EST
From: Radiograveyard@aol.com
Subject: [R-390] Pile of R-390As

My error the ebay Receiver Item number: 6507294205
Brought Winning bid: US $215.49
Guess I tuned out when it was a lower price. Everbody can check it out now.

Date: Tue, 1 Feb 2005 09:17:23 -0600
From: "Derek Cohn/WB0TUA" <vibroplex@mindspring.com>
Subject: [R-390] Pile of 10 R-390As

Ok...I think I have an understanding of the prices now. Let me see if I can get these things. It may take a week or two but I'll keep you posted on my progress. Special thanks to all who responded and helped educate me on this issue.

Date: Sun, 6 Feb 2005 17:51:30 -0500
From: "Scott Bauer" <odyslim@comcast.net>
Subject: [R-390] fixer-upper

I decided to buy an old fixer upper to try and learn a little by repairing it myself. I have a couple of manuals and know how to solder and can follow a schematic just OK. Well, this is a little more of a hacked up, torn apart junker than I thought. Guess where I found it :-) I first discovered somebody had unsoldered a couple of the mechanical filters then stopped

whatever they were doing for some reason. I ohmed them out and then resoldered them, then installed the IF into a working R390A. GREAT, the IF works! I then installed a grounded power cord and installed a spare PTO. This radio did not have one when it arrived. I know that I am going to be off here but this is just for educational purposes.

I then checked every tube. All were bad, most missing. Replaced them all with good used ones. After checking under all of the other modules for smoke leaks, I checked all of the fuses and moved the function switch to standby for a few seconds and did not hear the antenna relay. Then moved it over to AGC. Silence.... Nothing. Darn! I noticed the OA2 was not burning so I shut it off. The fuse was blown. Geeze, What have I gotten into. After taking a closer look at the AF module, I noticed both caps were 45uf. I borrowed 2 known good caps from another radio and looked around a little more. Ahh... A cut wire in the harness. I don't know one was able to cut it without damaging any others, fixed it. I then noticed the RF gain pot had wires falling from it. After re-doing the whole pot, I installed another 1/4 amp fuse and tried again. The antenna relay clicked in. Great so far! Ahh, the OA2 is lit, and I am getting hiss in the speaker!! No signals though, just hiss. No signal on any band. . No difference in noise when I pull the antenna off except for one thing. At around 140kc I hear a tone with the bfo on. I still have it on AGC so I move the switch to calibrate. The tone remains constant whether the switch is on AGC, MGC or Calibrate. Is the radio somehow stuck in the calibrate mode? I am now stuck. Any ideas? I have no test equiptment besides a voltmeter.

Date: Sun, 6 Feb 2005 19:44:44 -0500
From: "Scott Bauer" <odyslim@comcast.net>
Subject: Re: [R-390] fixer-upper/ More

I forgot to mention that I did also check the 3TF7. Still no signals. B+ is 150.

Date: Sun, 06 Feb 2005 20:31:23 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] fixer-upper/ More

Well when you only have a hammer fix it with a hammer. The Y2K manual has a bunch of good stuff in it. If you have not already downloaded it get one now. One of the things in there is a list of voltages in chapter 5. They are a very good way to work though the radio. I suspect they will help track out the low B+ voltage. Just remember that the voltages in the manual are for a 110 volt line voltage and in some cases a high impedance meter. The manual also has a set of tables of resistances in it. I have not found them quite as useful as the voltages but they are something else to check out. Based on what you have found so far I would bet on another loose wire. It

sounds like somebody was having fun taking your radio apart ... Of course if you have another radio handy you could do a couple of module swaps and figure it all out pretty fast. That would take all the fun out of it though ....

Tue, 08 Feb 2005 15:14:52 +0000
From: N4BUQ@aol.com
Subject: [R-390] Need Fuse Holders

Does anyone know where I can get some good, military-grade, fuse holders? I need to replace some that are missing/imcomplete in my current set of R390A's I'm restoring. I can get plain holders lots of places, but the nice ones with fluted "knobs" aren't easy to find. The other ones just don't look right. As a side note, I finally got around to cleaning the chassis parts and sent them out for Alodining. Wow. It's almost like working on new parts from the factory. I can't wait to get the front panels, knobs, and escutcheons powder-coated and get these things back together. Too bad I couldn't get the back panels Alodined, though. That would have really made for a nice looking set of frames.

Date: Wed, 9 Feb 2005 18:23:53 -0500
From: "Dulaff, Paul" <PDulaff@dpconline.com>
Subject: RE: [R-390] Detent spring?

There are various grades of stainless steel that are for springs (both cantilever and helical) and work well. The thing to check for is if the detent spring is made of spring steel, phosphor bronze, or beryllium copper and has been nickel plated. It will appear to look like stainless steel, but wear marks from use will have worn through the plating and exposed the base material. If fabricating a replacement spring, knowing the material is important. The modulus of elasticity for the above listed materials varies significantly and would have a significant effect on function. If necessary, I can check my radio and determine the material.

Date: Fri, 25 Feb 2005 13:33:29 +0000
From: jonklinkhamer@comcast.net
Subject: [R-390] EAC R390A question

I'm going thru the process of restoring a 67 EAC 390A model and was looking for some information on a test point near the phone plug on the front panel. The test point is a green plastic post that does not have any wiring on it behind the panel. Although I think it did at one point since there is evidence of soldering. My reading of various postings and literature seems to indicate that it was for the diode load. Most likely the test point is more convenient in the front then back. It just seems out of place. There is no labeling above to indicate such feature and I don’t see a lot of radios with this. Can anybody shed some light?

PS: I very much enjoy this group. You guys are obviously very talented bunch.

Date: Fri, 25 Feb 2005 08:49:24 -0500
From: "Veenstra, Lester" <Lester.Veenstra@intelsatgeneral.com>
Subject: RE: [R-390] EAC R390A question

Authorized field change, connected to diode load, to allow receiver testing without removal from rack. Les K1YCM/3 (CTM1)

Date: Fri, 25 Feb 2005 08:52:27 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] EAC R390A question

The magic unlabeled jack normally is connected to the diode load test point on the rear panel. It is a standard military installed modification and not something dreamed up by the previous owner of your radio. The workmanship on the mod varies since it apparently was only done as a field mod.

Previous posts have referred to this as the "Navy diode mod". Once the radio was mounted in a rack getting to the back panel on a typical Navy install was not a real easy thing to do. I have no direct experience with the system, but there are Navy antenna multicouplers that are tuned to match the radio. Having a signal level to do this with probably was a helpful thing. I also suspect it was a pretty good way to check a radio before pulling it for repair.

By far the most interesting (to me at least) use of the diode load point is in direction finding. With a good voltmeter and a little calibration table you can read out signal levels to a amazing level of accuracy. All of the applications I have heard of have been airborne, but the Navy may have been doing the same thing.

Date: Fri, 25 Feb 2005 07:53:56 -0600
From: "Laird Tom N" <LairdThomasN@JohnDeere.com>
Subject: [R-390] RE: Field Changes

Hope this helps, Tom Laird WC9M, Moline, IL.

The manual I have lists the field changes and shows some information and schematics. It does NOT contain the field change bulletins and is not a step by step guide. Most of the changes are quite simple and should pose no problem to a proficient tech. Others will be of no interest as they pertain to "convenience" changes made to shipboard receivers.

CHANGE AUTHORIZATION APPLICABILITY IDENTIFICATION

1

EIB 526 all

Lead connected between pins 2 and 7 of tube socket

2

EIB 542 shipboard only Two soldered jumper leads on TB-101

3 EIB 702 shipboard only "AN" type connectors for terminating

4 EIB 655 + others shipboard only Diode load test jack located on

5

EIB 664 shipboard only

Shorting plug connected to J104 on

6 EIB 702 shipboard only

Rectifier tubes V801 and V802 removed

7 EIMB shipboard installations Decals located on VFO in

8 EIMB Selected ships only Elapsed time indicator mounted on front

That's the info on identifying the field changes. Most are self explanatory. FC2 modifies the attenuator pad on the line output side to match a 450 ohm load. FC5 allows use of the whip antenna connector with coax cable. A shorting plug is iserted in J104 that grounds the J107 side of the connector. Then cables to J105 and J106 are swapped. I have no idea what FC7 does!

Date: Fri, 25 Feb 2005 08:31:51 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] EAC R390A question

This was a Navy field mod that made the Diode Load point more accessible for the techs while the radio was mounted in it's op position. It should be connected to the diode load point on the rear panel.

From: "David Wise" <David_Wise@Phoenix.com>
Subject: RE: [R-390] RE: Field Changes

The above text is a bit scrambled. An original FC7 job will have "Decals located on VFO assembly and RF amplifier chassis" that say "Modified by FC7". The mod was intended for radios used in "supplementary radio spaces only".

It increases the value of two screen dropping resistors. This weakens the output of the VFO and the first crystal oscillator, to reduce emissions that could be picked up by neighboring equipment. With less injection at the mixers, an FC7 radio is less sensitive than normal, which is why they only applied it to the less important radios where it didn't matter.

I learned this by applying it to my own radio. After I understood, I undid it, and would never recommend that anyone else do it.

If I acquired a radio with FC7, and if it was for use, and in not a museum, I'd undo it.

Date: Mon, 28 Feb 2005 08:45:36 -0500
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] Re: R-390 Digest, Vol 10, Issue 23

The last time I was in Skycraft Surplus, 2245 W. Fairbanks, Winter Park, FL 32789; phone (407) 628-5634, they had a whole bin full. According to my old catalogs, the correct designation for these connectors is type MB

Date: Mon, 28 Feb 2005 10:09:30 -0500
From: "John KA1XC" <tetrode@comcast.net>
Subject: Re: [MB connectors

I was at Skycraft about a year ago on a vacation and saw these too and picked a few up. Cool place! However, you would need to be there yourself and dig out what you want as the counter clerks have absolutely no clue what they are. Bob, Fair Radio sells them (used) for $2.50 ea.

Date: Sat, 26 Mar 2005 14:24:37 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: [R-390] Blackface 390A on the e-place - BEWARE

This is a followup to the thread: "Big bucks blackface 390A on the e-place" about Item 5761820560, and is the story as I know it. I got a call this morning from Howard Mills. He's the person I referred to in my post to the R-390 list:

" ... A well known restorer of "black Collins" radios did a batch of black R-390A panels not too long ago. I wonder if this is one from that batch. ... "

In fact, it is. Howard shared with me some of the background on the situation and suggested that I post the information here. This is the story as I know it.

About a month ago Gary Baker, W3OG, had an R-390 and sold it to the seller of Item 5761820560, Dr. Jan C. Robbins, N0JR. Dr. Robbins wanted a black faced radio, apparently because he had a black cabinet, so Gary took the radio to Howard. Howard noticed the following:

1) The front panel was bent in the upper right corner.
2) The radio played well.
3) The nomenclature tag on the panel was a reproducton Collins tag of the more common short size.
4) The PTO was a COSMOS unit, and the name tag on it had scuff marks and scrapes.
5) The radio interior was moderately clean but by no means pristine.
6) The meters were of the type that do not have separate front covers.
7) He did not determing what the manufacturer of the radio was. He did not remove any modules although it appeard to him that the modules in the radio were from various manufacturers, as is typical of many R-390A's that have seen service and periodic depot maintenance.

8) He did not do extensive electrical or mechanical restoration of the radio, alignment, or cleaning, other than replacing the panel, knobs and frequency readout escutcheon.

There was a discussion between Howard and Gary about Dr. Robbins' desire to have the radio sent to another well known restorer of R-390A's and keeper of an extensive web site on the subject. It was Howard's opinion that the radio performed well and since it was moderately clean to start with, the value added would not be worth the cost. The well-known restorer was offered the job but declined it. Howard accepted the job of installing a refinished black front panel, knobs and frquency readout escutcheon. The panel he installed was of the type that uses a longer

nomenclature tag. The tag on the replaced panel was from Motorola. The panel, knobs, and frequency readout escutcheon had been refinished with black satin powercoat paint. The charge for the panel was adjusted upwards to account for the need for metal restoration work on the exchange panel. He re-installed the original meters without refinishing them. The powder coating process he uses involves baking at over 500 degrees F and only meter fronts that are separate from the meters can be refinished this way. The heat would ruin the whole meter. The now-blackfaced radio was shipped by Gary to Dr. Robbins within the last few weeks. Dr. Robbins posted Item 5761820560 on Ebay on March 20, 2005.

A background note on black faced R-390A's: Howard bought an R-390A with a black panel at a hamfest about five years ago, and still has it. The panel is black *anodized* aluminum, not painted, and appears to be the original panel. Visitors to Howard's shop commented on the black radio and so Howard refinished a batch of panels in black satin powder coat paint. He now offers these panels on an exchange basis for $150.00. Meter covers, knobs, and frequency readout escutcheons are available also. Reports have been heard from time to time about black faced R-390A's and the government agency that is supposed to have used them. I don't have any good information from people who were "there at the time". It appears that at least one batch of R-390A'a was built with black anodized aluminum panels. The panels, knobs, etc., that Howard offers are black satin power coated.

I summarize the situation. The quotes are from Ebay's auction Item 5761820560.

1) "This is my carefully collected, thoroughly restored, intelligence-agency-black R-390A." - Gary shipped a black-faced R-390A to Dr. Robbins within the last few weeks. That radio had not been recently restored except for newly refinished panel, knobs, and frequency readout escutcheon. The finish used was black satin powder coat.

2) "...the radio has been perfectly aligned." - No alignment was done recently to the radio shipped to Dr. Robbins. That radio was working well and apparently not in need of alignment. No thourough testing for such things as sensitivity, IF alignment, BFO calibration, PTO endpoint errors, HF crystal oscillator peaking, or the like had been done on it.

3) "I have compared this receiver on CW, SSB, and AM in hundreds of A/B tests with my Icom IC-775DSP." - Comparisons with the radio Gary sent to Dr. Robbins would have been done in the last week or two.

4) "It is mechanically, electronically, operationally and cosmetically as close to perfect as any R-390A you'll ever find anywhere, and absolutely

beautiful. When you first take it out of the box YOU'LL THINK IT JUST CAME FROM THE FACTORY--NO EXAGGERATION (only the rear panel reveals this receiver has ever been used)." - The radio recently shipped to Dr. Robbins by Gary had a moderately clean but not pristine interior, the meters had been removed
(unsoldered) and replaced in the refinished panel, the COSMOS PTO has scratched and damaged label, and the modules in the radio appeared to have been a collection of various modules from normal depot overhaul and maintenance.

5) "(... this is the best by far). I have had great pleasure restoring it to that highest level, and I do not like to see it go, but I am ageing and near retirement..." - The radio shipped to Dr Robbins by Gary was not pristine inside and had not been completely restored in the manner expected from Howard or the well known restorer of R-390A's who declined to work on it. - It appears that Dr. Robbins is 61 years old.

6) "Third, the receiver comes with a NEW-STYLE SSB CONVERTER that simply attaches to "line," "AGC" and ground connections on rear of radio; no internal mods. " - In the past a sealed module was offered that attaches to the R-390 in the same manner that creates audio-derived AGC voltage. An article appeared in Hollow State News about the module, and reported poor performance compared to the radio's normal AGC system. The module was taken apart and found to consist of one diode, one capacitor and one resistor, the values of which were reported. The author may have been Dallas Lankford. The module reported on was supposed to help in AGC action while receiving SSB signals, *not* convert IF signals to audio as other SSB
adapters or internal receiver modifications do.

7) " METERS ARE ALL ORIGINAL(!), a rarity. I wanted to keep them that way, so didn't powder coat."" ...the inside is as clean and neat as the outside, ..."
- It is the sellers opinion that original meters on an R-390A are rare. Other workers familiar with the radio find that meter-less radios or radios with substitute meters are the less common. - The meters on the radio shipped recently to Dr. Robbins had no removable front bezel and so could not be powder coated. - The front panel of the radio shipped recently to Dr. Robbins had been recently refinished in powder coat paint. The interior was clean but not pristine.

8) "Cabinet is FACTORY NEW (yes, BRAND NEW!!), a shiny intelligence-agency-black milspec CY-979A, the only new black one I have ever seen."
- In the last couple of years, a number of new CY-979A cabinets were available from Mac McCullough. It is not clear if any of those were black. It has been reported that those cabinets came from a military source. The

three at this location appear to be genuine military equipment and arrived in new condition.
- The front panel of the radio recently shipped to Dr. Robbins is black satin powder coat and would not match a shiny finished cabinet.

9) "NOTE: NOTE: I should have mentioned that Bidder ID is kept private in this auction to protect the privacy of honest bidders. A growing number of dishonest individuals make it a practice to contact and even harass those who bid on someone else's listed items, and I don't intend to help them. "
- A (possibly growing) number of Ebay sellers make Bidders ID's private to allow them to cooperate with someone who dishonestly bids the item up in price with no intention of actually buying it. This may entice bidders from such places as Germany and Japan to become interested in the item, and bid more for it than they would if they knew its true condition. The world of gambling uses the words "shill" "mark" and "patsy" to describe this activity.
- Reports have been seen of extreme dissatisfaction among auction winners when they asked Ebay to help resolve issues with sellers.
- It is unclear whether a seller of an item with private Bidders ID's has access to the bidding information, but a noble step would be to ask all bidders if they mind revealing that information later and make it available.

10) "... dishonest individuals make it a practice to contact and even harass those who bid on someone else's listed items, and I don't intend to help them. " - I belive I am an honest individual, and I certainly would send a copy of this to bidders of Item 5761820560 if I could. My intention would be to help them understand clearly the nature of what appears to be offered. That is the situation as I know it. Roy

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Date: Mon, 28 Mar 2005 14:04:50 -0500
From: "Christian R. Fandt" <cfandt@netsync.net>
Subject: Re: [R-390] Black faced R390-A

Well, I'm decidedly not a spook but my 390A was said to have come out of the NSA. I got it from a small surplus dealer up near Rochester (NY) back in 1984/1985. I recall him telling me he got it in a batch of NSA gear that he bought from an auction in Virginia. He had no reason to BS me as I kinda knew him. Additionally, Nolan spoke well of him during one of our private email exchanges on a TV7 tube tester I had bought elsewhere. Looks like a "normal", unmodified unit: grey panel, no shutter over freq indicator, made by EAC in the '67 contract. Haven't turned it on for 4-5 years. I need to get a chance to un-rack it and do the preventative maintenance stuff: replace blocking caps in the mech filter circuit, check electrolytics, clean and lube gear train, etc. You know, the typical stuff one should do to protect and preserve their fine RX. BTW, it seems I've only heard of one black 390x on the list but that was some years ago (5 or more?). Can't attribute it but, IIRC, it was simply a unit painted by one of the list members. Anybody

recall that? Doesn't it seem funny that if any black panel versions were factory-made and placed in the field in some quantity that some of us would have seen or at least heard of those units a decade or more ago?

Date: Mon, 28 Mar 2005 14:20:08 -0500
From: "Veenstra, Lester" <Lester.Veenstra@intelsatgeneral.com>
Subject: RE: [R-390] Black faced R390-A

Actually the best clue to a "spook enabled" R-390 is not the paint color, but rather the presence of the ten turn dial modification on the BFO. We tended to put that on all the receivers rather than keep track of the receiver that might have to meet an FRA-86.

Date: Tue, 29 Mar 2005 07:31:05 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] R390-A Contract Choices.

This is kind of turning into the "buy a new radio" thread so I suppose we might add a few things in here. Probably the biggest thing that gets me excited is the implication that you can simply buy one of these and run it forever with no problems. Certainly there are radios like that and I have a couple of them. I also have a couple that require a bit of attention from time to time. Every so often a radio decides all on it's own to switch groups. That's true of R-390's, other tube radios, and the solid state stuff. The main difference is that if you are used to the better solid state gear the tube gear is a bit more maintenance intensive.

Don't get me wrong here. The R390's are reliable radios and the work very well. They are arguably the most reliable and easiest to service high end tube radio radios ever made. However when they were designed it was *assumed* that they would be serviced from time to time. It's not hard to do if you have the simple test gear to do it.

Here's what you probably should think about getting with your new R390 if you don't have them already:

1) A VTVM. Don't worry a lot about which one, just don't pay a lot of money.

$20 to $30 gets a great meter.

2) A signal generator. Again keep it cheap. Probably stay in the below $50 range.

3) A set of tubes. Best guess would be below $40

That adds another $100 to your $400 investment in a radio. Trust me - it will be worth it in reduced frustration. The manuals are very good on explaining how to use the gear and the alignment work is straightforward. Doing the simple stuff yourself sure beats putting it in a box and shipping it off each time something goes wrong. Of course if you want to go a bit further there is more gear you can get. I think I'd put a second radio next on the list ...

Date: Thu, 07 Apr 2005 17:48:22 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Identifying Collins 390a

Both the early Collins and Motorola front panels were silk screened and not engraved. Like any statement concerning the 390 radios that should always be prefaced with "as far as I know ..." Sounds like your front panel is from a later build.

Date: Wed, 20 Apr 2005 15:49:17 -0400
From: "Jim Temple" <jetemp@insightbb.com>
Subject: [R-390] OT: Diode Matching

I am trying to match a set of diodes for a tube tester. They are 1N540's. The schematic says "matched for equal forward resistance". I have a Fluke 87 meter that has a diode test position. I get similar forward voltage indications of about .510 volts. I get similar resistance measurements of about 1.7meg.

What confuses me is when I measure the forward voltage in the diode mode, then without disconnecting the leads switch to resistance mode, I get either approx 40K resistance, or approx 380K resistance, randomly. When attempting to match for equal forward resistance, which procedure seems correct?

1. Simply measure the resistance.

2. Measure the diode voltage, then switch to resistance mode and measure the resistance, which gives me either approx 40K or 380K?

3. Measure the diode voltage, then switch to resistance mode, disconnect and reconnect the leads, which gives me approx 1.7meg?.

Date: Wed, 20 Apr 2005 15:27:01 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] OT: Diode Matching

I have to believe they are interested in the resistance of the junction with

the diode forward biased. Your meter biases the diode when in the diode test mode and shows the resulting resistance as a voltage drop across the junction. When you switch to the resistance mode you no longer have enough voltage to forward bias the junction thus the 1.7 meg reading. It should actually be infinity on a healthy junction...you may be reading your hands if you are holding the diode to the test leads with them. The intermittent reading is an anomaly of your meter....probably because of switching between modes with the leads connected to the diode. I would just pick a pair of diodes that give you the exact same voltage drop reading in the diode test function....should be close enough. Use clip leads and make sure you have a good solid connection at all points. There are other more complicated ways to measure the forward biased resistance but I'm not sure it would result in any better selection of diodes. A regulated power supply with a 1% tolerance resistor of a determined value in series with the diode and using the meter to either measure series current or voltage drop across the resistor or the diode junction are a few that come to mind.

Date: Wed, 20 Apr 2005 16:29:50 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] OT: Diode Matching

Normally what this cryptic little note means is "buy the over priced ones from us". Depending on what the circuit is actually doing there are a number of ways to match the diodes. The first question to ask is "how many diodes do you have?". The answer is usually a limited number so the whole exercise comes down to getting things close enough rather than perfect. I would take a low current forward voltage reading and use that to pick the two diodes that are the closest to each other.

From: Steve Byan <stevebyan@mac.com>
Subject: Re: [R-390] Re: Black 390A's

> As an Ex NSG type (CTM1), where would I find an "operator/maintenance
> TM for the Elephant Cage"?

Go to <https://www.logsa.army.mil/etms/online.htm>. Note carefully the "https"; the server won't respond to http requests. Click on the "I accept" button.
Click on the "Enter the Site" button. Enter "FLR-9" in the text-box next to "Pub Title Text" and click on the "Search" button. You see a screen with the following TM's:

TM 32-5985-217-15 - ANTENNA GROUP COUNTERMEASURES RECEIVING
AN/FLR-9(V7)/(V8)

TM 32-4940-201-15 - MONITOR AND TEST GROUP COUNTERMEASURES R SET, AN/FLR-9(V7)/(V8)

TM 32-5895-233-15 - SYSTEM CONTROL GROUP COUNTERMEASURES REC SET, AN/FLR-9(V7)/(V8) (S&I USAEMRA, VINT HILL FARMS STA, WARRENTON, VA 22186)

TM 32-5895-234-15 - INTERCEPT GROUP COUNTERMEASURES RECEIVIN
AN/FLR-9(V7)/(V8) F&M SYSTEMS COMPANY

TM 32-5895-235-15/2 - DIRECTION FINDING GROUP COUNTERMEASURES SET, AN/FLR-9(V7)/(V8)

TM 32-5895-232-PMCS - PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR THE RADIO FREQUE SWITCH MATRIX (RFSM) COUNTERMEASURES RECEIVING SET, AN/FLR-9

Click on the PIN, TM number or title to download the PDF. Some links will lead you to a "login" page; you need an official account to access these documents, which I presume are restricted. Most are freely downloadable, however.

Alternatively, call NTIS at 1-800-553-6847 or (703) 605-6000 8 a.m. - 6 p.m.; EST, Mon-Fri and ask them to search for TM's with "FLR-9" in the title. In 2003, I got the following list from them:

TM 32-4940-201-15 OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT AND DEPOT MAINTENANCE MANUAL FOR MONITOR AND TEST GROUP COUNTERMEASURES RECEIVING SET, AN/FLR-9(V7)/(V8) Paper Copy is $33.50

TM 32-5895-232-15/4 RESTRICTED NOT AVAILABLE PER ARMY DISTRIBUTION CENTER.

TM 32-5895-233-15 RESCINDED

TM 32-5895-234-15 OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT AND DEPOT MAINTENANCE MANUAL FOR INTERCEPT GROUP COUNTERMEASURES RECEIVING SET AN/FLR-9(V7)/(V8) F&M SYSTEMS COMPANY Paper Copy is $52.00

TM 32-5895-235-15/2 RESTRICTED NOT AVAILABLE PER ARMY DISTRIBUTION CENTER

TM 32-5985-217-15 RESTRICTED NOT AVAILABLE PER ARMY

DISTRIBUTION CENTER

I purchased the two that NTIS said were available at the time.

In googling the web, I see that
TM 32-5895-235-152 - DIRECTION FINDING GROUP COUNTERMEASURES SET, AN/FLR-9(V7)/(V8) and TM-32-5985-217-15 - ANTENNA GROUP COUNTERMEASURES RECEIVING AN/FLR-9(V7)/(V8) are apparently now available from Integrated Publishing <http://www.tpub.com/>. Dunno how much they want for them.

Date: Wed, 27 Apr 2005 15:06:03 -0400
From: "John KA1XC" <tetrode@comcast.net>
Subject: Re: [R-390] R390 Band Switch Alignment

Roger, if you want to see any post including your own just take a look through the archives. http://mailman.qth.net/pipermail/r-390/ Sometimes it's a little slow but it does work.

Date: Thu, 28 Apr 2005 14:29:43 -0700 (PDT)
From: "W. Li" <wli98122@yahoo.com>
Subject: [R-390] Re: unusual Capehart for me

Am looking at my third R-390A that I picked up at a hamfest last year. Due to unforseen family demands, it sat untouched under my bench for an year. Am now just getting around to it... Capehart 21582-PC61 #2716 according to the nametag (but we all know what that means). Anyway, it was outwardly clean, with original meters, unscratched grey engraved front panel, undeformed SS panel screws, and an outboard audio xformer jerry-rigged to TB-102 and a newer 3-line AC cord. All the knobs were there, and their action was surprisingly smooth. The seller knew nothing about the unit (selling it for a widow he ses'). Anyway, I snapped it up as a future project.

Imagine my surprise when I took out the P/S, audio, and IF modules and saw that all were Capehart, and that the Xtal module was also Capehart. The gear train looked too clean, and all the caps were original down to those yellow Aerovox ones and C-609. Looked at C-103 (bathtub) at its June 62 date. No brown beauties here which helps date it. All the RF slugs go up and down. All the solder joints I can see look 1960-ish, no newer ones. The electrolytic cans have 1962 dates on them.

I think that either this unit failed its functional checkout and just sat around somewhere; or that it was used infrequently (wishful thinking).....

Obviously, my work is cut out for me, before it gets powered up.... but

thought you guys might get a kick sharing this "find" with you. Never thought that such a clean unit would turn up at a 2004 hamfest, but then again, you can never tell. Will post my findings once they are meaningful to this astute group.

Date: Fri, 29 Apr 2005 15:50:11 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Re: unusual Capehart for me

>Am looking at my third R-390A I think that either this unit failed
.....

Not unheard of, though.

>Obviously, my work is cut out for me, before it gets powered up....

If I had it, I'd reform the power supply capacitors, check the audio cathode bypass cap for leakage/derioration, and fire it up. (DO NOT bring it up slowly on a variac!)

>...Never thought that such a clean unit would turn up at a 2004 hamfest,
>but then again, you can never tell.

I was lucky to connect with an essentially unused EAC '67 at a big hamfest a few years ago. I was pondering the price carefully till he said:"Oh, yes. I forgot to bring the double rack mount speaker that goes with it." That made up my mind. The radio has some failure in the RF deck, but I'll solve that.

Date: Wed, 04 May 2005 09:01:57 -0400
From: "Miles B. Anderson" <mbalaw@optonline.net>
Subject: [R-390] R-390 Progress - Schematic

Re: Your problem in printing a large schematic. LOGSA uses the Adobe Acrobat (*.PDF) file format, Download the latest version of Acrobat Reader (7.0) from the Adobe website -- free.

Go to the page with the schematic.
Click the "select" button on the toolbar (camera icon).
Press the left mouse button and use the cursor to draw a box around a part of

t

he schematic.
Open the "File" "Print" dialog box.
In the "Print Range" check "Selected Graphic."
For "Page Scaling" select "Fit to printer margins"
In "Page Handling" select "Auto rotate and center"

Then press OK in the print dialog box.

The result will be to enlarge the selected part of the schematic.
Repeat the process for the rest of the schematic and paste the pages together.

Date: Wed, 04 May 2005 16:49:22 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: RE: [R-390] R-390 Progress - Schematic

I've just put the schematics only from the manual found on the Andy Moorer's web site (jaminpower...) on my web site:
http://home.comcast.net/~roysmorgan/
Go have a look and see if these pages work for you. .each page is 8-1/2 by 11 and should print more or less to match lines up.

Date: Thu, 19 May 2005 16:41:13 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Fwd: Avoiding a bad experience

This was posted to the BA list. Seems like a good idea to me. Tom NU4G

> Subject: Avoiding a bad experience
> Reply-To: xxxxx@mindspring.com
>
> Well it happened to me again, I was holding a minature, near irreplacable, >spring in the jaws of my needle nose pliers attempting to reinstall it back into >the spring loaded split brass gears and sproing, it launched into space. I >searched my junked up electronics shop for hours and finally was lucky enough >to find it. This time I tied a length of thin cotton sewing thread to it and >attempted to install it once more. Yes it got away from me again but this time I >just reeled in the thread and there it was. John.

Date: Mon, 23 May 2005 16:27:40 -0700
From: "Scott Overstreet" <scott@becklawfirm.com>
Subject: [R-390] Connectors

Several times in the past there have been recommendations for members to try a particular guy or outfit for hard to find connectors----who is the guy or outfit?

My need is just a bit off track but it is real-----Specifically, I need one each of the following Amphenol "Blue Ribbon" series connectors:
26-159-16, 26-190-16, 26-159-24 and 26-190-24.

Date: Mon, 23 May 2005 18:31:45 -0500
From: <pmills7@houston.rr.com>
Subject: Re: [R-390] Connectors

I think this is the one you need...
http://militaryradio.com/Images/WilliamPerryCompany.jpg

Date: Mon, 23 May 2005 20:34:51 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] R390 RF deck cover

There is nothing sacred about the deck covers.
•

A double sided printed circuit board works fine.
•

A cookie sheet also works fine.

You can lay out the 8x32 machine screw holes with a paper bag and pencil. I like to mount a concrete / metal / fiber saw blade in my table saw to cut up cookie sheets and printed circuit boards for these type projects.

Date: Mon, 23 May 2005 20:43:55 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] R-390 "deadly components"

The R390 is the good receiver.
The R390/A is the cheep knock off model.
The R390 has none of the problems like the R390/A.

Having said that,
•

Check the tubes.
•

Check the 47 OHM resistors in the Audio and power supply deck.
•

Check the power supply filter caps in the audio deck.

You will not run into a problem until you run a tube to death. The tube that dies will likely take a resistor or more with it. Pull your decks out, do a good visual check to ensure you are not running with a burnt resistor from some past event. Check all the tubes in a tube tester for shorts. And put every

thing back together. Turn the receiver on and enjoy. Twice a year, check all the tubes in the tester. Put the tubes back in the same socket they come out of, Or you will need to do an electrical alignment. Signal to noise and super receivers are another topic.

Date: Mon, 23 May 2005 18:04:12 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] R390 RF deck cover

Roger, I make the RF deck covers as exact repro complete with silk screening. Fits R-390 and R-391. I made the die for the drop center edges and silk screens, the aluminum is cleaned and gold alodined prior to screening. They look real sharp. They are $25.00 plus S&H $6.50 and I am making so much money I just called my butler to have the Rolls brought around so I can run over to the airport to go to Vegas in my G II for the dinner show. HaHa as I die laughing rolling on the floor drowning in my tears.Hank KN6DI They look better than a printed circuit board to say the least.

Date: Wed, 25 May 2005 10:03:16 -0700
From: "Scott" <scott@becklawfirm.com>
Subject: [R-390] Fw: Amphenol Blue Ribbon Connectors

Thanks to Phil, Don and Roy------I found the Amphenol Blue Ribbon connectors that I needed at William Perry http://militaryradio.com/Images/WilliamPerryCompany.jpg and also some MS connectors that I needed for another job. The guy that I talked to sure knew his connectors and stock-----very efficient and helpful. Thanks again guys and to the group

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Date: Fri, 27 May 2005 01:35:56 -0600
From: "Kenneth Arthur Crips" <CRIPS01@MSN.COM>
Subject: [R-390] Coldheat revisited

I pulled my coldheat soldering pencil out to try to get some use out of it. I was doing some point to point wiring in the RME-45. I must say I was kind of surprised as to how well this thing worked if you use it properly. I found the trick was to make sure the contact LED is lit up before you hit the connection with solder, and that isn't always easy. The solder joints are very clean with a good flow and binding. I am not going to say Coldheat is anywhere near being a replacement for a good soldering station but in a situation where you might have small number of things to solder it might be ok. The bottom line is if you have one give it a try, again, remembering the contact light. If you don't have one spend more and get a proper rechargeable soldering pencil. If you get a ColdHeat for a gift act like you have been waiting for this for hundreds of years. It doesn't take up much

space in the tool box.

Date: Sun, 29 May 2005 12:01:38 EDT
From: RLucch2098@aol.com
Subject: [R-390] I was unaware they made this cover(pics)!

I never seen one of these but then again I only have a few R-390A's. Someone told me that these were used to "Hide" the receive frequency in a Military receiving station where they had many receivers.Does anyone know who made these? Where they put on or made by the Military? This one is on a
Collins R-390A

Date: Sun, 29 May 2005 12:23:46 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] I was unaware they made this cover(pics)!

They're not all that common, but not all that rare either. From time to time, Fair Radio puts individual flip-down covers on the e thing. I have one sample, not installed. No markings as to manufacturer. Not all that high-tech -- just a piece of sheet metal, stiff wire, a spring for friction to hold it in position and a piece of felt. The urban (or rural) legend says these were used by 3-letter orgs. like NSA, CIA, to keep monitored frequencies away from the prying eyes of passers-by. However, someone posted a link recently to a photo on a website that showed an R-390A with one of these covers in a mil radio shelter. They would also be particularly handy if monitoring the ball game. For anyone who may be interested, I am making available a small number of a newer version for only $25 each. No need to remove any screws -- these are magnetic, business card sized. Pay no attention to the "Ajax Plumbing & Heating", "<town name> Fire Dept.", or "So and So Realtors", etc. printed on them. Just a countermeasures diversionary feature. You might already have some -- keep an eye out next time you go to the fridge. ;-)

Date: Sun, 29 May 2005 12:50:25 -0500
From: "Barry" <n4buq@aol.com>
Subject: Re: [R-390] I was unaware they made this cover(pics)!

... and your covers stick to aluminum??

Date: Sun, 29 May 2005 14:37:40 -0400
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] I was unaware they made this cover(pics)!

These could be "black out" covers. The R-390A does not have a dial light dimmer. When the radio is used in a shelter, at night, there would be a requirement for a black-out door or turning off/covering up all light producers for someone to enter or leave the shelter.

Date: Fri, 17 Jun 2005 06:55:39 -0400
From: n4tua@aol.com
Subject: [R-390] New Owner

I am new to the list and am the new owner of an R-390A (Motorola, 14-PH-56, #651). It looks like mine has all chassis with the same contract number too. But, I have a few questions.

Has anyone ever seen a case were the bfo pitch and selectivity switch shafts were not aligned with the front panel holes? Is there an adjustment to align these? When I got mine the bfo pitch would not turn due to alignment. Now that the IF chassis is out it turns fine.

What are some good or critical things to do before applying power for the first time? I have removed the audio, power supply and IF chassis and inspected and am doing some clean up now. Thank you, Collin

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Date: Fri, 17 Jun 2005 08:04:58 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] New Owner

There's a certain amount of misalignment between any module and mainframe, but usually the worst is that it makes turning the knob a little stiff. Maybe a hard knock to the chassis (in shipping?) caused things to go out of alignment worse than this. The "usual suspect" is to remove the knob, loosen the bushing mounting nuts, wiggle everything into realignment, and retighten.

>What are some good or critical things.....

Replace the "killer cap", C553 on the IF chassis, with a higher-voltage unit. Also the electrolytic cans on the AF chassis and C609 on the AF PCB. Check the fuses for proper values. (I've seen 5 Amp fuses in the 1/8A position! Augh! I suppose a penny didn't fit...

Date: Fri, 17 Jun 2005 08:02:12 -0500
From: "Barry" <n4buq@aol.com>
Subject: Re: [R-390] New Owner

Make sure someone has not put washers or other spacers between the IF

module and the frame. That could cause a misalignment. The IF module is designed to mount directly to the frame. Just a thought.

Date: Wed, 06 Jul 2005 09:59:32 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: [R-390] Is this the same mini-BNC connector?

Is this the same as our favorite mini-BNC connector? Seems to be making a comeback in the "wireless" world:

http://www.tycoelectronics.com/prodnews.asp?id=686
http://www.trompeter.com/assets/product/PDF/250series.pdf
http://www.newark.com/product-details/text/catalog/80535.html

None of the prices are as cheap as Fair's!

Date: Wed, 6 Jul 2005 09:28:30 -0500
From: "Barry" <n4buq@aol.com>
Subject: Re: [R-390] Is this the same mini-BNC connector?

Sure looks like them. Any luck finding new 3TF7's? :-)

Date: Wed, 6 Jul 2005 11:34:18 -0400
From: "David Hallam" <dhallam@rapidsys.com>
Subject: Re: [R-390] Is this the same mini-BNC connector?

I'm not sure but they don't look quite the same. The connectors in the R-390A were MB series. I don't believe that is the same as mini BNC.

Date: Wed, 6 Jul 2005 16:01:36 GMT
From: "dps4@juno.com" <dps4@juno.com>
Subject: Re: [R-390] Is this the same mini-BNC connector?

The mini BNC is a new connector designed in the last several years to reduce the package size of the "standard BNC" The claims are 40% more connections in the same space. The Mini will not mate with the standard BNC. The standard BNC is the one designed in the 40's and used in the R390/URR. Just some info for all.

Date: Thu, 7 Jul 2005 19:49:50 -0400
From: "Michael Murphy" <mjmurphy45@comcast.net>
Subject: Re: [R-390] Is this the same mini-BNC connector?

The connector used in the R-390 is not a mini-BNC in my book. A proper BNC has a pin! The Amphenol connector used in the R-390 has a socket instead of a center pin thus making it a "Reverse mini -BNC". Ha! Amphenol

discontinued this connector series a few years ago. Only one company still makes this connector (well sort of) It is RF Industries in California.

http://www.rfcoaxconnectors.com/

The one that they make is 75 Ohms and will work only with RG-59 coax- unfortunately not mini-coax. They also make a bulkhead. These are compatible but are fairly useless except for test cables.. It is cheap, only a few dollars each, last time I bought some for work. The new Mini-BNC as you have found is simply a small BNC design. The world apparently needed one more connector. It is not compatible with the R-390. Darn..

Date: Thu, 7 Jul 2005 19:54:55 -0400
From: "Michael Murphy" <mjmurphy45@comcast.net>
Subject: Re: [R-390] Is this the same mini-BNC connector?

Here are the links to the connectors:
http://rfsearch.rfindustries.com/fshome.asp (The cable side)

And the bulkheads: http://rfsearch.rfindustries.com/fshome.asp

http://rfsearch.rfindustries.com/fshome.asp

http://rfsearch.rfindustries.com/fshome.asp

Date: Fri, 8 Jul 2005 14:51:29 -0400
From: "Tom Bridgers" <Tarheel6@msn.com>
Subject: Results of talking with RF Industries:

Spoke with Darryl at RFI, who told me their minimum order was 200 of RFM-2000 (the straight connector). For smaller quantities, he referred me to Chad at Current Source. Chad at Current Source (208-323-9692) had the RFM-2000 for $4.45/each for quantities under 25. For 25 pieces or more, their price is $3.34 each. Just a thought. Are their enough people who want these connectors for us to pool an order for 25? They'll have to go to one location and then
whoever receives them would reship to the others.

Date: Fri, 8 Jul 2005 16:20:31 -0500
From: Craig <westerman@cableone.net>
Subject: [R-390] Judging a R-390A for potential purchase

Questions on how to buy a R-390A. I'm my area there are never any R-390s for sale. My only options are to buy something from Fair, buy from a individual on the net or buy one via a ebay auction. Most I see on Ebay auctions are being sold by people that know nothing about what they have.

Please see this ebay auction.
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=5785656186

Description isn't very helpful and pictures are small and hard to tell condition.
Looking up production history on Chuck Rippel's site tells me that there were 5 or more built by Amelco. 1962 Amelco 35064-PC-63 5 (?) Serial number is 2179, so I'm guessing Amelco made more than 5.I email the guy asking questions. This is his reply:
--
I just opened it up....It looks very very clean and complete on the inside....only a few signs of surface aging...It was obviously kept indoors...I found it in the garage of an old house that was being demolished....Dont have my digital camera or I would take more pics of the inside....
--
Given what little information there is, how does one come up with a reasonable value for this receiver? It ultimately sold for $610. A checked receiver with replacement meters sells for $600 from Fair. Which would be a better deal? Or is it all just a crap shoot regardless from where you get them?

Date: Fri, 8 Jul 2005 17:33:52 EDT
From: R390rcvr@aol.com
Subject: [R-390] R-390A value

I have pursued all of the purchase avenues you discussed, and far prefer with dealing with someone off the list, or being able to see it first. Fair is very good about standing behind their rigs, and sending parts as needed, often free, but in my humble opinion, they have gotten pricey relative to the market. Their stockpile is really dwindling, so they are in hurry to give their gear away. I have purchased rigs off of ebay. About 50% of the time I am pleased, and 50 % disappointed. Some of the list memebers do sell on ebay, so they can give you good descriptions, which helps. the general antique dealers, you are on your own. I have had one come to me that had been rolled around in a sand box, and put away wet. You absolutely couldn't tell from the pictures or the description. My advice is to put out a request to the list, and see what shakes out. There are a lot of radios out there, and I think you can do better than ebay.

Date: Fri, 08 Jul 2005 17:38:28 -0400
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Judging a R-390A for potential purchase

> A checked receiver with replacement meters sells for $600 from Fair.

A different data point from Fair: A "Used/Reparable" unit comes with no

meters, a very grunged up geartrain, lotsa dirt everywhere, and some green dots indicating that Fair has swapped modules around from various units until they had a mainframe filled with working (but maybe not perfect) modules. Oh, yeah, don't forget that big yellow stripe across the front. I'm a couple of weeks into refurbing my yellow striper, getting maybe an hour or two each morning to play with it. At $350 it's the most fun I've had in a long time. If your objective is to start with a working radio, $600 or $610 or whatever is a bargain. I would be reluctant to spend that much on a clean but unknown-condition radio without a lot of pictures and very good assurance/reputation from a seller. Fair has that good reputation automatically. I'm wondering what to take on next... maybe a tube transmitter. Anyone here with opinions of the T-195/GRC-19? I have no personal interest in SSB modes, and it looks like it could be fun.-

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Date: Fri, 8 Jul 2005 16:46:56 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Judging a R-390A for potential purchase

This ones been bitten HARD! The T-195 is the companion transmitter for the R-392, the companion transmitter for the R-390 or the R-390A is the T-368, it's gray, ... or maybe the BC-610, which is a black crinkle finish. When you get your research done come back and we'll proceed further, hopefully you can find one nearby to look at, buying one is another story. The only reason I say it this way is because you might not believe me otherwise. It's not called the Beastly-610 for nothing. T-3,.... class by itself. http://groups.yahoo.com/group/T-368_BC-610/

Date: Fri, 8 Jul 2005 21:26:31 EDT
From: DJED1@aol.com
Subject: Re: [R-390] Judging a R-390A for potential purchase

There are tradeoffs on all the possibilities. I visited Fair recently, and talked to them about their refurbished units: The good news is that they put a lot of effort into repairs for the extra couple of hundred dollars- repainting the front panel, etc. The bad news is that you're getting a blue striper, which by definition has been abused, and no original meters. Buying on eBay may get you a radio with good meters, but unknown condition, and no recourse. On the other hand, I've in general been satisfied with my eBay purchases, but I try to deal with items which have ben described in good detail, and the seller has provided some assurance that the item works. At a flea market, you can at least touch and poke around the radio. I saw a half dozen R-390s at Dayton, and they seemed to be going for reasonable prices ($450-500). Most had original meters, but I didn't explore the working condition of any of them. Of course, we've been trying for years to get members of the list to share, but there have been few offers thus far.

Date: Sat, 9 Jul 2005 12:27:09 -0400
From: "Michael Murphy" <mjmurphy45@comcast.net>
Subject: Re: Results of talking with RF Industries:

Kind of cool to run into a "real" connector company like RF Industries. The connector is fairly simple in design compared to the Amphenol (a bit crude), but it is available and is reasonably priced. We used it for a mini 75 Ohm video connector on a microwave transmitter at work. It is characteristically hard to mate, but stays put. Buy a few and try them out. Again, the RFM-2000 straight male is designed for 75 Ohm RG-59 sized cable. I suppose that somebody could figure a way to make some kind of adapter to mini-coax, though.

Date: Sat, 9 Jul 2005 22:59:55 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Judging a R-390A for potential purchase

Short of a real chopped up wire harness, almost any R390 or newer R390/A can be repaired. If it has not actually undergone a fire, it is likely repairable. Over the net, ask for lots of pictures. It's worth driving over to see it and bring it home yourself.Nothing like seeing one, first hand at a swap meet. Fair Radio delivers as advertised. If it has just been setting around, these are easiest to fix. Painted front panels are about $150.00 Do not fret over bent metal, That is all fixable. Consider your own skills. There is no reason to buy something you cannot fix up your self. Do not worry if you know what needs fixing in an R390. The folks here on the list will happily walk you through any problem. We been there and we have done it. But your stuck doing the work yourself. You are going to have to do your own washing and soldering. Pick a problem any problem, jump in anywhere with it on the list. We will slow you down, back you up and feed it to you step be step with the test equipment you have on hand. We will help you get to the problem part. Then you have to fix it yourself. If you think you would like to take a "project" on, R390's are great "projects" You can buy almost any thing and get it operational. Over the long haul the cost of tubes will be your biggest expence. You may do a one time tear down with, cleaning, new caps and some rework. The missing knob or meter can be costly. Mostly the issue is finding time to make the repairs. Back in the old days, 68-75, I never saw a problem that was not located with more than a signal generator and a volt meter. Neither needed to be calibrated or very accurate. Obviously more is good, but not required. Older receivers are now presenting problems that take more thinking to solve their problems, or more careful inspection and test. But you do not need a laboratory of test equipment to support the receivers.

Over $650.00 you better be getting a fine receiver from someone on the list

or past list member who put more hours than you want to know about and love into the receiver. If you can afford it your still stealing the beast. Pay your dollars and run home with it.

$650.00 Really good looking paint job smoked inside. (your buying a paint job)
$500.00 Original paint and meters good working receiver.
$450.00 Original paint lost meters good working receiver.
$400.00 Original paint meters "If was working the last time it was powered on before the kids were born"
$300.00 It is at least all there. No real obvious missing broken parts.

For things missing subtract the cost of item from Fair radio and $100.00 for repair time. even if you are doing it your self. Would I spend more than $650.00 on a receiver? From the right guys on the reflector here, In a New York Minute. Would I walk past one in a swap meet? Only when I have spent all my money. Roger KC6TRU

Date: Sat, 9 Jul 2005 22:08:50 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] Is this the same mini-BNC connector?

Yes, sort of. The mini-BNC we were talking about is designated "MB" and is the type found in the R-390A, while the "normal" BNC is used in the R-390. The connector from Trompeter appears to be new design and is different from the mini-BNC found in our radios - which was the subject of the first email. The earlier MB connector was a bit smaller than the M-BNC, but the new connector has better mechanical properties and impedance characteristics. Regarding Mike Murphy's comments on finding info on the older style connector, I think Steve Haney - of Haney's Surplus - has several small lots of prefabricated 75 ohm cable assemblies, or he did earlier this year. I bought a bundle, may have a couple extra if anyone wants. If I can find where I put them. I also need to dig up Steve Haney's email today.

Date: Sun, 10 Jul 2005 00:03:41 -0500
From: "Brad Huff" <huffb@avalon.net>
Subject: [R-390] Cleaning Potentiometers

I apologize if this has been discussed before but sometimes it's the simple things like this that can cause us the most trouble. What are you guys using to clean and take the noise out of carbon potentiometers? I've heard horror stories about the different brands sold for this purpose. I've even heard of the value of resistance changing after using some cleaners, this in fact has happened to me and I'm still waiting to see if it will return somewhat to what it was before cleaning. I've been told that the stuff Radio Shack sells is not good for carbon pots and that the mineral oil in it will attack the

carbon element. Any thoughts?-Brad

Date: Tue, 12 Jul 2005 12:06:15 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Where do I begin?

Ah yes, the old yesterday it worked, today it does not problem. Number zero if you have an R390/A, check C253 (C553) in the IF deck. If this is a brown or black plastic cap that look original, replace it NOW. If this cap shorts or leaks it kill the mechanical filters. Use a .01 600 volt orange Sprague or high quality cap. Number one due to the hours of tube time used, all the tubes need to get checked. Likely you do not own a tube checker. So task one is to locate a shop
that still has a tester you can use. Just finding a shop or parts house with a tester can be a job. Sooner or later you are going to need to check the tubes and start weeding out the weak, noisy and bad ones. Getting a set of tubes that are good will likely get you some signals back. Then you will need to get into an alignment.

Number two is to find your self one of those silly spline keys to fit all the RF slug rack, cam clamps, and knobs. A good tool store. You can grind an L wrench off solder a length of spline into a tube to make a long screwdriver tool. A once in a life time task.

Number three is to find your self a long #1 Philip screwdriver. #1 is a #2 that is too fat for some spaces. Long as in to reach into all the recesses to the green screws.

See the late mail here on noisy pots and getting them cleaned. Also see the mail on cleaning up your gear train. Have you found the Y2K manual on line? You should get a CD copy if your Internet connection is slow. Back in 1999 the fellows did an awesome job of producing a great manual for the R390 on line and available also on CD. The work got titled The Y2K manual. You can fix your R390 your self, No problem, If you have a voltmeter you can do a reasonable job of getting it aligned from the Calibration tones. If you have a voltmeter, an RF signal generator and the Y2K manual, you can read and adjust your receiver back up to a great receiver. After old tube problems, the R390/A has some sorry caps. Old age is getting the electrolytic filter caps. There are a bunch of brown or black plastic caps that fail. These just get replaced. Filter caps plug in. New ones are hard to find. You can put new caps in the old can. Put new caps in 8 pin octal tube sockets and plug those in. You can put caps in relay cases and plug those in. The brown or black caps just get replaced in circuit. New caps are smaller than the original. You will be amazed at how much space is under the deck after you get those caps all replaced.

Go read the R390 archives. Lots of good detail. Lots of dead horses to read around. After reading for a day you get some topics to read on and then sort and read by thread. You will want to deal with the 26Z5s being replaced with diodes. The ballast tube being replaced. Roger KC6TRU

Date: Wed, 13 Jul 2005 05:52:03 -0400
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: [R-390] C553 ever a brown beauty?

> ..... if you have an R390/A check C533 in the IF deck.....
> If this is a brown or black plastic cap that look original, replace it NOW.

While I fully agree with the recommendation, did they ever manufactureIF decks with C553 a brown beauty? I've always seen Sprague Vitamin Q's or Westcaps in this position in apparently original IF decks. It's possilble that the depots swapped out brown beauties and put in the metal-can-with-hermetic-seal caps decades ago, of course. My experience is definitely not with pristine all-original radios.

Date: Mon, 18 Jul 2005 08:38:31 -0400
From: "Miles B. Anderson" <mbalaw@optonline.net>
Subject: [R-390] What to do now

I have been able to find many of the precision mechanical components needed for R-309A repair at Winfred M. Berg, Inc. 499 Ocean Avenue, East Rockaway, NY 11518 Tel: 1-800-232-BERG, Fax: 1-800-455-BERG website---ww.wmberg.com. They have a lot of hardware including gear collars, oldham coupler springs, snap rings (but no 8-36 spline headed set screws that I could find). They are nice to deal with, and I have used them for years.

Date: Mon, 18 Jul 2005 07:32:34 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] What to do now

I have all of the above plus more. Hank

Date: Sun, 24 Jul 2005 22:24:39 -0400 (EDT)
From: John Lawson <jpl15@panix.com>
Subject: [R-390] Non A questions for the experts

I have paid for, and will pick up, the R-390 I bought, in a couple of weeks. A freind and I have been looking at the pictures on the auction page, but they were assembled as a collage of several images of the radio, and thus the individual ones are too small to carry enough resolution to tell fine details.

Like the manufaturer, f'instance. I've brought the photo into PaintShop Pro (which I'm fairly 'good' with) but there are just not enough pixels to completely read the data plate. It *looks* like the manufacturer is Westinghouse, Inc.... but my friend has a book of 390 lore and lineage, and he informs me that only Collins and Motorola made Non As. Maybe the plate has been replaced? It *does* say "R-390/URR" and this rig was for the Navy. Also, on the back panel, are two of those round, small/few-pinned blue connectors with a threaded boss in the middle, like a lot of the PRC and GRC radio sets used for interconnecting cables.... again I can't read the nomenclature above and below them - not having ever owned a "Non A" before I thought I'd ask their purposes.. No tools left, but the 7 and 9-pin straighteners are there. Now I can get my R-388 out to Howard Mills for refurb and still have two HF Boatanchor recievers in the shack.

Date: Sun, 24 Jul 2005 23:22:52 -0600
From: "Kenneth Arthur Crips" <CRIPS01@MSN.COM>
Subject: [R-390] Pin straighteners

Does anyone make tube pin strengtheners anymore, I have been using ceramic tube sockets to do this but if I could get the real deal it would be nice.

Date: Mon, 25 Jul 2005 02:20:30 -0400
From: n4tua@aol.com
Subject: [R-390] R-390A restoration

I have posted some pictures on the web of the restoration in process,
http://hometown.aol.com/n4tua/r390a.html
http://hometown.aol.com/n4tua/phase1.html

Date: Sun, 24 Jul 2005 23:32:38 -0700
From: "Dan Merz" <djmerz@3-cities.com>
Subject: RE: [R-390] Non A questions for the experts

John, the connectors are power on the left and remote control on the right (looking from the rear of the receiver). You'll need something to connect to the power connector to operate the radio. Maybe your seller will have the connector. I bought one from Fair Radio for about $15 without a cord. Some guys use Molex connectors and make something up but it's nice to have something close to the original with the center attachment screw to hold it on. I haven't explored the function of the remote control connector. This is a great radio - I listen to it more than the 390a currently - never thought I'd buy one, but it was staring at me at a swapmeet so I bought it earlier this year. Best regards, Dan.

Date: Mon, 25 Jul 2005 06:36:03 -0400

From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: [R-390] R-390(A) patents?

Is there an index online of patents applicable to the R-390 and R-390A? Off the top of my head (well, bottom of my rig) I see my PTO has patent number 3,098,989 on it. Don't know what else is in there.

Date: Mon, 25 Jul 2005 09:33:39 -0400
From: "Scott Bauer" <odyslim@comcast.net>
Subject: [R-390] Order number list?

Does anybody keep a list of the different order numbers for the 390A's? I am curious to find out how many different ones there are from all of the manufacturers.

Date: Mon, 25 Jul 2005 10:04:42 -0500
From: Craig <westerman@cableone.net>
Subject: Re: [R-390] Order number list?

Not sure if this is complete or not, but it's a start.
http://www.r390a.com/html/Ordernumbers.htm

Date: Mon, 25 Jul 2005 11:18:12 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Order number list?

Yes. Tom Marcotte has kept a list: Tom Marcotte <courir26@yahoo.com>
here it is: http://www.hausernet.com/r390faq/CONTRACTSL.htm

See: http://www.r-390a.net/
and click on "<http://209.35.120.129/faq-manuf.htm>Manufacturers "
to get info and pictures of name tags.

>I am curious to find out how many different ones there are from all of the
>manufacturers.

Information of this sort is only approximate. Tom's list is the best available. Unless you have a crystal ball.

Date: Mon, 25 Jul 2005 12:38:56 -0400
From: Barry <BarryG@visi.net>
Subject: [R-390] Depot Dawgs

I have been on this list for years, I enjoy the 390A es 390 tech talk. This is my first post, I hate the off topic stuff, but having put up with it this long, maybe you can indulge me. This has been discussed in the past, however,

not recently. I worked in a Depot for 5 years, Naval Air Rework Facility (NAS Norfolk). EVERY ITEM WE OVERHAULED HAD TO PASS THE FACTORY SPEC. PERIOD. Were there different manufacturer's for the same item? Yes. Did various modules from various manufacturer's end up in a different mainframe? Yes. Did the build quality differ from vendor to vendor? Yes. Zero defects were the stated goal at my facility, EVERY piece of gear I personally overhauled had a document with MY artisan stamp (number unique to the tech) on it. Plus, there was a SEPARATE Quality Assurance Dept. that sampled 50 to 100 percent of the output of equipment from the shop. God forbid you got a QDR (Quality Deficiency Report) back from the customer on a piece of gear you certified as spec. It created a real problem for the shop and tech. I suspect and have seen, this "DEPOT DAWG" moniker used by various morons and radio snobs over the years. Who might not have a TRUE appreciation for the depot overhaul process as I saw it. Of course there could be one bad apple in every barrel, however, in this case THAT apple didn't spoil the bunch. To reiterate: EVERY ITEM WE OVERHAULED HAD TO PASS THE FACTORY SPEC. PERIOD!

Date: Mon, 25 Jul 2005 13:39:38 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Depot Dawgs

Hi Barry, thanks for your comments in the R-390 list. I think most of us refer to the "Depot Dawgs" with affection as far as the R-390A's go. I can appreciate the quality control that goes into the depot repair process. I think the point was that if someone is asking $3500 for an R-390A then it ought to be in absolutely mint condition as if it came from the factory. If it is a mix of parts from different manufacturers then it couldn't really be the same as if it was like new and came from the original factory, as far as the collectors are concerned. Of course operationally it shouldn't make any difference. Lighten up guys!

Date: Mon, 25 Jul 2005 13:48:53 -0400
From: JMILLER1706@cfl.rr.com
Subject: Re: [R-390] Depot Dawgs

One of the design features (and a key government requirement) of the R-390 series is the ability to interchange modules for repair purposes, regardless of the origin of the module. To be a "Depot Dawg" for an R-390 then is to be an R-390 that better conforms with the original designer and government intent and expectation. It could be argued that if you do not have a depot dawg, then you have something inferior because the full strength of the design has not yet been realized. A true R-390(a) should be able to substitute modules from different sources with no perceptable change in performance. Only until you have done that can you claim having a truely valuable 390.

Date: Mon, 25 Jul 2005 14:22:32 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Depot Dawgs

Oh no -- another Barry. Well, I guess we may be missing one or two, but there's another who also just has "Barry" as the display name, so might be helpful if you added something to it. "Depot Dawg" is more of a realistic "term of endearment". Whether done at the depots or some time later, as you've affirmed, R-390's are modular and you're supposed to be able to swap modules around. Some have in mind the "holy grail" of R-390A's -- the one where the modules all match. From where I sit, I don't even know if all of the new receivers direct from the
various manufacturers matched in the first place. (could have "borrowed" modules from other subcontractors if they needed them to complete rigs.) The "NIB" find on the e-place may well be a matching one. Are radios with matching rubber stampings on the modules better than the majority? Probably not. It's just the rarity and novelty, I guess. Not motivating enough for me to go chasing one for a primo price. I don't know of a single "radio snob" on the list. OK, some are opinionated. Some say that it's the original R-390 that's the "man's radio", etc., but really not coming from an elitist position.

Actually, it's pretty tricky to even set out to become an R-390A snob.What's better? Some prefer Collins made, but they are, on average, older. There is the segment that want EAC '67's or nothing. How about an all Collins with matching modules except one, an SW audio deck, vs. an EAC '67 with matching modules, but isn't working and has seen better days. Or that Collins with one mismatch vs. a Teledyne with all matching ones? There are some practical reasons to prefer the EAC '67's -- better Teflon insulated cables, etc, but not the smoothest gear train. And, going on 40 years old anyway, subject to the same rebuild caveats as all of them.

Even that NIB -- if it is really so, is way overdue for PM and is sitting there with failed caps needing replacement. Functionally, you're better off with a privately preowned one that's been worked on and running up to yesterday.

But, back to simpler things. The origin of the "depot dawg" term is that a radio with mixed modules is analogous to a mutt, while a radio with matching modules has some sort of pedigree. The mongrelization may have just as readily occurred long after the military, by private owners and even as you read this, somewhere in Lima Ohio, modules are being mixed 'n matched to cobble together working radios from the remains of St. Julien Creek massacre
victims. They may be closer to "Franken-radios" than dawgs. But after they're purchased, cleaned up, restored and tweaked, they're as good as any.

Some still seek the matching modules pedigrees, the grails. Don't know what happens after they find 'em. Either they get really lucky or struck by lightning. Maybe that explains what happened to some of the missing list members. ;-)

To be clear, "depot dawg" is not a putdown of the depot work. Just an expression that covers the majority of the receivers, including the ones that have been professionally rebuilt at high cost.

Nobody's casting aspersions on your work at the depot -- at least I'm not.The problem we have is with the guys who ordered the guys who ordered the tank drivers to run over and put down the other puppies.

Date: Mon, 25 Jul 2005 11:38:28 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] Re: Depot Dawgs

Barry, You may have been lurking in the shade but you missed it somewhere back down the road, I have been on most of these list when there was only one Barry, I do not remember anyone talking about the depot overhauls other than a couple that had some QC problems. IIRC the term "Depot Dawg" came about in the discussion of the process that all of the, in this case RADIO's went through.

Like all of the modules, parts, tags, panels and frames went on there merry way throughout the process and after be checked they all came back together, shook hands with new family members i.e. Collins, Eac, S-W etc hey lets all work together and down the road they went. My guess they all met specs at least but some of them happened to have better genetics so they performed better, less wrist power, better audio, etc. etc.

It all boiled down to some Purist wanting an all Collins, or whoever brand with matching S/N or some nitpicking category that had no bearing on the performance of the subject radio. I do not remember anyone badmouthing any of the Techs. at any time. Radios are just like Caddies, Rolls, Fords they all somewhere had and have and will continue to have LEMONS and I do not mean a twist with the Scotch & Water either. So if your feelings are hurt maybe you should consider lurking until you have all of the facts, And last but not least I am not a moron as you implied about some of us that use the term DEPOT DAWG. I believe in doing things correctly and up to specs With over 20,000 hours in my flight log flying J-2 Cubs through Boeing 747's had to do something correct. I feel you owe the list an apology.

Date: Mon, 25 Jul 2005 11:45:41 -0700
From: "Kenneth G. Gordon" <kgordon@moscow.com>

Subject: Re: [R-390] depot dawg - demeaning ?!?!?! Humph!

The term "depot dawg" is, to me, not a demeaning term: it is a "term of endearment". It means that the receiver in question has been loved and abused, worked on by someone who cared and brought back to life, possibly more than once. I would much rather have a depot dawg than an NIB one. They are (usually) cheaper, and work better. I USE my receivers. I don't put them on a shelf and admire them from a distance. Humph! "Demeaning", indeed! Let the snobs have the NIB ones; I'll take a depot dawg any day. And anyone who actually WORKED in a "depot" has my sincerest appreciation for doing such an excellent job on our beloved "dawgs". You were the first who really cared: we've learned from people like you.

Date: Mon, 25 Jul 2005 15:11:23 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] depot dawg - demeaning ?!?!?! Humph!

>.. it is a "term of endearment".....

That's the way I took it. How about another term: "Old Soldier". I have one R-390A which has apparently done so much service in knob-twisting mode that the paint and aluminum at the tuning knob have been worn down into the panel. There's a half moon shaped ring around the knob you could almost hide a dime in. How many SIGINT signals do you think that thing tuned in over the years? This one did not sit on fleet common 24/7 for 15 years and haul in those loud broadcasts from Norfolk day in and day out. I will not be filling and painting that panel. I feel that it deserves to be appreciated for what it has done.

> It means that the receiver in question has been loved.....

About once a year, the only still-flying B-29 flies into this area (Suburban DC) for an air show or two. There is nothing in the air that sounds like a B-29. There is no other flying B-29. None. The thing was "born" just after I was, and is still flying. I wonder how many engines it's gone through? How many tires? See: http://www.cafb29b24.org/fifi.shtml One of these days, I'll have both my essentially-unused EAC-67 and my oldest Collins-made R-390A side by side for a happy comparison. There's no telling which one will work the best, but I am sure they will BOTH be working just fine. that's the wonder of it for me.

Date: Mon, 25 Jul 2005 22:11:38 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Depot Dawgs

>ought to be in absolutely mint condition.....

Naw Todd, If someone is asking $3500.00 for an R390/A, it ain't the way it come from the factory, I think you are getting a paint job. Way too much paint for a receiver.

Really good receivers, less paint, with whole lots of hours of maintenance can be had for a lot less than $3500.00. At this level old PT is looking for his one a minute. It ain't a crime but it is expensive entertainment.

And Barry's right, If it got out of depot it ain't no dawg. Since when did R390's become something to look at? They are supposed to be glowing in the dark and knocking your ears off, not knocking your eyes out. Even new radios back in the 68-75 window were not good looking,

My goodness Navy gray paint and other paint on stuff that would kill almost any known fungus. We were like supposed to touch that stuff every day.

Date: Tue, 26 Jul 2005 10:23:00 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] NOS R-390A on the E-Place

Anybody ever seen one of the EAC Rocketship radio's. One that was sold to the public directly from EAC in the late production years. I've never heard of one being seen, but I remember seeing the ads... It would be very interesting to see just what a radio that has never seen the Mil.Maintenance/Depot system looks like on the inside. Matching numbers? Built to the same Mil. Spec's? I would think it would be the standard for what one would expect a non-depot
puppy to look like. I have a couple R-390A's with all the same manufacturers modules inside...and a tag that matches but the numbers don't match...I'm not sure it's reasonable to expect they would. I envision several assembly areas....one for each module type and would expect them to be numbered as they were built uniquely from each other. I would think final assembly of the radio would be from a stock of available, tested modules with a resulting mix of numbers.....but as has been mentioned I would expect them to be close....within a few hundred of each other. The bottom line is...due to the excellent design of the radio it doesn't make any real d difference.... except that the 67 EAC with all EAC modules is the youngest of the pack. I have one of those that is close.....the audio deck is Collins if I remember correctly. It's a true DOG. It was in the pile at SJC and it did not stand up to the elements as well as the earlier radio's. The plating on the chassis and modules is thin and didn't protect the radio. What a shame! Works pretty good but will never be pretty again! Good platform for mods testing I guess.

Date: Tue, 26 Jul 2005 08:55:48 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] Rocket Ship Radio Pics

I had one of these, well actually it did not have a rocket ship tag, but a special brass tag as it was presented to the EAC chairman (Robert Edwards) and that is who I bought it from. It was labelled "THE MILLION DOLLAR RADIO" as that is what it cost to make the first one. The s.n.s were all cats and dogs, like a 29 mixed in with a 15,000 or some such thing. No matches. Here are some pics.

http://www.geocities.com/courir26/edtop.jpg
http://www.geocities.com/courir26/edfront.jpg
http://www.geocities.com/courir26/edbot.jpg
http://www.geocities.com/courir26/edback.jpg
http://www.geocities.com/courir26/Ed390A.jpg

It had one shorted cap and the PTO was a bit off endpoint, otherwise it was cherry. I don't think he ever used it. One of our members on the list has it now.

Date: Tue, 26 Jul 2005 06:20:21 -0400
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] NOS R-390A on the E-Place

A metal decal applied to the back, saying "OVERHAULED TOBYHANNA ARMY
DEPOT DATE 2322"? What does 2322 translate to, anyway?

Date: Tue, 26 Jul 2005 13:13:55 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: RE: [R-390] NOS R-390A on the E-Place

It's a R-390A, so can't be 52. 72 seems most likely. I don't think 82 is impossible. Even though all the modules are from the mid-60's onward, I think the mainframe may be older (it seems to have been retrofitted with B+ fuses), so maybe even 62.

As long as we're talking about dates and decals, I've got in my other radio a PTO with a Raytheon (Los Angeles, CA) decal. I believe they did not manufacture but did refurb the PTO. I've seen rigs at hamfests with Raytheon labeled PTO's too, so they probably did a lot of refurbs. What years did Raytheon do this?

Date: Tue, 26 Jul 2005 13:16:21 EDT
From: Llgpt@aol.com

Subject: Re: [R-390] NOS R-390A on the E-Place

The dates are usually on the Raytheon decal, at least the ones I've seen. The contract number too.

Date: Fri, 29 Jul 2005 08:18:22 -0400
From: "Veenstra, Lester" <Lester.Veenstra@intelsatgeneral.com>
Subject: [R-390] Tools for maintenance

I am about to on pass an R-390A to a new user who will need to do some mechanical and alignment work on it. I have the issue tools, which I will retain, so need to give a list of commercial tool sources for the untypical tools required. I am thinking in particular of the long handled Bristols needed to remove knobs and to get to clamps inside. Anyone with suggestions?

Date: Fri, 29 Jul 2005 09:18:36 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Tools for maintenance

McMaster-Carr part numbers:

55705A48 Screwdriver-handle 0.096 x 6 Bristol driver
7048A31 Long-arm 0.096 x 6 Bristol spline L-wrench
7048A18 Short-arm 0.096 x 6 Bristol spline L-wrench

The screwdriver handle driver is the most useful but the L-wrenches come in handy in certain circumstances. There are some smaller spline socket screws for calibrating the PTO but those aren't so immediately necessary. Also, don't forget some long phillips screwdrivers (#2 and #1), and split-ring pliers.....

Date: Fri, 29 Jul 2005 16:25:59 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Out from the shadows ...

>Since I'm mostly sure there's nothing tremendously wrong w/ radio my plan >of action is to do the absolute minimum to the rig that'll get it up and running >and safely. This includes (here's where I'd really appreciate opinions) visual >inspection underneath modules, replacing electrolytics, and replacing two

> nasties in IF module. I'll also be putting a three prong power cord on radio and
>lubricating gear train. <snip>

Nice catch! I see you've been very busy with it. First thing is to fix the filter caps, temporary is good, rip the bottoms from two OLD, no good, octal based tubes or get the bases from two "ice cube" relays. Clean them out and solder in some new electrolytic caps of the proper value, this will get the radio back up and running until you figure out what you want to do with the old filter caps. This might solve the humming problem, too. If not we'll do something different.

Next, replace the capacitor that protects the mechanical filters from B+, I think its C553 in the schematics. Use and Orange Drop or similar.

While you're waiting for more information do the resistance and voltage checks in the manual, this will give you a baseline reference for THIS particular radio when you need to do troubleshooting in the future,... or, you may find something amiss now.

Any cleaning or visual inspection you do now will get you more familiar with the radio, and lead to even MORE questions. Be careful with the pins on the plugs, they are soft brass and bend/break easily. Tighten all ground connections while you're in there, even the tube socket bolts, trust me, they're loose, look for corrosion.

Look into getting a VTVM and a URM-25D signal generator as shown in the manual. Oh, sure, there are better ones but the URM-25D is cheap and its the one used in the manual,... besides, its just as interesting as the radio!

Date: Fri, 29 Jul 2005 20:23:05 -0400
From: "Dave Maples" <dsmaples@comcast.net>
Subject: RE: [R-390] Out from the shadows ...

All: As an aside, I just finished recapping an old AM-FM broadcast-grade monitor tuner (Meissner). I didn't use the orange-drops; I chose some different axial-lead caps from ARS that were referred to on one of the lists recently. I really liked the way they went in, and the specs seem to be as good or better than the ODs in this application. The tuner sure did like them also, if the performance is any indication.

I used ODs on my 390A, but I wanted to pass this along for what it's worth. I highly recommend looking the specs over and drawing your own conclusions. I also concur with the assessment about the need to replace the filter killer cap. It's too cheap a thing to do to not do it and not provide additional protection for the very-hard-to-find filters. That's one I won't stand on ceremony over.

As for the others, I'm not going to give an opinion.

Date: Fri, 29 Jul 2005 20:39:30 -0700
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: [R-390] What to buy...

Are certain manufacturers better than others? For instance, is Collins better than Motorola? Or does it really matter? Is a 390 better than a 390a? Or is that another case of it does not really matter? Thanks for the answers,

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Date: Sat, 30 Jul 2005 11:34:56 -0500
From: "K3PID" <k3pid@sbcglobal.net>
Subject: Re: [R-390] What to buy...

Now there you go starting yet another discussion over which is better :>) Ostensibly they were all manufactured to the Mil Spec I believe was created by Collins and therefore should all be the same except for mods etc. There is however, a significant difference in the A vs non A in that the A was the result of some serious cost reduction efforts that replaced the filters with crystal filters among other things which resulted in much sharper skirts. The argument over which is "better" will go on as long as there are both version but I think most in this list will agree that there is a "softer" sound to the non-A. If you listen to AM broadcasts, the non-A might be a better choice...

Date: Sat, 30 Jul 2005 02:00:21 -0700
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: RE: [R-390] What to buy...

Hi Tracy, Well that question is going to draw a good bit of fire from a few. In my opinion and I think you will find most of the guys opinion there is not any real way of telling who made your radio by looking at the front panel. Here's the drill. During the life of your radio it periodically went back to a depot somewhere that completely disassembled it for overhaul. The modules were scattered amongst the modules from two dozen other radios. I guess guys and gals trained in specific modules were sitting daily rebuilding IF decks for example. The rebuilt modules would go in a finished module pile. Meanwhile the front panel was refinished along with the knobs. What I didn't mention was that early in the process the front panel tag was removed and placed in a bin with two dozen others as well.

Once the front panel, chassis and knobs were all cleaned up and reassembled the tech would go and grab a full complement of modules from the completed module bins and start dropping them back in the radio...with no regard for manufacturer....because that's how the R-390A was designed. All manufacturers worked from the same military specifications so the modules were all interchangeable. Once the radio was reassembled, lubed

and aligned back to specifications, they grabbed a tag from the tag bin and screwed it down to the front panel... That's why the guys call them "Depot Dawgs"

So....it might say Motorola on the tag but have an EAC IF deck, an Amelco RF deck, a Motorola power supply, a Collins PTO and a Teledyne Audio deck. Occasionally one will find a radio with matching modules and front panel tag. I have a couple like that. Some may have never been through depot. I have a Motorola from the 56 contract that appears to be that way. Is it more valuable...probably not. The only thing that seems to make one more valuable is if they are all Collins. There are guys out there that will only own or buy one that is all Collins. Purists I guess. Are they any better....well some will argue that the build quality is different between the manufacturers....I've only seen minor differences. Certainly the EAC's from the 67 contract are the newest of the line and should be in the best shape but it all depends on the life it lived. Also many others will tell you that the most used radio's are probably the best.... I tend to agree with them to a point. Well used means it was probably dependable and worked well. Pristine coming out of surplus may mean it was a depot queen. Was broke all the time and never saw much time being operated...If one had a problem that nobody could seem to crack it would be shoved over in the corner for years. I have read stories about a guy picking up a radio from a hamfest or surplus dealer that was in beautiful shape only to find it didn't work properly and after many many hours of work a cable was found to be pinched between some parts of the chassis...probably on original assembly.

I believe all radios can be made to work as designed with enough work.... I currently have probably 10 or 12 R-390A's waiting for restoration. I am just about to finish an R-390/URR for a list member that will be sold on Ebay. Should bring $1200 to $1300. It's beautiful and in an original military cabinet. All refinished and electrically restored.

That brings us to the question of the R-390 -vs- R-390A. Both are excellent radio's. The R-390 was only built by Collins and Motorola. They are becoming very difficult to find but the prices don't seem to reflect the scarcity. I expect that to change in the near future. The difference between the two radio's is minor functionally. The "A" uses mechanical filters in the IF, the R-390 uses tuned circuits of inductors and capacitors. It's not as selective but has better audio quality on AM/SW broadcasts. It does have some heat related problems in the voltage regulators that bakes a few resistors...but it has very few capacitor problems because the radio's were built with all top quality components.

The "A" was a redesigned R-390 to reduce the manufacturing cost and to simplify field maintenance. The result was a radio that was easier to service but was built with cheaper components...mostly caps. It uses

molded paper caps instead of the metal with glass sealed caps that don't fail very often....even nearly 55 years later. The "A" caps fail quite often....but gradually where the owner is not really aware due to gradually reduced performance. Occasionally they will fail and burn a resistor or kill a tube. Pull an easy module from your radio and use a magnifying glass an give a few of the molded caps a look...near the seams on the sides you will find cracks a times that run the length of the cap....Not a good thing. Many guys own an R-390A restored to top performance and maybe add a few minor mods to improve performance...then they also own something like a Hammarlund SP-600 fully restored to tune around with. Once they find a target with the SP they will bring it up on the R-390A to bring it out of the noise and apply the mechanical filters to make listenable....Then we seem to buy several more of each just for the fun. (it's an untreatable illness) I think at last count I have 4 SP-600's with maybe 3 or 4 more on the way. It's my favorite radio.

I also have 8 or 10 R-1051 radio's. They replaced the R-390 series. I was doing restorations on them as a small business for a few years but interest in them seemed to die and I couldn't even break even on the work so I closed up shop on that work. Plan to sell them off as is to clear the shop of them. They are very difficult radio's to work on but when right are super SSB receivers....

Hope all this helps a bit....

Don't let the guys get you down...some of them can be somewhat of a pain at times but there is a lot of good info that comes out of this group...I like the dynamics myself! Cecil....
++++++++++++++

Thanks for taking the time to answer that question Cecil. That was very good read. I guess the fact that I don't have any experience with either model I should have asked "Which model would be better for a beginner?" That said, I think that I'm going to go ahead and get one from Dave. He is offering up a good deal on a 390. Sandy I think you put that in perspective with your Chevy analogy. I can sure see the differences in those two body styles. Thanks for the Links Don. Great stuff! It seems that the 390's are extremely popular. There is quite a bit of info out there. I can say one thing about this list. It is by far one of the better radio related lists that I have been on. Thanks for the help guys.

Date: Sat, 30 Jul 2005 17:11:51 -0400
From: "Bob Young" <youngbob53@msn.com>
Subject: Re: [R-390] What to buy...

I read your post with interest, I don't often post except top ask questions as

I don't own a 390 yet, but do own a HQ-180. I noticed you said that the SP-600 was your favorite receiver and I have noticed other people saying the same thing. Why are they better than a 180 in your opinion? On paper it would seem that the 180 is the better receiver having triple conversion etc, they are on my list of wanted radios though along with several different Collins and 390A's, -thanks

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Date: Mon, 1 Aug 2005 16:37:14 -0700 (PDT)
From: Mike Castellana <rocket_no9@yahoo.com>
Subject: [R-390] Out from the shadows *Revisited* ..

I wanted to take a moment to thank everyone that took the time to offer help, here on the list and privately. I rebuilt both filter caps and replaced C553 yesterday morning (sunday). Except for sleep time radio has been left on and seems to be performing well... All functions work and radio is sensitive across all bands. Unfortunately transformer is still humming. Had a great phone conversation with Rick Mish where he patiently answered every question I could think of (and a bunch I couldn't). He's of the mind that I should simply replace power supply module. I have a couple of calls out, if these fall through do any of y'all have a *clean*, functional module you'd be willing to part with? Digging around radio it'a become clear it'a actually an EAC from the 67' (mid) run (even though it's tagged Imperial) with this in mind an EAC module would be too good to be true. My near term plan is to replace module and then live with radio for awhile simply letting it run. Then I'll start thinking about alignment. Thank you again for all you help.

Date: Wed, 10 Aug 2005 13:31:58 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Rolling your own R-390A

Very sad to see some R-390A chassis that have been offered for sale but with the wiring harness just chopped off or cut off in several places, which would make the valuable harness useless. If someone was stripping an R-390A it would always be best to try to sell the chassis/front panel as one unit. Some folks just cut the harness to get the front panel off because they don't want to take the time to remove all the individual pots and controls to keep the harness intact.

Date: Wed, 10 Aug 2005 13:24:38 -0500
From: "Barry" <n4buq@aol.com>
Subject: Re: [R-390] Rolling your own R-390A

American Trans Coil offered (offers?) wiring harnesses like that. I bought one because I wanted the connectors and it was cheaper than buying them from Fair Radio. Also, I got some extra wire of the right look-n-feel along

with some clamps, etc. I guess they figured whoever bought the front panel would want the pots and switches more than whoever bought the harness, but I'm sure it was an economic issue. It takes time to disassemble the equipment from the front panel. Also, either you have to unsolder the wires from the back panel or clip them. If clipped neatly, there's plenty of wire to make new connections. Oh well, what'reyagonnado..

Date: Wed, 17 Aug 2005 09:43:33 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] RE: R-390A

I have for starters 10 R-390A frames with harness, antenna relay, Power supply, front panel with handles, panels are straight, missing the 2 large knobs, panels show normal wear and tear These units come with "THE ORIGINAL METERS" THE UNITS ARE SOLD "AS-IS" READ IT AGAIN THEY ARE SOLD AS-IS.

SOME HAVE TAGS and some panels are stamped. SOLD AS-IS No returns, no warranty SOLD AS-IS No tags and silk screened panels $325.00 plus UPS estimate max. of $30.00 for shipping in lower 48. With original tags and stamped panel $350.00 plus UPS same as above.NO CHOICE!! NO !Except choice of panels. THESE UNITS WILL REQUIRE A BUNCH OF TLC AND MODULES. I HAVE MODULES BUT HAVE CHECK THEM OUT BEFORE I QUOTA PRICES

TO give everyone a fair chance I will not except any orders until 2000 PDT or 0400/18/05. Any emails time stamped prior to the above stated time will be deleted. I have no answers to the above information and any email asking questions will drop to the bottom of the list

Terms: USPS Money order or Paypal with confirmed use/address Paypal ID is my email addy..

Date: Sat, 20 Aug 2005 18:22:55 -0600
From: "DW Holtman" <future212@comcast.net>
Subject: [R-390] R-390A questions

I finally picked up two R-390A's Used/Repairables from Fair Radio. They are a little bit rough, but I think very restorable. My first question is with the front ID plates removed from the front, how can I determine the make and year they were made? I know most if not all of the modules are not original. They both have Cosmos PTO's. One has one fuse in the rear panel the other one has 3 fuses (newer?) in the rear panel.

Second question, CR102, mounted on the inside rear panel is a Selenium Rectifier. Doesn't it have to be changed? Every other radio, that I worked

on, one of the first things that I did was change out the Selenium and add a resistor for the additional voltage drop of a Silicon diode.

I have already gone through the Audio and IF modules. It receives from 14 to 32 MHZ, nothing below 14. But, the good news is it does receive. Before doing any additional troubleshooting, next I'm going to remove the RF front end, clean all connections, check tubes and clean the gear, shafts and make sure all mechanical alignments are correct. Thank you in advance for all of your help.

Date: Sun, 21 Aug 2005 10:32:47 -0600
From: "DW Holtman" <future212@comcast.net>
Subject: [R-390] R-390A Springs

Looking for help again. The two receivers that I aquired from Fair Radio, have no Oldham coupler springs. Where can I get the specs/dimensions for these springs to get replacements? Also several of the springs on the RF deck to the slug racks have a lot of rust. Where is a good place to get these springs and find the specs? Thank you in advance for all of your help.

Date: Sun, 21 Aug 2005 16:45:27 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Hollow State Newsletter

I finally got to set up the web site for HSN. It's in place but the domain names have not "propagated" yet. They should be operational in a day or two. As of now, issues 38-53 are up on the site (except 51-52, for which I have the files and have to scrounge around to find 'em). I also put up the four "Best of HSN" compilations that Reid Wheeler, the previous editor, put together.

I will be back to you with the URL's for it in a day or two -- they don't work yet as I just today hooked 'em up with Network Solutions.

I have some old copies of the older issues and the plan is to have all the old issues up on the site. Some of my copies are not so good -and it's possible you might have better ones. Also, I could use a hand getting them scanned. So if a few of the listmembers could divvy up the scanning chores, we could have complete archives sooner rather than later.

Access to old and new issues will be free of charge. (The old snailmailed version was at a sub price that barely covered paper, printing and postage, anyway.)

We will be taking paid ads at very low rates, but not one-shot classifieds as this has to be, for the time being, a low-maintenance proposition.

New issues will be published on an ad-hoc basis. We need contributions of new material, or updates, reprises, etc. The web site will be much more flexible so issues can vary in number of pages and contain graphic elements and color photos. This was a stumbling block with one or two of the issues that were in progress before the long hibernation and are yet to be published. (I will try to contact the authors to finish those up.)

Again, I'll be back to you with the URL's in a day or two. Barry

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Date: Sun, 21 Aug 2005 21:49:41 -0400
From: jgolden365@aol.com
Subject: [R-390] R725 or R390A or what?

For a few months I had what I recall was an R725 but maybe it wasn't. It had an LED readout in place of the Veeder-Root counter, and a small aluminum box full of electronics hung off the rear apron of the receiver. If it wasn't an R725 what was it?

Date: Tue, 23 Aug 2005 11:35:31 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Hollow State News Web Site

Greetings to the list ... The HSN web site is now up and running.
No, don't go to that hsn.com site ... ;-) Here are the URL's:
http://www.hollowstatenews.com
http://www.hollowstatenewsletter.com

Date: Wed, 24 Aug 2005 21:14:12 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Thank you

I just put up more issues -- #1 through 12 and #37 plus a combo file with highlights of issues 1-4 in it -- all thanks to Brian Jeffrey, VE3UU who scanned them to pdf. The pdf conversion is built into his software and may be somewhat different than #38-53 -- though I don't see any difference with Acrobat 7.0. So you might want to try some of the lower numbered ones and make sure they work out for you. Just click on the "Older Issues" link under Archives and then on the link on the page that pops up. These are handled with a database gimmick to make it quicker and easier for me to add files.

Date: Fri, 26 Aug 2005 21:36:37 -0400
From: n4tua@aol.com
Subject: [R-390] zinc chloride NO NO

Thanks Group, I have received the answer I was hoping not to get. The paste flus I used on the solder wick is BAD for my radio. I only used it in a few places and I think I can remember which ones... Is there anything I can do to salvage what I have worked on?

Date: Fri, 26 Aug 2005 21:50:37 -0700
From: Buzz <muttman@charter.net>
Subject: Re: [R-390] zinc chloride NO NO

Several years ago I bought a bottle of liquid flux used on PC boards from an electroincs store. I make my own solder wick using the shielding from coax or audio cables, then dip it into the flux. I have some small size military coax that uses silver plated wire, MAN, does that work great as solder wick. BTW it seems to me that (again) years ago I saw the tip on making solder wick in one of the ham mags, then shortly there after it appeared on the market.

Date: Sun, 28 Aug 2005 16:11:18 +1000
From: "pete williams" <jupete@bigpond.net.au>
Subject: [R-390] Wiring ID

R-390A has a wiring color code/chart for the internal loom which isn't replicated in the modules. having the rainy day job of replacing a missing J112 plug on the IF module and not knowing what went where on the 20 pin plug, it would have been useful to have a wire colorcode for each of the pins. Yeah, I've traced it with the DMM, but assuming they were consistent, the job can be a bit easier next time if there was a chart. Anyone done/know about this ? Probably same for the audio module.

Date: Sun, 28 Aug 2005 13:45:20 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Wiring ID

What you are looking for *may* be in "The R-390A Drawing Set. There is a set of drawings for the R-390A that someone obtained from The Government some time ago. It's called "The Fort Monbmouth Drawing Set" or some such.

(EDMICS stands for Engineering Drawing Management Information Control System, or something like that.) You need the particular viewer software for it, and the index is essentially unusable. Someone in the community created a useable index for the drawings. The whole package may well be online some where. It appears that Radio Era Archives offers this on CD: http://www.radioera.com/mall/cds.asp

The Collins list archives from February 1998 has some info. see

http://www.collinsradio.org for info on the archives.

This guy also offeres a CD with the drawings on it:
http://users.erols.com/eengineer/CD.html
"R389 R390 R390A R391 R392 SP-600 CD ROM" it's $10.00

I found the index at:
http://209.35.120.129/faq-refs.htm#Drawings
This is on the "R-390A Frequently Asked Questions Page"
http://209.35.120.129/
and it lists "SM-D-31963 WIRING ASSY - POWER SUPPLY - I/C GAGE" but that's not what you want.

But this one may be:
"SM-E-249141 30-MAR-65 RCVR R-390A/URR WIRING ASSY (MAIN FRAME)"

Maybe some one with the drawing set can look that up and see what it says.

Date: Sun, 28 Aug 2005 13:35:02 -0500
From: "Barry" <N4BUQ@aol.com>
Subject: Re: [R-390] Wiring ID

Awww, Roy, the indexes aren't *completely* useless. I worked on a project a few years ago that generated and manipulated those indexes. When properly built, they were a decent roadmap to the file(s) you were looking for; but, I'll agree, that unless you know how to "read between the pipes", they're not very much help.

Date: Sun, 28 Aug 2005 21:44:38 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] backlash on R390A

I might know a thing or three about ATC -- I took over the R-390A (and some other type) parts inventory on consignment. While you can order through the ATC website, better to just directly email me as it avoids delay..... <snip>

Date: Mon, 29 Aug 2005 18:31:11 +0100
From: "charles bolland" <KA4PRF@peoplepc.com>
Subject: [R-390] Off topic again - Sorry

I like to fiddle around with projects as I listen to my R-390A. In days past if I wanted to etch a circuit for a project, I could go to Radio Shack and purchase a blank circuit board and some etching solution. It seems that

these materials are no longer available. I even tryed Mouser. So I have given up on making my own circuits. What I'd like to do now is find a commerical enitity that does this type of work, but someone who will understand that my circuits are for personal use. Does anyone out there have a source they can pass along? I'd appreciate it.

Date: Mon, 29 Aug 2005 13:34:04 -0500
From: "Barry" <n4buq@aol.com>
Subject: Re: [R-390] Off topic again - Sorry

These folks do that sort of thing. http://www.farcircuits.net/index.htm

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Date: Mon, 29 Aug 2005 14:41:56 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Off topic again - Sorry

There are many places that do one-off and low number runs of circuit boards.. they accept digital files of the design and the whole thing is automated. I don't know any particular places, but I know a fellow who does. He has made some projects for the Teletype guys on the greenkeys email list. He is:

gil smith <gil@vauxelectronics.com>

It may be that his company does this, but in any case he's familiar with the whole process of prototype and small runs of circuit boards, and a very helpful fellow.

Also: for circuits: http://www.farcircuits.net/
"Welcome to FAR Circuits! FAR Circuits is exclusively a manufacturer of Printed Circuit Boards for electronic projects that are used by the Amateur Radio and electronic hobby enthusiast. We supply boards in any quantity, but are geared toward low volume and individual circuit board users.
"(These guys have a wide array of boards available with article reprints for many many projects that have appeared in ham and electronic magazines...)

Date: Mon, 29 Aug 2005 14:46:08 -0400 (EDT)
From: John Lawson <jpl15@panix.com>
Subject: Re: [R-390] Off topic again - Sorry

www.expresspcb.com.....
Have used them commercially and privately - very nice place, also they have thier own (free!) CAD software - once your design is finalized, press a button on the keyboard and your finished boards arrive a few days later, ready to be stuffed and soldered.

Date: Mon, 29 Aug 2005 12:54:04 -0600

From: "DW Holtman" <future212@comcast.net>
Subject: Re: [R-390] Off topic again - Sorry

Radio Shaft still sells blank circuit boards and etchant. They have a complete kit for $15.49 with everything needed for simple boards. You are not going to make dense layered boards, but for most one off type circuits it will work.

Date: Mon, 29 Aug 2005 12:56:39 -0600
From: "DW Holtman" <future212@comcast.net>
Subject: Re: [R-390] Off topic again - Sorry

I fully agree with John, the Express PCB systems works well. The software is very user friendly. You can check the price at anytime in the development of the board, it directs you to their site.

Date: Mon, 29 Aug 2005 19:02:49 +0100
From: "charles bolland" <KA4PRF@peoplepc.com>
Subject: Re: [R-390] Off topic again - Sorry

Thanks everyone. There should be someone in your lists that I can use. I am not looking for anyone elaborate.

Date: Mon, 29 Aug 2005 15:06:00 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Off topic again - Sorry

I've used ExpressPCB http://www.expresspcb.com/ on several occasions and am very satisfied. They even give you for free their PCB layout software - which isn't the best in the world (no autorouting etc.) but it's more than adequate for what I do.

Date: Mon, 29 Aug 2005 20:44:13 -0400 (EDT)
From: John Lawson <jpl15@panix.com>
Subject: [R-390] Re: CAD Programs

> I down loaded their software and have been trying to layout a schematic.
> Don't think it's that easy. But I will keep trying for a little while more.

As with a lot of electronic CAD software (of the simpler kind anyway) it helps immensely to have a good idea in mind (or much much better, on paper) of what you want to do first - then use the ePCB CAD tools to refine that. Have a schematic done already - one that you've "dry tested" and are pretty sure is going to work. Then, try to visualize the layout of the parts. Then it might be easier to make some sense of the program. Note that, as

with every EE CAD proggie I've used, from ACNAP to ProTel and onward - there's always a very frustrating, steep learning curve to get over. But once things 'click' - you might find it quite enjoyable. Do give it a bit of a chance to become more familiar - especially if this is your first foray into Desktop Design. And especially if you're an Old Fart like me, whose brain left the cranium some years ago, never to return...

Date: Tue, 30 Aug 2005 07:47:57 -0600
From: "DW Holtman" <future212@comcast.net>
Subject: [R-390] R-390APanel Lights

What are the lights for the cover to the mechanical counter on the front panel of a R-390A? Thank you for your help.

Date: Tue, 30 Aug 2005 10:01:59 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] R-390APanel Lights

Qty 2, #328 bulbs, 6V, 0.20 Amps.

Date: Tue, 30 Aug 2005 10:49:36 -0400
From: Bernice & Al <saglek@videotron.ca>
Subject: Re: [R-390] R-390APanel Lights

Mouser has them. I used #381, same voltage and current, life (MTBF) is 20,000Hrs. Slightly less light intensity. The #328 has life of 1,000 Hrs.

Date: Thu, 8 Sep 2005 05:11:31 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] Beware - Miltronix Stewart Warner R390A on ebay

Doesn't Rick also mark with paint the valves when tested, and a paint dot on the oven switch?

Date: Sat, 10 Sep 2005 16:50:59 -0400
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] R-390A Coax question

Fair Radio (http://www.fairradio.com/) has the connectors and cables (used) for very affordable prices. Others here on the list post them for sale from time to time too.

Date: Sat, 10 Sep 2005 18:09:53 -0400
From: roy.morgan@nist.gov
Subject: Re: [R-390] R-390A Coax question

> Is the coax cable used throughout the receiver 50 ohm impedance?

I think so, but it probably does not make much difference what you use.

> If it is 50 ohm, would RG-74 make a good replacment,

I don't remember offhand the nature of RG-74, but if it is about the same diameter as the original stuff, then it will work in the MB connectors.

>should I try to find some better coax, with lower loss?

Loss at HF for those distances is irrelevant.

> > How hard is it to re-work the Mini BNC connectors?

It's not all that difficult if you know a couple of tricks:

1) Heat the solder of the covers on the connector and tap it just right against the edge of the bench and the little cover will fly out. 2) A very sharp knife will allow you to strip insulation correctly if you are gentle so as to not cut through the shield wires.

>I have looked high and low on the web and don't think they are available.

Contact RF Connections - they may well have them.
http://users.erols.com/rfc/index1.htm Ask also if they have the correct coax for use in the radio.. they may well have it. Buying just a few feet will not break you.

Date: Sun, 11 Sep 2005 08:38:49 -0400
From: "Steve Hobensack" <stevehobensack@hotmail.com>
Subject: [R-390] Re- Coax question

The runs of coax are so short that impedance (100 , 75, 62, 50 ohms) is not that big a deal. More important is to use coax that will not short out years in the future. Sony earphone coax seems ideal but will short out as will the original stock r-390a coax. Foam dielectric is bad.

Date: Mon, 12 Sep 2005 00:10:03 -0700
From: John Kolb <jlkolb@jlkolb.cts.com>
Subject: Re: [R-390] R-390A Coax question

I've got a few available as mini-BNC to BNC adapters that could be salvaged.
http://jlkolb.cts.com/site/fs_misc.htm

Date: Mon, 12 Sep 2005 07:56:20 -0500

From: glwebb@gundluth.org
Subject: Re: [R-390] Unusual Facility in UK

I was surrounded by (Wullenwebers) on Guam and in the Canal Zone, Panama 1967- 1970:
http://www.anzwers.org/free/navyscpo/guam_intro.html
http://www.anzwers.org/free/navyscpo/Guam_035_big.jpg
http://www.anzwers.org/free/navyscpo/NSGA_Galeta_Island_Site.jpg

Since it has been a while I may be wrong, but I think on Guam we could also use some rhombic arrays for weak very important signals. The CDDA's were used for direction finding and getting fixes on certain signals usually ships and usually Soviet Union. Gary L. Webb NI9V

Date: Fri, 23 Sep 2005 11:03:19 -0500
From: "Barry" <n4buq@aol.com>
Subject: Re: [R-390] MB (Mini BNC) connectors

Isn't there a cross-sectional view of the MB connectors in one of the manuals? I'm not sure it gives step-by-step instructions, but it might clarify what's in there for you.

Date: Fri, 23 Sep 2005 16:46:21 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] MB Connector Assembly Instructions Online

For those that don't already have it, or that don't have a manual right in front of them... Very small file, about 80K Adobe 6 or better.

http://www.fernblatt.net/_radio/MB-connector.pdf

Date: Sat, 24 Sep 2005 12:09:59 -0400
From: roy.morgan@nist.gov
Subject: Re: [R-390] Mini-BNC connectors: where to buy?

RF Connections is likely to have MB connectors and also the correct coax.

http://users.erols.com/rfc/index1.htm
They may not be listed on the website so send an email to them at:

- email address: rfc@therfc.com

Date: Mon, 26 Sep 2005 16:28:59 -0700 (PDT)
From: Daren Q <greybeard5150@sbcglobal.net>
Subject: [R-390] Re: Thinking of Nolan Lee

I'm one of the many lurkers on the list and to be frank I remain that way because I have nothing to contribute. None the less, like the rest here I am fascinated by the R-390a, and look forward to having mine back in the near future. I too genuinely miss the input of the list's resident philosopher Nolan Lee, and was pleased to see some of the reposts that have surfaced recently. As for his detailed description of his EAC rebuild, it came through on my end somewhat chopped-up as in a forwarded mail. Due to the fact that it contains much of Nolans inimitable insight, I stripped and cleaned it, and did my best to reorganize it and make for an easier read. I figured that others on the list might possibly appreciate the effort and want to save the post, so here it is ..... DQ

Below is one of the typical posts from my friend Nolan. I think we all enjoyed his posts and writing ability. 73, Don WC4G

(May 1999) I've had a couple of requests for the list of items I did when I went thru my EAC last year so I'm reposting my original message on it to the list. The EAC has been running 24/7 since October of last year and I have no complaints. I've been wanting to pull it out of the rack and do a "visual" of it and check the tubes and the alignment but haven't had the time. Maybe this Fall. Your mileage may vary ..... Nolan

-----snip from Oct 1998-----

Well, after spending months slowly going thru my two R390A's, one is finished. Below is an outline of the steps that I took during my overhaul. This was probably one of the more evolved R390A "overhauls" done in the South. The other, will take longer, I'm probably going to replace all of the bushings in the RF deck among other things that I didn't do with this one. The victim: I started with a cherry 1967 EAC contract model that was the "lowest mileage" R390A I've ever seen. All of the original modules, meters, covers, etc. were still on it. In addition, all of the tubes in it had date codes within a two or three month period of each other in 1968. Even with clean gears, there wasn't even a hint of a wear pattern in any of the gears and all of the aluminum finish in the tracks on the RF deck was still intact. The green paint on all of the module hold down screws was even 100%. I'd be surprised if this thing saw more than a few hours operation after the burn in period. There's no diode load hole in the front panel or adjustment hole in the top dust cover for the meter adjustment. :-)

Jerk all of the modules out of it and rip it's gizzard out and scatter and toss the parts around! I tried, but I managed to not lose any of the parts and didn't even have any extra ones left over. Chassis: Tested the dial lamps, checked the value of all of the resistors, the diode, the 2 capacitors, the meters, tested the selenium rectifier, and the antenna relay and inspected the contacts in the relay. Verified function of the main power micro switch, it's placement, and measured the resistance of it. Measured the resistance

of all of the front panel switches and potentiometers, and very lightly lubed the shafts of each, checked the ovens switch, verified the values of the fuses, checked their resistance, replaced one of the fuse holders that I didn't like the look of with a NOS one, and replaced the rear panel IF connector, the center terminal was missing. Checked the line filter, and checked the tightness on all of the screws holding the whole damn mess together. :-)

I removed all of the knobs and inspected and lightly lubed the set screws. Also verified that the index washers were installed in the two big knobs that prevent the clamps from turning. The next step ate up a lot of time. I removed all of the hoods of the chassis connectors to inspect and then measured the resistance of EVERY damn wire in the chassis. Then I installed a NOS military 3 wire 8 foot rubber 16 gauge power cord with a molded plug. Nice and flexible SJ. The original strain clamp for the cord was still there. First one I've ever seen. :-)

Power supply module: visual inspection, resistance readings of the transformer windings, and wiring, inspected the solder connections, verified 115 volt setting, stuffed two new 26Z5W's in it. Checked all of the screws and nuts for tightness. :)

PTO: Why bother? Chunked it in the R390A parts pile and installed an Army rebuilt Cosmos that I've been sitting on for about ten years, sealed in the box, to replace the Cosmos that was in there. It turned out that the endpoint was out a little less than 2 KHz, and linear within a little less than 200 Hz across the spectrum. I don't know what the specs on it where when it left their hands in Feb. of 1984 but it sure aged well. :-)

I guess that I'll let it run a few weeks and then adjust the endpoint. I did power up the oven and verified that the thermostat worked, measured the resistance of the transformer, and tested the tube. I like the Cosmos PTO's. That blue label sure is pretty, bubba! On a side note, I probably use a bit more complicated method than most people do when fitting a PTO to a receiver. If you're going to do it right, it might as well be done right the first time. Both halves of the oldham coupler should be perfectly parallel to each other and the centerline of both shafts should be perfectly in line with each other on both planes. I only spent about an hour adjusting the position and height of the PTO in the chassis, but spent several hours measuring the components and setting up the fixtures to measure other aspects of the components. I first measured the run out of each half of the couplings while installed on their shafts. The one on the PTO was true within .001. The one on the KHz shaft of the RF deck was machined improperly. The rib was .003 off to one side and wasn't square with the bore either. I tossed it and pulled a few others out of spares. It took several before I found one that was square with the bore and only had a little more than 0.001 run out. The next step was to check the center section. The

width of the two grooves seems pretty consistent, but I was curious if the two grooves were machined at exactly 90 degree angles to each other. The grooves were of a dimension that I didn't have any key stock for so I used two 12" long pieces of 1/4" ground steel rod. I centered the two pieces of rod, lengthwise, one in each of the two grooves, clamped the three pieces together. Then by measuring and comparing the distances between the four rod ends, I could determine the exact angle that the grooves were from each other. This part of the process was a wasted effort, the coupling center piece from the EAC was 90 degrees like it should be and so where the ones in spares that I checked. :-)

When I finally assembled the receiver and physically aligned the PTO to the chassis, mechanically and electrically, the dial indicator measured a total movement in the center section of the oldham coupling of .003 when the KHz knob is turned. Close enough! Put that spring on! Oh, I used a little dab of Penzoil wheel bearing grease to lube the coupling. It's red and contrasts, in a pleasing fashion, the blue label of the Cosmos PTO. :-)

Crystal Oscillator Module: Tested the tube, and tightened the screws holding the tube socket to the chassis, they were loose. Checked resistor values, transformer windings and crystals. Bad 10 MHz crystal, throw one in it from spares. Most are still on the money, the few that are "off" are well within 1 KHz or maybe a shade more. I decided against spending ~250 dollars on new ones. Measured the resistance of all of the wiring and switch contacts and tested all of the fixed capacitors and spun all of the trimmers a couple of turns. Powered up the oven and verified function of the thermostat. Also, "timed" the two switch bodies. They were "off" a bit. Then when thru and re tested everything on it's underside just to make sure. I figured that anything that was a pain to remove, I double check everything. :-)

Audio module: One of the original plug in electrolytic caps showed signs of leaking, tossed it in the trash, installed another one from spares. Reformed both, leakage at 50 volts over the rated voltage was less than 1 ma. per section after reforming. I fused them and ran them for a couple of weeks at full rated voltage on one of the HV supplies, they didn't explode and leakage declined even further. Good enough, bubba! (yeah, I know, Doc, but the power factors were good, I even checked that. :-) Ripped all of the paper capacitors out of the module, and tossed them in the trash. Installed two new .022 400V orange drops in the location that Chuck likes, and NOS Vitamin Q's in the other locations. I have the orange drops on hand and could have used them thru out but didn't like the way they sit on the circuit board. I did use an Orange Drop to replace the one on the chassis under the circuit board. All of the new caps were tested for leakage at their rated voltage and tested to verify their value before installing. Checked all of the resistors for value, replaced a couple. Tested the mica cap, no problem

there. Tested all of the tubes, they all passed but tossed the 0A2 and stuffed a new 6626 in it's place. I don't trust used 0A2's, had some weird problems with them. Tested the relay and measured the resistance of the wiring, the chokes, and the transformers. I left the 800 cps filter alone. Probably not a whole hell of a lot of R390A's out there that still have their original 6AK6's. All of the tubes are original except the rectifiers and the regulator. :-)

IF Module: Tested the tubes and the 3TF7. Measured the resistance of the wiring, the transformers, the switch contacts, and the resistors. I replaced more than a half a dozen resistors that were out of spec. Checked the capacitors and resistors inside the IF transformer cans, that could be tested. Some could not be tested in circuit. I tested the big above chassis oil filled capacitor for leakage and value. Tested all of the mica capacitors for leakage and value and then ripped all 18 or so of the axial lead paper capacitors out of the module and tested them just for kicks. EVERY "brown beauty of death" tubular capacitor that was in it leaked like hell and a good percentage had microscopic cracks in the bodies within maybe .020 of the seams and paralleling them. Most of these caps leaked at voltages below 50 volts when tested. Only one of the metal can axial capacitors leaked when tested. I replaced all 18 of the capacitors with Orange Drops. For the .1 and the .033 values I used 400VDC rated ones and for the .01 values, I used 600VDC rated ones. The reason that I didn't use 600V rated ones thru out was their size. It was a pain in the ass to the fit the ones that I used in there properly. If I'd have used the 600V ones everywhere, I'd have had to move the locations of some of the capacitors and a bunch of them would have had excessively long leads. I didn't think that this was such a hot idea in the IF section and figured that the best placement of the parts was in the original locations. ;-)

Let's see, other than checking all of the screws and nuts, I think that was it for the IF deck other than lightly lubricating the shaft extensions where they passed thru the front of the IF module chassis. I didn't test the mechanical filters. I tested the blocking cap before I tossed it and it had tested good even at 100 volts over it's 300V rating. Whew! The last one, the RF deck: After removing it, the first step was to take it apart. I removed all of the tubes and tested them, the crystal oven and tested it, all of slug racks and springs, four of which (for the variable IF slug racks) were really weak, so I installed NOS ones in that location when I put everything back together.

The geometry for those 4 springs suck, they're stretched a lot more than any other location. I removed all of the RF coil assemblies and measured the resistance of all of the windings and checked what capacitors I could. The bridge wouldn't work on some, so I kept track of those in case I had some weird assed problem when I tried to align it later. I disassembled the

gear train and tossed all of the parts, except for the counter, in a coffee can and sprayed a mess of gunk in there and let them brew. They weren't really dirty, but the original lube had mostly evaporated and what was left was stiff as hell and I don't really find the gear train much of a mechanical challenge so I ripped it apart. About the only thing I didn't take apart was the 6 camshafts and the antenna trimmer can. I worked a few drops of penetrant into the bearings of the cam shafts and kept lubing and wiping them until only clean oil would come out. Oh, I used 10w30 Mobil 1 synthetic oil for the RF deck except for the detent where I used Penzoil wheel bearing grease. Two of the cams appear to have been stamped, I guess, with cracked dies, leaving a couple of sharp burrs on the surface that the rollers ride on. I stoned these down while maintaining the original cam profile. :-)

When you take the split gears apart, tie them together, with a bit of soft wire in the orientation that they were originally assembled with. I suspect that the halves were matched. While all of the stuff soaked, I replace the three paper capacitors, with Orange Drops, and replaced close to ten resistors that were out of spec, checked all of the other capacitors and found a cracked 005 1KV ceramic disc. And yes, I measured the resistance of all of the wiring and of the band switch. ;-)

I found an odd thing. One of the tube sockets only had one screw holding it to the chassis. When I attempted to install a screw there, it turned out that the little "C" shaped piece of metal that curves all of the way around one side of the socket had an unthreaded hole in it for the screw. I'm surprised that an inspector didn't catch this at the factory. I tapped the hole and moved on. Most of the gear clamps were either viably cracked or showed cracks when dye checked. I guess that they must have been over tightened when it was built. I replaced all of them with NOS clamps to be safe. I found that several of the roller retainers had been over staked on a couple of the slug racks. This prevented the rollers from turning. In addition, a few of then ends were not square and had to be straightened. Burrs and gouges on the end surfaces had to be stoned down and polished. The fit and finish of mechanical portion of this EAC RF deck didn't impress me at all. The old Collins decks were much more finely finished mechanically. I wiped each of the RF cores out with a pair of damp Q-tips, wiped the slugs off, and eye balled them. The Collins part numbers on all of the RF slugs are all the same EXCEPT for the six variable IF slugs. They are different from the rest of the RF slugs, so they aren't interchangeable. ;-)

I assembled the RF deck and mechanically aligned it and put the receiver back together. For what it's worth, the repeatability of the RF slug racks averages about .001, the repeatability of the variable IF slug racks averages .004 on one and .005 on the other. I suspect that this could be improved upon by relocating the location of the attachment point on the

chassis of those four springs. This would require either shorter springs or possible just creating spring "wells" that extent slightly below the chassis so that standard RF deck rack springs could be used. I fired it up and let it cook a while in Standby mode, at 7+000. None of the magic smoke escaped so I switched over and set the PTO to 2455 KHz and tightened the clamp. I stuck a VTVM lead into the unbalanced antenna connector and cranked it down to WWL on 870 and let it run more than a day before I did the first alignment. I always like to align a receiver twice. I go thru it, and then when I'm finished I start all over again. I've been playing with it for about a day and a half since the alignment. This is the most sensitive receiver I've ever owned. It kicks ass.

I did a few sensitivity tests using my URM-25F. I questioned the results so I dug out the URM-25D and tried them again. REAL close. I started with a receiver that hadn't been abused and tried to do the best job that I could going thru it. I wanted something that I didn't have to screw around with every few weeks. Something that wouldn't wake me up at night with a burst of light like a Romulan disrupter (I've had R390A's do that before). Something that would sit there and run for month after month and need nothing but tube and dial lamps like my R-1051B's. Hopefully, this will do that. Many of the of the steps that I took, were "over kill", but I had fun doing it and learned a few more things. The numbers you ask? Lets just say that they're as good as the best sensitivity levels that I've ever seen posted or in print on the R390A. Numbers, that up until now, I always had my doubts about. Guess I better feed the critters and make me a mess of grits for breakfast.. Nolan

--- If an infinite number of rednecks, riding in an infinite number of pickup trucks, fire an infinite number of shotgun rounds, at an infinite number of highway signs, eventually they will produce all of the world's great literary works in Braille. ---

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Greybeard 5150 aka: DQ
....
LOUD Pipes & Stars 'n Stripes . . . La Vida Bueno!
Make Your Choice: Get Busy Livin' or Get Busy Dyin'

Date: Sun, 2 Oct 2005 14:06:51 -0500
From: "Bill Hawkins" <bill@iaxs.net>
Subject: [R-390] Stuff that's not in the book

Many thanks to Roger KC6TRU for a great write-up of a little help with sensitivity. He mentioned the alignment of the balanced antenna input as being "not in the book."

I worked on an R-390 with a very scratchy local audio pot. Had a 2.5 K pot from ATC, so assumed it was for audio, but decided to check the taper. The ATC pot taper was linear - turn it to half rotation and measure half the pot resistance to the cold end. That didn't seem right. The existing R-390 pot measured less than 1/4 of the total to the cold end, more like what you would expect for an audio (log) taper. So I removed the original pot after dropping the front panel, bent the cover tabs and opened it, sprayed it with regular contact cleaner (Caig can empty) then air, closed it up and reassembled. Had to bend a handle a bit in a vise to get the threaded studs to line up. You wouldn't think you could bend the handle by hand, but it didn't take much.

Oiled and re-set the bushings for KC and MC shafts, then found that the MC knob clamp was slipping even though it was tight. Used some cleaner to get the oil off the external shafts and cleaned black gunk out of the knob shaft bores so there was no lubricant between the knob and the shaft. Much better. Wonder how many clamps have been broken because of the overtightening required when the shaft is slick.

Is the pot taper mentioned in the manual? Looks like the RF Gain pot has a reverse log taper.

How about stuff in the manual that is wrong? The instructions to drop the panel want you to loosen the clamps between the IF deck shafts and the panel. It is much easier to leave the clamps alone and remove the knobs. There's no retainer that keeps the extension shaft from going through the panel bushing.

This is not true if you want to remove the IF deck without dropping the panel. Then you have to have a long Bristol wrench to loosen the clamps, or long-nose pliers and plenty of patience.

Date: Sun, 2 Oct 2005 18:48:46 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Stuff that's not in the book

Good job on the pot clean up and recovery. Knobs set screws put burs on shafts. That why they did the big knobs with the split and clamp. So as not to burr the shaft. The idea on the IF deck extensions is to let the burred extension shafts stay in the front panel. Some receivers have the micro dial on the BFO for RTTY work. It was easier to do the clamps on the extension shafts. If you do not have a long spline wrench that will reach in to the deck and your RF gears, you need to make one. Grind (sawing spline wrench is a forever job) chunk of spline off an wrench so you have a straight piece. get out the acid core solder and solder the spline into a

length of small brass tubing. Arrange a good handle.

> Oiled and re-set the bushings for KC and MC shafts,

Amazing what reseting the bushing can do for tunnel carpal relief. How about stuff in the manual that is wrong? Not all that much is wrong. But there was enough to movite the fellows to produce the Y2K manual. I like that manual a lot.

Date: Wed, 05 Oct 2005 22:08:42 -0500
From: Patrick Jankowiak <recycler@swbell.net>
Subject: [R-390] A tale of Two R-390A's

I'm new to this list, but have owned an R-390 or two in the past.. I have never had to repair one yet. In the last month, after 10 years without an R-390, I went from zero to two R-390A's. I would appreciate from this wise list any comments or suggestions which come to mind after these acounts:

Stewart-Warner R-390A #1258.

This unit is nice an clean, but does not work. All the tubes light up, and the 600 ohm speaker emits a low hiss which can be controlled by the RF gain and the audio gain control. It will not receive any signal. If I unplug the VFO's Rf cable, the hiss goes away. I also found that the 0A2 was bad and the radio had been run before with 240VDC in the 150V regulated line. I replaced the tube and cured that, but still no workie. The AGC voltage is 0.8 (or zero if I switch to manual) and the RF gain control properly varies the cathode bias line. I have not gotten out the test equipment yet, but I wonder if the power supply malfunction might have cooked something.

R-390 #2: label is missing, no idea how to tell..This one seems to work reasonably well, except for the BFO, and the VFO tracking is off a little.The main thing I am searching for here is what the "record of modification" label on the back indicates. The label is USAFSS form 245. Here are the mods, listed by publication and date.

publication

date
MB +04 +03 +01

03 FEB 69
MB 4-4-2

8 FEB 69
MB 4-4-8

8 JUL 69

Anyone know what mods these might be?

Date: Sun, 16 Oct 2005 17:16:18 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] LONG BRISTOL

Xcelite makes an 11 piece screwdriver type set of Bristol Multiple-Spline Socket Drivers with long blades about 4" long. Each blade plugs into a screwdriver-type handle. Great for reaching into tight places. There are 9 blades to a set and one extension blade. Techni-tool carries the set for about $43. I am not sure if they sell individual blades but the set is very nice to have - I wouldn't want to be without one.

Date: Mon, 17 Oct 2005 09:34:27 -0400
From: Jack Absalom <kf4yio@charter.net>
Subject: [R-390] replacement for bristo wrenches

Great group here. I am writing to tell you about a cheap temporary replacement for the bristo wrench. Go to Sears and in the tool departemnt, look for a small rack with Torx wrenches. They are cheap (less than 3 bucks) and made by Craftsman. look for "professional T8 X 2-1/2 torx. they have a black handle with a red top. They are a "LITTLE" loose but do work. I think that if you ground off a little bit of the end it would fit better as they are tapered. I have used mine during my R390A restoration and it seemed to work fine. Give it a try.

Date: Tue, 18 Oct 2005 06:22:18 -0500
From: "Bill Breeden" <wbreeden@tconl.com>
Subject: Re: [R-390] Long Bristol

Tecra Tools sells the individual Xcelite blades. They are a handy source for extra .096 blades. Put "spline" in their search box to see what they offer. Xcelite uses the term "spline" to describe their 4 flute and 6 flute bristol drivers.

http://www.tecratools.com/

Date: Fri, 28 Oct 2005 08:51:39 -0500
From: Dave Merrill <r390a.urr@gmail.com>
Subject: [R-390] Fair Radio Report

Had a chance to stop at Fair last week on the way back from the East coast. I had not been to the new facility and was quite impressed. A much better

location than the old quarters.

I introduced myself to Gary, their R-390 guy, and he gave me the tour of his work area, the outdoor paint booth and the huge back room storage area. Wow - they have so much more stuff than is listed in the catalog, much of it in too small a quantity to advertise. I wish I could have spent the day but my wife's patience only extends so far. Gary said they were going to stop advertising 'checked' R-390As because they are about six sets behind already and they have reached the limit of usable modules to make a complete receiver.

He's the only tech there and he just works part time so it's hard to keep up with demand. I see from their web page that they have taken this step. In fact, they are not even listing 'repairable' receivers at all. The good news is they still do have parts for sale but you'll have to inquire for anything not listed on the web page. Gary does have a good supply of crystals in all frequencies (I believe there was discussion on the list earlier that they were out of 17 MHz but this is not the case).

Date: Fri, 28 Oct 2005 22:48:39 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Fair Radio Report

Thanks for the report Dave. Well that is a milestone of sorts to hear that Fair Radio has finally run out of 'checked' or even 'used, repairable' R-390A's. The R-390A was one of their featured items it seems for almost as long as I can remember, I would guess for at least the last 15 years or more. I remember reports of them having R-390A's stacked from the floor to the ceiling of their original warehouse, so they must have sold hundreds of them over the years. It may open up more R-390A parts for sale if they are not trying to save certain parts to build complete receivers with. One thing about Fair Radio is they always know how to pack heavy items safely including transformers. They use cardboard and newspaper and heavy boxes and seem to know how to do it right. Like Dave mentions it is always worth asking Fair Radio about something not listed in their website or catalog. They have bits and pieces of other radios
like the R-388 so if you need something just ask.

Date: Sat, 29 Oct 2005 21:18:22 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Fair Radio Report

When I saw Dave at Fair Radio late last month there were only about 80 frames left in the whole place. The radios were stacked 5 to a layer and 4 layers high on a pallet. I think I saw 4 pallets. There were a few others around but not likely more than a 100 in the whole place. Dave said the

ones he is putting out today are being reclaimed from ones that were long ago passed over as non repairable. The fact that Dave is getting almost every one into a working state is a testament to the receivers repairability. Most folks are very happy with the receivers Dave is putting out the door. Looking at the items, I though most of them would be repairable. I am sure not all of them will be. I can see Dave becoming a chassis wire harness expert to get the last ones out the door. There were a couple hundred pulled 16KHz mechanical filters into two boxes on a shelf but no 8, 4, or 2's to be seen. The big KC MC knobs look to be the limiting factor. Dave does not have enough of those for even the receivers he has left. The folks though that the R390A parts would not make the catalogue as the sales would not cover the cost of print space. It was indicated that the line may be, call and ask for what you need. Fair Radio would try to fill the request as they do with so many of the other unlisted items they supply. A shame less plug. If you have collected something and need a part to get it restored, call Fair Radio and ask what they may be able to do for you. They just may have what you need if it was produced in OD green or of GI issue. I was amazed. I have been into shops around the world since 1968 and Fair Radio made my day last month. On one side the story is all those Julian Creek receivers are back in operation and distributed all over the world. OK so not evenly distributed. On the flip side all those receivers are owned by someone who is not I. Thanks Dave and Fair Radio for all those wonderful surplus items you have put back in the hands of individuals. Roger KC6TRU

Date: Sun, 30 Oct 2005 19:13:56 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Fair Radio - Photos from an earlier decade

Though not *THAT* much earlier - These were taken about 1995 or so by a fellow in Nashville, AB Bonds. I had gone up a year or so before but forgot my camera, so AB fixed me up.
http://www.fernblatt.net/_radio/fair_radio_sales_pics/
No fancy web page, just click on the filename to see the pic

Date: Mon, 31 Oct 2005 10:11:10 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: [R-390] R-390/URR on Ebay

In an effort to minimize any confusion and idle chatter of the negative nature concerning the merits of the radio I have listed or the perceived value of the radio listed, here are things you should know. (maybe more "Crapola" Mr. Lawson...use delete key as needed) I am R1051shop as listed on Ebay. Not to be deceptive but because I ran a small business restoring R1051's a few years back and at that time the ID was appropriate. Appears it still is today as I receive responses from past customers when they see me list things for sale on Ebay as has happened with this 390.

I am also a member of this group and have been since the days of Nolan Lee... One would think you guys would be cheering for one of the home team as opposed to finding whatever fault you can in the workmanship and/or the perceived value of the product of many hours of labor by fellow list member. I am not trying to make a commercial venture out of the R-390 series of radio's....I do love and enjoy working on them as many of you do. Instead of picking up one and restoring it and putting it in my station (which I am doing) and that be that....I'm afflicted with the disease of buying 6 or 8 or 10 because I hate to see them sitting around looking sadly as many do. I enjoy the work but like anybody expect a fair return on the time spent. I have 2 and a half months of evenings and weekends invested in the radio listed and while the "Buy it Now" price is a fishing trip, the reserve is not! When is the last time you looked at the price of a fairly nicely restored 50+ year old car for sale. Something that sold for 2K when new that is considered a classic design....not unusual to see 20K to 30K selling prices. What makes you think that classic radio designs have not been effected in the same way...besides the desire to wish it wasn't so.

Is the radio I have listed perfect....Nope. Is it Museum quality....don't know, I've seen some pretty crappy stuff in museums...but I didn't list it that way. Is it rare....well judging by the production numbers some might say so. What I do know is that there are probably 20 to 30 "A" models sold on Ebay for every R-390. I haven't seen any that were restored to the level the one I have listed has been restored to. I watch Ebay daily with the exception of the two months after Hurricane Katrina when I had no electricity and/or internet onnectivity....maybe I missed the market surge of sales on R-390's. (probably not) I do know many that listed as R-390 by their sellers seem to end up having an antenna trimmer knob in the middle of the front panel...so validate your search John by checking the pictures....I've seen only one in OCT..... I sold one a while back to a fellow in Washington DC who has been delighted with it...through Ebay... went for $860.....it was nowhere near as nice as this radio but performed extremely well once finished up. That's two I know of....there may have been others..... I am open to and able to accept constructive criticism of my work and welcome it....a GURU of things R-390 I don't claim to be.....I manage to learn something new almost daily. I can say that just because my name is not Mish, Medley or Rippel doesn't mean I or many of you cannot produce a product of equal or greater quality and performance. It just takes technical experience, the right tools for the job, a desire to do the work and an eye for some level of detail.

Hope that clears up a bit who has the radio for sale and where I stand on the subject.... Any negative reactions to this note can be sent directly to me at chacuff@cableone.net Sorry for the length of this post for those of you not really interested....

Cecil Acuff
WB5VCE
Gulfport MS
R1051shop

Date: Mon, 31 Oct 2005 09:21:39 -0700
From: "Kenneth" <crips01@msn.com>
Subject: RE: [R-390] Looking for mini-bnc

I was looking at Fair Radio Sale website last night and they have used ones.

Mini-BNC p/o R-390A, used, $2.50
Mini-BNC chassis-type p/o R-390A, used $2.50

I would not be surprised if they have the original cables.
Go here: http://www.fairradio.com/hfrece.htm

Date: Tue, 8 Nov 2005 10:23:37 +0900
From: "Osamu Hazawa" <pomerol@mocha.ocn.ne.jp>
Subject: [R-390] R-390A is no more available at Fair Radio

The subject says it all. Go to their site and see what I mean. Of course miscellaneous parts for R-390A are still available but very sad thing.....

Date: Mon, 7 Nov 2005 17:37:40 -0800
From: "Leigh Sedgwick" <bipi@comcast.net>
Subject: Re: [R-390] R-390A is no more available at Fair Radio

While I agree it is sad to see a reliable R-390A source disappear, just think about all of those functioning R-390A's out there in the world receiving signals that otherwise would have gone (or went) and stayed in the scrap heap. Further, many of those receivers have been restored to top condition. Gotta love it!

Date: Mon, 07 Nov 2005 17:52:19 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] R-390A is no more available at Fair Radio

I have 35 or 40 R-390A's and tons of parts. plus about 350 other radios.

Date: Tue, 8 Nov 2005 21:10:41 -0600
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] R-390 repair services?

>....who can expertly align or repair an R-390A to specification?

Rick Mish can do anything from the basic alignment on up, and he'll do the cosmetics as well if you ask him to, Hank Arney will do that set of jobs, too. My humble opinion, but I'd happily send any of my 390s to either. Cecil Acuff, if he does 390s, is another I'd trust. I know he did very fine R-1051 work for a long time.

Date: Tue, 08 Nov 2005 20:37:51 -0800
From: "Kenneth G. Gordon" <kgordon@moscow.com>
Subject: Re: [R-390] R-390 repair services?

Any of those below, in no particular order: Hank Arny, Rich Mish, Cecil Acuff (if he still does those). Take your pick: they ALL do superb work. There were a couple of others, but I think they may have retired from doing it. Oh...yes... Chuck Felton KD0ZS is another one.

Date: Wed, 9 Nov 2005 01:12:47 -0500
From: "Bruce Hagen" <b_hagen@sbcglobal.net>
Subject: RE: [R-390] R-390 repair services?

You have a very good guy in Toledo, OH by the name of Rick Mish. I'm a retired Tech so I feel that I can make a good judgment. Rick is good, very good. Company name is Miltronics - do a google search and he'll pop up.

Date: Wed, 09 Nov 2005 06:01:04 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] R-390 repair services?

Matt Parkinson in Orange,CA does superb work also.
Dave Medley has retired from doing the R-390.

Date: Wed, 9 Nov 2005 09:30:29 -0600
From: "Joe Grossbauer" <wa9msd@ggnet.net>
Subject: RE: [R-390] R-390 repair services?

Chuck Rippel has to be high on the list (Chuck is top of my R-390A list and Rick Mish tops my R-390 list) of R-390A technicians and restorers. His URL is: http://www.R390A.com.

Date: Wed, 9 Nov 2005 21:09:06 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] R-390 repair services?

If you are near the North West Corner of South Carolina I can be of service to you. Am Army trained in 1968 and been working on some every since. Did it 8 hours a day for more than 6 years. Any one else in the South East

who needs some help may Email. I will not ship one. You likely will need to drive it over. If you plan to come early and stay late you like can take it back home with you and spend the time watching your receiver get PMed.
Roger L. Ruszkowski
Westminster South Carolina.

Date: Fri, 11 Nov 2005 22:25:22 EST
From: Bonddaleena@aol.com
Subject: [R-390] Y2K Manual

Thanks to the List Moderator, Don, for all his patience! AOL and HTML, blaaah! It is said that third time is charm, so this attempt to post is VERY charmed.... If it is being seen more than once, please bear with me. I have rejoined this List after several 'unexpected' moves. ha ha I intend to start 'going through' my working and very mint '67 EAC. I have it in a Budd rack along with a nice CV-591A. I have the very nice Y2K Manual. I was just wondering if anyone has an 'erratta' list for the Manual. Just after getting the Manual, I remember some discussion concerning a mistake or two. I just want to prevent headaches down the road. I'm NOT complaining.
<snip>

Date: Sun, 13 Nov 2005 20:37:06 EST
From: ToddRoberts2001@aol.com
Subject: [R-390] R-389 Sold For $3550.00 on eBay

All I can say is Wow! Is this a new record for an R-389? I think the most I have seen one go for in the past was about $2200 -$2500.

Date: Sun, 13 Nov 2005 21:22:47 -0600
From: "Dennis Pharr" <dpharr53@swbell.net>
Subject: RE: [R-390] OT- Army training manuals online?

The main link to LOGSA is:

https://www.logsa.army.mil/etms/index.cfm?fuseaction=viewsearchform&CFID=5837289&CFTOKEN=352728d019d4aaad-8CC74C74-E746-5E20-560C487D7BAE5FA8

Or try this one: https://www.logsa.army.mil/etms/welcom1.htm

Date: Sun, 13 Nov 2005 23:15:40 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] R-389 Sold For $3550.00 on eBay

That's about it. <snip>

Date: Fri, 2 Dec 2005 11:56:21 -0800 (PST)
From: mike Kana <aa9il@sbcglobal.net>
Subject: [R-390] The ultimate heresy?

Dangerous question.... Has anyone attempted to completely rebuild the modules or (entire?) R390 A radio with new low noise resistors, modern caps, wiring, etc - obviously all the mechanics, tubes, slugs, major components, etc stay.

Date: Fri, 2 Dec 2005 15:14:50 -0700
From: "Kenneth" <crips01@msn.com>
Subject: RE: [R-390] The ultimate heresy?

Sounds very interesting, I to would like to know if anyone has done this, also add to the list the trusty R388/URR.

Date: Fri, 02 Dec 2005 18:05:01 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] The ultimate heresy?

Well, many of us have gone through and replaced any questionable caps and any questionable resistors in some/all modules. Doing everything everywhere could prove disastrous in the case of special tempco parts. There must be some of these in the PTO. And remember there's not just the caps in the chassis but also caps inside many of the coil cans. Replacing wiring sounds a more than just a little bit overboard. You'd still have the same old connectors (which would be the weak point). Some here have replaced individual bad cables etc. in the harness, and it's a fair amount of work to unlace the harness, remove the cable, put in the new cable, and lace it all back up. While I've done some cable-lacing in the past I can guarantee you that I would never be able to put it all back together as well as it was done at the factory. The parts most likely to be in need of refurbishment are the mechanical controls and switch sections. Many of these have custom wafers/contact arrangements that make them certainly NOT off-the-shelf items. Usually donor rigs are found and/or Deoxit + some very particular refurbishment takes care of the problem area. I'm guessing the cost of fabricating new switch wafers/contacts throughout would run into thousands of dollars, very much discouraging en masse replacement from "new stock".

Date: Fri, 2 Dec 2005 18:19:31 -0500
From: "Jim M." <jmiller1706@cfl.rr.com>
Subject: Re: [R-390] The ultimate heresy?

I have found that replacing some caps has actually improved performance when it had degraded, even the disc 0.005 bypass caps. In areas where I

was having problems, especially along the AGC lines and screen bypass lines in the RF deck, replacement discs have helped. They were more than likely marginally leaking. I wouldn't do it wholesale, but in selected areas such as this. Any resistor in a B+ or screen line to a tube should be suspect, even if it looks OK to the eye. They will drift in value with age and heating. Normally 2200 ohm mostly. I replace them with 1 watt resistors. Beware, however, some modern resistors exhibit inductance, they are not pure carbon as the older ones are. Replacing the straight wiring probably won't help, but I did have a case where the miniature coax cable carrying the diode load signal from the IF deck was breaking down and causing popping noises on strong signals... the dielectric in the cable started breaking down after many years, even with the low voltages there (less than 10 volts). Don; bother with ozone free oxygenated monster wire, it is a fraud.

Date: Fri, 2 Dec 2005 21:38:37 -0800 (PST)
From: "W. Li" <wli98122@yahoo.com>
Subject: [R-390] re: The ultimate heresy?

Years ago, Nolan Lee went through his EAC R-390A and checked everything down to the resistance of each wire in the interconnecting cables! He found "lots" of faults, most minor, some major (like unsoldered grounds!). He did not strip out the modules and rebuild them from the 'ground up' as you describe. He did replace a mess of resistors and capacitors though. It is all described in his post in "Restoration_general.pdf" in Pearls.

Date: Wed, 7 Dec 2005 10:47:27 -0800
From: "Craig C. Heaton" <wd8kdg@worldnet.att.net>
Subject: [R-390] A Christmas Wish

Well, after becoming a caretaker of a R-390A for less than a year, I would like to make a suggestion to this illustrious group, using the phrase "To make the best, better", the Y2K manual could use a few additions. Also please accept the fact, I don't know the original intent of those who wrote this manual.

With that said, I'll further clarify. Roger, KC6TRU, made a post on Sept.26,2005 and it included a few sentences. "Once you get to the point where you have a calibration tone every 100 KC, you have a working R390/A. A working R390/A and a wonderful receiving R390/A should not be confused with a good-looking R390/A. Each of these are different. Good looking R390/A's are selling for over $1000.00 on Epay and may not work at all." His next few pages outlined what it takes to arrive at a wonderful receiving R390/A. Now, Roger is to blame for my quest of a wonderful receiving R390/A.

The Y2K manual is great. Without its content, I would not of been able to arrive at the point where I have a working R390/A. Note, this is the first receiver I've ever attempted to repair, fix, restore, align, etc. Heck, the manual is only 300 and some pages, what's a couple more to take us to awonderful receiving R390/A.

So, addition one: How about something like Scott Seickel's illustration of how to reassemble the gear train. Using his information and good techniques on disassemble, I laid everything out on a clean bench in order, it still took over 12 hours to clean, reassemble, and lubricate the tranny. Note, I did not say copy his work without his permission. Great work Scott!

At some point the IF section has to be able to pass a 30db Signal + noise to noise test. Or at least some authors in the past have stated. With that in mind and not wanting to start a feud, measurement creeps into the picture. A short dissertation of what happens when a sig-gen, such as a URM-25() is used without consideration of impedance matching, RF leakage, etc. Then addition two: A blow by blow account of what to connect, where to connect, the values are we looking for, and the correct order of tubes to swap while measuring for the 30db goal. Is that clear?? I believe I know the answers and pitfalls, but they were spread out at different sites and had to sift through several hundred pages.

Addition three: Same thing in the above paragraph to the RF section all the while hoping for the 20db difference between modulated signal to unmodulated signal. Of course ignoring impedance matching between the sig-gen/receiver, RF leakage, plus the antenna to be used with the receiver will vary your results in real life.

The three above wishes are made without criticism. Not everyone that follows this group has a radio background as a living. Bet you a soda few here have ever sent an instrument to a metrology lab for calibration/certification.

Gotta find some tubes.....with that and not trying to be politically correct, after all more people are trying to get into the U.S. than are trying to leave.

Date: Wed, 7 Dec 2005 20:48:54 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Christmas Wish List

Warning NOT ONE IOTA in this post about getting to a wonderful receiving R390/A. I'll further clarify: <snip> Craig, I had nothing to do with the creation of the Y2K manual. The Army taught me R390A from lecture

notes and no one I met in service from 1968 to 1975 waxed elegant about the wonders of TM 11-5820-358-32 8 December 1961 a copy of which is here in the desk as I work on this mail.I thought when the fellows did the Y2K manual it was to address the mush in the TM and the fact that many folks had R390/A and no TM of any variety. I still like the Y2K manual, as the best book to start with when I reach beyond the front panel of my R390/A into is a warm glowing innards. If the Y2K manual did it all then we would not have this fine reflector discussion going. The begging and end of all R390 on the web would be the Y2K web site with down load instructions.

<snip> 12 Hours not bad time for your first one. (RF gear train) Did you look at the size of all those files to present Scott Seickel's illustration? These fellows have done a good job of getting a lot more good stuff out there on the web for use than was ever in the TM11-5820-358-32 of any printing. Learning R390's is a lot like your sex life. I do not care what they said, you know you did not learn it in school and you picked up a little here and a little there and along the way their was a lot of just plain hype.There is a lot of stuff that has also been archived from the mail here and stuff in the frequent questions web pages. Umpucky, ballast tubes, cap replacement, solid state rectifiers and Langford diode modifications are just not in the TM. Window covers and micro dials are not TM topics either. In 8 years of fixing R390 for a living I never took a gear train down further than needed to replace a clamp or a missing spring in a split gear. Back then those receivers were "new" and did not need a good deep cleaning to get a half-century of crud out of them.

>At some point the IF section.....

Now you just get down to some inside information from the real been there done that guys. This stuff is just not in the TM. Strange as it is trouble shooting skills are also not in the TM. You will find trouble shooting procedures. A lot of skilled instructors at many military school taught some basic skills. All of the students had passed an aptitude test and had a minimum probable chance of being a good troubleshooter. In the field I knew many guys that were good at doing preventive maintenance. I knew others we would not let hold a screwdriver. Then there were the guys who did trouble calls. This was when something quit working. An op would drop in the shop and tell the trick lead that he had a problem. The item and its location was logged into the 2402 logbook and given a log in time. The trick did not get relived until every trouble call was fixed or accepted as passed. It was less than 20 minutes old and could get passed. In 20 minutes any one could walk out to the floor, go yep it broke, go get a spare and have it installed. That closed the trouble call and got a new one open. I have a broke critter here in the shop on the bench. A lot of small problems got fixed in place. But guys just hated to even think about doing a front panel

diagnostic and making a fix in place. Much of the stuff was loose knobs and were give mes. One guy in five or six was willing to walk up to one of these on the bench and "fix it". The best solution to problems was prevention through maintenance. No one wanted to let anything run until it broke. If it just needed a wash, tube check, alignment peak and paper work, lots of guys were able to achieve that. The book says the receiver shall do 10:1 but how do you get there. How do you divide and conquer? When it ain't 10:1 what's a body to do and where do you start? How do you know your beating a dead horse? What does a dead horse look like? The TM goes on and on about smoked tube sections and oscillators that do not. It says nothing about a noisy tube. You check them in the tube tester and they are good or not good. All 1964 Ford Mustangs are not equal in 2005. What differentiates them? The blue book only gives a range of values. And some should not even be allowed on the road today. But the blue book does not tell you that. It just says for the one that should be on the road the range of values is as follows. You have to go to a different place to find "roadworthy" defined. And yet another place to judge how to inspect that poor Mustang for its roadworthy attributes.

More to Follow. Roger

Date: Wed, 07 Dec 2005 21:06:47 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Christmas Wish List

I think the pictures and procedure that Scott's put together are marvelous. Sometimes I'm not sure what to think:

1. There is no such geartrain teardown/clean/rebuild procedure in the TM because they never thought that a tech would go to that level.

or

2. The radio techs of the 50's and 60's had a lot more mechanical competence (and intuition for tearing down and rebuilding geartrains) than I do, and that one exploded diagram was more than enough for them.

I'm no slouch in terms of tearing apart and (usually!) putting back together electromechanical gadgets, I THOUGHT. Then I attempted to rebuild my club's R-390A in the 80's, only with some phone help did I get everything back together and then it was probably worse than before! Now here I am a quarter-century later and I can actually do it, but only thanks Scott Seickel's resource (and some others too.)

Date: Wed, 7 Dec 2005 21:54:39 EST
From: Flowertime01@wmconnect.com

Subject: Re: [R-390] Christmas Wish List

That's just one subject in the TM we hated. I have no clue why the subject was skipped. The R390 TM covered PTO end point adjustment. Several editions of the R390/A TM never picked it up. Guys wrote long letters and some provided ever good copy to the change board and just had their input ignored. We woud get nice letters back thanking us for our input. We keep some of the stuff on KSR punch tape so we could print it on the TTY machines and pass it from station to station. Most shops keep a note book of stuff. Good pictures we never had. A camera in an ASA building was a one ticket to jail. A photo of an R390 would get you more third degree than one wanted.

Date: Thu, 08 Dec 2005 00:05:23 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Christmas Wish List

As one of the gang of three, with supporting cast, let me cast some light on the origins of the Y2K manual.

Al Tirevold and I had the idea virtually simultaneously. Ironically, I had some problems with inconsistencies in the R-105(a)/ARR-15(a) manuals. I posed the question -- are there anomalies/errors in the various R-390A manuals and the answer came back in the affirmative. So that was one reason -- a gone-over, proofed and corrected manual. But the ideas kept flowing. Many photos and line drawings in the existing manuals aren't very clear. Then someone suggested replacing many with color photos. That would seem to be fluff, but it's much easier to make out the components in a module in color. Then, while we were at it, adding additional notations/blurbs with more up-to-date info and tips would make sense. I did the original OCR work. After some consideration -- basically a no-brainer -- the '85 Navlex (Navy) manual was my choice and another list member supplied a good copy. The typography was much crisper and it was laid out with a single wide column, not two. Apparently that manual was word-processed by or for the Navy. It is one of the better ones in terms of content, though one of the Army manuals has some material it does not have. I OCR'ed the Navlex manual in sections and distributed (by email) the text for proofing.

Pete Wokoun recreated many (most all) of the line drawings to improve clarity and enhance them. When the pieces were all ready, Al did the Acrobat (pdf) publishing. The original version of the manual was about 4.3 megs. A revision was done about a year later, incorporating a number of corrections for errors that slipped through (OCR-ing is far from perfect and proofing parts lists is a bear). It also included some enhancements. Al re-published it with a newer version of Acrobat. It wasn't so much the

additional content, but the new version somehow produced a file on the order of 14 megs or so. (BTW -- the version on my website is the old one -- get the revised one from Al's website. It's available as one big file or several sections.)

The intention was generally to develop it further. One area was the gear train diagram, which is still the original. As I recall, Pete concluded that it would be too time consuming to replicate/improve upon with a CAD-CAM job. Perhaps Scott's gear train photo piece would be a nice addition -- or it might be a bit much size-wise. It's a trade-off -- while it would be nice to have one big book that covers just about everything you'd need to know in one place, at some point, it may become unwieldy. Here are a few of the things I had in mind ...

-- Incorporation of some of the more established mods/workarounds -- like 3 or 4 of the ballast tube subs, including the resistor, silicon rectifier replacement for the power supply with recommended initial dropping resistor value (yeah, basic, but document it),

-- Capacitor "hit list", updated for some of the silver micas that seem to be failing.

-- More on PTO adjustment by make of PTO

-- Troubleshooting -- lifted from TM-4000 (TM-4000 is a training manual that covers a number of pieces of equipment - but oddly not by name. The receiver section uses the R-390A as a model -- but never mentions "R-390A". It is rather extensive. However, an expert -- or several -- would have to read through the receiver section to make sure that the authors did not take "literary license" anywhere, or fail to clean up errors that were not significant for book training.)

But then again, is it necessary or that helpful to have everything imaginable between a single set of (electronic) covers? I dunno. The idea is not to usurp or render obsolete other works, such as the "Pearls of Wisdom", also available on Al's site. Also might be difficult to get permission from some who are now difficult if not impossible to reach. Another approach is to organize an essential "library" consisting of the Y2K and 3 or 4 other reference pieces. Realistically, a lot depends on Al's availability if and when some new volunteers contribute material or pitch in to prep it for inclusion. For example, excerpting from other manuals generally means keystroking it -- they're not OCR-able.

But, the idea was to periodically enhance the Y2K manual, it's a question of what belongs in there ... and time available. And, yes, we want to leave some material as grist for this (reflector) mill, I suppose. So you're both

right ;-) Barry

Date: Thu, 8 Dec 2005 01:34:13 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Christmas Wish List (part 2)

Part 2 and more to follow (tomorrow)
This about the RF signal to noise test.
Tomorrow will cover those tube swaps and IF deck test.

Thank you Barry Al, and Pete for the Y2K manual. It is still the best book an R390 owner or an A owner can have next to his receiver. Just my 2 cents. OK its Christmas. I owe Craig. Hopefully someone will put this in the frequent question file. You all copy this into you personal files. Healthy comment is welcome but when, Barry, Barry, Barry or Barry start to complain the horse is beginning to smell we drop this thread. <snip>

(remainder of this detailed article is posted under
SENSITIVITY_ALIGNMENT ---

From: R390rcvr@aol.com
Subject: [R-390] Digital copy of TM-4000

The Y2K discussion and mention of TM-4000 makes me wonder if anyone has a digital copy of the TM-4000 manual? LOGSA doesn't, nor does BAMA. I would appreciate a copy if someone has it! Thanks! Randy
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Date: Thu, 08 Dec 2005 09:35:47 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: The Y2K Maintenance Addendum (was: Christmas Wish List)

Barry, and others who contributed: THANKS.

To this I would add:
-- Mechanical Filter topics (testing, repair, alternatives)
-- Signal generator topics (impedances, actual RF input levels, matching)

and other test bench topics
-- The gear train rebuild
-- The Noise Figure measurements/testing and tube selection

I agree, and so I PROPOSE: that we assemble a Y2K-like addendum. Call it: "The 21st Century R-390A/URR Maintenance Addendum And Miscellaneous Notes" FURTHER, I volunteer to help put it together. I'm a good writer, and the R-390 receivers are among my favorite topics. I am somewhat known for my diatribes on fused line cord plugs and the making

of widows, and the dangers of variacs. The beating of dead horses in those areas seems to be fairly infrequent nowadays, so I could use a new topic. The thing could start as a web page that either assembles or links to work-in-progress type sub-pages. Once the material is written, edited, and gathers comments from folks who have used it, the transition to the PDF format would make sense. Roy

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Date: Thu, 08 Dec 2005 10:31:08 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] The Y2K Maintenance Addendum

I was also thinking about that -- and including traditional "folk" terms and possibly some urban (and rural) legend items. There might even be an entry for ...

Barrys, Barries -- While a less common name than Tom, Dick or Harry, tend to turn up in clusters of 3 or 4 or more for yet unknown reasons, perhaps attracted to exotic items such as the R-390 series.

Black Beauty -- Molded tubular paper capacitor, black with color code stripes. Originally the actual trade name for this style of capacitor produced by Sprague. also see BBOD - black beauties of death. It is rumored that these are known to leak and often physically split open.

Brown Beauty -- same as black beauty, but brown.

Bristo Wrench -- According to the archeologists, "bristo" is a misspelling of "Bristol" which appeared in some military manuals. (also see "alinement")

Dead Horse -- R-390(A) topic which is discussed over and over again, even though one would think it was resolved long ago. R-390 people are foresquare against cruelty to live, real animals.

GLOD -- acroynym for "gray ladies of doom" -- gray colored equivalent of black beauty.

Kielbasa -- sometimes mentioned (in jest) as a sub for the 3TF7 ballast tube, actually a sausage of Polish design. See Chapter78, pps. 723-985 where the 205 known workable subs are discussed.

Ukkumpukky -- black gooey stuff found in plug in capacitors and other components. Chemically identical to the stuff found in the La Brea Tar Pits. Do not eat.

YMMV -- original for "your mileage may vary", relating to the disclaimer re: advertised auto gas mileage. Euphemism for "your results WILL vary", also

popular as a closing line equiv.to '73's.

Actually, the glossary would be helpful to archeologists 100's of years from now who try to interpret 21st century civilization based on some posts they un-earth. ("Well, you can recall the team from Warsaw, it turns out they were just JOKING about Kielbasa. Good thing we found this Y2.1K manual.") Barry

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Date: Thu, 08 Dec 2005 10:56:46 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] The Y2K Maintenance Addendum

Hi Roy & gang ... I second the nomination! Not sure though about what's fit for the addendum vs. incorporated within, but it's a practical approach to alow things to move forward and avoid too many versions. The Hollow State Newsletter web site has plenty of room and unlimited bandwidth. I offer that as a collection point for works in progress and completed modules. There they can be looked over and recommendations for additional material and edits could be communicated to Roy and/or others developing contributions. When the dust settles on a piece -- i.e. no more comments coming in, it could be "finalized". To avoid confusion, duplication of effort, etc., changes should be routed through the original author/compiler. This is not to displace Al Tirevold's site which should remain central. However, I suspect Al has been very busy and travels quite a bit. So, we can do this for the time being -- and the HSN website is also appropriate as an expansion site long term. Make sense? Barry

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Date: Thu, 8 Dec 2005 11:28:54 -0800 (PST)
From: "W. Li" <wli98122@yahoo.com>
Subject: Re: [R-390] Christmas Wish List (part 2) comments

Speaking for myself, I really appreciate Roger's post re RF s/n test in the R-390's. It illuminates a part of this hobby that many of us were not aware of when we were on active duty. In a way, most folks are compulsive and perfectionists in the confines of our warm and unpressured shop environments (for example:

Nolan Lee's saga on his 1967 EAC unit); and it is quite a shock to see what actually went on in the "real world" of field facilities in the 60's.

The real value in this kind of post lies in emphasizing what is of utmost importance (picking up low strength, intelligible signals) and what is desirable (silky smooth gear train action), and what is not so key (matching serial numbers).

Scientific theory (ie: high powered math) is very important in deriving S/N

ratios, impedance matches, etc. and loads of intellectual fun.... but is often forgotten or lost when it comes down to actually doing stuff. Here these two disparate processes are shown to be actually intertwined. The fun lies in the fact that we may take as much of one or the other as we wish at any point in time. In the final analysis, it is the wrench-turner that gets the job done, and for that we can all thank Roger in his current postings.

Today, we have the distinct advantage of the Y2K manual Pete's beautiful schematics, and Barry's OCR texts, and Al's work... all in one invaluable publication.

BTW, I have seen the original 1958 TM-11-4000 service manual; and it would be a very good addition of have on our archives as a pdf document.

"Pearls" is only an attempt at collating current posts on specific subjects for fast and easy retrieval.

Date: Thu, 8 Dec 2005 12:14:21 -0800
From: "Craig C. Heaton" <wd8kdg@worldnet.att.net>
Subject: RE: [R-390] Christmas Wish List (part 2)

I see said the blind man! Your following explanation is just for the RF section. More in coming days, thanks. Putting this into terms that us non-radio background old grayed hair farts can understand helps. Using equipment on hand, I will add these comments.

For lack of a TS585; the first time setting up this test, I'll use two meters to measure voltage and current across the 600 ohm load resistor. (P=IV)Write down those values somewhere not to be lost, for future reference, and should only have to dial in the voltage next time (oh my). In other words the first target is 0.4 watts across the 600 ohm load.

To make things just a little easier, more than one way to skin a R390/A, I'll use a db chart for power, voltage, and current ratios from an old ARRL handbook. This way, just have to measure voltage across the 600 ohm resistor and I trust the two meters owned.

After setting switches, dials, sig-gen, etc. and arriving at 0.4 watts; turn off modulation. Then back down the local gain to one volt AC across the 600 ohm load resistor. Next step turn on modulation and read voltage; a smidgen more than 3VAC is 10db, 10VAC is 20db, and 30VAC is close to 29.5db. Or where 20 x log(V2/V1)=db

I had to do the math to understand the chart, suffering from CRS. If this is a valid method of squeezing the proverbial last bit from the RF section, I've got work to do, tubes to find, and so forth.

Going to guess the IF follows in similar fashion, it is fine in that event?? That part of the radio is near 28db. But will check everything again after all comments and votes are in.

Date: Thu, 8 Dec 2005 14:28:20 -0600
From: "Don Reaves W5OR" <w5or@comcast.net>
Subject: RE: [R-390] The Y2K Maintenance Addendum

Why not use a wiki? You could set up trusted contributors and allow users to post and/or submit material for archiving, as well as including existing sites and sources of info. Perhaps even integrate your HSN site. I've been thinking about this as an alternative and adjunct to this standard email list.

See http://en.wikipedia.org/wiki/Collins_Radio for a hint of how wiki's work. I'll include this post on the list as a topic for general discussion.

Date: Thu, 08 Dec 2005 13:52:23 -0700 (MST)
From: Richard Loken <richardlo@admin.athabascau.ca>
Subject: RE: [R-390] The Y2K Maintenance Addendum

Yes but when all is said and done, I want a binder containing a paper document with a table of contents, page numbers, and an optional index that will sit open on the bench while I stare and measure and muttter. Computer provide a nice way to store and organize information but they are lousy for reading it. I tried writing notes on my screen but they don't stick to the document.

Date: Thu, 08 Dec 2005 16:07:15 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: RE: [R-390] The Y2K Maintenance Addendum

I agree. Based on my limited experience with them, wiki's are good for large groups of either document development collaborators or interested users, or both. By the way, what does "wiki" mean, anyway? Google says: "Wiki is sometimes interpreted as the backronym for "What I know is", which describes the knowledge contribution, storage and exchange function. ... " Ok good, but what's a "backronym"? Holy Acros, Batman, this stuff is COMPLICATED!
The process of gathering, editing and writing what may become an addendum is really not all that complicated. It can be done one chunk at a time, and likely will not involve more than a very few people per chunk. The next step, getting some folks to use it and make corrections/comments, can be done nicely with a simple web site document, it seems to me. Lots of dialog, commenting and contributing can be done over this mail list, which

is it's purpose, right?

Date: Thu, 8 Dec 2005 13:49:34 -0800 (PST)
From: Daren Q <greybeard5150@sbcglobal.net>
Subject: [R-390] Re: The Y2K Maintenance Addendum

I'd whole-heartedly agree that with all of the additions that have been made to the R390 gene pool, an 'addendum' to the R390 Y2K Manual is called for at this juncture, however: there's just something about the word 'addendum'... How about 'codicil'? The 1st Codicil to the R390 Y2K Manual v2.0 By their very nature codicils are designed to be changed after the original composition, and insofar as 'dead-horses' are regularly and unmercifully flogged around here anyway, it just seemed 'right'to me ..... *smile*

Date: Thu, 8 Dec 2005 14:01:00 -0800
From: "David Wise" <David_Wise@Phoenix.com>
Subject: RE: [R-390] Re: The Y2K Maintenance Addendum

Supplement.

Date: Thu, 8 Dec 2005 17:18:55 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] The Y2K Maintenance Addendum

I would like to see someone champion the effort as a new set of web pages. I would put some cash in the Kitty to pay the bill to keep them on line. I think there is a lot of stuff we need to cull out off the old mail and get into a set off additional frequently ask questions. I like the ideas of it going up as web pages to start with and then amend as commented on. Once it got big it could be offered on CD by mail as just to much to down load. I remember when I did not have a CD burner on every machine and I still do dialup mail that takes an hour to down load a JPEG photo. I would pick up some of the topics and put together a paper on the subject to get posted into a page.

Date: Thu, 8 Dec 2005 17:38:36 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] The Y2K Maintenance Addendum

I think a two phase effort here. One is a subject boss and the second is a web page boss. One and only one guy should be posting pages on the web site and get to rebuilt when it trashes itself.

A second poor soul should be the final editor or new stuff going onto the web pages. Hopefully these two fellows would have some fast home computers and links to support their efforts. Sure would hate to have this

work being done on some employers bandwidth.

The subject book boss could keep the list of topic needing work. we could toss out a horse a week and any one that wanted a slice could post what ever on it. Plow up the archives we could. Then let every thing posted for the topic could get edited by some enterprising fellow. I would be willing to do that type stuff.

Then this first cut gets passed to the book boss to bless and dig the ugly bad formats trash out of. Then a nice work gets presented to the web page Fellow to post up as a new page and get indexed into the web site. We could open a topic for a week. Then the editor could post the topic up for darts, knives, shot and just plain rude comments. After that forever hold your peace.

Date: Thu, 8 Dec 2005 16:55:11 -0800 (PST)
From: "W. Li" <wli98122@yahoo.com>
Subject: [R-390] Re: Y2K maintenance addendum

This is a great idea: coming out with an addendum. I vote it come out as a separate publication, as opposed to being embedded in the Release 2.0 volume... and set up under topics paralleling V2.0. Barry has made a significant offer of using the HSN site as a clearing site.. thanks! There has been a wealth of practical experience and technical expertise appearing in the posts here over the years that could easily fill up such an addendum. I will help any way I can!

Date: Thu, 08 Dec 2005 19:17:47 -0600
From: bw <ba.williams@charter.net>
Subject: Re: [R-390] The Y2K Maintenance Addendum

I was a graphics designer/illustrator, so I volunteer to do the graphics if needed.
The other other other Barry

P.s. Since Joe isn't around, let's volunteer him for something. Something he would hate....

Date: Thu, 08 Dec 2005 19:21:17 -0600
From: bw <ba.williams@charter.net>
Subject: Re: [R-390] The Y2K Maintenance Addendum

You left off cat piss, and whatever we called the zippo lighter technique for gassy tubes that Nolan was big on. Also, we never named the dead spider in every radio phenomena either. Wasn't there some research at one time regarding the correct size of repair hammers? The other other other

Barry

Date: Thu, 08 Dec 2005 17:48:19 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] The Y2K Maintenance Addendum

I am still here and can still take pictures as required.
I have a Nikon digital Cool Pix which has better resolution.

Date: Thu, 08 Dec 2005 16:23:03 -1000
From: "pete wokoun, sr." <pwokoun@hotmail.com>
Subject: Re: [R-390] The Y2K Maintenance Addendum

Looks like we have a volunteer to clearify that infamous RF gear train assembly drawing! That drawing was beyond my capabilities back in 2K.

Date: Thu, 08 Dec 2005 21:10:08 -0600
From: bw <ba.williams@charter.net>
Subject: Re: [R-390] The Y2K Maintenance Addendum

Actually, I did scan those 2 page drawings and pieced them together. I remember that it was more legible, but maybe the file size is what kept it out of the manual update. I sent it to somebody. I may still have it. If so, anyone is welcome to the file.

Date: Thu, 8 Dec 2005 19:41:46 -0800 (PST)
From: DQ <greybeard5150@sbcglobal.net>
Subject: [R-390] Hank Arney Restoration Job

Hot diggity dog! Today was a big day for me!

For the last 4 or 5 years I've had an old '59 S-W 390a stashed far away upstairs in a safety-kept spot that kept it away from dogs, kids, and mice. Now this radio wasn't a virgin by any means, but at the same time it was a far cry from being a blue-striper survivor from the massacre too. Fairly easy on the eyes actually and it appeared to be a thorobred, filled with 100% Stewart-Warner modules. While there were no indications of any mods or field changes whatsoever, it did have 3 fuses that appeared to be from the factory.

To make a long story short the time and the money finally rolled around, and I dropped an email in Hank Arney's mailbox about possibly bringing my vintage prize back to life for me. He said that it would be a while, but he'd contact me at the appropriate time.....which he later did. He had a dickens of a time with some wafer switches, the PTO, and other things too, but one by one he crossed them off the list and did the radio proud.

As of this afternoon, my now BEAUTIFUL Hank Arney restored Stewart-Warner R-390a is back home where she belongs, and man o' man does she look sweet. A beauty of a fresh grey-front panel that's been re-silkscreened to perfection, fresh alodining, proper covers, and gnats-ass detailing everywhere you look ... and that's just on the outside. I can't wait to pop the covers and check out the reworked gear train, and all the rest of the freshly reworked/rebuilt/recapped and re-markable work that Hank has done for me. Then she's getting slipped right inside the CY-979A/URR case that rolled through here 3 or 4 weeks back. Oh YEAH!!

Dammit anyway! I'm in a wheelchair, and I'm so screwed-up that I can't get the radio anywhere even close to properly hooked up tonite. I'll have to get my son to help ol' Pop, and we'll see what we can do for a couple of proper antennas. But I sure CAN throw a length of wire on the floor and see what I can hear out there tonite.

Thanks a million Hank! You did a beautiful job. I could have done this in a private email to you, but I wanted to show you the respect and admiration that's due you for the work that you do. I thought that anyone here on the list that isn't one of the 'regulars' might not be familiar with you, and your work. If that's the case, they do now! Thanks again .... Quig

PS: It really WAS a thorobred Stewart-Warner!

Date: Thu, 08 Dec 2005 20:51:28 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Hank Arney Restoration Job

Well I am happy that you are now in possession of a great performing S-W R-390-A.I cannot take all of the credit as my friend Matt Parkinson soled some of the problems with the unit. Like replacing the PTO that I sent, tweaking the OSC. deck and the gear train. So it was a joint venture of Matt and Hank but a very enjoyable task. to get one up and running in a great performing radio. So enjoy it Daren.

Date: Fri, 9 Dec 2005 02:04:45 -0500 (EST)
From: <w9ya@arrl.net>
Subject: RE: [R-390] Re: The Y2K Maintenance Addendum

Here Here...I also vote for "Supplement"

Date: Mon, 12 Dec 2005 19:23:56 -0000
From: <fwbray@mminternet.com>
Subject: [R-390] Dial Lamp Source

I just discovered that halted.com has the lamps for the R-390A dial for $0.69 each. The SKU is CAL037. Undoubtedly there are other sources, but elsewhere I have seen them for 2 to 3 times that. FYI, halted.com does impose a $3.00 service charge on orders under $30.00.

Date: Mon, 12 Dec 2005 13:42:49 -0500
From: "Steve Hobensack" <stevehobensack@hotmail.com>
Subject: [R-390] Gear clamp

I was just sitting here in my hamshack listening and looking. I noticed the microphone connector on my Icom transceiver and AEA 2 meter Cb . The rear of the microphone connector has a two section/ two bolt strain relief. Seems like if one cut off the main body of the connector and ground the rough edges, one could come up with a neat gear clamp and be able to install it without a major dismantle of the clockwork. It looks like the right size just eyeballing it. I have had the misfortune of breaking a gear clamp deep in the gears. I had to salvage a clamp from a parts deck and it wasn't easy.

Date: Mon, 12 Dec 2005 17:04:54 -0500
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] Dial Lamp Source

If the R-390A uses the 327 bulb as does the R-390, All Electronics has them 2/$1.00, no min order, $6.00 shipping charge for most orders.

Date: Tue, 13 Dec 2005 02:06:47 +0000
From: "WA0HQQ" <r390@al.tirevold.name>
Subject: [R-390] Y2K Addendum(s)

I'm all for it!! Perry Sandeen had also volunteered to re-organize and refine the Y2K pages to make them easier to deal with. I had some ideas about reorganizing things so that any 'addendums' could be included inline with the manual if desired. Let's get the knowledge gathered and edited and beaten with a dead horse (or whatever) and publish it.

Somebody needs to troll Wei Li's "Pearls" and get the accumulated wisdom distilled. The space issues with the r-390a.net site have long been resolved, so there is plenty of virtual library shelf available. I'm itching to use a new .PDF generating software tool or two that I obtained - this gives me an excuse. I don't have the kind of free time available that I had when we did the Y2K manuals (R1 and R2), but I can certainly work it into place piecemeal.Somebody head it up - and bring it on!! Al, WA0HQQ..

Date: Mon, 12 Dec 2005 18:41:44 -0800
From: "Craig C. Heaton" <wd8kdg@worldnet.att.net>

Subject: RE: [R-390] Y2K Addendum(s)

As a guilty party of stirring this pot, what do others feel needs to be added? Then search for the good stuff on those items. Much less effort if some of the web authors would donate their work, Scott Seickel's tranny rebuild as an example only.

I don't like reinventing the wheel if there is no need. I've download Revision one and thought it was fine as is, allowing for errata. A list of caps that are giving R390/A owners things to think about, several good web sites have rebuild photos of the power supply caps/cans and step on how to rebuild them, better detail on the gears, a section for those who have the measurement equipment and how to get a valid sensitivity number, and the list goes on!

Date: Mon, 12 Dec 2005 17:50:44 -1000
From: "pete wokoun, sr." <pwokoun@hotmail.com>
Subject: RE: [R-390] Y2K Addendum(s)

Now that a lot of folks have added their inputs as to what should be included, what is needed is for someone to 'take the bull by the horns' and start doing it. There were a lot of good suggestions tossed out to make a great addendum. Waiting for a consensus to start will not get anything going. Once someone starts the work others can add to it, critique it, and improve it. What got the Y2K done was 3 guys who decided to stop talking about it and do it. Al, Barry, and I may not have the time to do it this time but we sure are willing to help others run with it.

Date: Mon, 12 Dec 2005 18:23:19 -1000
From: "pete wokoun, sr." <pwokoun@hotmail.com>
Subject: RE: [R-390] F103/R390a

You can get a power distribution drawing showing current levels throughout the receiver on my website at: (It's the last one down on the list.)

http://www.qsl.net/kh6grt/page4/r390aschematics/r390aschematics.htm

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Date: Tue, 13 Dec 2005 18:28:26 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] A (very) big project

Mark, We may not have to start with the whole thing. Hank has done some covers already. There is a need for some big knobs to be die cast. Some mechanical filters packaged to a form that would fit the R390A IF deck would likely be a paying project. Front panel in designer colors and texture

look to be selling well. Some have though that printed circuit board may be in order.

As in Audio decks with a form of plug and play into the R390A chassis but with solid state audio parts. The IF deck would be next with a real product detector. Some other things have come to mind. As the last stage some new chassis and wire harness could be assembled to go with all the available subassemblies.

Date: Tue, 13 Dec 2005 19:15:51 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Dial Lamp Source

The R390A uses a 6.3 volt lamp while
The R390 uses a 28 volt lamp.

But you are right All Electronics has them. 2/$1.00, no min order, $6.00 shipping charge for most orders.

Date: Tue, 13 Dec 2005 19:26:52 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Y2K Addendum(s)

One of the things we need to add is the front panel diagnostic and trouble shooting. Just too many of us do not know how to localize a problem when one pops up. We get the question .."it died and it does not work. what do I do?".

We can point the owner to the front panel diagnostic and await the question that comes back from that operation. For those that know how to front panel an R390 or R390A problems get narrowed down much faster to much smaller areas.

Do we have a good schematic analysis with trace of signal through the receiver? It goes with the front panel analysis. Front panel runs back from head phones to antenna relay click. Schematic analysis runs forward from antenna relay to audio output. Some time you use both and meet some where on a problem in the middle. We need both items for both receivers. They read alike, but are receiver specific with the proper tube and connector numbers in the verbiage.
I would do the drafts and clean up the incoming comments to get the text ready.
It just needs a place to hang it into the bid web page index. Roger KC6TRU

Date: Tue, 13 Dec 2005 19:46:33 EST

From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Y2K Addendum(s)

I am on the end of this dial up line and stuck with what you see on the Qth.net for text. I can look at web pages after I wait for the load. I would be happy to post subject per week to go mining for. I would accept the input to my mail and try an edit a subject into something usable. I would post that back up for a second go around and reedit. Rule one put it on the open post through r-390@mailman.qth.net. Rule two if you send it to me personal I will do my best to ignore it forever. Who would like the task of managing the web page?
The subject is Re: [R-390] Topics to start. Please post a top ten list. Most votes goes first. I will compile and sort the list and post it back in a week for review.

Date: Tue, 13 Dec 2005 19:28:49 -0800 (PST)
From: "W. Li" <wli98122@yahoo.com>
Subject: [R-390] Re: Topics to start (Y2K Addendum)

Here is one approach to the Y2K Addendum:

Compile and organize by topic all the important areas such as "RF gear train rebuilds", "sensitivity and alignment" or "power supply" or "recap projects"...then go to the ver 2.0 of the exisitng Y2K publication and hotlink to each area in question (or insert a footnote about where to go in the Addendum). One underlying fact re maintenance procedures: they almost always break down to mechanical AND electrical. We could divide up each subject area into these basic components for clarity. We are often drawn to electrical because of our training and orientation; but we often neglect mechanical aspects as they are obvious to us, maybe not so to a newbie....

OK here is my list on 'topics to start' (in order of preference)

1) basic electrical safety measures (not mentioned by Joe Foley's excellent piece)
2) re-capping (when to, pro's & con's,
3) power supply (solid stating, B+delay, in-rush currents, fuses, AC power filters)
4) ballast tube subs (all schemes available)
5) PTO alignment
6) mechanical RF train clean and lube
7) restoring front panels and knobs
8) panel meters
9) SSB options
10) tubes

11) mechanical filters
12) antennas
13) heat-buildup (IERC shields, fans etc)
14) weird and unusual problems with their solutions
15) test equipment

Date: Wed, 14 Dec 2005 09:50:22 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Re: Topics to start (Y2K Addendum)

I did think about that, such was left out on purpose. I thought that the new owner should have training or experience already in that area and that it wasn't the purpose of this manual to train in that area. And I didn't want the liability of it either. So I focussed on the radio and kept it closer to the subject at hand.

Date: Wed, 14 Dec 2005 13:07:13 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Re: Topics to start (Y2K Addendum)

Joe has a good point there. It may not be a good idea to try to take the total newbie into high voltage electronics. Instead, it might be better to beef up the warnings and add a disclaimer if one isn't there already.

Date: Wed, 14 Dec 2005 18:32:23 EST
From: Flowertime01@wmconnect.com
Subject: [R-390] Web Page Lay Out

Al, When doing the R390 web pages, what's the chances of opening to a text only page that pops open sort of fast. Lots of text will still open slowly. On the opening page could we do lots of links as a menu to other pages. Can we have the pictures / photos as separate linked pages? I would like to see lots of photos. I can ask for that as I do not expect to have to get them all edited and put up on the pages. I see this work turning into a large awesome project. We had better plan to allow pages to open before some of our fellows die of old age waiting for a download.

Date: Wed, 14 Dec 2005 19:27:51 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Re: Topics to start (Y2K Addendum)

>Joe has a good point there. <snip> Here Here. Roger

Date: Thu, 15 Dec 2005 09:52:49 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] 390/390a gear train

For the heck of it, I quickly converted Scott Seickel's gear train photo instructions to a single pdf file. I brought the graphics into a Word file and "printed" to a file with a pdf driver. Without any optimizing for efficiency, it's only 3 MB or so. It could be a good deal more compact if the text were separated from the graphics and re-stroked as true text, and some other things could be done without much sacrifice of quality. So, if Scott's permission could be secured, his gear train rebuild sequence could be part of either the next revision of the manual (there's a spot for it) or an addendum/supplement. It could benefit from some labeling of the gears by the same references as in that exploded diagram. At any rate, the combination of the two should be more than enough unless someone wants to recreate the gear train in a CAD program for sport. I noticed in re-reviewing the Y2K manual itself that there remain a number of unimproved photos -- the old black & whites were picked up from the Navlex manual. They were intended as placeholders until replaced with new color photos with re-done parts callouts. The Y2K was/is a work in progress, so might be premature to jump to a supplement until finishing up some unfinished business.

Date: Thu, 15 Dec 2005 11:19:23 -0500 (EST)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: [R-390] building new components

I think the ideas of building new receivers, don't get me wrong. But... if one were to prioritize first, I doubt it'd be the mechanical parts that would be first on the list. The stainless steel gears, etc, just don't rust, and the majority of the other frame and mechanical parts are readily available for the R-390A.

Here's my perspective on rough priority:

- meters (many R-390A's are without)
- 390 RF deck parts, especially slugs
- 390-A mechanical filters (repairing and replacing)
- small parts easily lost:
  - oldham couplers
    - 390/391/390-A PTO coupler
    - 390/391 crystal deck coupler
    - 392 bandwidth control coupler
  - springs
  - wiring harness clamps (390/391 and 392 come to mind)
  - covers and shields (all)
- R-389 parts of all types, PTO especially
- gear clamps
- spline screws
- big knobs

various connectors, UG-970/UG-971, etc.
R-391 autotuner spares

I really wouldn't spend time tooling up for the mechanical parts that there still lots of around, like gear trains and module chassis. Obviously, a lot in the list above are made, or can be made fairly readily, but those are the bigger items that keep the receivers down.

>From watching what Hank Arney goes through, and also watching eBay prices on various bits and parts, I don't think there is much market to justify even making very many of the highly needed parts, given the actual cost.

It's fun to think about, but when it comes down to brass tacks, it just doesn't pay. With so many receivers surviving in complete condtion, and with so many being basically non-destructable, there are going to be lots of parts units around for a long time (of R-390A).I think to make it even worthwhile from a hobbiest perspective, that whoever it was that wanted to step up and make a part would have to do a market survey of this and other groups to get an idea of how many might be sold, then divide that number by about 4 (or more), and then hope you could approach break-even on that quantity. Paul

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Date: Thu, 15 Dec 2005 09:37:23 -0800 (PST)
From: "W. Li" <wli98122@yahoo.com>
Subject: [R-390] Re: Topics to start (Y2K Supplement)

After mature reconsideration, I think that you are all correct in not including a treatise in high voltage safety in the Supplement. A bold-faced large-font disclaimer is sufficient for our purposes. There are already many salient safety issues addressed re 3-wire pwr cords and AC pwr filters under "pwr suppy" in "Pearls" for whomsoever trolls thru that section for inclusion in the Supplement.

Date: Thu, 15 Dec 2005 13:41:56 -0500
From: "Bruce Ussery" <twc9198764412@earthlink.net>
Subject: Re: [R-390] Re: Topics to start (Y2K Supplement)

To their credit, (probably not dictated by lawyers back then), the original manual makers included a high voltage warning on the first page or two of the R-390 and R-390A Maintenance Manuals. It seems to vary somewhat by version. My reprint of TM 11-5820-358-35 (R-390A, 8 December 1961) also added a radioactive tube warning:"Before handling or disposing of defective voltage regulator tubes 0A2WA and 0A2WB refer to TB SIG225, Radioactive Electron Tube Handling." Anybody seen that manual? And in TM 11-5820-357-35 (R-390, 9 March 1962), they even added a warning

about selenium rectifier failures ("don't breath the poisionous fumes"). No such warnings for the 28V R-392, therefore I will continue to lick my fingers and poke around at will...

Date: Thu, 15 Dec 2005 14:01:04 EST
From: DJED1@aol.com
Subject: Re: [R-390] building new components

I'm inclined to agree with Paul. There's a few items that are no longer obtainable that also have the biggest impact on functionality. IMO these include the meters, the mechanical filters and the BFO and PTO. I think you can buy repackaged Rockwell filters, but there is no source of meters that I know of. And I see my PTO gradually deteriorating (the hermetic seal disappeared years ago) with no way to refurbish it. If it dies, the receiver is dead. I did some thinking as to whether it was feasible to build a solid-state replacement that would go in place of the PTO, but couldn't find an encoder with enough resolution. It sure would be nice to have a PTO that really gave perfect 100 Hz readout over the whole 1 MHz band, even it it was (Gasp) solid state. On the other hand, I think Fair Radio has piles of non-working modules which are available to use for mechanical parts. Obviously there are some shortages like Oldham couplers, but they should be easy to reproduce. Ed

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Date: Thu, 15 Dec 2005 13:20:43 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] building new components

If I'm not mistaken, Hank Arney has Oldham couplers available for sale.

Date: Thu, 15 Dec 2005 14:17:47 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Troubleshooting "unrepairable" radios

Jon's solution reminded me of a Troubleshooting Adventure I had not too long ago on a radio marked "not repairable" This was a 1962 Amelco that appeared all-original. Seems every time you'd turn it on, it would blow the RF/IF B+ fuse. First thing I found was that line showed a short, and indeed there was a pinched wire right at the BFO switch. I turned off the radio, unplugged the radio, took off the front panel, fixed the wire and the short went away. Put it all back together. *bam* the fuse blows again when it's switched on. I unplug the radio and check that side of B+ at the fuse, and sure enough, a dead short to ground. I unplug the IF, RF, Crystal Osc, still, dead short. Unplug Audio and PTO. Power Supply. Dead short. I remove the front panel and I check around, nothing unusual -- and no short any longer. I plug in all the modules, switch off the power, plug in the radio, and with the front panel down turn it on. Radio works fine. Mumble "bad

wiring harness..." unplug, turn off, button up. Plug in turn on.... and as I turn it on I just *happen* to be looking down the front panel and see a *flash* as my next to last fuse in the box blows.

Defect Found: Terminals from the function switch were *just* touching the RF deck. Apparently this particular switch stuck back behind the panel enough to allow this. Nothing appeared to be modified in any way nor did switch appear to be damaged.

Solution: Bent terminals out of the way and removed lockwasher between switch bushing and panel. Considered replacing function switch in the future.

Date: Thu, 15 Dec 2005 17:06:19 -0600
From: Tom Norris <r390radio@gmail.com>
Subject: Re: [R-390] building new components

Interesting about Fair, though. They had held back selling many 390 parts so as to use them on their repairables going out the door. I emailed them the other day and was told that those items such as knobs etc marked as unavailable were still not available. Didn't ask for Phillip or anyone. Probably just got the generic answer. Figured more parts would be freed up with no whole radios going out the door.

Date: Thu, 15 Dec 2005 19:08:15 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Web Page Lay Out

I am not pushing for the lowest common denominator. I would like Al's web pages at http://www.r-390a.net/ to continue to open as quickly as it does. Once you get there pop open References, Scroll down to Tutorials, pop open Wei-Li's Pearls of wisdom Then open one of those pearls. After that opens for you go back and open one of the PDF scanned TM's

I just favor the much faster access to Wei-Li's pages. If we are going to add a zillion new bits to the web pages, I would like all R390 fellows to be able to access those bits this week. Fellows that own R390's are not necessarily in love with the latest fastest whiz bang of the week. After some fellows acquired their R390 from some sources we are amazed they can still support an Internet connection. Tom Norris offered his thought on slow access.

Date: Thu, 15 Dec 2005 19:28:31 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] What did I miss?

Ron so glad you asked.

First off Craig put in a Christmas Wish List for you know when 2005. The reply to that was so fat, the powers to be managing the Qth.net looked favorably on the text and enlarged the size of text message we can exchange on the reflector without getting a blessing from management.

Second this being that season every one has been on their very best behavior.
The mail has simple been very very nice of late.

Third the wish list just blew up when every one seen wishes being granted left right and daily.

Fourth some big wishes popped in that may not be filled by any one this year.
But not wanting to dash hope for any one the date Y3K was proposed at least once.

Fifth everyone that wanted to commented that some addendum to the Y2K manual was needed. A look at http://www.r-390a.net/ indicates that a simple text addition to the Y2K manual just will not do the wish list justice.

Sixth Al Tirevold WAOHQQ has allowed that the web page he supports at http://www.r-390a.net/ could be utilized to support some additional materiel if someone was willing to support the collection and editing process.

Seventh Roger (me) offered to mange a list of topics and edit a topic a week for a while until we best the topic list to death.

Eight a call went out for your top ten items you would like to see as topics added to the available web pages.

Ninth once the web pages were up dated and settled down, then a CD collection of the best of the page could be generated. Getting a hard paper copy would be left to the reader as an exercise for their printer. No one is thinking two cent could be make printing and sell paper copies. Even Amazon.com is trying to get out of the paper selling business.

Tenth, to separate the talk from the walk the first topic to research, compile, review and beat to death is the mechanical alignment of the R390 and R390/A
receivers.

Ron there was much more as I am sure I missed a few things.

Roger L. Ruszkowski KC6TRU (still)

Date: Thu, 15 Dec 2005 19:57:01 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Call for input on 1st addendum topic

After one has done a good receiver cleaning and before one jumps into an electrical alignment of the receiver a good mechanical alignment is in order. At http://www.r-390a.net/ under Wei-Li's Pearls of wisdom is a couple of papers on cleaning and oiling the gear train. A popular wish is for collection of wisdom on the alignment of both the R390 and R390/A receivers. That wish feels like a small book in its self and needs some decomposition into manageable sections. An electrical alignment begins with a mechanical inspection and adjustment as necessary. Most receivers having been well adjusted mechanically need no adjustment. However a proper inspection is in order. Before plunging into an electrical alignment section the mechanical alignment should be conducted.

Here is your chance to ask any question you ever wanted on the mechanical alignment of either receiver.

Here is the call for help. Will every one who has saved a bit of mail on mechanical adjustment, clamps, parts, bolts, screws, where to get things, reworking the mechanical counter and any aside for the mechanical aspect of the RF gear train please post it again as Mechanical Alignment Input. Will any one who remembers something useful from a mail please go out to the archives and mine it out. Please post the information back on the mail.

Please include names for any thing you can. I want to include those into the text to get credit to contributors. Let us not have many new web pages that present the idea this knowledge just fell into the Internet from anonymous.

Thanks Roger L. Ruszkowski

Date: Thu, 15 Dec 2005 20:11:26 -0500
From: "Mark Richards" <mark.richards@massmicro.com>
Subject: RE: [R-390] Call for input on 1st addendum topic

I don't have any pearls to offer, but would request that I'd like to see some mention of the effect, if any, of worn bushings between the front panel controls (particularly the tuning knob) and the proper operation of the gearing. Tolerances, and how to replace (or repair?) these would be most helpful.

Date: Thu, 15 Dec 2005 20:12:20 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Call for input on 2nd addendum topic

Wise sayings and safety is coming to the top of the list as a popular subject. Early on mail suggested that these words of wisdom needed to be given a place of honor and not forgotten. Keeping with the spirit it is not to soon to start on the wisdom list. So while you are out mining items on mechanical alignment feel free to post any bits of wisdom to Things We Once Knew.

Date: Thu, 15 Dec 2005 17:38:39 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Troubleshooting "unrepairable" radios

Good story, Tom, Whenever I'm discussing troubleshooting I always want to know WHO worked on it last and what their level of expertise is. It's important! I want to know what they might have looked at and what they have seen in the past. If that person is a good troubleshooter I KNOW I have to look much closer for something THEY didn't find and I must suspect EVERYTHING. But, if the guy was a newby then I know I have to start with the obvious first, maybe even the REALLY obvious.

A maintenance electrician has an advantage over the new-construction electrician in that he knows the machine worked at one time, the construction electrician has no idea whether the thing will actually work, or even if it was designed properly, or what effect any design changes had on the final product. Joe

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Date: Thu, 15 Dec 2005 20:56:49 -0600
From: Tom Norris <r390radio@gmail.com>
Subject: [R-390] For the r-390 wishlist -- Things for the R-390/URR

Since Dave Medley retired, we've only see a few bits here and there on the R-390 vs the 390A. Anyone able to add any 390 experience? I've only recently dug into any R-390's. The 390A I can almost tear down and put together blindfolded* - though I'm not sure I can add anything that hasn't been covered in "Pearls" other than the one odd troubleshooting incident written about earlier, I've not ran into many things that weren't simple by-the-book fixes. Reason I ask about the R-390 is I have 2 here that don't seem to have simple by-the-book problems. (they'll get back up on the bench eventually) *Roger's suggestion of a front panel troubleshooting guide may have helped in chasing that odd problem mentioned in the earlier post. Though in that case a cigarette along with the blindfold may have been more helpful...

Date: Thu, 15 Dec 2005 19:18:54 -0800 (PST)

From: DQ <greybeard5150@sbcglobal.net>
Subject: [R-390] Quick reference R-390 member list

Have you ever wondered where that guy is at, that just posted to the list? Maybe wonder how old he is? Have you ever dumped posts from the list and then remembered that someones email address was supposed to get saved before you deleted it? Have you ever wondered about the demographics of this list? Have you ever wished that there was someone on the other side of the country that might be able to look at something for you, or maybe box it up and send it to you because someone refused to deal with mailing it?

I'll admit that a couple of these may be a bit far-fetched, but hey, you never know, right? I ask these questions only because I've put together a list (admittedly incomplete) that contains many of the 'frequent flyers' here on the R-390 reflector. I have WAY too much time on my hands and I did occasionally wonder who was where or how old they might be, and I got tired of wearing out the Call Sign Lookup.

There are also many folks here that either aren't licensed amateurs (like myself), or else they never refer to their calls, and for those I have emails listed for quick reference. If they have mentioned their QTH in posts, then some also have locations listed (city only).

All info has been culled from qth.com R-390 reflector posts, and Call Sign Lookup ONLY. First it's aphabetical, and then it's also been cross referenced by state as well. This is not some indepth thing, and with rare exception I only started paying attention to the players and taking notes about a month or two ago. At this point there's 116 people accounted for. Frankly, I never realized that so many different people actually check here at the list from time to time.

I'm sure that I've missed some people but it really doesn't matter. If anyone would like to have a copy of this list, just drop me an email off-list, and I'll shoot you one in the next couple of days. It's been done in Microsoft Word and saved in .rtf format, so as to be backward compatible for more users. I suppose that I could save it in .txt format too, it's just gonna' look mighty ugly after all of that nice color and text formatting work that I've done.

Date: Thu, 15 Dec 2005 21:38:22 -0600
From: Tom Norris <r390radio@gmail.com>
Subject: Re: [R-390] Troubleshooting "unrepairable" radios

To make the original story even more odd.... Remember Conard, WS4S and the strange problem of the 50 CPS shift with strong signals? Same radio. That problem didn't show up during a regular alignment.

I most certainly agree with Joe -- since this came from the estate, there wasn't any way to trace it's history. I *do* know the history of the PTO, IF deck, meters and about half the knobs since those were replaced, seeing as it didn't have them when it showed up. :-) So unless the knobs fall off, hopefully the radio will behave from now on.

For the wishlist? The bushing suggestion -- partially loosen all the front panel bushings before replacing the front panel to the shafts a bit of "play" so they'll be less likely to bind.

Date: Thu, 15 Dec 2005 21:45:01 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] building new components

I have a lot of the parts in the list. I will not make any more of the parts on spec as I have lost my A** on the flakes that want the part and say they will order but when push comes to shove and you ask for deposit or money up front they come up with some asinine excuse and disappear from the scene. Then after you go to the cost, time and effort.They then say I charge too much. A good example are all of the parts that have been done on CNC centers boils down to not just the programming but the proofing of the work making a sample, and all of the leg work dealing with all of the vendors. Selling, packing, shipping, ebay, paypal cost, trips to the post office, UPS charges, employee costs taxes, insurance and my fixed overhead. I have had excellent luck in dealing with hams from all over the world.No bum checks from over 2000 dealings, and I do not hold checks to clear, as a matter of fact I stick the checks in my briefcase and when I get several after a few weeks I then deposit them. AS we all know money talks and we ALL know what WALKS. <snip>

From: "Clemens S.Ostergaard" <clemens@it.dk>
Subject: [R-390] Ideas for Y2k companions (and an off-topic query on RA-1772)

This is one group that you never tire of! - ("If you are tired of the R-390 list, you are tired of life") Someone mentioned it already, but in case it got lost in the blizzard of suggestions and mails: It would be a great help to have access to the TM-4000 manual on troubleshooting, which is based on the R-390A Later it got called " Troubleshoot the radio receiver 390A/URR to the faulty component" Its STP nr is STP 34-33T14-SM-TG 867-816-1008

There is also, with end number 1009 "Align the radio receiver R390A/URR"
How useful it would be to have these two in digital form.

Now for the off-topic query. A Racal RA1772 just found its way into the shack. It has a number of fine 1.4 mhz filters, but the AM one is as wide as 8khz. Does anyone have, or can anyone direct me towards, such a filter that I might buy? Many receivers have these, Skanti 5001, R & S EK070, Redifon R550, Plessey 2250B and 2282A , as well as a number of Eddystone receivers.And of course the American and Canadian versions of the 1772. Sorry about this non-hollow state question, but it is certainly a boat-anchor, a fine receiver and perhaps the ultimate achieved before the transition to microcontrolled receivers, ---- excepting of course R390 and R390A.

Date: Fri, 16 Dec 2005 04:34:36 -0800 (PST)
From: "KC8OPP Roger S." <kc8opp@yahoo.com>
Subject: Re: [R-390] Troubleshooting "unrepairable" radios

With all due respect, I believe you should start all trouble shooting jobs with the "REALLY obvious". More times than I can count I have followed up some very good techs only to find that they have missed a very important step or symptom. Sometimes this can be perceived as an insult to their ability, because they KNOW they have checked/followed everything. Don't assume anything, cause you know what that makes you and me.

Date: Fri, 16 Dec 2005 07:34:26 -0600-------
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Ideas for Y2k companions

I have a very nice original copy of the TM-4000 manual....but no way to digitize it. I don't mind shipping the manual to someone that has the capabilities to do it properly as long as I get the thing back. You don't see them around much.

Date: Fri, 16 Dec 2005 07:37:06 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Troubleshooting "unrepairable" radios

The standard first step in troubleshooting any piece of electronic equipment is to do a very thorough visual inspection. If a problem turns up after work has been done it is reasonable to assume the problem is in the area last worked on. These two "truths" have always saved me a tremendous amount of time.

Date: Fri, 16 Dec 2005 08:43:34 EST
From: R390rcvr@aol.com
Subject: [R-390] TM 11-4000

I will take up the cause of scanning in the TM 11-4000. I have a good

original, which I will unbind to scan in the receiver portion of it. I don't think I can handle the big schematics, and haven't checked them out carefully enough to see if they are different from the other manual schematics. I do think it will be a very handy troubleshooting aid.

Date: Fri, 16 Dec 2005 09:15:23 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] For the r-390 wishlist -- Things for the R-390/URR

I have a few R-390's and R-391's. They all work - mostly. The only repair experience I've had was with one of the last R-390's out of Fair Radio. Dave, who used to work there back then and the R-390 resident expert, had kept it on his bench, tweaking it here and there and burning it in for a few weeks before shipping it. When I got it, it was DOA. The problem was an oddball one -- not dissimilar from your function switch experience on the R-390A. Someone mentioned some other situation that was similar - wire pinched by the IF deck or something like that. The R-390 has a big cable bundle running across the bottom of the mainframe. Where it crosses part of it is a cutout where there should be a small retainer clip. Sometimes they're missing. That cable bundle runs into a big connector that plugs into the audio deck. It's like the R-390A setup, only the R-390 has heavier coax. I'm not sure what made me do it, but I opened up that connector -- backed off the shell. Inside, the shield/braids of something like 12 or 13 cables are connected to a terminal in the connector by means of a piece of solid hookup wire. I seem to remember it was #13. May have some significance :-). The hookup wire and solder glob around it was cracked through from stress. Even with the shell off, it wasn't obvious. With or without that clip on the frame bottom, the cable bundle tends to sag and gets jostled when the receiver is set down or moved around. A bottom cover would minimize the movement, but still allow some jostling. While the bundle can shift, it's fairly stiff and puts quite a bit of stress on the connections inside the plug. Yes, there is a strain relief on it, but these are often not tight enough as the rubber wrap tends to shrink. Ground point for a lot of connections, so, if it fails it renders the rig inoperative. Short piece of hookup wire, soldering with a high wattage iron, shore up the strain relief and she's good to go. It's also a good idea to replace that clip and make things tight with some electrical tape or whatever. The only other things I know come from Dave Medley's notes -- like replacing the 47 ohm resistors, etc. -- and how to solid state the voltage regulator to eliminate the heat from the 6082's, though a muffin fan is another solution. I suspect many R-390's haven't needed the kind of intensive repair and pre-emptive PM applied to R-390A's, as they were of an earlier, more expensive, more proven design, and, as Les Locklear likes to quote, "a man's radio". That said, perhaps the most important tips are to 1. wear the correct (not politically correct) after shave, 2. but don't shave for a few days and work up a good sweat (so as to exude some manliness), 3.

consume compatible beverages (like regular, like Southern Comfort, Jim Beam, etc., but not light beer or Tanqueray and so on. (If you go with 180 proof rum, or vodka, you can also use it to clean the gear train -- and if you want to truly prove your manliness and bond with the radio, you can imbibe some of the gear train drippings). An ailing R-390 will generally perk up and work, purely out of mutual respect, even with a couple of weak tubes and crispened resistors.

Don't know if all that really works, but does improve one's general orientation and attitude before approaching the project.

Date: Fri, 16 Dec 2005 09:27:37 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] TM 11-4000

I have a copy too, but better you than me, heh heh. Some considerations:

1. It's better to scan and OCR the section. If you just scan and leave it as as bit image/graphic, it will be much larger in terms of file size, and you'll probably have to back off on the resolution, resulting in grainy-ness. If the text is OCR'ed, the photos and small line drawings can be scanned an incorporated in place in a higher resolution. Also, true text means that the digitized result can be searched for word and part references.

2. Your scanning software may already contain a variant of OCR software. They typically have to be "trained" on samples to recognize the type face accurately. Even then, it all has to be proofed word by word and edited. There's no such thing as 100% with OCR'ing this stuff. Also, I think the manual is set up as double column.

3. That said, it might be better to restroke the thing.

4. The TM-4000 section should be reviewed by some who know the R-390A like the back of their hands. Because it's a training piece, the authors may have taken liberties with some of it and may vary from the realities. Again, that manual doesn't even mention "R-390A" anywhere, which makes me somewhat suspicious of that possibility.

5. One approach is to divvy up the section between three or four volunteers to type it up. If those guys are also familiar with the R-390A, they may be able to detect any anomalies or variances as they do it.

Date: Fri, 16 Dec 2005 09:51:24 -0500
From: Michael Crestohl <W1RC@Verizon.net>
Subject: [R-390] Re: Y2K Addendum

I don't know this has been mentioned; it may very well have - but I don't follow the List as regularly as I would like so at the risk of being redundant, here goes..... The Navy version of the R-390A manual is far superior to the Army and AirForce versions which are basically the same. The troubleshooting and theory of operation sections are far more detailed. So if you can get your hands on one of these you have a real gem. They are hard to find. I am wondering if it exists in .pdf format. I have several versions of the Army/Air Force manuals in .pdf. The Y2K rewrite is based on the Navy manual. Wise sayings and safety is coming to the top of the list as a popular subject. Early on mail suggested that these words of wisdom needed to be given a place of honor and not forgotten. Keeping with the spirit it is not to soon to start on the wisdom list.

Date: Fri, 16 Dec 2005 08:42:23 -0700
From: DW Holtman <future212@comcast.net>
Subject: [R-390] TM-4000

If the chore of typing up the TM-4000 is going to be done, (as Barry H. suggested) I would be happy to do a chapter or two. I have a copy of the manual.

Date: Fri, 16 Dec 2005 09:46:56 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] TM 11-4000

I looked at the block diagrams and the schematics in the TM 11-4000 this morning and the R-390A is definitely the test subject in the manual but is never mentioned as such as Barry H. has correctly pointed out. The manual is a pretty general work aimed at the troubleshooting and repair of tube Receivers, AM transmitters and FM transmitters. I assume we are talking about only including the parts pertaining to Receivers here. Maybe getting the entire April 1958 TM 11-4000 on CD would be a nice thing to have one day....not sure how many of these are floating around...just like the others someone mentioned. I've never seen those!

Date: Fri, 16 Dec 2005 10:48:55 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Re: Y2K Addendum

As I mentioned some posts ago, I OCR'ed the '85 Navlex manual as a basis for the Y2K, so when you are reading the Y2K, you are mostly reading the last and best Navy manual that was published. I agree that they are also generally better than the Army manuals, though I recall someone mentioning that the Army versions have a few things that the Navy books do not -- don't recall offhand what those were. The reason for the choice was also that the Navlex was apparently produced by word processing and

has a single column format (full width of the page). That's not particularly desireable for readability -- there's a reason for columnar text (limits horizontal "eyeball" scanning when reading), however, the single columns plus the relatively modern typeface made OCR-ing much more efficient and accurate. Point is though -- no need to seek the Navy manuals if you have the Y2K.

Date: Fri, 16 Dec 2005 08:01:18 -0800
From: "Kenneth G. Gordon" <kgordon@moscow.com>
Subject: [R-390] OCR software and the new Y2K manual

I would be happy to OCR some books, etc. for the project. I use Textbridge Pro 11 regularly to OCR various ancient books for a research project I have been involved with for the past 10 or so years. Textbridge Pro 11 seems to be excellent for the purpose. BTW, www.scantips.com has OCR software for sale at VERY substantial discounts. And Barry is right: OCR'ing books both makes the final file sizes MUCH smaller, and in addition, much easier to read.

Date: Fri, 16 Dec 2005 08:11:42 -0800
From: "Kenneth G. Gordon" <kgordon@moscow.com>
Subject: Re: [R-390] Ideas for Y2k companions

If no one closer steps up to the plate, I can do that. I have all necessary software, hardware, and experience. However, I am pretty slow, and if a time-crunch raises its ugly head in the project, it should probably be done by someone who is not "time-challenged".

Date: Fri, 16 Dec 2005 14:35:49 -0600
From: "Craig Anderson Ext 1365" <Craig.Anderson@saintpaul.edu>
Subject: [R-390] RE: TM 11 4000 Manual

I have an original TM 11 4000 manual and I could scan it in on our professional tabloid scanner (13" x 19") plate size. It is an excellent resource for trouble shooting as it uses the R-390A as the example in the receiver section of the manual complete with schematics. I let K5?FF in Louisiana borrow it to scan the pages and when the manual was returned to me the spine was cut off so it would be easy to re-scan.

Date: Fri, 16 Dec 2005 16:00:05 -0500
From: "david freeman" <_dave.f@mail.com>
Subject: Re: [R-390] RE: TM 11 4000 Manual

I have access to a sheet feed 11"x17" scanner and Textbridge Pro as well. The scanner is probably too coarse for pictures but great for OCR. I'd be willing to help in whatever capacity. I can type pretty fast if restroke is

needed, (but not over 60WPM cuz I've got GreenKey's disease. :) I don't have a copy of TM 11-4000 however.

Date: Fri, 16 Dec 2005 16:07:00 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Troubleshooting "unrepairable" radios

I agree, Cecil. That's why when we get an unknown radio the first thing to do is to clean it up, you can't do a visual inspection on a dirty radio! And tighten all the ground connections. Didn't I put that in the preface to the Y2K manual?

Date: Fri, 16 Dec 2005 19:25:16 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] TM-4000 Project

Could you two Fellows swap some E-mail and arrange for a copy of TM-4000 to pass through a scanner. An OCR copy would be wonderful. Mostly we are not in the business of cutting and pasting text. So if we just had a readable copy we could send someone to read a few paragraphs from to help them with a problem would be a start. Once we get an electronic file copy you could send it to Al Tirevold and ask him to add it to the manuals on line at http://www.r-390a.net/ Once you Fellows got a copy to Al and he added it to the web page there will forever (OK a while) be a note that the document was Courtesy of you two fine Fellows. Craig Anderson W9CLA and David Freeman WW8S We would always love you two forever as the Fellows that put that TM into the electronic domain for everyone to enjoy.

Date: Fri, 16 Dec 2005 19:32:55 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Hunt is on for two more @RARE@ manuals

Clemens S.Ostergaard remembers two other manuals that we need to find, scan and post. Hunting for a copy of STP 34-33T14-SM-TG 867-816-1008 " Troubleshoot the radio receiver 390A/URR to the faulty component" Hunting for a copy of STP 34-33T14-SM-TG 867-816-1009 "Align the radio receiver R390A/URR" Any one have a copy of either that we could scan?

Date: Sat, 17 Dec 2005 08:10:52 -0600
From: Mahlon Haunschild <mahlonhaunschild@cox.net>
Subject: [R-390] Re: Hunt is on for two more @RARE@ manuals

11-5820-294-35/1, which is the MWO for the R-389, R-390, and R-391 to provide more adequate fusing (big whoop). On a more interesting note, I also have a set of figures for TM 11-856/TO 31R1-2URR-154, which is the

separate set of fold-outs for the R-390. I've never checked to see if they're all there; I suppose I should. If I had access to a big-enough scanner I'd scan 'em.

Date: Sun, 18 Dec 2005 20:16:29 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Re: Hunt is on for two more @RARE@ manuals

Wander over to http://www.r-390a.net/ and look. MWO 11-5820-294-35/1, which is the MWO for the R-389, R-390, and R-391 to provide more adequate fusing. TM 11-856/TO 31R1-2URR-154, Separate set of fold-outs for the R-390.

Date: Sun, 18 Dec 2005 20:18:30 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Re: Hunt is on for two more @RARE@ manuals

If we do not get a reply from the school house, I will go over to the ASA pages and ask them if any one has a copy.

Date: Tue, 20 Dec 2005 17:44:45 +1100
From: "bernie nicholson" <vk2abn@bigpond.net.au>
Subject: [R-390] Training manual

I think that I have a copy of the training manual that is already scanned to a disc, I am on broadband so I could send it to someone , Regards Bernie n

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Date: Tue, 20 Dec 2005 21:01:05 -0500
From: Dave or Debbie Metz <dmetz@ntelos.net>
Subject: [R-390] power plugs 390's? 392's

I realize this might seem inappropriate but people are always looking for power plugs for the 392 and 390. This sure looks like the real deal.

http://cgi.ebay.com/4ft-military-ground-radio-cable-cx-4720-jp2746_W0QQitemZ6581044228QQcategoryZ588QQcmdZViewItem

look at his store, he has a lot of "suspicious" plugs between pages 16-19.

Date: Wed, 21 Dec 2005 15:59:48 +1100
From: "bernie nicholson" <vk2abn@bigpond.net.au>
Subject: Re: [R-390] Training manual

Jay I sent various files to FRED at radio@urlhits .com & mparkinson1@socal.rr.com they can be the US distributors hi the training manual is pretty basic but there were about 4 other manuals which I

thought might be interesting

Date: Wed, 21 Dec 2005 08:50:35 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] power plugs 390's? 392's

The clamp shaft on this one seems to be a FEMALE: I never remember if the R-390/URR connector has a female or male thing... I go look at my radio. BUT, based on a picture I have here, the real real thing has a male screw shaft. THUS, the one offered in the above auction won't work.

Date: Sun, 25 Dec 2005 21:46:12 -0500
From: "Al Parker" <anchor@ec.rr.com>
Subject: [R-390] SP-600's - was Nuvistaplug

Well, Les is The Historian. He's put a lot of time into documenting SP-600's, and much if it may be found on The Hammarlund Historian website: http://www.hammarlund.info/

The "SP-600" page adresses a lot of the points that I guess Mark was wondering about, and Les has covered some of it in his post. Les, Barry H, Andy M, & I try to keep things up there, tho' I have been remiss in putting some of Les's stuff there, like pix of the Leary units he's owned. He sent me the pix months (yrs now?)ago, I recently got a better scanner & will try to get a round tuit soon. I'd much rather work on old radios than on website stuff. I got some ads, pix, etc. on Hammarlund from the archives of the IEEE a few months ago, and will get back to work on it also.

One concern I have with the present website is that it is often very slow to load pages, particularly the info we have in the "H-Files" which consists of a lot of large files of scanned ads and product info. The web hosting is provided by Al Waller and his great qth.net, etc., and is free to users, tho' at least partly supported by users' contributions. It's hard to complain about something that's taken as free by most, supported largely by Al Waller & a small percentage of users. Al W. is the owner of "hammarlund.info" and the servers that it is displayed upon. He's recently posted 1 of his not very often requests for supporting contributions, I guess this is my pitch to help bring some in.

Date: Sun, 25 Dec 2005 22:24:14 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: [R-390] A modest proposal (was Y2K Addendum)

OK, my mind is oversimplistic this Christmas. But let me try to categorize the things running around in my mind:

1. The Y2K Manual is a nice electronic edition of what's in TM 11-5820-358-35 (Field and Depot Maintenance Manual), PLUS it includes many of

the military-approved mods, PLUS it is
cross-indexed in a few interesting ways (broken out schematics, etc.) The scope of the Y2K manual, in other words, is almost the same as the scope of the military maintenance manual.

2. There are some misprints/typos/incorrect statements in the Y2K manual, most of which have been discussed here in the past or are self-evident on comparison with reality.

3. There are lots of other resources out there on the 'net and elsewhere which are very useful. BUT... if we tried to put them into a form like the Y2K manual it blows it out of the water
in terms of size/weight/editing effort.

4. Some of the "other" resources consist of opinions and factoids which have been the subject of much discussion, and occasional vitriol, on this mailing list and in other places. Incorporating these might prove difficult (unless we've got a single editor with an iron fist, in which case we may all end up disagreeing with the result in at least one and maybe multiple major ways!)

So, MY opinions:

A. Limit the Y2K addendum to corrections to the current document and things that "should have been" in the field/depot maintenance manual. The one thing I can think of that "should have been" is the teardown/rebuild of the RF deck mechanisms, ala Scott Seickel's very fine
writeup and photos. And seeing as how Scott's writeup is so fine already, I don't feel that it should have to go through an editing process - just link to it.

B. For the things that are not clearly in the scope of the original field/depot maintenance manual, we already have this mailing list, it's archives, and W. Li's selected and categorized extracts from the list. The wonderful things about these forms is that we don't have to all agree as to what goes in - skip the editorial process and give access to the raw stuff.

C. What would be useful is an electronic index to certain factoids to make it easier to dig up previously posted facts. Sifting through the mailing list archives can be difficult, as a month's worth of postings often tops a megabyte, and even W. Li's Pearls is less straightforward to search than I'd like (popping open a dozen or so PDF's and searching each by hand is cumbersome at best.) I'm thinking that I should be able to type "C227" into a search engine and have it come up with past posts to this list and maybe into the Pearls that tell me more about C227, and even better (you know I'm dreaming now!) show it to me in the schematic and in a photo of the

chassis.

Now Google does not serve as the electronic index: qth.net's mailing lists are excluded by QTH's sysadmins from being crawled by Google. BUT I can imagine a search engine that does know about, for example, part numbers and common "noise" threads (e.g. ballast replacement!)
and gets to what I want.

So am I too far off-base in my proposal? I happen to have some time coming up in mid-January, as I recover from a certain common elective surgery and will not be allowed to work on the house or haul around 80 pound radios, that maybe I could put something like my modest proposal of a R-390A specific search engine together. Am I onto a good idea, or a pipe dream, or worthless drivel?

Date: Sun, 25 Dec 2005 23:49:29 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] A modest proposal (was Y2K Addendum)

I agree mostly, but must disagree on corrections. The whole effort on the Y2K manual initiated from the idea to correct errors and inconsistencies, so it makes sense that if any remain, they should be corrected in place -- so the manual stands on its own. There were a number of other significant enhancements vs. the military manuals that are generally available - - improved clarity of drawings, fresh color photos to make it easier to spot the components, etc. Some photos were never replaced and should be to make the work complete and consistent.
Part of the idea was to have a manual on line that was at least edit-able -- not a pdf consisting of all grainy, un-modifyable gray scale images of old manual pages. So -- Y2K should get a second revision to complete it and correct any remaining typos. (Are those typo's in the revision or original version?)

It would also be nice to incorporate Scott's gear train rebuild -- with his permission. That would add about 3 megs to the 14 or so of the current version. I would only suggest adding some labeling/callouts here and there.

Other stuff can be developed separately to avoid overburdening the Y2K manual. As I recall Wei Li offered to further develop his "Pearls", so maybe they can be reorganized and indexed. I'm sure someone can assist if he needs it. Between those two things, and perhaps one other work, practically everything imaginable would be covered -- leaving some room for further activity on the reflector. like beating dead horses and deja vu all over again stuff. (Would be nice to have a digitized version (true text) of the TM-11-4000 receiver section.) So, basically, I agree, primarily with the

exception of the corrections. The Y2K is not carved in stone. At the same time, I would not recommend using it as the foundation of a new pyramid at Giza.

Date: Mon, 26 Dec 2005 00:57:18 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] A modest proposal (was Y2K Addendum)

In the back of the 42 meg version of the TM 11-856A that's floating around out there are 1200 dpi scans that I made back in '96 or so. I think I can also make some photos that match the photos in the mil manuals. I don't have a studio and I've only had so-so luck with hi-res photos of an entire module. Some of those earlier scans are quite clear as they were made from the 1956 manual. The images in the later manuals lacked the quality and clarity of the earlier versions. I think that large version of the manual is on the "Pearls" site.

Date: Sun, 25 Dec 2005 22:59:10 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] A modest proposal (was Y2K Addendum)

Hi Tim, Now you come up to the surface after a bunch of us put a lot of effort into the Y2K. So I think if you added your expertise it help a lot. So good luck on the surgery and have at it.

Date: Sun, 25 Dec 2005 23:35:20 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] A modest proposal (was Y2K Addendum)

I now have a higher resolution digital camera and can make better pictures. Plus I have all of the modules out of frames in all sorts of condition.

Date: Mon, 26 Dec 2005 07:29:33 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] A modest proposal (was Y2K Addendum)

Again, I don't really want to change the scope of the Y2K manual. Correct and add things that "should've been there to begin with" (especially a geartrain rebuild with pictures), yes.Color photos are nice too (although the halftone B/W pics in the original paper ones I think are "good enough".) Something that has always been my job over the years is preparing tables, charts, and graphics of very high information density. I think some of the tables in the Y2K manual are a little "heavy" on thick black lines around every box, and I think the smaller type, smaller format, and the dual-column text in TM 11-5820-358-35 are nicer for everyday use. But other

than those typographical things and a few typo's and thinko's in the Y2K I think it was exactly on target.

> So I think if you added your expertise it help a lot.

Oh, I have very little R-390A expertise! All that I know, I learned from this list or the books, with just a little bit from the school of hard knocks. I've been around ham radio and tube radios for only a couple of decades, and mil-spec surplus for only a few years, which puts me at a severe disadvantage compared to those who actually know what's going on! But a "R-390(A) search engine" is I think within the scope of my ability, let me see if I can get a demo going before New Year's...

Date: Mon, 26 Dec 2005 10:03:15 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] A modest proposal (was Y2K Addendum)

That's what I suspected -- you're a bit out of synch. That was the original version -- about 4.3 megs overall. The latest revision is on Al Tirevold's web site (where the Pearls of Wisdom reside). Go to http://www.r-390a.net/

Then scroll down to "References" and click on it, Then scroll down to R-390A Y2K and click on it.

Or just try clicking on this: http://209.35.120.129/Y2K-R2/index.htm

It's available by chapter or as one big file -- actually now 16.7 megs. I suggest downloading it as one big file so you can check out the navigation/search capability. It is referred to as the Y2K-R2. The much larger size does not reflect humongous additions... it somehow mushroomed when Al re-authored it in a newer version of Acrobat. It may well be when it is revised again, it will shrink down. Seemed to be some peculiarity of that Acrobat version as I recall.

A number of corrections were made and navigation was added or improved. Some additional photos were replaced with color and there may have been some other things which I can't recall. As I've mentioned before, way back when we embarked on the manual the first time, someone suggested color photos. I thought that might just be fluff and would result in larger file size. However, color beats even the best quality original manual B & W's because it's easier to make out the overlapping components in shots of the undersides of the modules. Even with the best black and white/greyscale, if two adjacent components are about the same "grayness" they tend to merge together into an amorphous blob in black and white. I don't remember five years later who it was who clamored for color, but it was a good idea and not fluff at all. You really need to download the newer version and take the

time to go through it. While you're at it, make sure that all the typos you found in the old one were caught and corrected.

Date: Mon, 26 Dec 2005 09:23:17 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] A modest proposal (was Y2K Addendum)

I agree....the Y2K manual should be revised as needed to improve accuracy where identified and to add usable information such as the gear train info and the parts of the 4000 manual that makes sense. The manual is a reference and cannot be expected to be an all encompassing R-390A training manual. There are some pre-requisites to this course that one should possess from experiences elsewhere in life!

Date: Mon, 26 Dec 2005 10:30:47 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Y2K - Photos

Just paging through the revised Y2K to check for unimproved photos. BTW -- not all the line drawings were recreated. Those that were -- many -- show "Courtesy of Pete Wokoun" at the bottom. Quite a piece of work and never fails to amaze me. The not-redone drawings were good enough in terms of clarity and quality -- I think. Here's a list of photos that were not re-done and should be:

Acrobat page -- Manual Page -- Photo #

147 -

6-6

Fig 6-1

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6-11

Fig 6-3

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Fig 6-14

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Fig 6-15

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Fig 6-19 (Sheet 1 and Sheet 2)

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Fig 6-20

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6-61

Fig 6-23

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Fig 6-24

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6-73

Fig 6-25

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6-74

Fig 6-26

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6-79

Fig 6-31

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6-80

Fig 6-32

223 -

6-91

Fig 6-36 -- placeholder for new exploded gear train diagram/photos -- this is where Scott's photo sequence would go if that's
OK.

192 6-51 Fig 6-16 was re-shot by Hank Arney and re-annotated with callouts by Pete W as were Figs. 6-17, 6-18, Also see Fig 6-21 & 6-22. There were quite a few others. See the difference! So, take a look at what those photos are -- shoot some new sharp color ones and then need someone to re-do the annotations/callouts. (Pete? -- since you're soooo good at it.)

Date: Mon, 26 Dec 2005 10:54:52 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] A modest proposal (was Y2K Addendum)

At first -- about 3-4 years ago -- I felt that it would be good to incorporate the whole R-390A section of TM-11-4000, but in retrospect don't think so. I'll have to go take another look at it, but I suspect it would be cumbersome -- it has it's own page and figure numbering, and some of it is redundant with the maintenance manual stuff, so just dropping the whole thing in would create a hodge-podge. It would be a piece of work to re-do and coordinate all the numbering and cross references. It is also a bit oddball in that it never mentions the R-390A by name and takes a different tack.

Better approach: Someone should digitize the R-390A section of the 4000 manual, including OCRed text and just pick up the figures as they are in place for now. As I mentioned before, OCRing the 4000 might be tough and call for a lot of editing and/or restroking. Some of the figures may coincide with those that have already been recreated in the Y2K and can be subbed into the digitized 4000 book. Once it is in computer form, we could lift some pieces and include within the Y2K if/where it makes sense. At that point -- with the 4000 online somewhere, it could have the benefit of a number of list members reviewing and recommending improvements and exerpting.

Make sense?

Also, the digitized 4000 could be expanded on its own to form "The R-390A Training & Tips Manual" or whatever, with a section derived from the Pearls
of Wisdom and other things. Alternatively, it could be called the "Supplement" as someone else suggested, or maybe we go with Y2K Vol I, Vol II, etc. as if building an encyclopedia. (As with the Brittannica and others, after we get to 24 vols., then issue annual supplements ;-)

Date: Mon, 26 Dec 2005 11:37:13 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] TM-11-4000 Course Correction

I should have skimmed through the 4000 book before posting. I seemed to recall a whole lot more of direct R-390A material than is actually there -- unless I'm missing something. What I see now is basically about 20-25 pages starting on page 66 dealing that applies to the R-390A, though not mentioned by name. It includes the standard simplified block diagram, a larger block diagram in the foldouts and a two-sheet schematic which is referred to as Fig 65. Offhand, looks like the same schematic as in the manual. The troubleshooting text refers to specific component numbers on the schematics. If they match the schematic version in the Y2K, no problem. So, the receiver portion may be short enough and easy enough to incorporate in the Y2K -- just about 20 pages of text. It might be better to restroke it rather than try to OCR which can produce a lot of difficult-to-find typos as well as other glitches. Also, some listmemembers who are highly experienced should read through those pages before we even consider it - to make sure there is no misinformation. After all, this was part of a training course, made no mention of the R-390A and so some of the references could be off. There may be some other pieces here and there. I seem to remember another section that I originally figured could be included, but not so now. There is, for example, a receiver "alinement" section, but it doesn't match
the R-390A. Time for someone else to review the 4000..... Barry

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Date: Mon, 26 Dec 2005 11:59:59 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Y2K Errata

I just revisited the Y2K Errata page on Al's web site. Struck by a couple of things:

1. 12 pages of Errata and proposed additions. I don't know how much of this got resolved in the revision, however, David Wise pointed out some elements that seemed to be missing -- not only from the Y2K but other mil manuals (chart entries on coils or something like that.). I suspect not

everything was resolved from this.

2. The major part of the errata was compiled by David Wise (thanks Dave!), some by Jim Bunting, Norman Ryan, Bruce Maclellan, Walter Wilson, Al Solway and others.

Anybody hear from Norman Ryan lately? I don't recall seeing any posts. Anyway, this work should be re-reviewed vs. the revised manual to see that everything got in, though I suspect the missing stuff may still be missing. No sense in re-inventing wheels until advantage has been fully taken of the work that was done.

Date: Mon, 26 Dec 2005 12:09:54 -1000
From: "pete wokoun, sr." <pwokoun@hotmail.com>
Subject: Re: [R-390] Y2K - Photos

Those color id photos in the Y2K-R2 could be redone a lot clearer as well as ones not done previously. If memory serves me, the originals were taken on film by Dan Arney. I scanned them prior to annotating them. That whole process fuzzied them up a little. If they were now done with a digital camera I bet they would look super.

Date: Mon, 26 Dec 2005 17:14:52 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Y2K - Photos

Hank says he has a new hi-res camera -- also has a large assortment of loose modules as models. You might be able to lift the original callouts you did and superimpose over new photos, then make a few adjustments for accuracy of positioning of the pointer lines. The photos I listed had not been done at all yet, so starting from scratch on those.

Date: Mon, 26 Dec 2005 16:12:01 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Y2K - Photos

Just let me know what you need and when. Jan. is going to be bad for me as I have to move all of my shop, radios and parts.

Date: Tue, 27 Dec 2005 12:36:02 -0800 (PST)
From: robert simpson <bobs@pacbell.net>
Subject: [R-390] Re: Y2K Manual Revision question

Just as a matter of curiosity, can someone explain how to edit a .PDF file? What are the steps? Is it possible to "convert" the file into one which could be read by MS Word or Word Perfect? This would simplify the process by

not having to re-type the entire 350+ pages for those individuals having anything to contribute.

Date: Tue, 27 Dec 2005 15:50:47 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Re: Y2K Manual Revision question

Generally PDF is a "Read-only" format, created by exporting from other formats. There are some very excellent tools for manipulating and extracting data/text/images from PDF files, though. Among them are ghostscript (a command line tool even though there is a GUI front end that won't get you to where you want to go). and PDF::API2 (a set of Perl modules that are top-notch in their abilities). Not for the faint of heart!

Date: Tue, 27 Dec 2005 19:41:41 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] A modest proposal (was Y2K Addendum)

Could you teach the search engine to search http://www.r-390a.net/ ? I have no intention of editing on the Y2K manual but some things come up on the Christmas wish list this year. And some Fellows thought it would be nice if the answer to the wishes were shared in the spirit of the season. So it was though that as some wish grants were made that Al's web page would be at least one place where the fulfilled wishes could be shared.

Already we see there are things hanging on Al's pages we have forgotten. Last week several documents come up on the wish list. The solution is not to cram everything into the Y2K manual. But we could try and cram it on or link it on a set of web pages.

I agree that being able to search a web page for bits would be helpful.

As we tried to add new pearls to the pages, I though we should keep the new stuff as searchable text. While Qth may not let crawlers in, I though Al's pages were searchable from the crawler. Again you have to know what to ask for before a search engine will give you a usable answer.

I was really hoping for lots of photos or links to photos. So many of the Fellows have done very nice modifications and some pictures of the work should be shared. I find the photos inspirational. I am wishing for a 2006 resolution from Al to work diligently at updating http://www.r-390a.net/. Roger.

Date: Wed, 28 Dec 2005 01:40:51 +0000
From: "WA0HQQ" <r390@al.tirevold.name>
Subject: [R-390] Y2K PDF Editing

All of the source files are still extant. I have the master copy in MS Word files.If someone needs the source files to do some 'editing' or re-formatting, just let me know. They can be made available. No need to jump through hoops attempting to decompose .pdf files!!

As additions are identified and provided, they will be added to the r-390a.net web page. As I find the time, I will look into ways to make the web page more easily useable/searchable. It is already indexed regularly by the usual web crawlers.

Does anybody have a suggestion for organizing the r-390a.net web pages better?? What should be the 1st order breakdown of the information presented?? what about the second-order breakdowns within each 1st order item??

Non-public portions of the r-390a.net web site can be made available as staging areas for folks wanting to share 'in-progress' copies of their work.
Al

Date: Wed, 28 Dec 2005 01:46:29 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] Y2K - Photos

Barry most of those photos are the ones I had mentioned that I had available clearly from my 1956 manual for use for those not taken anew. I'm working on them now to clean them up further. The pre-1962 manuals had illustrations that were photo quality halftones, the later printings did not. Never got a reply from anyone, but will continue to work on them.

It will only take a few days, then I'll mails a CD to you or hank or someone and you guys can decide which other ones need to be done. Upload them? On dialup?? heehee Never got a reply from anyone, but will continue to work on them.

Date: Wed, 28 Dec 2005 20:05:57 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Y2K Manual redo

A slight correction. I have the ENTIRE Y2K manual done EXCEPT I need someone to send me the drawing files. (Ahem, which I have asked for for the last 6 months.) To answer Craigs question of why:

1. Some of the PDF pages would be OK on screen but would not print properly.

2. Many of the tables had widows and orphan splits between pages.

3. There was a lot of extra space and the column spacing wasn't uniform.

4. I added pages to each chapter so that the new chapter starts on an odd page.

5. With the space reduction, the new manual is about 15-20 pages shorter.

6. I added the component values to each component. Previously, for example R4XX would be listed "as the same as R3XX". When you went to R3XX it would then say "same as R1XX". This is bad karma causing foul language to ensue.

7. The manual was in PDF form. Mine is in both MS Word AND Acrobat 5 PDF so it can be edited to an individuals needs.

8. I have downloaded almost 500 megs of associated files that could be inserted to the manual if one wished.

Finally, I have downloaded ALL the R390 list files.They have been converted to MS Word 6 files and Acrobat 5 PDF files. All the redundant posts were removed so a months worth of posts now takes up 80 percent less space.

We're rehabbing a house 80 miles away from where we live and it's eating time like crazy. With dial up, they are too large to send. I c will burn CD'd for the cost of postage or I can go to a B&N book store and get a wi-fi connection and send them from there. Reply off list to me at sandeenpa at yahoo.com for files. It will be after MERRY CHRISTMAS TO ALL before I can do this.
Regards Perry (five year lurker). 11 BA's & counting. Regards Perrier

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Date: Thu, 29 Dec 2005 19:29:40 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Index for Drawings Files on Y2K CD

Is there a "flat" index for the engineering drawings on the Y2K CD? I've forgotten from when I've used it with windows if there was one. Now that I'm on a Mac and am interested in accessing them, they appear to be spread out over several directories in several places. Any help appreciated.

Date: Thu, 29 Dec 2005 23:54:19 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Another glaringly obvious 390A question for the

hypothetical newbie

A newbie, all aglow from receiving his first ever R-390A from Ebay but wanting to find something to replace the rusted screws in the front panel of his new radio emails the list and asks -- "Is there a list of the sizes of hardware used on this radio? I need to replace the rusty ones on my front panel, and several other screws around the radio are missing too."

Where would you send him for a list that has a breakdown of what sizes of screws are used where on the front panel, and what are the common sizes used elsewhere? I'm asking this from a person's view who has never seen one of these radios before, and while probably has a manual on the way it hasn't arrived yet. Myself I keep a well-labeled assortment.

Date: Fri, 30 Dec 2005 15:38:21 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Another glaringly obvious 390A question for

t

hehypothetical newbie

I've had very good luck with flat external tooth lockwashers. Just screw them down until they become conical...!

And a certain amount of 4-40's and 2-56's as well if you're getting down to the component level (as opposed to simply removing subassemblies). I've heard rumor that the spline set screws are 8-36, but I've never run across that thread elsewhere to check!

Date: Fri, 30 Dec 2005 17:37:48 -0600
From: "Barry" <N4BUQ@aol.com>
Subject: Re: [R-390] Another glaringly obvious 390A question

f

orthehypothetical newbie

Yes, they're #8-36 threads. I have a tap I use to clean the threads out after coating the knobs.

Date: Fri, 30 Dec 2005 18:06:40 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Y2K CD? No Jeff Adams CD? Yes (Was "Index for

Drawings

Files on Y2K CD")

For reasons unknown I had gotten the Y2K manual mixed in with my

directory containing Jeff Adam's Big CD o' Manuals and Drawings that was published a while back. I had also backed them up as one volume, so that is where the confusion began.... The mechanical drawings to which I was referring are on Jeff's CD. That CD contained a dos/windows based reader with a file indexer that was - to me - a fairly clunky affair. Now it's not usable, not sure how many others are having the same problem, it may just be me. In my previous post I indicated I can read the files with no problem, but I'm limited to reading them randomly at the moment. Thanks for an earlier reply regarding the possiblilty of an Exel index.

Date: Fri, 30 Dec 2005 20:52:24 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Part II "What Hardware Do I Need For My 390A?"

I was hoping to get a straight forward answer for that question, since I wasn't asking for myself, since I know what the answer is. I was asking since we are looking for ideas to help folks that may be new to the R-390 and such.

One answer to the "What would I need" is to simply by a ready made kit from KK4DF at http://r-390a.us/parts.htm Not a bad idea. He puts together some good kits for restoring your 390A. He has the hardware kit, a couple types of cap kits. Nice guy to deal with too. I highly recommend Walter, he's a good fellow!. But the question I posed with the current post was "Is there a list of sizes for the hardware needed..." etc. Sending me to Walter would be like my asking what I needed to become a fisherman and you handing me a can of sardines.

I suppose I was asking if anyone on any site has a listing of the sizes of the hardware used for the front panel of the 390A. Like most of the lists I've looked for this week that other folks have known where to look, I've searched and not found one. If I were a new person and didn't know about Chuck's site or the Y2K page or any site, where would I go for something as simple as that??

The list of screw sizes in case the new fellow is hardware illiterate? For the front panel he'd need several flat or oval head conical stainless steel machine bolts. (So say some of the bags my hardware is in, depending on the hardware) If I were the person answering him, or the person whose web page had the information, I'd have photos and examples of where to get stuff - either as a kit like from Walter above, or if the guy was brave, list the sizes and point him toward a hardware store. Believe it or not I found all I needed at Lowes. They didn't know they had it, but most did. Even if I did have to argue with the salesguy at a couple stores - right in front of the bin. As I pulled the package *out of the bin right before his eyes* Anyway.... Hardware bulk sellers (example "Scott Bolt and Screw in Nashville) will

have what they need w/o a doubt.

Here are the sizes that are on misc removables of mine --

8 each #8x32 x 1/2" long
5 each #6x32 x 3/8" long
3 each #4x36 x 3/8" long & nuts (for harness clamps)
4 each #6x32 x 1/4 for around dial readout
5 each #6x32 x 1/4 for RF deck cover, if one exists
16 each #6x32 x 1/4 (if they have dust covers and want to put all the screws on both top and bottom.)

I *realize* it sounds silly, but I'm trying to think of questions to ask this stuff from a newcomer's point of view. I'm asking them as I know nothing of the commonly know web resources exist and the first thing I found was the R-390 list. I'm asking as if I just bought a radio off Ebay or at a hamfest and need to know basic things that may be Common Knowledge to most but are NOT to someone who's not even seen a tube before buying one of these big behemoths. I'm just sayin, before this particular thread goes off into Lutefisk mode.

Date: Fri, 30 Dec 2005 19:56:13 -0700
From: Les Locklear <leslocklear@cableone.net>
Subject: Re: [R-390] Part II

There is a "list," I'm at work, so don't have the files available. It is the manual that ends with a "P" it has all the hardware listed on the entire receiver, plus other errata. I'll post the manual number tomorrow when home.

Date: Fri, 30 Dec 2005 20:22:46 -0700
From: DW Holtman <future212@comcast.net>
Subject: [R-390] R-390A Hardware

A couple of the many places where stainless parts are available with no minimum order is below. In the case of McMaster-Carr the amount of hardware they carry is mind boggling. Everything from Oldham couplers to gears. They ship the same day, I usually receive orders in a couple of days. http://www.mcmaster.com/ OR http://www.boltdepot.com/

Date: Fri, 30 Dec 2005 22:33:54 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Part II "What Hardware Do I Need For My 390A?"

I think a look into the R390 -35P TM would list the hardware for you. The parts TM had almost all the parts listed with a parts description i.e. bolt,

8x32x0.75 stainless steel, recessed head, #2philips.

Lets get the new guy pointed out to the files on the web pages and explain to him what a parts manual for the receiver is and how to make use of it.

We never ordered bolts for the receivers. Every ASA shop had a big parts cabinet with all kinds of things in it. It was called an ME9 Kit. If you ran out of something you ask the supply sergeant to order some. His response was not good but someday (30-60 later) a box of 100 would show up and we would dump the contents of the box into a drawer in the cabinet.

We would order broken clamps. The spline bolts we ordered by the hundred. I would change those out in the IF deck extension shaft clamps and the KC MC knob clamps on a whim. Just let my spline wrench slip in one of those and it was replaced. The parts were just over there in the drawer and did not even need any paper work.

Finding good stainless steel bolts with the proper head style is a bitch. The exact length is not real critical. The thread is standard. Most any one can cut one off if it is so long as to be offensive.

Put together a kit of every thing and it will still cost more for the mailing envelope and postage than the kit contents. Just doing it you could sell a bunch. (OK maybe 20 and I would ask Hank for a second opinion on that number.) The most useful item would be a large bunch (20) of the 4-40x 1.0 clamp bolts. These would not be spline but just a hex key head. Include enough bolts and matching nuts to convert all the clamps in the receiver and have some spare. It will not take care of the splines in the transformers.

But it would help a lot of the mechanical problems. Include a clamp for the 1/4 IF deck extension shafts, One for the KC MC knob. Look into the parts list and provide one clamp with hole diameter for the gear train and cams. A hole bunch of pan head 6x32x0.375 straight slot bolts for the terminal strips on the rear panel would go a long ways. Some 6x32x0.74 Philips for the RF deck cover would also be nice. Just my quick list.

Date: Fri, 30 Dec 2005 22:46:29 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Part II "What Hardware Do I Need For My 390A?"

Tom, Let me try this again. I think the best we could do is send a new guy out looking for the parts TM. And try to respond to the question he posted to the reflector. Then us Fellows need to get better at knowing where what we already know is located. Getting a good search index together looks like a project worth doing.

I see your point and we need a short list out on the web page that could be found with a search engine. So the short list should be on a page with R390, hardware, parts, bolts, screws. clamps. Then a search engine can find the terms and return the list of nuts, bolts, screws, a count of each per receiver and likely a reference to available kits as a cost effective alternative to getting up an order to a parts house. Searches are nice when you know what you are looking for.

Asking Lycos for R390 hardware sizes is not going to return good usable results to the new guy. The R390 pages here where you can just ask away and have the several hundred Fellows here post you back some clues just cannot be beat.

Date: Fri, 30 Dec 2005 22:39:48 -0600
From: "Barry" <N4BUQ@aol.com>
Subject: Re: [R-390] Another glaringly obvious 390A question

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orthehypothetical newbie

The #2-56 screws are for the tag on the front panel.

Date: Fri, 30 Dec 2005 22:45:17 -0600
From: "Barry" <N4BUQ@aol.com>
Subject: Re: [R-390] Part II "What Hardware Do I Need For My 390A?"

The #6-32 screws for the terminal strips are "binder head" style. I buy them by the pack at the local old-timey radio store in town. They have an undercut head especially made for terminal strips.

Date: Fri, 30 Dec 2005 23:07:22 -0800 (PST)
From: DQ <greybeard5150@sbcglobal.net>
Subject: [R-390] Re: Part II "What Hardware Do I Need For My 390A?"

"I *realize* it sounds silly, but I'm trying to think of questions to ask about this stuff from a newcomer's point of view. I'm asking them as if I know nothing of the commonly known web resources that exist, and the first thing I found was the R-390 list." Oooooh, there is absolutely NOTHING silly about the info that you are seeking to provide for the 'virgins' that wander in here. To make this type of information readily available, and in plain languge, is pure genius. This is EXACTLY the kind of thing that I was hoping to find when I first wandered in here 4 or 5 years ago. Kinda like a "Big Dummies Kwik_Guide to the R-390".

The screw ID chart is something that even the vets might glance at now and then. I would also make available:

Fuse TYPES and RATINGS, with the info for which fuse goes in which fuseholder on the back panel. The panel may not have the info on it any longer.

Meter types and identifiers, as well as any common sources for obtaining them.

Audio jumper settings for the rear panel with the basic minimum "let's git 'er up and runnin" parts and/or settings allowing him to grab an 8 ohm speaker out of the broken boom-box, and see if he's receiving anything.

The proper way to install a 3 wire grounding plug in the R-390.

A "kwik-list" identifying the antenna receptacles on the rear panel, and the ID numbers of the commonly available fittings for them. There ARE folks that have never seen anything but a PL-239.

Knob types, sizes, and the sources where they may be obtained for those missing any front panel knobs.

I'm sure that something else will come to mind, but that's all that I can come up with at the moment. I realize that many here may consider this being the "dumbing down" of the book, but a disclaimer can be posted for the more erudite radio buffs to just keep "movin' on" past this part. ~ Quig ~

Date: Sat, 31 Dec 2005 09:47:32 -0500
From: "Joel Richey" <richey2@mindspring.com>
Subject: [R-390] Hardware

Another place where stainless is available is at a boating store, Boats US is a good example if your in an area that has one, very large stock of stainless. Just an FYI.

Date: Sat, 31 Dec 2005 17:29:30 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Re: Part II "What Hardware Do I Need For My 390A?"

I think Quig is on to it and some of the ideas that come up in the Christmas wish lists. Every one who has been reading this reflector for a few years knows we have just about beat every horse at least once. Some we have even kicked once they were down. The rub is the new guy is just as clueless as ever. Not his fault he is just younger than us and has not been educated. Being young is not wrong. Us old kids just got a head start in life. Having been there and done that does not make us better we just been there and

done it.

Back in 84 when I completed my Master Degree in Computer Science the PC was two years old and Al Gore had not yet invented the Internet. We have all been 20 years learning this new paradime shift. So now we are thinking about searching web pages and getting things we all know out there where the new comers can find it also.

A lot of this is about putting things in text on web pages in a fashion that can be useful. The trick is to put search words on a page so the search engine can find the idea.Place information on the page that answers the question being searched. Place links on the page that has all the gory PDF details in sleep inducing government text. Place information on the page to explain what you will get for down loading one of those big PDF files.

Enough Management

This is 2005 and the occupation of the year is Internet Web Page Author. Ask not what we need, Ask rather does this fill the need. Page size must get past Yahoo mail box limits. The low limbo pole limit. Pick your subject line for the mail post. Pick your keywords for the search engine to find Write some useful information Put in the request to help fill in the missing parts. Put that out here on the mail. Let the response come back. Collect the stuff and rework your original stuff. Then put that back out to read. Once you get a good page together ask Al Tirevold to add the page to http://www.r390a.com. Then a search of the web for R390 and the keyword will bring everyone back the page with the information. We can all work on our web page generation skills with little effort as Al will take care of getting the pages linked (Thank You Al for helping us in several ways.) Plus we get good reviewed subjects onto the web. Plus we get good R390 knowledge shared again. Plus we get the stuff out where we can search for it in today's paradime. Roger AI4NI

Date: Mon, 2 Jan 2006 12:30:45 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Additional Y2K Manual update info

Happy New Year to the List, Here's an update on the Y2K manual Project.

I have the entire manual done except for the adding of pictures. Al is sending me the files on a CD and I will get them installed hopefully by Jan. 15th. The tentative title is Y2K-R3 Beta. It will be posted on Al's web site for all to peruse, make suggestions and corrections. One new chapter will be Scott Scheickel's gear rebuilding pictures and data. Some other chapters may be added as feedback is received. One change is that this is not going to be a searchable PDF manual unless someone else does it. My reasons are

that it makes for larger files, is IMHO of marginal value, and I don't know how to do it. Many forget Edison's comment: It is 1 percent inspiration and 99 percent perspiration. There is considerable heavy lifting involved. When the vast majority of errors are corrected (it's never "finished") It will be re-posted on Al's site. It will be both in Word 95 and Acrobat 5 PDF as one large file. I will also break it down into as many 10 Mbyte files for those of us who have dial-up. I will mail a CD with all the finished files, plus the entire 5 year mailing list edited files, and other miscellaneous R390A downloaded data that I can fit on the CD for $5 including postage. I will print the manual ONLY on a duplex B/W laser printer and mail for $10. Get both for $12. DO NOT SEND ME ANY MONEY UNTIL REQUESTED!!. I have all the previous e-mail requests saved and will contact everyone off list. Regards, Perrier

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Date: Mon, 02 Jan 2006 16:43:35 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Additional Y2K Manual update info

> The tentative title is Y2K-R3 Beta. It will be posted on Al's web site
> for all to peruse, make suggestions and corrections. One new chapter
> will be Scott Scheickel's gear rebuilding pictures and data.

The gear train rebuild could use some additional annotations. <snipped>

>One change is that this is not going to be a searchable PDF manual unless
>someone else does it. My reasons are that it makes for larger files, is
>IMHO of >marginal value, and I don't know how to do it.

I don't understand. The first stage of the whole Y2K project five years ago was to go to the trouble of OCRing it so it would be true text -- searchable, edit-able and more compact. 200-300 pages of bit imaged pages pulled into Acrobat would be no improvement over the other (mostly Army) manuals that had already been done. Not edit-able and not searchable in that form. Some of those are around 43 megs due to the inefficiency of capturing and storing text pages as bit images. Both original and first revision of the Y2K manual are searchable as-is. Most of the text that are part of illustrations and the whole parts list is searchable as well. For example, I just searched on "C553" and Acrobat found six instances within a few seconds. It works well in the text body and parts list, however seems to highlight too many elements of the annotations in the drawings. If somehow you're coming up with an unsearchable version, sounds like a problem and potential giant leap backward. (Is the text still text? Did you start with the RTF files and inputs supplied by Al Tirevold?)

The entire Y2K Rev 2 is about 17 megs. There is a placeholder for the improved gear train illustrations on existing page 6-91. I think that's the

best place for Scott's photo sequence to be inserted. I did a test compile into acrobat and figured it would add abou 2-3 megs. That would bring the whole file to about 20 megs -- maybe one or two more with other edits.

> Many forget Edison's comment: It is 1 percent inspiration and 99 percent perspiration. There is considerable heavy lifting involved.

Yup, been there, done that.

> I will also break it down into as many 10 Mbyte files for those of us who have dial-up.

Shouldn't be more than 2 files that way. 10 meg files may not be small enough. The existing Rev2 is available by chapter.

>I will mail a CD with all the finished files, <snip>

I suggest you doublecheck your arithmetic including media mail (rates increasing) for the likely weight. Paper may be cheap but it's generally 2-3 cents per page in toner for a high capacity/loose toner copier at 5-15% coverage. If using a laser printer with toner cartridge, the cost can run much higher per page -- and counts per side, not per sheet. Might be OK, or you might be shortchanging yourself. Anyway. you're right -- it's way premature for anyone to get involved printing or burning CD's for others. Another factor -- much of the Y2K is in color. Not sure how some of the photos come out in b&w. Hope some of this helps. Barry

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Date: Mon, 2 Jan 2006 18:18:20 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Ultimate heresy answered

Wrote: The ultimate heresy? Has anyone attempted to completely rebuild the modules or (entire?) R390 A radio with new low noise resistors, modern caps, wiring, etc. I to would like to know if anyone has done this, also add to the list the trusty R388/URR.

Mike & Ken; the short answer is kind of. I've been "hotroding" receivers for 50 years. I started with a S20R. I've done a ARR-15, several SP-600's as well as some R390's back in '65-'66 at Karamursel Air Station in Turkey.

It is good science to replace all resistors and caps. The low noise metal film units are far quieter that any carbon comp type ever was, could be, or will be. Modern insulation materials make the same true for capacitors. Teflon sub-miniature co-ax is manna from heaven if you need to fix any receiver co-ax problems. The 6DC6 can be replaced with a 7788 if you want to put in a 9pin socket, re-bias and fiddle with the AGC. This was the front end

tube that we used at Hallicrafters in the late 60's in special OTH receivers.

All BA's receivers will benefit from inrush current protected electronically regulated power supplies. This especially true of the R-388 and SP-600 which use PS's to develop negative bias voltages and were designed for a lower nominal line voltage than most of have today. The noise filters on both the SP-600 and R-390 should both be replace with modern low leakage units to avoid shock hazards. R-338's can have much better audio. 0A2 regulator tubes can be replaced with a six stack of TL431's for lower noise, better stability and at less expense than using the 0A2.

Sadly, your post will probably show the schizophrenic traits of a few developmentally limited PC self-appointed ludites (from the Guardians of Art Society) who only write to complain. They will "allow" the idea of a resistor instead of a ballast tube, a new blocking capacitor for the mechanical filters, the Langford AGC mod, accepting "GASP" solid state rectifiers! After that, it is almost total denial that R-390's can have major improvements other than a product detector. And God help you if you propose mods with any new holes: torches will be lighted.

Unfortunately, these vocal few have driven off the list Dr. Jerry and Dallas Langford who have contributed to vast improvements for the R390 and R390A in particular and other BA equipment in general. Between them, they may have forgotten more about BA's than most of us now

As soon as I can I can get to them, my three R390A's, my three SP 600's and three R388's will all work much better than when the rolled off the assembly line due to replaced components and reworked circuits. I have a Fluke 6080 signal generator, 200 MHz scope, audio distortion analyze, audio power meter, and VTVM's to calibrate and verify what I have improved.

After stage one it's off to dual gate fet's for the IF, SS temp regulated ovens and LMxxx series solid state audio outputs. Bon Voyage, Perrier

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Date: Mon, 02 Jan 2006 22:19:56 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Ultimate heresy answered

Yup -- unfortunate all right, but that's not the reason Dr. Jerry left -- I was in touch with him afterwards. Didn't care for the foolishness that sometimes erupted on the list and some other disagreeables, but wasn't necessarily about solid state mods or the like. You're about 180 degrees out of phase on Dallas (Lankford with a "k" that is). The last time he stormed off it was due to conflict over recapping. He asserted that he never found a bad molded cap (i.e. black or brown beauty) and went as far as to assert

that those who claimed finding leaky ones were (paraphrasing, but not by much) misinformed, delusional or outright liars. Some list members even posted links to photos of physically split caps. I attempted to smooth ruffled feathers privately, pointing out that many of the list members' experience reflected St. Julien's Creek Massacre victims -- blue and yellow stripers -- that had been outside for over a year. (Of course, those caps can fail on the shelf or in a radio cozy on the shelf -- I was just trying to be diplomatic.) No good. He accused me of being "an apologist for the recappers." Your post would have been enough to make him go ballistic all by itself. As I learned later on from another list member, Dallas had suffered a stroke sometime before, and that probably has more to do with it all than anything. Dr. Jerry is active on the Collins reflector. I imagine there are
plenty of Collins collectors on that list who are traditionalists who would rather keep the gear as original as possible and true to its design of the times, and probably more so than on this reflector. He seems to be getting along there just fine, though he is missed here. Barry

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Date: Mon, 2 Jan 2006 22:52:21 -0500
From: "Jim M." <jmiller1706@cfl.rr.com>
Subject: [R-390] Pics/Stories of R-390x's In Service?

No Y2K or other manual upgrade would be complete without photos and stories of R-390s in use at monitoring sites. For example: (scroll down) to Frank Courtney USS Greenling 1970:
http://spookgroup.tripod.com/id6.html and http://www.operator-98.com/usafsslite/

Maybe some retired cold-war warriors out there have photos and stories to share (involving the 390s)?
http://www.comnetgroup.net/linksofinteresttospooks/ ?
http://www.chicksands.com/ ?

Date: Mon, 2 Jan 2006 22:18:59 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Ultimate heresy answered

Dallas' work, for those who are interested, is being posted on the Kongsfjord DX site. Seems he's been subjecting molded caps to extremes of temperature to try and simulate the SJC environment to back his argument. He doesn't have much nice to say about this list and its membership. (no surprise) His irrational behavior got him bounced from the list...nobody to blame but himself. Sorry to hear of his medical problems if in fact that is what has happened. (same has been said of Nolan but I think there is more to that story as well) Dallas contributed much in the past to the work on the R-390A but most of the difficult work being

done today on the R-390A is by those brave souls that will take the time and make the effort to bring back to life the abused of the series....those left out in the weather at SJC. Dallas admitted he had never seen one...nor would he ever own one...but spoke with great authority about all the problems they have and why they were not restorable. Not so....as can be attested to by many on this list. More work...yes! More rewarding.....I think so!

The days of the cherry surplus R-390A is near it's end.....just ask Mish and Rippel. A lot of the stuff they are seeing now days to restore are for the most part a mess. Walter Wilson's web site has pictures of what can be done if one will take the time and make the effort. www.r-390a.us It can be done! It has been done! Cecil.....

Date: Mon, 2 Jan 2006 23:37:59 -0500
From: "Jim M." <jmiller1706@cfl.rr.com>
Subject: Re: [R-390] Ultimate heresy answered

Notes on capacitor and resistor failures:
http://freespace.virgin.net/paul.zimmermann/Electronic/fault3.htm
http://www.aviationtoday.com/cgi/av/show_mag.cgi?pub=av&mon=1100&file=column2.htm

and from: http://www.dilabs.com/about/faqs.aspx "Why do some capacitors age?" Some of the higher dielectric ceramic formulations, ferroelectric ceramics, display a crystalline change that causes a decrease in capacitance with time. This is a consequence of the basic chemical formulation, the microstructure of the ceramic, and the relaxation of the strain energy within the crystalline lattice. The reference time, t = 0, for the aging phenomenon is the time which the ceramic was last exposed to the Curie temperature. Curie temperatures vary with ceramic formulations and can range from room temperature to 150˚ C. Thermal influences due to the external environment and manufacturing processes can reset the aging clock.

This variation in capacitance is predictable and repeatable. It should be considered during the design phase to insure selected capacitance values will be adequate for the anticipated life of the application. Operating temperatures should not exceed the maximum specified component temperatures."

And: http://my.execpc.com/~endlr/aging.html

"Class 2 ceramic capacitors go through a logarithmic loss of capacitance (aging) after manufacture because of the slow realignment of the crystals of barium titanate after baking. In general, the higher the K, the faster the

aging. Because of this, electrical measurements are typically taken no less than 24 hours later (some people recommend 1000 hours). Baking the capacitors for several hours at 130-150C restores the capacitance to its original value (should you want to), and the aging starts all over again.High voltage also tends to turn back the clock somewhat, and some test procedures take this into account." It happens.

Date: Mon, 2 Jan 2006 22:10:45 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Sub-minature co-ax

>...."Teflon sub-miniature co-ax" .....

The stuff I got is RG-158 I think and I scored a lot off of ebay. It is about 1/2 the size of RG-72 and the dielectric doesn't melt when soldered in close quarters. There are other surplus dealers that have it. If you get it new it is a fortune. Since the receiver lengths are so short, the exact impedance doesn't really matter. Also it is silver plated which I find easier to solder.

Date: Tue, 3 Jan 2006 07:15:37 -0600
From: "Craig Anderson Ext 1365" <Craig.Anderson@saintpaul.edu>
Subject: [R-390] SS hardware

Hardware kits: You can get all the stainless hardware for the front panel including the correct conical washers from McMaster Carr on the web.

Date: Tue, 03 Jan 2006 09:09:58 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Sub-minature co-ax

> .....The stuff I got is RG-158 I think <snip>

It's called RG-178/U actually You most likely can get it at RF Connections: http://users.erols.com/rfc/index1.htm (301) 840-5477 or send mail to <mailto:rfc@therfc.com>rfc@therfc.com While you are at it, ask them about MB connectors.

Date: Tue, 3 Jan 2006 07:18:01 -0700
From: "SAM LETZRING" <sletz@msn.com>
Subject: Re: [R-390] Sub-minature co-ax"

I use RG-188- same stuff- silver plated Teflon dielectric- I have a bunch if anyone would like some-

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Date: Tue, 3 Jan 2006 15:48:21 -0700
From: "Kenneth" <crips01@msn.com>

Subject: RE: [R-390] Sub-minature co-ax

This is the man when it comes to anything to do with coax.
http://thewireman.com/index.shtml

Date: Thu, 05 Jan 2006 10:33:48 -0500
From: <mfisch@kent.edu>
Subject: [R-390] Two questions as I put an R-390a back together

I have fixed up an R-390a and found I had to do the front panel and knobs. I did not take careful enough notes and the manuals probably have the answer, but so far I've had no luck answering the following:

1) Does the bezel have the lights towards the bottom of the front panel or towards the top? (The panel has the parts labels for the lights below the hole, but the wire for power suggests the top would be better). <snip>

Date: Thu, 5 Jan 2006 09:44:03 -0600
From: "Barry" <n4buq@aol.com>
Subject: Re: [R-390] Two questions as I put an R-390a back together

The lights go to the top of the escutcheon. <snip>

Date: Thu, 05 Jan 2006 12:17:21 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Two questions as I put an R-390a back together

>1) Does the bezel have the lights towards the bottom .....

Top, I think. Maybe soon you'll have a second radio to compare with :-) I suggest you add a length of much more flexible wire to that lead to avoid damage to the lamp socket or broken wire strands. <snip>

Date: Fri, 6 Jan 2006 15:55:54 -0800 (PST)
From: "KC8OPP Roger S." <kc8opp@yahoo.com>
Subject: Re: [R-390] Waking up my non-A

Not sure if I qualify to offer an answer, but at least I can give my opinion. Here is how I would go through the R-390. Good visual, looking for bent, broke, smoked or burnt things.

B+ in specs?

Audio section working Ok?

Fixed IF, test and align, fix as necessary.

PTO close to working, worry about endpoint and linear adjustments later.

Variable IF's and crystal oscillators, check and align.

Finally the RF deck repair and alignment.

When the radio is near working order and all of the surgery is finished is the time to start the deep cleaning and polishing. Good luck and let us know how things are going. I have on the bench one of the most ugly 390A I have ever seen, but having been rescued from the landfill and now working I can start on the last step of cleaning and polishing.

Date: Wed, 11 Jan 2006 19:43:34 -0600
From: Jim <jclark6@gmail.com>
Subject: Re: [R-390] Cutting power cords

I cut cables on equipment which dose not work or may be dangerous to someone who may come by it in the trash or as surplus. I would take it as a big warning sign. If it was an piece of equipment I was working on I would approach it with extreme caution. Jim

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Date: Fri, 13 Jan 2006 00:14:10 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] More on the R-390 Classroom Literature

Got an email from the fellow from whom I bought the '390 classroom notes. He says he has more and is sorting through it right now. I asked if he would consider selling it direct and am awaiting a reply. Thought I'd let the list know. This is for the the '390, not the 390A. There seems to not be too much floating around for the '390. All paper that I am able to purchase will be scanned and available for the archives.

Date: Sat, 14 Jan 2006 12:05:52 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] TIRED OF READING ABOUT CARDBOARD SPEAKERS

<snip> In that vein..... I refilled the engravings on my "Blue Stripper" project radio's refinished front panel last night. The panel was quite rough when I started out but came out pretty nicely. I have no plans of making this a perfect radio but plan on using it as the test bed for evaluating all the mods floating around to decide which ones work for me and which ones don't so I can decide which ones I want to incorporate into the planned radio rebuild for the listening position. (a black faced Motorola in a black CY-979A cabinet) I used a little different capacitor rebuild process than I have seen after having much trouble with the drill and tap routine to

attach the new capacitor leads to the pins in the base of the original caps.

I cut a defective octal tube base apart to salvage the pins that I soldered to the new cap assemblies. I pushed the pins into the appropriate socket locations and mounted the original cans minus the bases in their associated clamps and screwed the clamps back in place on the audio deck. So the cans basically float over the new cap assemblies that are plugged into the octal sockets on the audio deck. Looks completely original once the module is back in the radio and I can re-enter the caps at any time to make changes. I think the next one I do I will cut the original cans lower around the crimp and it will look even more authentic once reinstalled. Just another way of doing the cap job that will make it easier to go back in. All leads are insulated with Teflon tubing so nothing electrical exposed to get against something it's not supposed to!

I plan to put the panel back in place today and begin the turn up and alignment. The other mods already done to this radio include replacement of the selenium rectifier with a silicon bridge, 12BA6 tubes and a jumper for the ballast tube, a complete recapping of all paper caps using one of Walter Wilson's kits, a 20 turn pot for the "S" meter zero, solid stated power supply as per the military mods and an inrush current limiter for a softer start.

All of the various controversial stuff discussed on the list from time to time....but none of the above conspire to do near the damage to the radio than the government had already attempted to do by having them out in the weather for an extended period. Most of which I feel I have reversed.

I expect it to be a nicely performing radio before any additional performance enhancing mods are done. The gear train sure is slick and feels wonderful. Very easy to tune both Khz and Mhz!

What are some of the other group members current winter time projects.....We'd love to hear about them! My next challenge will probably be an SP-600VLF that needs caps under the RF deck and every tube socket replaced.....sounds like fun don't it! HA!

Keep it FUN guys...that's why we do this! Cecil Acuff WB5VCE

Date: Sat, 14 Jan 2006 13:44:42 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] TIRED OF READING ABOUT CARDBOARD SPEAKERS

Making a HBR-16 type receiver from scratch is mine. Been tearing through junker BC-453B's for IF transformers. For those who don't remember, the HBR-series of receivers were in QST articles in the 60's, and are dual

conversion (1.6MHz first IF and 85kHz second IF, adjust to fit whatever IF transformers you can find.) Have a nice big Millen dial and VFO put together already, and have been sweeping out and tweaking IF transformers for eventual use. qth.net also has the HBR mailing list, I highly recommend it as well as the HBR site:
http://k5bcq.edebris.com/

I know the habit here is to talk about brown beauty caps, but the paper-caps-in-metal-cans in my BC-453B's make brown beauties look good in comparison! In many cases the metal cases are leaking green gunk (or, they have been leaking gunk for a couple decades now.) I didn't know that paper caps had that much gunk in them!

I still have my project from summer to wrap up too, the yellow-striper R-390A from Fair Radio. All the modules are cleaned up, recapped, and re-aligned, and work in my other chassis, but haven't quite put the banged-back-into-shape chassis from Fair back together yet (there's actually some banging still to be done on the back panel - the front panel has been done for half a year now!) Realistically these projects will stretch into summer too. Been on the air with my Ten-Tec Triton IV on CW recently. It's sweet on CW w/break-in, but no tubes!

Date: Sat, 14 Jan 2006 14:03:49 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Floating Capacitor Cans & Other Issues

I dunno, Cecil, that seems to be a deceptive method of stuffing the plug-ins. One day, 30-50 years from now when it's time to re-do the caps again, some pilgrim is going to lift those things and go ... "WHOAAAAH! This ain't right! I've been took!!!"

The other issue: What could possibly cause the need to replace ALL of the tube sockets in that SP-600-VLF? Not that I doubt you, but very curious. Severe corrosion? Soaked with 409 and internally ionized with salt compound residue? Wanna know. (You might have posted on that before, but I don't remember.)

BTW -- here's a small project for the group: It would be nice if there were a small standard form layout to indicate mods and when things were last serviced on R-390's, R-390A's, etc. Ideally, it should go inside the radio somewhere -- there are a few "cubbies" -- or attached to the back panel. It would be helpful when the radio is passed along -- or even before that if you have a few and lose track of where you left off. That would be the place to indicate SS rectifiers, replacement/bypass of the selenium rectifier, ballast tube alternatives, tube substitutions, AGC mods, etc. Could be a little address book thing or a layout in Excel or Word to fill in on the PC and re-

print each time there's a change -- or just something with lines to write in and indicating dates, such as "1/7/2006 -- Overhauled plug-in caps -- floating can method." Be sure to write the year out in all four digits, so no confusion with 3006 when the time comes.

Needs some kind of holder -- maybe rolled up in an aluminum cigar tube and wired to the tool holders or velcro'ed on. I've taken to putting hang-tags on the rack handles to keep track of things, but they're just blank and don't have enough room -- and the string might break -- and it doesn't look too pretty.

Will have to get back to you with wintertime projects -- it's half over and I'm way behind on 'em. Anybody familiar with PRD-1's?

Date: Sat, 14 Jan 2006 14:26:46 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] TIRED OF READING ABOUT CARDBOARD SPEAKERS

I have that ATC stock -- includes side and back panels. There are a lot of good side panels. Back panels vary, but some are not too bad. If your panels are just slightly bent, I've found one of the best tools -- rather than pounding with a heavy hammer -- is a large adjustable "Crescent" wrench -- at least a foot long. You tighten up the (smooth) jaws very firmly at the point to be bent back, using some pasteboard -- such as from a matchbook or cereal box -- to avoid marring things. Then lean on the panel and rock the thing -- i.e. get a feel for the metal -- and bend to original angle. Alternative is a big C-clamp if you can get a grab on it. Big old monkey wrench would also be good -- the ones with the smooth parallel jaws. (I think the ones with the toothed curved jaws are called "Stilson wrenches" -- or I might have that backwards.) Let me know off list if you need any panels.

Date: Sat, 14 Jan 2006 14:27:49 EST
From: DJED1@aol.com
Subject: Re: [R-390] TIRED OF READING ABOUT CARDBOARD SPEAKERS

I've got a bit of a problem because my wife has her own ideas on winter projects. I'll be rebuilding a bathroom for her, so my radio list has to be more modest: I want to try and fix the warble in my Progressitron PTO and put it back in the radio, then set up a jig to calibrate the Cosmos. I've done it in the radio a couple of times, but my hands and eyes get awfully tired working in tight spaces. My concern is that if I want settability of 100 cycles on the PTO, I need a fixture that will read out accurately to a small fraction of a degree. After that, I want to clean and lube the geartrain in my SP-600. Anyone know of a reference to tearing down the geartrain on the SP-600?

Date: Sat, 14 Jan 2006 14:49:05 -0500
From: "Al Parker" <anchor@ec.rr.com>
Subject: [R-390] re: Floating Capacitor Cans & Other Issues

Yes, let's move on, with a new subject line so we won't delete something good without looking. (it's easy with the digest) Interesting method Cecil, but I still like the can mounted to the base somehow. Just did 3 for R-388's, one had a slightly different base/pin arrgt that made drilling/tapping a little difficult, but came out OK. Haven't done an R-390A cap yet (only have one here, I could do it), been working on R-390/URR's lately, still am into the one that's been open for a cupla mo.s. Need to ck the span on the PTO, then abt ready to re-assemble, but am not decided on how much clean/paint I should do on xfrms/cans. The gray is kinda speckled with rust. Open to suggestions.

Tim, I've just gotten a Triton IV on the air about a month ago, have been on 40m CW every day for at least 1 qso since. I bought a new Triton IV back in abt 1976, wanted to see if it was still a neat rig, it is.TenTec makes great CW rigs, this one was the beginning of them getting into the "bigtime".

Barry, yes, a short-form data/work sheet would be nice. I guess the best would be radio specific. I keep a notebook on all I do, but don't always incl. a synopsis when the radio moves on. SP-600's & R-388's have been the bulk of what I've worked on for a cupla yrs, other than a few one time shots.

Date: Sat, 14 Jan 2006 16:20:15 -0500 (EST)
From: John Lawson <jpl15@panix.com>
Subject: [R-390] Saturday Afternoon occupations

I'm half-way through de-mounting the panel from my venerable R-388 - it and the dial-drum are heading to Howard Mills for ReFurb. The front panel of this radio was "re-finished" by a twit (or twits) before it came to me (I've had it about 20 years now) in a beige/pink/salmon gloss, with those 'press-on' transfer decals for the control designations. While the cosmetics are with Howard, I'll repair it's recently-dead PTO and re-tube, re-cap, and when it's back together again, it'll get a nice tuning-up. Hopefully it'll now outlast me - and perhaps become a problem for whoever has to clean out my Junk after I've gone SK. "My God! What did he want with all that STUFF???"

Date: Sun, 15 Jan 2006 08:09:02 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: [R-390] Metal strips on inside of 390A's side panels?

On the inside of a R-390A's side panels, there are these aluminum strips above and below the main deck. They're like 3/64" thick and 8" or 10" long

and 1/2" or so wide. (Actually the left ones seem to be different than the right ones). They seem to be glued on (they've fallen off in a couple of places on my yellow striper.) What are these for? The main deck plate is attached by seven screws on the left side and 5 screws on the right side, so clearly they aren't there for locating the main deck plate. The modules seem to be very licely located onto the main deck plate by the green screws. Maybe the side strips help locate a module when access is poor or the whole rig is on its side or something? Any insight for a newbie like me?

Date: Sun, 15 Jan 2006 10:22:29 -0500
From: "Al Parker" <anchor@ec.rr.com>
Subject: [R-390] Rebuilding canned multi-section capacitors
To: "R390" <r-390@mailman.qth.net>

I have documented what I've done for the re-stuff process on my website. You can take a look at: http://www.boatanchors.org/filtercap.htm; that page covers work on Drake receiver, SP-600, R-388 filter caps, and the bathtub caps found in the SP-600 & R-388 series. I did 3 caps for R-388's this past week, 2 had good sized pins to drill into, the oldest one (51 date code)had pins with holes that looked like they could be used as-is for crimping, but did have just enough
meat for drill/tapping.

Date: Sun, 15 Jan 2006 16:30:47 -0600
From: "Barry" <N4BUQ@aol.com>
Subject: Re: [R-390] Metal strips on inside of 390A's side panels?

Those strips are spot-welded, not glued, to the side panels. It is a clever way to gain extra support for the main shelf. The weight rests on these instead of relying on the shear strength of those little #6-32 screws. All the screws do is keep the center shelf tight against the side panels while the spot-welded strips take the weight. Also, it helps keep the center panel at precisely the right height so that the controls will be centered as closely as possible.

Date: Mon, 16 Jan 2006 20:12:32 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Metal strips on inside of 390A's side panels?

Thanks Barry. On my yellow striper the welds had undone themselves (what would undo spotwelds?) at a couple of welds. For now some super-glue seems to be holding them in place, although I'm dubious of super-glue providing enough strength to keep the main deck plate supported, that sounds like a job for JB Weld :-).

Project for 2005: manufacture an entire R-390A entirely out of JB Weld!

Maybe the strip is a different alloy than the aluminum side plate, and temperature differentials did the work of detaching them?

And another chemical testimonial: Goof-off is good at removing spray paint from the back and side panels. Takes several applications followed by scraping but it does work (and the original legends are still at least mostly there.) It also removed dymo label remains nearly instantly.

Also went into both my RF decks and replaced a bunch of out-of-tolerance 1/2W carbon comp resistors. Lots of 10K's were at 20K+, many 2.2K's at 6 or 7 K, a 1M at 2M, etc. The worst of them had signs of charring (past abuse?) I know I'm a heretic for it, but most of them got replaced by 1W metal films (yeah, yeah, tell me all about their self-inductance...)

Why so many charred out-of-tolerance resistors on my RF decks? One was a Stewart-Warner yellow-striper, the other is a Stewart-Warner that has been very gingerly treated over the years. Incidentally, the serial numbers on my two RF decks: #625 and #626! Twin brothers, separated at birth, one treated royally, the other abandoned at SJC, and finally reunited on my bench! Tim.

Date: Mon, 16 Jan 2006 20:28:22 -0500 (EST)
From: John Lawson <jpl15@panix.com>
Subject: Re: [R-390] Metal strips on inside of 390A's side panels?

Duct tape, too! Don't forget the duct tape...

Date: Mon, 16 Jan 2006 20:41:40 -0600
From: "Barry" <N4BUQ@aol.com>
Subject: Re: [R-390] Metal strips on inside of 390A's side panels?

I'd guess that bad welds combined with a couple of shock drops could have popped the welds. I would investigate getting them spot-welded. JB Weld or Super Glue (or even epoxy) really doesn't bond well enough to do the job here (at least in my opinion).

Date: Tue, 17 Jan 2006 08:51:19 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Metal strips on inside of 390A's side panels?

I have side panels available from the ATC stock if you'd like to order a pair. They're not perfect, but do have the strips attached.

Date: Tue, 17 Jan 2006 08:55:30 -0600
From: "Cecil Acuff" <chacuff@cableone.net>

Subject: Re: [R-390] Metal strips on inside of 390A's side panels

My opinion would be to pick up a replacement side panel from Barry Hauser.
They are "experienced" surplus so it would probably match the look of the rest of the radio with no problems. Beyond that I would drill and bolt the strip back in place with some small stainless bolts....or maybe even pop rivets from the outside.-

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Date: Wed, 18 Jan 2006 01:33:08 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] R-390A Aluminum Strips - Photos

For folks that were wondering what some of us were talking about when we were discussing the thin aluminum strips on the inside of the side panels of the '390A, here are a couple of photos -
http://www.fernblatt.net/A/390A_strips.jpg
I had taken some assorted pix some time ago, if anyone needs any more without the labels, email me.

Date: Wed, 18 Jan 2006 11:38:04 -0500 (EST)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: [R-390] "Y2K" R-390 TM

For the first time since my daughter was born, I have some time to kill. A few years ago, I took the TM11-5820-357-35 from LOGSA, OCR'd it, scanned most of the pictures, grabbed text and pictures from the Collins R-391 Instruction book, and typeset the whole mess using a tool similar to LaTex called Lout. There is a parts list appendix, which is taken from the R-391 manual, and is a superset of the R-390 parts list. Parts should be easy to distinguish (e.g. the R-390 doesn't have any automatic tuning related parts).

I need help proofreading the manual. It is a 13MB PDF. Prospective volunteers would ideally have TM11-5820-357-35 handy, either as a printed copy, or the original LOGSA copy (which I can make available). My primary goal right now is to ensure accuracy, and also get feedback on suggested changes or additions at the chapter level. Later, I'd like to consider adding sections about restoration issues specific to these receivers (R-390 and R-391). May I have volunteers with some time on their hands? If more than one, I'll suggest splitting different sections to different volunteers.

Date: Sun, 22 Jan 2006 12:53:14 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Fwd: Re: [R-390] Little ball bearings... where from?

> If under the RF deck, there is one in the Geneva coupler, so if it isn't
> missing it's ball, I'd say all is well...

Good point, the ball in the Geneva coupler is there and working fine. It did get dropped on the floor at least once when I was rebuilding the geartrain, but it's back where it's supposed to be!

> I don't know of any in the front panel. There might be one in the band width control detent mechanism under the IF deck - I can't recall offhand.

In fact a quick look-see confirms that bandwidth detent in the IF deck has its ball too. So who knows where those little balls came from, maybe I can put them on Ebay under the heading "Art Collins' lost balls". Right now the subject of swearing and consternation is that while I was putting the chassis back together, several of the original 6-32 machine screws had their heads simply snap off. (And I'm not exactly putting this thing back together with an impact wrench!) One of them was at least a little my fault (too long a screw) but a lot of them have a lot of corrosion right under the head. Time to abandon the old corroded hardware I guess, and get a left-handed drill to remove the #$!%#%$ broken screws. I did fix up the broken fuseholders on the back, added an IEC socket and filter, an inrush current limiter, etc., and am happy with that progress. Strangely enough the B+ fuse that has 4 wires to one terminal (F105) had never had one of its terminals soldered, I don't think it was a recent replacement because none of the wires nor the terminal show any sign of solder! Still have to replace the very banged-up-and-rusty selenium rectifier (almost certainly with a solid-state bridge, I think Barry was doing this too, how did that turn out BTW?) and the screw terminal strips on the back are missing some hardware too.

Date: Sun, 22 Jan 2006 11:10:31 -0600
From: "John Schmitz" <cjs004@comcast.net>
Subject: RE: [R-390] Little ball bearings... where from?

I just finished rebuilding a Stewart Warner 390A which I spent a year and a half on and I had the front panel and RF Deck completely disassembled. I'm talking down to bare chassis with holes. I had the RF deck completely disassembled, including planetary gear and knocking the pins out of cams to remove them from their shafts and everything (yes, I guess I'm a fanatic). Anyway, the only ball bearing I came across in the whole unit was a single ball bearing that is part or the band switching and you have to disassemble the Geneva drive to get to it. So I think I can vouch for the 390A and say they are not from that unit. I don't know about the straight 390, haven't taken one of them apart yet.

Date: Sat, 28 Jan 2006 17:02:17 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: [R-390] Progress!!! My yellow striper

Good news... Got the mainframe banged back into shape, a couple of spot welds on the aluminum strips, the broken connections from the wiring harness to the front panel mostly mended, and the RF deck cleaned up and installed. Power supply had 200-ohm resistor added (the military had upgraded it to solid state rectifiers but there's no sign they added a 200-ohm resistor). Put in audio deck, verified B+ lines with correct voltages, added RF deck and crystal oscillator deck,
verified 100kHz, 17MHz, and crystal oscillator deck operation on all frequencies. VFO operation verified and endpoints within a few kHz (good enough for now).

Sometime later, gotta put in the IF deck and add a 600 ohm transformer for the speaker. Might happen tomorrow! Still some mending necessary on the front panel etc. wiring too, have to reconnect the lights on the bezel too.

So, calendar timing: Got the yellow striper on June 17th. Made a lot of progress in the first month cleaning up chassis in general (including repaint) and the PS and AF modules. Then things slowed down, I finally cleaned up the IF deck just a few weeks ago. Then spent the past couple of days putting everything back together. With a little luck, it'll be happy and receiving after a complete realignment in the next week or two (realistically I have very little free time unless I get up at 3AM).

Obviously I'm not the quickest worker, but I do want to thank everyone here for the encouragement and words of wisdom in the past half year! Also, corporate thanks to the wonderful world of chemistry, especially JB Weld and Caig De-Oxit! Brake cleaner and bike grease and a lot of solder wick too :-).

Date: Sat, 28 Jan 2006 23:18:51 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] Looky GRC-19 plus much more

http://tinyurl.com/e3wuc This ebay seller has most of a complete GRC-19 set, R-392, T-195B, convertors, mounts, etc He also says he has quite a few other things from when he worked for John Meshna. Interesting. And I miss places like John Meshna.

Date: Sun, 5 Feb 2006 13:48:08 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Good technical reference books.

Here are 3 sources of chee... I mean "thrifty" tech books for us BA enthusiasts. They have both basics and up to the esoteric math explinations.

1. Bill Orr Handbooks. Found on Ebay. Search by his name. Usually $10-$20.

2. ARRL Handbooks. Mid 70's. Also found on Ebay. Search by name. Usually $10-$20. In this age range they still have tube theory and info on using dual gate MOSFETS so we can SS our R-390 and other BA receivers. In this era you didn't have to be a MIT EE graduate to understand the explanations.

3. Communications Receivers by Ulrich L. Rohde, Jerry C. Whitaker, and T. T. N. Bucher (Hardcover- Jan 15, 1997). Found on Amazon.com. Search using Ulrich L. Rohde. Usually can be purchased used for $25-$30. Rhode is a ham and THE AUTHORITY on receivers. Practical as well as all the math you could ever handle. He wrote for years for Ham Radio magazine. WARNING: Extensive use of SAND STATE! Ludites should avoid this one.

Date: Mon, 06 Feb 2006 18:25:07 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Good technical reference books.

> 2. ARRL Handbooks. Mid 70?s..<snip>.....

The monthly QST's were good too. The Handbook construction projects tend to be very pedestrian and while the details vary from year to year there is overall not a lot of variety (but a lot of really good reference material). The QST articles tend to be more exotic and detailed. My personal taste in Handbooks is 50's and 60's. By the 70's all the ads are gone. But on the sand-state side they start getting heavy into robust simple receivers and QRP equipment. The Handbook was a bit cookbook-like, and that was probably a good thing. (There was also this bizarre fascination with 7360 beam-deflection mixers for everything including the kitchen sink!) A good tube textbook I remember was one by Seely, "Electron Tube Circuits". I also subscribe to the HBR mailing list on qth.net. Highly recommended. When I was a kid I got to read all this stuff but didn't have the money to play with it. Now I can afford it but don't have enough time!

> 3. Communications Receivers by Ulrich L. Rohde, Jerry C. Whitaker, and T. T. N. Bucher.. <snip>.....

I really really like Clark and Hess, "Communications Circuits: Analysis and Design". Maybe too much math for a lot of hams: they spend a lot of time making approximations to waveforms so they can integrate to get semi-

analytic results, but today a lot of the analysis would be done with computers (even a spreadsheet would be leagues beyond what they do in the book, but with less rule-of-thumb-derived in approach). Does both transmitters and receivers, tube and transistor and just a little IC. (Admittedly more transistor at least for the receiver side.)

Date: Tue, 14 Feb 2006 15:01:17 -0800
From: "Pat McGrath" <ka6tya@arrl.net>
Subject: [R-390] $390A Price

What is a fair price for a R390A that is in working condition but need the two large knobs and a complete overhaul? Cleaning, alignment, testing components etc.

Date: Tue, 14 Feb 2006 17:53:21 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] $390A Price

Depends....Knew someone would say that.... Depends on cosmetic condition.... front panel engraved or silk-screened? Mods....extra holes? Meters? St. Julians Creek survivor. (Blue or yellow stripe on front panel...corrosion or rust on top side of chassis) I would guess average $275-$325 if just average surplus. Less with other problems as listed above but probably not less than $200-$225

Date: Tue, 14 Feb 2006 20:09:32 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] $390A Price

Pat asked the price of a "$390A". Like coinage with famous defects, a $390A is very @RARE@ and therefore goes for an appropriately high price. Unlike the cost-reduced R-390A, the "$" signifies a cost-increased version. Back in the 50's, someone misread the engineering reports and went the wrong way, incorporating both L/C AND mechanical filtes, and crystal lattice filters,
roller bearings, etc., but was stopped after a few units were made. Someone noticed the gold plated front panel screws on the gray mother-of-pearl front panel and called the OMB. All seriousness aside, Cecil I think your pricing may be a bit out of date, unless it reflects only non-auction, non-internet, last-day-of-hamfest-and-it-ain't sold yet radios.

Date: Tue, 14 Feb 2006 17:35:39 -0800
From: "Pat McGrath" <ka6tya@arrl.net>
Subject: Re: [R-390] $390A Price

Thanks for the reply Cecil. The R390A is in good condition. No rust,

original meters, no blue or yellow stripe on front panel.

Date: Tue, 14 Feb 2006 17:52:39 -0800
From: "Pat McGrath" <ka6tya@arrl.net>
Subject: Re: [R-390] $390A Price

Everything thing is on it except one large knob missing and the other one appear defective. The receiver is working but need a complete overhaul.

Date: Tue, 14 Feb 2006 21:31:55 EST
From: DJED1@aol.com
Subject: Re: [R-390] $390A Price

I would have to agree with Barry- the prices seem to have taken a jump since Fair stopped selling complete radios. Even before, a repairable Fair unit without meters was going for $4-500. Flea market units I've seen went for 500-700, and really nice units on the e-place are now exceeding $1000. So I would judge the radio as described would be worth $4-500 (having meters makes up for the lack of knobs)

Date: Tue, 14 Feb 2006 22:09:45 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Edited reflector files

I have downloaded and edited the reflector files from the QTH zipped archives. They are from 2001 thru 2005. They are MS word 95 docs. I removed all the extra stuff and they are similar to W Li's "Pearls" format. Total file size about 12 mbtes. Al may post this on his site at some time in the future. I will try to email them via my dial up to those who want them. It may take me a while to answer you. Reply off list. Regards, Perrier

PS I highlighted lots of tech tips that so many have graciously donated. Many will be added to the new Y2K manual.

Date: Tue, 7 Mar 2006 16:30:29 -0400
From: "Kal White" <kalwhite@nbnet.nb.ca>
Subject: [R-390] R 390 problem

This is my first shot of explaining a problem with my R 390 receiver.

1.. Chassis is hot at 80 V AC
2.. V 505 no filament but checks good
3.. Test point E 211 Attached rf generator & lots of signal
4.. Test point E210 attach signal generator no signal
5.. V 6C4 checks ok
6.. V 401 6AK5 checks ok

7.. Original problem was 1 dead 26Z5
8.. Install 2 new replacement.

Not sure if there is more info I can give you but would appreciate any help from any of the owners of this wonderful receiver, on this interesting site. This radio had never been worked on until the two 26z5 replacements were installed.

Date: Tue, 07 Mar 2006 15:44:26 -0500
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] R 390 problem

This is normal for the stock line fiter if you do not have a good chassis ground.
If you only provide a good ground, then you will trip a GFCI (if you have one).

Date: 7 Mar 2006 21:00:35 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] R 390 problem

Lack of filament on V505 is probably due to an open 3TF7 regulator tube.

Date: Tue, 7 Mar 2006 21:14:41 -0600
From: "Barry" <n4buq@knology.net>
Subject: [R-390] What gives here!?

Paragraph 56 (page 96) of TM 11-856A shows various table for the resistance values for each pin on the various subchassis connectors. Table "a" is for the RF Subchassis and shows the resistance for pin "E" to ground to be Inf(inite); however, if I trace the schematic, there are two resistors, R201 (270K) and R234 (1.5M) in series to GND. I'm getting about 1.8M so my reading agrees with the schematic. I wonder where they came up with "Inf" for this pin??

Date: Wed, 08 Mar 2006 05:40:41 +0000
From: eldim@att.net
Subject: Re: [R-390] A bit more on my IF deck

Your statement about swapping 5814's brings to mind a problem that we faced with a DC Test Point Readings on the SMO (Stabilized Master Oscillator) of the AN.KWT-6/5 Collins Radio HF Transceiver circa mid 60's. (Navy version AN/URC-32). The test point was supposed to read typically no less than -3.5 Volt DC at each frequency tracked across the Frequency Band. On one unit we just couldn't achieve that tracking level regardless of how many tubes we substituted in that ckt. We finally replaced the entire

SMO with a New or Depot Overhauled Unit which did track across the band with voltages slightly above the minimum -3.5 VDC.I decided to take a closer look betweeen the two units and discovered that the replacement SMO had a Premium GE 5 Star tube. So we reinstalled the suspect SMO and stuck the 5 Star Tube in the circuit and "BINGO", the levels were in the Pass region. I think the tube was a 5670 or 5670WA. I have also noted that Oscillator Circuits in our older UHF Multi-Channel Collins Transmitters T-217 (AN/GRC-27) were particular which tubes it enjoyed. Lastly, I recall a TV that we serviced in the early sixties that had a Front End Tuner problem that would not work when one of the Tuner Tubes was replaced. PROBLEM: Tube replacement resulted in overdrive and picture tearing. We found out that the original tubes were all burnt-in to provide an acceptable drive level to the Mixer stage. I think the manufacturer issued a Service Bulletin later on to address this problem. We ended up changing some resistors to lower the gain when tube replacement was necessary. My thought and bottom line is "DON'T CHANGE OUT TUBES AS A CURE or FIX-ALL. I always mark the tube with the V # or where it came out of the circuit, and put it in a small zip-lock with the Test Results what radio it came from, and symptoms. Just in the event that something new and unusual occurs to the sets performance, I can look back on what I did. If the Tube is Below Test Specs, Shorted, Gassy or Intermittent, then I discard the tube and press on. I always say, measure and compare readings specified in the manual, TM, TO, or NAVSHIPS.
73, Glen Galati, KA7BOJ Tacoma, WA

Date: Wed, 08 Mar 2006 08:25:06 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] What gives here!?

Might be as simple as an outright error. That was the initial motivation behind doing the Y2K book - errors in the originals. One thing that seems to cause inconsistencies in resistance charts is the use of unused tube or connector terminals as convenient tie-points. In addition, because these were arbitrary, they might vary from one batch of radios to the next. Then there's the question of how the resistance and voltage charts were compiled -- from a careful read of the (usually early) schematic? -- or live readings -- from a prototype? Either way, there can be errors.

Date: 8 Mar 2006 14:12:18 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] What gives here!?

What got me started on this was the fact I wasn't getting the -0.4V on V506, pin 2. Resistance checked around 400K instead of the listed 500K; however, looking at the schematics revealed that there is about 1.7M in parallel with that pin via the RF deck. If pin E on the RF deck did indeed

have INF resistance, then the 500K value would be correct; however, it is not INF and the 1.8M it really measures pulls that 500K reading down (as it should).

Perhaps these resistance values were checked on the RF deck with everything disconnected, but I doubt it as there are references to different readings on some pins depending the setting of certain other controls that are not part of the IF deck which means it would have to have been connected to the harness for at least some of these readings.

I'm just glad I found the problem, albeit I stumbled on it. At the very minimun, I should have checked all tubes for grid emmission, etc. I chose 5814's from the calibrator as my first choice for subs, but those were apparently a little weak as well. Since I swapped with another IF deck 5814, I probably just moved a problem to a different part of the radio. Looks like I may be looking for some good tubes as I don't think I have many (if any) replacement 5814's. Thanks!
Barry

Date: Sun, 12 Mar 2006 10:25:30 -0800 (PST)
From: mike Kana <aa9il@sbcglobal.net>
Subject: [R-390] R220-URR

I recently picked up a Motorola R220/URR receiver. Did some web searches but didnt find too much information on this set. Just out of curiosity, what were they used for? Any information would be appreciated.

Date: Sun, 12 Mar 2006 20:23:01 -0500
From: roy.morgan@nist.gov
Subject: Re: [R-390] R220-URR

I have one here, and can report just a little bit about it:

- It was used by the Army for presumably tactical base station use.
- it covers something like 40 mc to 220 mc (I could be quite wrong on this)
- It has FM, AM, and I think CW modes
- It is HEAVY, like about 80 pounds or so
- It uses subminature tubes in the front end and oscillator sections, at least

one of which is moderately pricey now.
- It has two odd tuning coils with ferrite slugs for RF front end tuning (In my

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eceiver, one of the slugs is loose from it's rod and I have no idea

how to get at the thing short of major dis-assembly and subsequent

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emanufacture and perhaps difficult re-alignment.)
- The connecting cable from the RF to IF sections, about 3 inches long,
has an odd connector, and of course must be there for the thing to
operate.
-The knobs on the thing are odd, I've seen them nowhere else. I seem to
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emember something odd about them: some run on 1/8 inch shafts, or
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hey have locking mechanisms in them or some similar thing. I
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emember deciding that finding replacements for some missing on my
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adio would be most unlikely.
- WARNING: At least in the one I have, the bottom cover is made such that
without the cover in place, the tips of the under-chassis tubes extend
below the frame, and can (did!) get broken by simply putting the thing on
a bench.

>Any information would be appreciated. Does that mean you have no manual? I have one, but unfortunately, it *may* be among the things that recently went to storage. No telling when I might see it again if that is the case. I think I can get to my receiver farily easily, though. Roy K1LKY

Date: Mon, 13 Mar 2006 06:28:26 -0500
From: "James M. Walker" <chejmw@acsu.buffalo.edu>
Subject: Re: [R-390] R220-URR

I have one, it works pretty good, after I refurbished the power supply for the thing. I also have the manual, which is VERY necessary if you intend to put the thing back into operation. I think I even still have some pieces and parts extra. However like Roy mine is NOW in storage, it works pretty good on CW never had it on FM. But it was touted as the vhf version of the R-390, not true I think they were referring to the weight. The unit uses a lot of 6BA6/5749 tubes in the IF chain. I remember buying a pack of 100 from some guy up north so I could get mine running. got pictures only at:--> http://eshop1.chem.buffalo.edu/R-220-VHF-RX.html I would make the effort and look for the manual, if you need one.

Date: Mon, 13 Mar 2006 11:40:47 -0800 (PST)

From: Bob <enigma_y_2000@yahoo.com>
Subject: [R-390] Poor man's R389

Regarding using various selective voltmeters as receivers, all of the ones I've used have no AGC.

Date: Mon, 13 Mar 2006 20:03:34 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Poor man's R389

It has been suggested that for beacon hunting on LF the AGC should be disabled on receivers that have AGC, mainly because of the atmospheric noise in that part of the spectrum. Static crashes would keep the radio desensitized due to constant AGC action. That being said frequency selective voltmeters are a great choice. I think with the proper mods they make excellent LF/VLF receivers.

I'm currently massaging a very nice W&G SPM-15. It has a built in selectable low pass filter that begins to roll off at 620 Khz. It has three crystal filters...3.1 Khz, 1.9 Khz and 25 Hz. The 25 Hz is great for beacon hunting. It has flywheel tuning in selectable steps down to 1 Hz and digital step tuning with selectable step sizes. Has a 600 ohm output for connection to an external amplifier or headphones. I would imagine it cost more new than the 389 did in it's day....but it was designed as a piece of test equipment. It's built like a tank and I would expect it to be shielded internally to the hilt. (it's portable and can be battery powered) But that's just my 2 cents worth.... May not be for everyone....

Date: Mon, 13 Mar 2006 21:17:21 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Poor man's R389

Hi Cecil, the atmospheric noise on LF is exactly the reason why I couldn't live with a receiver with no AGC on LF. After a few lightning static crash spikes take out the level meter or after a while they would take out your speaker or your ears if using headphones unless you use some kind of limiter to protect your ears. Also it is very tedious when tuning with no AGC to have to constantly adjust the input attenuator to keep from overloading or banging the level meter everytime you tune across a beacon signal or other signal down there. A nice AGC enabled VLF radio like the R-389 is the only thing I can live with on LF/VLF.

Date: Mon, 13 Mar 2006 19:27:14 -0700
From: DW Holtman <future212@comcast.net>
Subject: [R-390] Poor man's R389

I have never had a receiver to access VLF. Anybody have any suggestions on inexpensive converters for HF receivers such as the R-390A?

Date: Mon, 13 Mar 2006 18:57:52 -0800
From: "Dan Merz" <mdmerz@verizon.net>
Subject: RE: [R-390] Re: CV-89A

Hi, there was also a not-so-beatup R390a there for $900, "make me an offer". I didn't. This unit was shrink wrapped, and looked clean. I later saw it unwrapped, the knobs were cleaned down to the metal, ready to be coated. I think it left the swapmeet with the seller. I was surprised by some of the good prices on 50's/60's BA's, lower than I thought from experiences in the past. I didn't buy anything because I have enough for now and sold an HRO-50T to a guy that traveled across state to attend, from a town 8 miles away from me here. He was delighted to find one, Dan.

Date: Mon, 13 Mar 2006 21:58:21 -0500
From: roy.morgan@nist.gov
Subject: Re: [R-390] Poor man's R389

There have been converters made and published in ham journals. But they overload, suffer from feedthrough and have other maladies. Heath made one, and Palomar Engineering does still, and it appears to be head and shoulders above the Heath one I have used. Cost is $100.00
http://www.palomar-engineers.com/VLF/vlf.html

"Many receivers do not cover the VLF band below 500 KHz or, if they do, have greatly reduced sensitivity there. QST's reviewer (Jan. 2000) reported: "the difference was astonishing. In many cases I couldn't hear the navaids at all with the IC-706, but they were clearly audible when received through the Palomar converter." The VLF Converter has excellent sensitivity. It also has a 7-pole filter to eliminate overload from local medium wave broadcast stations. It connects between your antenna and the radio. When turned "On" the 10-500 KHz band appears at 4010-4500 KHz for general coverage radios (Model VLF-S) or at 3510-4000 KHz for ham-band-only radios (Model VLF-A). When turned "Off" the antenna connects directly to the radio for normal shortwave reception." FAR Circuits almost certainly has a kit (circuit board and magazine reprint) for very modest money. You buy parts and enclosure and build it yourself. Cheapest way to get one of these converters:

The downloadable catalog http://www.farcircuits.net/FAR_CKTS.pdf lists:
73's Dec91 VLF SPACE SHUTTLE RECEIVER $7.50 COMM. QUARTERLY Winter94 JOE CARR VLF RECEIVER $6.00 LOW &MEDIUM FREQ SCRAPBOOK 9th ED RADIO CORNELL REGEN RECEIVER PREAMP $4.00 POPULAR ELECTFeb95 AAVSO VLF RECEIVER PREAMP BY CARR $6.00

(I see no converter, but the Low and Medium Frequency Scrapbook likely has one.)

There is a simple "mod" for the R-390A to let it hear below the normal lower limit of 500 kc: Simply feed your antenna into the radio at one of the test points in the RF deck *after* the input tuned circuits (through a cap to avoid messing up any AGC.) It may overload, suffer from cross modulation and so on, but it gets you started with zero actual modifying, building, or expense. A preslector or low pass filter (or both) may be very useful, depending on your antenna and location.

Date: Mon, 13 Mar 2006 23:05:57 EST
From: DJED1@aol.com
Subject: Re: [R-390] Poor man's R389

Palomar makes a converter which shifts the 0-500 KHz band up to 4.0-4.5MHz. I got one and used it with my R-390A. It worked well, but I quickly lost interest in tuning the VLF bands. Costs a bit more than $100, so it's a LOT less expensive than a R-389. Ed

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Date: Fri, 17 Mar 2006 22:00:02 -0500
From: "TChirhart" <sparks@codepoets.com>
Subject: [R-390] R-390A help

This is my first R-390A project. I have an Imperial 1963 vintage R-390A and the previous owner may have modified it. First of all, all 3 fuse holders are either missing or have been bypassed, the AC, B+ 1/8 amp and B+ 1/4 amp have been bypassed with F-102 B+ 1/4 amp fuse holder missing..

F-102 B+ 1/4 amp fuse socket, near power supply is missing and two wires soldered together.
F-101 AC 3 amp fuse has been bypassed, fuse socket broken
F-103 B+ 1/8 amp, fuse bypassed inside.

In the power supply, the 2x 26Z5's are missing, the metal tube sockets crimped and a selenium rectifier installed over the sockets and the F-102 fuse holder is missing, apparently this is a modification. But why would you bypass the AC and 1/8 amp B+ fuse? Am I missing something here? It makes no sense to bypass all 3 fuses, especially the AC fuse socket. The fuse holders are damaged, but can easily be replaced. I would hope that the previous owner had enough sense to replace a simple fuse holder...but... I've pulled out all the tubes and found over half of them bad or very weak. This is my first time going into an R-390A so I'll need some advice from you experts. Also does anyone have the top and bottom covers for an R-390A? Thanks in advance

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Date: Fri, 17 Mar 2006 21:31:46 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] R-390A help

Congrats on the R-390A. You'll enjoy the project. Sounds like the fuse holder problem is easily fixed and pretty obvious as to how to do it. If I remember correctly one of the fuse holders never had anything connected to one lead...I am working from memory here but I think it is the one marked 20 amp....I'll have to go look.

Pull the power supply out and look under the bottom side of the tube sockets...I am guessing you'll find solid state rectifiers soldered onto the tube socket pins. That was a military mod. Crushing the tube socket bases was to ensure tubes were not placed in the sockets after the mod was done. It's no big deal. You will find differences of opinion on the list as to the suitability of the mod but personally it works fine. The selenium rectifier is factory...it supplies a couple of things. The break-in relay and the antenna relay. If it's not causing the relay to buzz or chatter it's ok for now. I usually replace them with a silicon bridge just to improve long term reliability...they are quite nasty if they fail and spew
their guts! The top and bottom covers are available as reproductions or Fair Radio may have some. The reproductions are sold on ebay quite regularly...Hope that helps...

Date: Fri, 17 Mar 2006 21:47:21 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] R-390A help

I have the new covers for the R-39X series, plus the RF Deck, AC power covers and AC cable clamp. I also have the peel-and-stick OSC. module band indicator strip.

Date: Sat, 18 Mar 2006 10:16:06 +0100
From: "paolo gramigna" <paolo.gramigna@controllo.it>
Subject: [R-390] R: R-390A Help

Hi, you indeed are looking for a LOT of help! First of all: do you have a manual? if not, go to http://www.hausernet.com/r390a/ and download the Y2K manual. it is worth his weight in gold and sweat. Second, RESTORE THOSE FUSES. you will need them in place, believe me. Third, do not throw away the "low" tubes; sometimes, an old tube is so much less noisy than a new one that it's better to leave them alone. All that said, a good source for spare parts (including those covers) is www.fairradio.com

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Date: Sat, 18 Mar 2006 06:42:03 -0500
From: "Tracy Fort" <beerbarrel@cox.net>

Subject: [R-390] Where would you start?

Just got a new 390a the other day. It seems to have arrived with a little problem. It has extremely low audio output. I don't know if something was shaken loose in shipping or not but it all looks good and was packed well. Tuned to a local AM station with rf gain and audio maxed out I can barely hear audio. I get very little carrier reading. It's slightly above zero. No movement on the line meter either. I'm trying to figure out if it was working OK before it was shipped and am waiting on a response from the seller. I'm pretty sure that it was but wanted to make sure before I started getting to deep into it. Are there any problems that jump out at anyone right away that could be easy to check?

Date: Sat, 18 Mar 2006 06:52:56 -0500
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: RE: [R-390] Where would you start?

I got carrier level to come up but no audio impoovement.

Date: Sat, 18 Mar 2006 07:32:46 -0500
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: RE: [R-390] Where would you start?

I'm so-so at it. I'm not close to an expert though. I do have the manual. I was just hunting quick things to check. I can't tell is sensitivity is Ok because volume is quite low. At this point, I'm thinking that it's only audio. I'm think I might check for the leaky cap at V507 tube socket. I lose volume completely if I turn off limiter switch.

Date: Sat, 18 Mar 2006 07:38:29 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] Where would you start?

Problems in the IF deck can cause the symptoms you describe. If you have an audio source, you can check the AF deck and work back up the chain from there.

Date: Sat, 18 Mar 2006 08:51:00 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] R-390A help

A couple of thoughts:

1. Verify that the original B+ wiring is still there and intact. Wire colors and diagram are in the Y2K manual. Also look for charring etc. on the wiring harness and check out the filter inductors (on the AF deck) for

continuity.

2. Verify that the wiring harness you have is one appropriate for B+ fuses. It is vaguely possible that someone transplanted a back panel with fuseholders for B+ onto a chassis with a wiring harness that didn't have B+ fuse connections.

> I....and a selenium rectifier installed over the sockets and the > F-102 fuse holder is missing, apparently this is a modification.

Is it vaguely possible that the "selenium rectifier installed over the sockets" is an approx 200 ohm resistor (maybe with fins?) and that there are diodes under the sockets?

> But why would you bypass the AC and 1/8 amp B+ fuse?

Original radios had no B+ fuses. But it makes no sense at all to bypass the AC fuse.

Date: Sat, 18 Mar 2006 11:11:28 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] R-390A help

Barry you are absolutely correct....I was confusing my work on the R-390/URR with that of the "A". Tom sorry for the confusion. I told you guys I would have to go look. After checking three R-390A's that have the three fuse rear panel all are indeed connected and should be again! On the selenium rectifier....is it mounted on the power supply module or to the rear panel? The rear panel mounted one is factory...beyond that it's probably a mod! They say your memory is the second thing to go.....I can't remember what the first is! :-)

Date: Sat, 18 Mar 2006 10:10:16 -0800
From: "Dennis Wade" <sacramento.cyclist@gmail.com>
Subject: Re: [R-390] SSB R390A on eBay

The book is (from the R-390a website): R-390/URR - R-390A/URR Handboook by Paolo Viappiani, 1996, ISBN Number 9-789705-648898, published by Editrice Il Rostro, Milan, Italy

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Date: Mon, 20 Mar 2006 07:43:44 -0600
From: "Craig Anderson Ext 1365" <Craig.Anderson@saintpaul.edu>
Subject: [R-390] RE: Washing your R-390A

As some one already pointed out, back in the old tube scope days Tektronix actually washed their scopes. I was in charge of our cal lab back in the

early 1970's and remember well the Tektronix folks putting these in some kind of dish washer contraption. They used a low foaming, non-alkaline detergent that did not leave any residue after a thorough rinse in distilled water. You can get the same kind of detergent by going to:

http://cleanosonic.com/cleaning_solutions.htm

I use these chemicals in a large commercial grade heated ultrasonic cleaning tank. I can get an entire R-390A RF deck in the tank. Amazing results!

Date: Mon, 20 Mar 2006 12:22:54 -0600
From: "Craig Anderson Ext 1365" <Craig.Anderson@saintpaul.edu>
Subject: [R-390] Re: Follow-up on "Washing Your R-390 390A"

An inexpensive and effective cleaning solution that I have found is to use the commercial version of Simple Green called "Crystal Simple Green". Crystal Simple Green is non-fragrant as opposed to the home version which has a strong pine smell. It comes in 1 gal. containers and is priced at about $16/ gal. at any Grainger outlet under their part number 3UP40. I use this in my heated ultrasonic cleaning tank for the individual modules as well as stand-alone with a soft brush and power washer when I am doing the R-390A frame.

I always do a double or triple rinse with distilled water (de-ionized water is the preferred method for the individual modules if you can get it). I use an air compressor after the final rinse to blow out the trapped water, then a powerful hand hair dryer and then I place it in a box that I built containing 60-watt light bulbs, a small exhaust fan and a thermostat to maintain a temperature of 110 F - 120 F for 24 hours. The box is large enough to accommodate all of the R-390A modules plus frame at one time. I have one set of bulbs on all of the time and the other set is controlled by the thermostat to maintain the proper target of 115 F. The small muffin fan runs all of the time to exhaust any humidity. I also do a lot of restoration work on old broadcast sets like Zenith, RCA, GE, Crosley and what a difference it makes after a good heated ultrasonic tank cleaning. I now do this prior to restoration!

It is pleasure to begin a restoration with a clean chassis and clean components. Unfortunately my ultrasonic tank costs about $2,000 so it I probably not something everyone will rush out to buy unless you use it often as I do.

Date: Mon, 20 Mar 2006 13:19:28 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Re: Follow-up on "Washing Your R-390 390A"

Just my 2 cents worth but I would be very careful using ultrasonic cleaning on anything electronic. I have been told that it could create hair line cracks in many things like carbon resistors, ceramics and who knows what else. Recently a very knowledgeable jewelry expert said it was not recommended for cleaning gemstones such as Ruby, Emerald, Sapphire....etc. I would be hesitant to use it on radio gear with the exception of maybe the gear train... Again just my opinion after hearing a jewelry expert speak on the topic...

Date: Mon, 20 Mar 2006 22:55:13 -0500
From: "Steve Hobensack" <stevehobensack@hotmail.com>
Subject: Re: [R-390] Hosing those 390A

Are not the coil forms of the R-390* made of cardboard? I have replaced an antenna coil due to the cardboard being scorched from excessive RF or a lightning strike. The slug wouldn't pass. Would not water dissolve the coil form? I would think that one would have to go to extreme measures to protect the coils from moisture during a water bath.

Date: Tue, 21 Mar 2006 07:41:05 -0800
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] Hosing those 390A

They are made of cardboard, but they are also impregnated with something-or-other. Water bounces off them as off a duck's back. The slugs themselves, however, are porous. The water doesn't hurt them, but they need to be dried out. Better to remove them first. The meters started out perfectly sealed, but they often aren't.

Date: Tue, 21 Mar 2006 10:27:57 -0600
From: "Francesco Ledda" <frledda@verizon.net>
Subject: RE: [R-390] Hosing those 390A

I have rebuild few 390a and other radios. Some were so dirty that water washing was required. In the case of a 390A, I remove all the modules and put them aside. I wash the chassis with a mixture of water and Simple Green; I remove the excess water with compressed water and leave it in the sun (Texas sun) for few hours. Next, I remove and label all the tubes from the modules.

Now, I wash the audio amp and the power supply modules; again, I use compressed air to remove the excess water, and I put the module in a oven at 130 degrees for 30 min or so. I remove slugs and coils, from the RF group. I degrease and wash the RF group and dry it using the same methods mentioned above. I clean the RF coils separately with a humid

cloth. I clean the variable capacitors, as well.

Now, before cleaning the IF module, I remove the BFO and the mech filters cover. Clean the top module with a humid cloth and a brush, and I wash the bottom part hot distilled water; I hold the module, on top the sink, and I spray water from the bottom, to minimize the possibility of water getting inside the coils. Dry everything and start putting things back together.

I have used the same methods for many other receivers and never had any problems. My best and favorite 390A is a blue stripper that I bought for about $100. It was a great satisfaction to bring it back to life. I repainted the front panel, knobs and redone the engraving. By the way, I only replace failed components and black beauties. I would never wash meters or PTOs.

Date: Tue, 21 Mar 2006 10:49:16 -0600
From: "Francesco Ledda" <frledda@verizon.net>
Subject: RE: [R-390] Hosing those 390A

.....compressed air... not water.....

Date: Tue, 21 Mar 2006 17:42:49 -0000
From: "Rob Filby" <robsr390a@btopenworld.com>
Subject: [R-390] R389 and R390 faults

I have recently bought an R389 and a pair of R390 rxs. They are all complete and in good condition. At first appearance it seems as the PSU, Audio stage and IF strip are interchangable. I have a few questions which I would to ask the group and perhaps somebody could help me please.

1.Were any parts listings produced for the above rxs, ie detailing the wattage of resistors and the voltage ratings of other components?

2.Are there any common faults or other troublesome components that fail or give trouble that I need to be aware of?

3. I have a couple of R390A rxs which have a mechanical counter for the BFO, why was this used over the standard knob? Thanks for your help

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Date: Tue, 21 Mar 2006 14:02:27 -0500
From: Mark Huss <mhuss1@bellatlantic.net>
Subject: Re: [R-390] R389 and R390 faults

First, you may want to reference the R-390A manual at http://www.hausernet.com/r390a/ It should have everything you need. Pay particular attention to the capacitor replacement listing. Also, for some reason, 2.2K resistors in the R-390A's seem to change value

considerably. Otherwise, just watch the list. Good Luck. The counter knob on the BFO was added to R-390A's used for RTTY reception. Makes tuning the BFO to FSK tones much easier.

Date: Tue, 21 Mar 2006 14:09:30 -0500 (EST)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: Re: [R-390] R389 and R390 faults

Be careful of the PS's - there are several mods for them, the first R-389 didn't have B+ in the same place as the R-390/R-391, so they in theory later modified the R-389's to match. If they didn't, then you will have no B+, or B+ on the wrong part of the connector. My R-389 manual had some addendums that gave this information - I can't recall, but maybe one of the R-390 manuals I have did, too. Other than that, the IF and AF I believe interchange freely.

Date: Tue, 21 Mar 2006 14:42:14 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] R389 and R390 faults

Not sure what comes first logically, but here goes: First -- the R-390A Y2K manual on my website is the original, not revised version. If that's what you need, suggest you go to Al Tirevold's site for the later version. Second -- Rob is asking primarily about the R-389 & R-390 (without the A) -- apparently, as the '389 is related to the '390, not the A. The Y2K manual on my website and Al's is strictly for the R-390A.

I am not that familiar with the R-389, but if the power supply and AF deck -- which is mostly power supply/regulation components is the same, same applies to both: The 6082's throw a lot of heat. The AF deck is mounted upside down so the heat rises and tends to cook the components under the chassis. In particular, it is recommended to replace the 47 ohm resistors (4 of them I think) as per Dave Medley's advice. In addition, it's a good idea to use a small fan set up to exhaust the heat from that side of the mainframe. R-390/URR's -- the pre-cost reduced edition -- do not exhibit the same capacitor failure patterns as the R-390A/URR's. Component and tube compliment are very different.

AS for the counter knob on the BFO, they are not vernier/gear reduction drives, just counters which were added to improve reset-ability of the BFO -- unless someone also added a 10-1 reduction drive as well, but it's not part of the counter-knob mechanism.

Date: Tue, 21 Mar 2006 15:04:43 -0500
From: Mark Huss <mhuss1@bellatlantic.net>
Subject: Re: [R-390] R389 and R390 faults

Opps, Caught by the R-390/R-390A confusion again! About the BFO counter knob. Your right, it is not a vernier knob. But someone in the history of mine must have replaced the shaft extension with a 3:1 vernier reduction gear. Very handy.

Date: Tue, 21 Mar 2006 19:49:56 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] R389 and R390 faults

No, if you read further down, Rob does ask about the 390A counter knob.

"3. I have a couple of R390A rxs which have a mechanical counter for the BFO, why was this used over the standard knob?"

So you gave the correct answer Rob's primary message was a request for info on the R-389 and R-390/URR. Mark (as he later realized, having fallen prey to the R-390/R390A confusion syndrome) mistakenly referred him to the Y2K manual which is strictly R-390A. I fortunately noticed how Rob had referred to the interchangeablilty of certain modules which, although I am not intimately familiar with the R-389, was the tip-off that he truly meant an R-390 and the absence of the "A" was not accidental. I was well aware that Rob was referring to his R-390A's regarding the BFO counter knob, but it doesn't really matter. While they are probably more often found added onto R-390A's than R-390's, they could have been added to either receiver -- and there I was merely amplifying on Mark's explanation. They do not have vernier/reduction built in and were probably originally manufactured to use with 10-turn pots. As it "turns out" though, Mark's receiver has a separate 3:1 vernier drive added behind the panel. Now that all that is squared away ..... who's on first? heh heh

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Date: Thu, 23 Mar 2006 16:09:40 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Y2K-R3 beta Update

I've finished the Y2K R3 beta and have sent it to our esteemed three wise guys, uh I mean editors Al, Barry and Pete at the famous firm of Shorts, Arcs and Sparks for their consideration and posting. The biggest change is in the chapter 7 parts. Besides pagination improvement I added the part information to each identifier so you don't have to go through the "same as" stuff for 4 or 5 pages

In pdf form the total files are about 4.5 Mbytes. For us members of the perpetually Doomed to Dial-up, it is broken down to 13 files, the largest of which it about 700K bytes. There will probably be a large single file for the high speed fortunate.Now I'm working on the additional supplemental

chapters. AKA "The Missing Links". This list is just a start from my brain and isn't set even in warm jello - let alone cement.

1. Roger Ruszkowski's Service Tips. He did R390's service full time for 7 or 8 years!

2. PTO Servicing

3. Cleaning & Lubrication Materials

4. Gear Train Cleaning & Lubrication. I have Scott Scikel's superb gear rebuilding article in 4 sections.

5. Spare Parts and Services Sources

6. Modification & Improvement Circuits- including SSB adapters.

7. Internet Resources. This includes other web sites, parts dealers, and related services.

I'd appreciate comments and collaboration. I still can't download pdf files from my yahoo mail account. I'm going to get a hotmail account and see if that
works. Will post address when it's activated. I also need some help with picture format conversion and cropping.

Some material such as Chuck Ripple's IF Deck Alignment is copyrighted. Although posted on the R390 reflector, I'm seeking permission to re-post it in the supplemental chapters.

It wouldn't surprise me if the supplemental data didn't end with the same amount of bandwidth. As per the R3 it will be kept into small pdf chunks. When
I originally downloaded the R2 17+ Meg files, it took a week of trying to not have a broken connection. It tool 8 hours to download. I want everyone to be able to get the information easily no matter how far you are in the boondocks

Please contact off list if you contribute or help. Regards, Perrier

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Date: Fri, 24 Mar 2006 17:59:21 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Slightly OT: Good Service

McMaster-Carr has got to be one of the greatest things since sliced bread. I have gotten 2-day service from them in the past and never had to wait for a

backordered part. With ordering so easy online I don't even bother to try to search the local hardware stores much anymore for stainless steel hardware or other hard-to-find parts. Most of the time the local stores never have what I need and the parts they do have are expensive. McMaster even has the 8-36 hex-key socket screws to fit the R-390A front panel knobs. By the time you have made a round trip, fought traffic, used gas and came up with nothing at a local store you will save money and time ordering online. They really give A-1 service.

Date: Fri, 24 Mar 2006 18:02:55 -0500
From: "Bruce Ussery" <twc9198764412@earthlink.net>
Subject: Re: [R-390] Slightly OT: Good Service

I've had similar good results with those guys, mostly workplace related but also hobby related stuff like specific replacement drill bits and hardware. (Ever get tired of having to buy complete sets just to replace that 1/8 in. you wear out or break?) They have everything, including the kitchen sink-several sinks if I recall correctly. Everything seems to be in stock, no matter how arcane. I'd love see the warehouse(s).

Date: Fri, 24 Mar 2006 17:20:30 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Slightly OT: Good Service

In LA I used to order by noon and get the order by 5:00 PM in most cases. They were about 40 miles away.

Date: Fri, 24 Mar 2006 17:24:31 -0800
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Slightly OT: Good Service

The Santa Fe Springs warehouse (LA) is huge like 3 WalMart Super centers at least.

Date: Sat, 25 Mar 2006 01:27:47 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] Slightly OT: Good Service

They have great service, and they have EVERYTHING! The only thing they've not had that I've wanted is a *PRINT CATALOG* While the web site is very good, sometimes it's nice to have paper in your hands to be able to flip through to see what it is you're looking for. This year it'll be 6 years of trying every 6 months of asking. Interesting. Ahhh, no biggie.

Date: Sat, 25 Mar 2006 05:21:53 -0800
From: Dan Arney <hankarn@pacbell.net>

Subject: Re: [R-390] Slightly OT: Good Service

The catalogs are hard to come by. They now are issued every other year or so to Regular customers that have a steady purchase history over a period of time and I seem to remember they look for an annual purchase history of around 1500.00 or so a year. I had 2 of them and if they both made it to TX I can send you the oldest one for postage. They are big and if you have wish list it will be in it. W.W. Grainger now only sends out one every other year or so. Same deal, but if you know they have new ones if you have an account and walk into the store they will give you one.

Date: Sat, 25 Mar 2006 06:02:16 -0800 (PST)
From: Robert Watson <kn4hhptc@yahoo.com>
Subject: [R-390] R390A interconnect cables

I am restoring a Stewart Warner R390A and I have discovered that the coaxial interconnect cables are in pretty bad shape (insulation cracked and braid and or center conductor broken). Does anyone know of a good currently available cable to rebuild the original ones. One suggestion was RG-174 which is small 50 ohm cable. I'm just not sure how critical the cable impedance is. Thanks for any other suggestions.

Date: Sat, 25 Mar 2006 10:27:46 -0500
From: roy.morgan@nist.gov
Subject: Re: [R-390] R390A interconnect cables

RF Connections has the correct wire.
http://users.erols.com/rfc/index1.htm
Send an email or call if it is not listed on the web page.

>.....was RG-174 which is small 50 ohm .....cable.. impedance is.....

The impedance is NOT critical. Impedance is important when the electrical length of the cable is a significant part (20 percent or more) of a wave length at the operating frequency.

Date: Sat, 25 Mar 2006 11:18:35 -0500
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Slightly OT: Good Service

Cribbed from a Usenet thread by Scott Moore:

I wanted to find out once and for all what determines whoMcMaster-Carr sends a catalog to, and when. Turns out they are operating under goverment decree ! The weight of the catalogs was causing landmass depressions in sections of the country. Combined with depleted oil

resources and mining, the excess weight was actually causing several large areas of the US to sink, inches or even feet in some cases. It was determined that the weight of McMaster-Carr catalogs, along with old copies of the National geographic, were affecting this problem.

They are still allowed to sent the catalog out, but must distribute them in an order that will keep the weight ballanced across the USA. Because this algorithim is not apparent unless you know the exact current distribution of both the old catalogs, and old National Geographic copies, the distribution will seem quite random ! More seriously, McMaster has some competition from MSC etc., and MSC is much more liberal with their catalogs. My buys from them come to maybe $100-$150 a year and they sent me their big catalog (I could see the UPS truck come up on its springs a little bit when he put it on the hand truck and wheeled it to my door.) Their website (http://www.mscdirect.com/) isn't quite as useful as McMaster-Carr's but it's close. I get next day delivery from either of them most of the time (but occasionally something will have to come from the left coast and take a whole week to get here.) MSC sends me 10 and 20 percent coupons every couple of months. But... MSC doesn't have spline keys! They don't have quite the selection of oddball fasteners. They have a bit more of a machine tool orientation (not that McMaster is a weakling in that area either.)

Date: Sat, 25 Mar 2006 10:28:04 -0800
From: "Scott Overstreet" <scott@becklawfirm.com>
Subject: Re: [R-390] Slightly OT: Good Service

And McMaster's on line catalog is so good at helping to find the part needed that I prefer starting there rather than with their printed catalog----it is faster, easier and they do their best not to let you miss something that you shouldn't. And their quick delivery is ledgionary----

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Date: Fri, 14 Apr 2006 17:29:11 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Distribution of the Y2K R390 manual

Thanks, but not such a great thing. In order for it to work whereby individuals are downloading from each other -- and that's where the "advantage" lies-- firewalls and other protective software have to be adjusted or allowed to have "holes" in them which would otherwise be unnecessary. Might not even work with all ISP's. Also, it is more appropriate to those folks who "sharing" large media files -- including whole CD's at 600 megs a pop and even movies at 4
gigs plus. (I used the word "sharing" instead of "ripping off, illegally trafficing, bootlegging, etc. to be subtle -- oops!)

You turn it on, the software seeks the filename/title you're looking for like

"Bedtime for Bonzo" and it goes looking across the internet through the appropriate portals. Round and round it goes, where it stops, nobody knows. To be a cooperative, give 'n take, good sport participant, you have to leave your computer on 24/7 and accessible to everyone and his kid brother. Are
you sure you made all your personal files inaccessible? As Dirty Harry said "Do you feel lucky?"

Also, one or more people out there can be downloading files from you at any given time and when that happens, whatever you're doing can get bogged down a bit -- like that super gee-whiz glowbug rig you're trying to bid on. Yes, you can turn it off, but then you're being a stingy neighbor until you remember to turn it on again. It works best for things that are very popular and widely copied around and "shared", like the latest "gansta" rap tune.

It's good for sharing media files which for legal and bandwidth reasons, an outright ftp web site would be "asking for it" -- copyright-wise. Even then it's in a gray area -- dark gray. But, yes, it can be used for legitimate files too, but ... not a great way to do it, or make sure everyone is "on the same page" in terms of revisions. A new revision will be done soon, Rev 3 or whatever, but there might be a 3a, 3b, etc.

Not necessary for the Y2K manual anyway-- relatively speaking, it's only 17 megs as-is, and will soon shrink back to about 4-5 megs. It exploded to 17 when Al Tirevold published the previous revision - -for reasons unknown. There wasn't much poundage added -- only corrections in place.

Perry Sandeen has recently edited the manual in preparation for Rev 3. He has refined the typography and incorporated the corrections that did not make it into the last one. In addition, as of last we spoke, he's working compiling an addendum -- Chapter 9? Meanwhile, I've started taking replacement color photos for the remaining 12 crummy black 'n whites I picked up as placeholders for the original manual years ago. I've asked Matt Parkinson to shoot a few modules I don't have out and handy. I shot most of them the other night, but discovered I had the darn date marker turned on, so will be re-shooting most this weekend and forwarding to Pete Wokoun to recreate the callouts -- part descriptions and pointers.

Even with that, the final Y2K Rev 3 manual should be much smaller than 17 megs . The preliminary files Perry sent me about 2 weeks ago were back down to about 4.3 megs in total. They will also be kept as separate chapters or chapter groupings and anything big, such as Scott's gear train rebuild, will be part of the addendum and separate as well. It's better to have the manual all in one place - on Al's website and maybe a mirror site -- together with all the other goodies and download it normally.

If you have a fast connection -- DSL or cable -- it takes a few minutes tops. If you have dialup, takes longer - -but you then are certainly not a good candidate for Bit-Torrent, etc. as an alternative, anyhow. Barry

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Date: Fri, 21 Apr 2006 22:06:42 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Call for Y2K manual corrections

I have finally re-paginated the entire Y2KR2 manual. Part of the delay came because Word2K will not do footer numbering properly when using collums. So coverting chapter seven parts from collums to tables took a bit of time. Barry Hauser is in the process of replacing some of the less-than-steller picture. When I get them we are very close to a beta release.What I need is this. I have only had the Y2KR2 manual to re-paginate into the latest form. If there are any errors in the original I have unfortunately copied them. If any one knows or has done any needed corrections please send them to me. I have been concentrating on the supplemental information in chapter 9. So far I have 60 or so pages of Roger's wisdom and Scott's gear rebuilding stuff. It could end up being about 200 pages. I'm trying to put togeather a list of good vendors as well as those to avoid. Other than the usual suspect of list discussions submissions are welcome. As the supplement gels I will report back so nothing good is left out.

Date: Sun, 23 Apr 2006 08:56:19 -0400
From: "WA0HQQ" <r390@al.tirevold.name>
Subject: [R-390] R-390A FAQ Addition

Perry Sandeen's 4+ year collection of R-390A reflector distillates is available at http://www.r-390a.net/Redux/index.htm or at http://www.r-390a.net/faq-refs.htm - look under "Tutorials" Perry's are organized chronologally while Wei-i Li's "Pearls" are organized by topic, so now you can have it both ways!!

Date: Sat, 29 Apr 2006 21:21:24 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] RE:OC module channel indicator

FYI, I now have the channel indicator strip that are peel n stick. They are silk screened on a Mylar base. They are Peel N Stick.They are $7.50 each mailed.

Date: Sat, 6 May 2006 13:21:04 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] R390A Cap and Resistor list

This is the beta of the R and C list I made. Hope it posts OK. I'll redo it if it crashes.

R390A Resistor and Capacitor Tally List BETA Does not include all variable cap assemblies or the 1% carbon film resistors. Does include alternate values for mechanical filters.

Tally

Capacitor, Mica

4

Capacitor, Mica 5 pF., ± 0.5 pF., 300 Vdcw.., MIL type CM15D050K
5

Capacitor, Mica 12 pF., ± 5%, 500 Vdcw.., MIL type CM15D120J.
4

Capacitor, Mica 15 pF., ± 5%, 500 Vdcw.., MIL type CM15D150J
2

Capacitor, Mica 18 pF., ± 5%, 500 Vdcw.., MIL type CM15D180J.
1

Capacitor, Mica 20 pF., ± 5%, 300 Vdcw.., MIL type CM15D200J
1

Capacitor, Mica 24 pF., ± 5%, 500 Vdcw., MIL type no. CM15D240J.
4

Capacitor, Mica 33 pF., ± 2%, 500 Vdcw.., MIL type CM15D330C
2

Capacitor, Mica 39 pF., ± 2%, 500 Vdcw. MIL type CM15D390J
4

Capacitor, Mica 47 pF., ± 2%, 500 Vdcw.., MIL type CM15D470G
2

Capacitor, Mica 51 pF., ± 2%, 500 Vdcw.., MIL type CM15D510G.
1

Capacitor, Mica 56 pF., ± 2%, 500 Vdcw., MIL type CM15D560G.
10

Capacitor, Mica 68 pF., ± 2%, 500 Vdcw.., MIL type CM15D680G
1

Capacitor, Mica 75 pF., ± 2%, 500 Vdcw.., MIL type CM15D750G..
1

Capacitor, Mica 82 pF., ± 2%, 500 Vdcw., MIL type CM15D820G.
10

Capacitor, Mica 100 pF., ± 2%, 500 Vdcw.., MIL type CM15D1016.
8

Capacitor, Mica 110 pF., ± 2%, 500 Vdcw.; MIL type CM15D111G.
5

Capacitor, Mica 120 pF., ± 2%, 500 Vdcw.., MIL type CM15D121G.
5

Capacitor, Mica 150 pF., ± 2%, 500 Vdcw.., MIL type CM15D151G.
2

Capacitor, Mica 160 pF., ± 2%, 500 Vdcw.
1

Capacitor, Mica 200 pF., ± 1%, 500 Vdcw..
4

Capacitor, Mica 220 pF., ± 2%, 500 Vdcw.., MIL type CM15D221G.
1

Capacitor, Mica: 270 pF., ± 2%, 300 Vdcw.., MIL type CM15D271G
2

Capacitor, Mica 300 pF., ± 2%, 500 Vdcw.., MIL type CM15D301G.
1

Capacitor, Mica 330 pF., ± 2%, 500 Vdcw..,
2

Capacitor, Mica 470 pF., ± 2%, 300 Vdcw.., MIL type CM15D471G.
1

Capacitor, Mica 510 pF., ± 2%, 300 Vdcw., MIL type CM15D511G.
2

Capacitor, Mica 1000 pF., ± 2%, 500 Vdcw.., MIL type CM30D102G.

1

Capacitor, Mica 1000 pF., ± 2%, 500 Vdcw.., MIL type CM30D102G
2

Capacitor, Mica 1500 pF., ± 10%, 300 Vdcw.
4

Capacitor, Mica 1800 pF., ± 2%, 500 Vdcw.., MIL type CM15D181G.
5

Capacitor, Mica 2400 pF., ± 2%, 300 Vdcw.., MIL type VCM20E242G.

Capacitor, Ceramic

1

Capacitor, Ceramic: 0.75 pF., ± 0.25 pF., 500 Vdcw,MIL type

CC20CKR75C.
1

Capacitor, Ceramic: 0.5 pF., ± 0.25 pF., 500 Vdcw.., MIL type

CC206K0R5C.
2

Capacitor, Ceramic: 1 pF., ± 0.25 pF., 500 Vdcw. MIL type CX20CK010C.
2

Capacitor, Ceramic: 1.5 pF., ± 0.25%, 500 Vdcw..MIL type CC20CK1R5C.
2

Capacitor, Ceramic: 2.0 pF., ± 0.25%, 500 Vdcw..,
9???

Capacitor, Ceramic: 4 pF., ± 0.25 pF., 500 Vdcw
1

Capacitor, Ceramic: 8 pF., ± 0.25 pF., 500 Vdcw.., MIL type CC20CH080C.
1

Capacitor, Ceramic: 12 pF., ± 5%, 500 Vdcw., MIL type CC20UJ120J.
1

Capacitor, Ceramic: 47 pF., ± 5%, 500 Vdcw.., MIL type CC20UJ470J.
52

Capacitor, Ceramic: 5000 pF., ± 15%, 1000 Vdcw

Capacitor, Variable

1

Capacitor, Variable, Ceramic: 1.5 pF min, 7 to 10.5 pF max, 350Vdcw.;
1

Capacitor, Variable: 3 to 12 pF.,
4

Capacitor, Variable, Ceramic: 3-18 pF., 350 Vdcw.
1

Capacitor, Variable, Air: 3.2 pF. to 60.7 pF., 850 Vac
8

Capacitor, Variable, Ceramic: 5 to 37.5 pF., 350 Vdcw.
8

Capacitor, Variable, Ceramic: 8 to 50 pF., 350 Vdcw..
6

Capacitor, Variable, Ceramic: 8-75 pF., 350 Vdcw.

1

Capacitor, Variable, Glass Dielectric; 1.5 to 8 pF., Corning #692063

Capacitor, Paper

12

Capacitor, Paper: 0.1 uF, ± 10%, 200 Vdcw
7

Capacitor, Paper: 0.033 uF, ± 20%, 300 Vdcw.., (56289) part no.

96P33303S4.
1

Capacitor, Paper: 220,000 pF., ±20%, 100 Vdcw.., (56289) part no.

96P22401S13
12

Capacitor, Paper: 10,000 pF., ± 20%, 300 Vdcw. (56289) part no.

96P1030354.
1

Capacitor, Paper: 2 uF., ± 10%, 500 Vdcw. (53021) type no. 62A.
1

Capacitor, Paper: 47,000 pF., ± 20%, 100 Vdcw. (56289) part no.

186P4730155.
1

Capacitor, Paper: 0.1 uF, ± 20%, 100 Vdcw.; (56289) part no.

96P10401S4.
2

Capacitor, Paper: .033 uF, ± 20%, 300 Vdcw.., (56289) part no.

96P33303S4

Capacitor, Electrolytic

1

Capacitor, Electrolytic: 8 μF, 30 Vdcw., (21520) type no. PP8B30A2.
2

Capacitor, Electrolytic: 2 sections, 45 μF 300 Vdcw., MIL type CE52C450N.
1

Capacitor, Electrolytic: 3 section, 30 mF., 300 Vdcw., MIL typeCE53C300N.
1

Capacitor, Electrolytic: 50 μF, 50 Vdcw.., MIL type CE64C500G.

Tally

1/2 Watt fixed

6

Resistor, Composition: 27 ohm, ± 10%, 1/2 W, MIL type RC20GF270K
1

Resistor, Composition: 33 ohm, ± 10%, 1/2 W, MIL type RC20GF330K
3

Resistor, Composition: 47 ohm, ± 10%, 1/2 W, MIL type RC20GF470J.
1

Resistor, Composition: 56 ohm, ± 10%, 1/2 W, MIL type RC20GF560K
1

Resistor, Composition: 56 ohm, ± 10%, 1/2 W, MIL type RC20GF560K
2

Resistor, Composition: 100 ohm, ± 10%, 1/2 W, MIL type RC20GF101K
1

Resistor, Composition: 150 ohm, ± 10%, 1/2 W.
1

Resistor, Composition: 220 ohm, ± 10%, 1/2 W, MIL type RC20GF221K
1

Resistor, Composition: 270 ohm, ± 10%, 1/2 W, MIL type RC20GF271K
1

Resistor, Composition: 390 ohm, ± 10%, 1/2 W, MIL type RC20GF391K
3

Resistor, Composition: 680 ohm, ± 10%, 1/2 W, M1L type RC20GF681K
1

Resistor, Composition: 820 ohm, ± 10%, 1/2 W, MIL type RC20GF821K
3

Resistor, Composition: 1000 ohm, ± 10%, 1/2 W, MIL type RC20GF102K
2

Resistor, Composition: 1200 ohm, ± 10%, 1/2 W, MIL type RC20GF122K
13

Resistor, Composition: 2200 ohm, ± 10%, 1/2 W, MIL type RC20GF222K
1

Resistor, Composition: 3900 ohm, ± 10%, 1/2 W, MIL type RC20GF392K
1

Resistor, Composition: 3900 ohm, ± 10%, 1/2 W, MIL type RC20GF392K
1

Resistor, Composition: 6800 ohm, ± 10%, 1/2 W, MIL type RC20GF682K
1

Resistor, Composition: 8200 ohm, ± 10%, 1/2 W, MIL type RC20GF822K
2

Resistor, Composition: 10,000 ohm, ± 10%, 1/2 W, MIL type RC20GF103K
7

Resistor, Composition: 22,000 ohm, ± 10%, 1/2 W, MIL type RC20GF223K
4

Resistor, Composition: 27,000 ohm, ± 10%, 1/2 W, MIL type RC20GF273K
3

Resistor, Composition: 33,000 ohm, ± 10%, 1/2 W, MIL type RC20GF33K
1

Resistor, Composition: 39,000 ohm, ± 10%, 1/2 W., MIL type RC20GF393K
1

Resistor, Composition: 56,000 ohm, ± 10%, 1/2 W, MIL type RC20GF563K
3

Resistor, Composition: 47,000 ohm, ± 10%, 1/2 W, MIL type RC20GF473K
3

Resistor, Composition: 56,000 ohm, ± 10%, 1/2 W, MIL type RC20GF563K
1

Resistor, Composition: 68,000 ohm, ± 10%, 1/2 W, MIL type RC20GF683K
3

Resistor, Composition: 82,000 ohm, ± 10%, 1/2 W, MIL type RC20GF823K
1

Resistor, Composition: 100,000 ohm, ± 10%, 1/2 W, MIL type RC20GF104K

1

Resistor, Composition: 120,000 ohm, ± 10%, 1/2 W, MIL type RC20GF124K
2

Resistor, Composition: 150,000 ohm, ± 10%, 1/2 W, MIL type RC20GF154K
2

Resistor, Composition: 220,000 ohm, ± 10%, 1/2 W, MIL type RC20GF224K
1

Resistor, Composition: 270,000 ohm, ± 10%, 1/2 W, MIL type RC20F274K
1

Resistor, Composition: 330,000 ohm, ± 10%, 1/2 W, MIL type RC20GF334K
1

Resistor, Composition: 390,000 ohm, ± 10%, 1/2 W, MIL type RC20GF394K
17

Resistor, Composition: 470,000 ohm, ± 10%, 1/2 W, MIL type RC20GF474K
2

Resistor, Composition: 680,000 ohm, ± 10%, 1/2W, MIL type RC20GF684K
1

Resistor, Composition: 820,000 ohm, ± 10%, 1/2 W, MIL type RC20GF824K
4

Resistor, Composition: 1 meg., ± 10%, 1/2 W, MIL type RC20GF105K
1

Resistor, Composition: 1.5 meg., ± 10%, 1/2 W, MIL type RC20GF155K
2

Resistor, Composition: 2.7 meg., ± 10%, 1/2 W, MIL type RC20GF275K

One Watt Fixed

1

Resistor, Composition: 22 ohm, ± 10%, 1 W, MIL type RC32GF220K
4

Resistor, Composition: 560 ohm, ± 10%, 1 W, MIL type RC32GF561K

2

Resistor, Composition: 2200 ohm, ± 10%, 1 W, MIL type RC32GF222K
1

Resistor, Composition: 5600 ohm, ± 10%, 1 W, MIL type RC32GF562K
1

Resistor, Composition: 22,000 ohm, ± 10%, 1 W, MIL type RC32GF223K
1

Resistor, Composition: 27,000 ohm, ± 10%, 1 W, MIL type RC32GF273K
1

Resistor, Composition: 39,000 ohm, ± 10%, 1W, MIL type RC32GF393K
1

Resistor, Composition: 56, 000 ohm, ± 10%, 1 W, MIL type RC32GF563K
1

Resistor, Composition: 82,000 ohm, ± 10%, 1 W, MIL type RC32GF823K
1

Resistor, Composition: 150,000 ohm, ± 10%, 1 W, MIL type RC32GF154K
2

Resistor, Composition: 180,000 ohm, ± 10%, 1 W, MI type RC32GF184K
1

Resistor, Composition: 220,000 ohm, ± 10%, 1 W, MIL type RC32GF224K

1

Resistor, Composition: 22,000 ohm, ± 10%, 2 W, MIL type RC42GF223K

Tally

High wattage
1

Resistor, Fixed, Wire Wound: 4 ohm, ± 5%, 8 W, MIL type RW30G4R0.
1

Resistor, Variable: 100 ohm, ± 20%, 1 W, MIL type RV2LAXSA101B.
1

Resistor, Fixed, Wire Wound: 800 ohm, ± 5%, 8 W, MIL type RW30G801.
1

Resistor, Wire Wound: 1200 ohm, ± 5%, 10 W, MIL type RW31G122.
1

Resistor, Wire Wound: 1600 ohm, ± 5%, 10 W, MIL type RW31G162.
2

Resistor, Variable: 2500 ohm, ± 20%, 2 W, JAN type RV4ATSA252D.
1

Resistor, Variable: 5000 ohm, ± 20%, 2 W, (71450) type SW1376.
1

Resistor, Variable: 10,000 ohm, ± 20%, 1 W, MIL type RV2LAXSA103B.
1

Resistor, Variable: 500,000 ohm, ± 20%, 2W.

Date: Sun, 21 May 2006 20:14:57 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Receiver Specification Numbers Explained Article

Sorting through some old magazines I came across the Receiver issue of Ham Radio Oct. 1975. In it was an article by the late Jim Fisk W1HR. It is entitled “Receiver noise figure, sensitivity and dynamic range – what the numbers mean”. I have never before or since read an article which explained all of this in a practical way I could understand. Caveat: I didn’t subscribe to all the ham magazines so there maybe other equally excellent articles out there. Anyway, I’ve scanned this into a pdf file that’s almost 2 Mbytes and will email a copy to anyone interested. Please reply list.

Date: Tue, 23 May 2006 11:13:05 -0400
From: Steve Byan <stevebyan@mac.com>
Subject: Re: [R-390] Receiver Specification Numbers Explained Article

Note that the ARRL sells CD-ROMs containing scans of the entire set of Ham Radio back-issues. The scans are TIFF files, and so are usable on most any computer, but the index is a Windows application.

Date: Tue, 23 May 2006 09:44:16 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Receiver Data posting update

YEOWZA!!!

First, Apologies to the List Admin for goofing and missing the word OFF before “list”. I humbly accept my 20 lashes with a wet noodle and will do just penance the next time I go to Cedar Rapids. I had 37 people ask for a copy and I hope I got to everyone. Several mail boxes were full so I’ll do a resend. I also sent it in .doc format as some had trouble with the pdf version. This means about 6 Mbytes of files. Some kindly volunteered to post it on their web sites. This may be a problem. Although the article is 30 years old, and HR went toes up in ‘89(?) and CQ mag bought the carcass. I believe radio archives is selling a CD of the scanned issues. I don’t have a problem with sending anyone on the list copies of anything I’ve scanned as I’m not cutting into someone’s profit. If any wish to pursue the posting it, be my guest. I think it would be a great idea, but at this point I think it’s best to err on the side of caution. That said, I have two more scanned articles from the same issue which I will share later. As I have dial-up I will go to the local library branch to send as it took over an hour to go through Yahoo’s virus scan. If I missed anybody’s request please ask again OFF LINE and I will get back to you although it may be after the Memorial Day weekend. My best regards to all my fellow vet’s and my humble thanks to the relatives of all those that served our country now and before. Our freedom only exists because good men have the superior firepower.

Date: Tue, 23 May 2006 19:36:54 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Posting articles on the web

After doing some research on the net I learned that there are at least 3 different business’ selling scanned Ham Radio magazine. Since we don’t want cut peoples income it would be bad Karma (AKA lawyers) to post excerpts of selected files on the web. They seem to be about $150 for a set which is a bit pricey IMHO but I suppose it is better than hauling the originals around (and I have TONS). I guess I might start scanning mine. The commercial ones do come with a searchable data base which might make them more cost appealing. I have no problem though in sharing specific articles or ski’s that I come across among the list members as we aren’t doing this for profit - it’s “group research and education”. Remember that taking from one is plagiarism, taking from many is research. Nomex undies on runnin’ and duckin’. Regards, Perrier

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Date: Wed, 07 Jun 2006 15:54:52 -0400
From: Larry Kirkland <lkirkland@sc.rr.com>
Subject: [R-390] R-1051

Anybody know if there is a R-1051 reflector or newsgroup? I need some parts for one I recently found a home for.

Date: 7 Jun 2006 20:23:06 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] R-1051

The server that hosts this list also hosts an R-1051 list.

Date: Sat, 10 Jun 2006 08:12:51 -0600
From: DW Holtman <future212@comcast.net>
Subject: [R-390] R-391 Receiver Connector

Looking at the rear of my R-391, it needs a 10 pin round screw on military type connector. Does anyone know the MS number or where I might locate one. It is the plug for the 24 volts for the auto-tune motor.

Date: Sat, 10 Jun 2006 09:20:07 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] R-391 Receiver Connector

Dyke, Try William Perry Company in Louisville KY.

Date: Sat, 10 Jun 2006 10:24:51 -0500
From: "Dave Merrill" <r390a.urr@gmail.com>
Subject: Re: [R-390] R-391 Receiver Connector

The 24 VCD for the autotune system actually comes in the 9-pin connector. Special Purpose Cable CX-2083/U connects the receiver to PP-629/URR. Fortunately the 9-pin connector is the same as the power connector on the R-392, Amphenol 164-4FS. You can find them at the auction site or for -much- less at Bill Perry (who prefers telephone/FAX orders to e-mail).

WILLIAM PERRY CO
702 (rear) Beechwood Road
Louisville, Kentucky. 40207
Fax-502-893-9220
Office-502-893-8724

Date: Sat, 10 Jun 2006 12:05:49 -0400
From: "Don Heywood" <wc4g@knology.net>
Subject: Re: [R-390] R-391 Receiver Connector

DW, an easier method of applying +28VDC to the autotune system is to simply input your +DC voltage to pin B of the main power plug P104. Of course the other side of your DC supply must be grounded, use pin C. This input source is the same point as pin D on the REMOTE input.

Date: Sat, 10 Jun 2006 21:41:52 -0700

From: Buzz <muttman@charter.net>
Subject: [R-390] Installing a R390

http://webpages.charter.net/muttman/Inst_R390.jpg

Date: Fri, 16 Jun 2006 19:15:42 -0700
From: "Ken Kaplan" <krkaplan@cox.net>
Subject: [R-390] Re: Re: 807 Anyone?

The discussion of 807's prompted me to finish my documentation on rare R-390A PTOs. Go to: http://www.qsl.net/kb7rgg/radio/index.html and look about half way down for the link "rare manufacturers of PTOs" to see what I mean.

Date: Sun, 18 Jun 2006 19:16:30 GMT
From: "mil_dude@juno.com" <mil_dude@juno.com>
Subject: [R-390] Father's Day Dream

>From a dream early this morning:

I'm in a building at an Army Reserve base. In a room a couple of GIs are operating R-392s. One of the R-392s looks pretty stock, but the other has an unusual faceplate. Humm, I make a note to investigate these further. Then I notice a T-17 microphone that has been painted desert camo and I think, "That makes sense, this unit must have just returned from the Middle East." (never mind that it's been decades since the military used T-17s) Even though the mike isn't connected to anything, I pick it up, press the transmit button and begin to speak. From somewhere comes the sound of squelch breaking and then the voice of my late father. We converse back and forth, father to son. It's great but I suspect it can't be happening. So I say to him "I hope this isn't just a dream." Tears begin to well up in my eyes. And of course, it was only a dream. There is no magic T-17 that can speak to loved ones that have passed, no matter how it's painted. So this Father's Day remember the man who helped raise you and the sacrifices he made for you. If you still have your father, you are fortunate. The rest of us have only memories and dreams. Dad, you may be gone, but you have not left my heart. And as these electronic bits escape into the universe, maybe, just maybe, I've found that magic T-17 after all.

Date: Sun, 18 Jun 2006 17:43:47 EDT
From: Commtekman@aol.com
Subject: Re: [R-390] Father's Day Dream

Very well stated, I wish I had used the "standard" T-17 and told my Dad how much he meant to me while he was still alive-Bob
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Date: Tue, 27 Jun 2006 08:19:20 -0400 (EDT)
From: Phil <tubesareking@yahoo.ca>
Subject: [R-390] letter on R-390A front panel - what might it mean?

My Collins R-390A [1955 run] has some markings on the front panel - looks like permanent magic marker - near the KC knob. Being a rather historical person, as well as an electronics nut, tube-o-phile and MW DXer, I'm as curious as can be as to what they might mean: There is a slightly styilized "F" which is circled by a shape very reminiscent of a 1960's era TV screen - a rounded square, if there is such a thing. Also, near this "F" are the letters "AOD". Any guess as to what this might mean? I figure that perhaps some you you kind folks who worked with these babies in the military might know. One thing for sure - my front panel is in very nice original shape and those letters are staying!

Date: Tue, 27 Jun 2006 11:14:00 -0400
From: Scott Bauer <odyslim@comcast.net>
Subject: R-390] letter on R-390A front panel - what might it mean?

I don't know about your situation but I have 2 R-390A's that have names of the operator or the repairman scratched behind the name plate. I thought that was pretty cool. I did post the names here but nobody recognized them.

Date: Tue, 27 Jun 2006 15:05:55 -0400
From: Mark Huss <mhuss1@bellatlantic.net>
Subject: Re: [R-390] letter on R-390A front panel - what might it mean?

If it is on the unpainted back of the front panel, it is probibily an inspection mark,

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Date: Tue, 27 Jun 2006 20:27:46 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] letter on R-390A front panel - what might it mean?

My 56 Motorola has the ASA sticker on the back and a peace sign scratched in the MC change knob that you can see if you look at it just right. I haven't found any FTA's on it yet. *g*

Date: Tue, 27 Jun 2006 21:58:51 -0400
From: Scott Bauer <odyslim@comcast.net>
Subject: Re: [R-390] letter on R-390A front panel - what might it mean?

I forgot about the one I have that had " FU" scratched near the KC knob. I filled it in with bondo before re-painting :-)

Date: 13 Jul 2006 20:05:55 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: [R-390] RF Coaxial Cables

A few months ago, I started looking for some suitable cable to replace the output coax from my PTO as well as the other RF connections to the IF deck and crystal deck. These have gotten rather worn in my radios and worry me every time I start fooling with them. They may be electrically okay for now, but with the jacket being broken in a few places, it makes the cable kind of weak in those areas and I'm constantly worried about the inner jacket failing at those same weak points. I finally found something that looks to be a perfect fit. Some have suggested using RG178, but its OD is typically 0.072" or smaller and, as such, the clamp in the PTO won't grab on the jacket of the coax. I made it work with a little shrink tubing, but wasn't really satisfied with it. Besides, RG178 is a bit small looking to be a replacement for the original cable. Some have suggested RG174 but with an OD of 0.100" or greater, it won't fit in the various connectors. The original cable's OD is about 0.084" and the coax I have is about 0.083" so it should work just fine. It is PTFE (Teflon(r)) inside and out with silver-plated braid and inner conductor so it should be a very nice replacement cable. I stumbled across this on eBay and the fellow is selling another lot of it so if you're interested I can point you to the auction. I don't know how much of it he has in stock, but I've emailed him to see. Also, if anyone's interested, I may sell some of mine. I had to buy 25' and don't plan using all of it, but I don't know if/how much I'll have left. I'm just happy to finally have a good cable and hope I can get all of them replaced. The ones in my Motorola are quite ratty.

Date: 13 Jul 2006 20:58:54 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] RF Coaxial Cables

The connectors aren't a big deal. I resoldered one on my first radio and will resolder this one. The hardest part is opening the back of the 90-degree connectors. Some of them don't like to come apart. You can sometimes heat them up with a larger soldering iron and tap them on the workbench (wear protective eyewear when doing thas as the solder can and will splatter). This one was stubborn and a rather tight fit without the solder. I had to resort to a broken dental pick and heat to get it out. Once you have it apart, the shield is a mechanical connection with a little compression thingee and the center conductor solders to either a pin (in the case of the 90-deg connector) or (and I'm assuming this) the center of the male connector much like a standard BNC connector. If you do tear one up, though, I believe Fair Radio still sells them.

Date: 13 Jul 2006 21:00:44 -0000

From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] RF Coaxial Cables

The link is:
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=160006496498

Date: 13 Jul 2006 23:49:35 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] RF Coaxial Cables

I heard from the seller. He has a bit of this on odd length spools. I've asked him for a price for 100'. My plan would be to sell it in 8' or 10' lengths, enough to do a single radio, to listmembers. I'll let you all know the price and if we have enough folks interested, it might be a better deal than everyone bidding against each other (and there may be folks who don't do eBay or PayPal).

Date: Fri, 14 Jul 2006 12:29:57 -0500
From: "Craig Anderson Ext 1365" <Craig.Anderson@saintpaul.edu>
Subject: [R-390] RE: R-390 Digest, Vol 27, Issue 8

I use RG-316/U and it works just fine. The outside dia. is .098

Date: 14 Jul 2006 17:52:59 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: [R-390] RG316 vs ?

I think RG196 will work with the original MB connectors, so it will work for the IF and 2nd oscillator cables, but I wanted something that would work for all the cables and this stuff appears to be the cable to do that.

Date: Sat, 15 Jul 2006 18:07:26 +0200
From: "Paolo Mantovani" <pmthome@gmail.com>
Subject: [R-390] Advice on 390 non-A

A few weeks ago I collected the 390 - non-A - I won at an auction (not eBay...). It is a 1951 unit. I think at some point it was employed at some Air Force base (US or NATO). Because of how the auction was, I couldn't see the unit in advance nor ask questions about it. There is a **major** issue with it: the IF deck is the one of the 390A!

What surprises me is that the substitution work is state of the art: for example wiring is consistent with the rest of the receiver (same type of wires - no plastic, the two coaxial cables P225 and P226 have been replaced as the connectors are on the other side of the deck but still have the cable name ring on them).

The IF deck looks like it was fitted ages ago. So my dilemma is: should I keep the receiver as is or restore it to its original conditions? It might be something that is part of the history of the receiver and then should be kept as is, or just somebody running out of spares... What you guys would suggest me to do? Paolo from Italy

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Date: Sat, 15 Jul 2006 09:55:55 -0700
From: "Kenneth G. Gordon" <kgordon2006@verizon.net>
Subject: Re: [R-390] Advice on 390 non-A

Well, Paolo, if it were mine, I would keep the receiver as is. It sounds like a bit of the history of these neat receivers to me. Perhaps you might find some paperwork connected with it omehow?

Date: Sun, 16 Jul 2006 07:23:18 -0400
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Advice on 390 non-A

Is there any obvious "extra" functionality from the alternate IF deck? Any obvious "missing" functionality from it? While there were special editions for NATO allies that add extra switches/subchassis for SSB, I could imagine other special editions that would have best been done with a whole new IF deck. Packing more parts per cubic inch in there is undoubtedly possible :-).

Date: Fri, 28 Jul 2006 14:47:42 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] R390-A questions

I see your problem with this receiver rebuild. I agree with Cecil. Take the time to get it back to the rebuilder and have it worked on some more. You have at least the following problems you would like fixed that should have been fixed to start with the first time it went to the shop.

1. a split gear not set up right.
2. RF band switch problem.
3. MC knob loose
4. Gear dropped apart and lost alignment.

You are paying great money for service bench time and that kind of money deserves better performance. There is nothing in the receiver you could not fix yourself. There is nothing in the receiver that could not have been fixed to start with. Now you have paid a large sum for services and the results was close but no cookie. Keep mailing to your service provider and ask him to put the rest of the effort into it to get it correct.

Date: Fri, 28 Jul 2006 21:40:37 -0400
From: "Bob Young" <youngbob53@msn.com>
Subject: Re: [R-390] R390-A questions

I've read a lot of your stuff, the things you know about these amazes me as with the rest of you. I did also think that since I paid the money I might as well have it fixed by the restorer as he would probably do a much better job than me and much quicker too. He did answer me today and I'm sending it back Monday. The thing is it did function well the first few times through the bands, so I think it left his shop OK, he seems to think it was a shipping issue but I'm not going to argue or try put in a claim with UPS as I've heard they are impossible to collect from. I'll just eat the shipping which isn't too bad from Ma. to Va. I thank all you wizards on this list as I read almost everything that comes in, I've been a subscriber for a while now. I want this radio as close to perfect as it can be so when I start to buy other ones I have something to compare them to. I'm sure this list is where I'll get my information.

From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Will trade nice 390 or 390-A for

You may know that a nice R-390A is worth maybe $600 to $1000 and an R-389 in any functioning condition might start at $2500 and up. If you want a tube type VLF receiver, you may want to look for an RAK, RBA or an RBL. These are not really high end radios by todays standards, but they will pull in a lot of signals below 2 mc. Based on what I've read (and only a little actual experience) the lower you go in frequency, the more important antenna performance is. The
R-389 will hear very little more than an RBA will if your antenna is very good.

Another possibility is to find one of the more modern solly state receivers, such as the Watkins Johnson or CEI (Communications Equipment, Inc,) receivers. One example is the CEI VLF-354 (earlier) or 357 (later with nixie readout). These things apparently have all you need for most any signal: selectable bandwidth, plenty of stability, front end attenuator, noise limiter, BFO. You certainly should be able to get one for the value, in money or in kind, of a medium-nice R-390A.

Date: Tue, 15 Aug 2006 10:33:41 -0700
From: "Kenneth G. Gordon" <kgordon2006@verizon.net>
Subject: Re: [R-390] Will trade nice 390 or 390-A for

You might also consider an RCA SRR-11/FRR-21. They are contemporaneous with the R-390A, but use all submini tubes and a projection type readout. I've always like the SRR-11/12/13 receivers. The

HF version, the SRR-13/FRR-23 isn't as stable as the R-390A but it sure is fun to operate. When working properly and properly aligned, it has been my experience with them that they are very reliable receivers. However, as Roy Morgan mentioned, the ANTENNA is really far more important at VLF then the receiver.

Date: Tue, 15 Aug 2006 16:56:29 -0400
From: Scott Bauer <odyslim@comcast.net>
Subject: Re: [R-390] Will trade nice 390 or 390-A for

You are 100 percent correct about the antenna issue. In fact that is my weak point. I have a 1/2 acre mini-antenna farm. I use a 48 foot tower for HF and have an Alpha Delta Twin-Sloper that works fairly decent for SWL as well as transmitting the 160 meter band. I am going to moving within the next few years and one of my main objectives is to get 4 or 5 acres for a real antenna farm. About the receiver. I don't have to get a boatanchor in trade for one of my R-390xx's. I am looking for a real work-horse though. In fact, I plan to sell a lot of my gear in order to purchase the Ten-Tec 340 or something along that line. To sum it all up. I will have room in the near future for a good antenna and am open to any good HF/ VLF receiver in trade. It does not have to be hollow state, just good :-) Thanks a lot for your positive input. It is very much appreciated. This goes to all of you that have replied as well.

Date: Thu, 17 Aug 2006 07:40:56 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Will trade nice 390 or 390-A for

Input on an R8B purchase.....the mechanical encoders used for the main tuning are showing their age and failing. Why Drake chose to move from the optical encoder used in the earlier R8's is a real mystery. They rarely fail. Be careful when buying a used one that it tunes smoothly with no hiccups.... Not sure what a replacement costs if they can be bought...Drake has been good about this in the past.

>
>> Thank you VERY much for telling me about the Ten Tec.
>
> I would hate to have turned you off on the RX340, and hope you will try
> one for yourself. It is, in very many ways, a truly great radio, and
> except for the R8Bs it is the last radio I would sell. In fact, I'd
> probably sell one of the R8Bs first. Which is why its faults annoy me
> so much. I've not spoken to Ten-Tec, but it is possible that some of
> what I perceive as faults could be corrected by revised firmware.
>> Do you know anything about the Collins HF-2050? I have an offer to
>> trade for one in excellent condition.
>

> I have one here. I'm not in love with it. Some of the most valuable
> features were omitted from production units when the Canadian
> government revised the design before (or during?) production. For
> whatever reason, the controls and menu options remain but do nothing.
> Their linear regulated power supplies run scorching hot and burn down.
> [If you end up with one, let me know -- I have a terrific mod that
> cures them completely, without need for a fan, and can be easily
> reversed if desired.] Every time you touch a control, it switches to a
> keylock mode, so you have to preface nearly every command with a mode
> choice. Many of the controls use one switch (each), so you have to
> scroll through a menu of selections to get the one you want. And there
> are three tuning rates, NONE of which is suitable for band scanning.
> (Way too slow, too fast, and way too fast.) Again, all in my personal
> opinion. I could go on if I got it out and refreshed my memory. It DOES
> have very intelligible audio. One Internet source attributes this to
> the DSP, but in fact it is because the audio frequency response is
> tailored (broad peak at 1000-2000 cps and weak low frequencies). You
> can do the same with any radio and a parametric EQ.
>
> The JRC NRD-545 shares some of these horrible ergonomic features
> (although some of its other features are superbly ergonomic. Go figure!)
>
>> About your " B " version. I wish that I could help you with the docs.
>> After hearing what you have written, I would like to have one of the
>> radios as well.
>
> They come up on eBay occasionally -- I've seen 2 in maybe 5 years.
> Neither seller knew what it was, so they were just advertised as
> RA6790/GMs. Buyers knew, though! They went for $2000-3000 rather
than
> the normal $500.
>
>> I have a friend that has an R8B. I will try to borrow it for a while.
>> I have only heard and read great things about the radio.
>
> I concur, although in fairness I must point out that there are a few
> things I would have done differently. First are the "anti tactile"
> rubber keys, like a TV remote control. I know why they did it (cost and
> reliability), but IMO they feel awful. The best tactile keys ever, in
> my view, are the ones HP used in their old LED engineering calculators
> (HP29c, etc.). The keys that JRC uses on the NRD-525 and NRD-545 are
> nearly as good. Rubber keys are ... well ... unpreferred. Some people
> complain about the light plastic tuning knob. Not me. I did pull the
> encoder out of one of mine and washed the silicone goo out of the shaft
> bearing, then oiled it with 5W30 Mobil 1. (Don't try this unless you
> are willing to buy a new one -- it is put together with bent tabs and

> not designed to be opened. But I like it so well I'm gonna do the other
> one.) It also has more spurious responses than I'd consider ideal, but
> they are very low in level and do not intrude if you have a decent
> antenna on it (atmospheric noise drowns them out). Even with the things
> that are not entirely to my liking, I consider it the best HF radio I
> have ever used. The audio is absolutely superb, largely because of the
> LC IF filters. (I do recommend using a parametric EQ to make the very
> weakest signals a bit easier to copy, but this is the cherry on the
> icing on the cake and nearly all radios can benefit from this.) It
> doesn't have the near-infinite choices of IF bandwidths that the TT
> RX340, WJ-8711/HF-1000, or JRC NRD-545 have, but it turns out that
the
> ones it has are exceptionally well chosen so you almost never feel you
> need more, particularly considering that the IF shift works in all
> modes and the synchronous AM detector allows you to choose USB, LSB,
or
> DSB. Speaking of the synch detector, it is the best in the business.
> Better than the Lowe, the Palstar, the AOR, the Ten-Tec, and the
> Watkins-Johnson; better than JRC's ECSS; and better than the Sherwood
> SE-3 external unit. It alone is worth the price. (Sadly, the R8 and R8A
> do not share this same circuit.) It alone among the digital receivers I
> am familiar with lets you set the tuning step for the "up" and "down"
> buttons independently from the tuning knob. With the Ten-Tec, the
> NRD-545, and others that even have up/down buttons, you are
constantly
> having to change the tuning step when you go from the up/down buttons
> to the knob. For example, with the TT RX340, I'll set the tuning step
> to 10 kc, 9 kc, or 5 kc to step up and down the MW and SW broadcast
> bands. Then I'll decide to fine tune around the vicinity of a station
> with the knob, and when I give it a quarter turn I've gone half a
> megacycle because the knob is also stepping 10, 9, or 5 kc per encoder
> pulse. Not the R8B! You can set them independently. Further, if you
> want, you can set automatic steps by band and mode. (You can also set
> auto IF bandwidths by mode, and go manual any time you want.) Anyway,
> to make a long story shorter, it's the only radio I like well enough to
> own two of anymore. Best regards, Don

Date: Thu, 17 Aug 2006 20:00:30 -0400
From: "WD9INP/4" <WD9INP@isp.com>
Subject: [R-390] BEWARE of spray contact cleaners!

I heard a long time ago that spray contact cleaner can be a no-no for cleaning some contacts. Well, I learned the hard way that that is right! The problem isn't in the cleaner itself, but in that it breaks up old deposits on the switch contacts and allows them to migrate about and create high resistance scales that insulate contacts one from another. Try cleaning the

contacts with acetone, remembering that acetone can also dissolve plastics.

Bakelite don't care 'bout no acetone so OK there, but the trimmers in the 2nd and 3rd I.F. cans DO care. They can open up. Fortunately, the can may be removed w/out removing the RF deck, but I don't know how to unbust a busted trimmer. Tears do damage, too. Wear goggles while crying! Charles A Taylor, WD9INP/4 Greenville, North Carolina

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Date: Fri, 18 Aug 2006 10:22:43 -0500
From: Rick Brashear <rickbras@airmail.net>
Subject: [R-390] Lubrication

I finally own my first R-390 (non A) and need advice about a few things. The "Kilocycle Change" seems to me (remember, this is the first one I have ever turned) to be a little stiff or maybe better described as hesitant. I reset the bushing where the shaft enters the front panel and that seemed to help considerably, but it still is not silky smooth. The receiver is not real dirty and works relatively well, however, the gear mechanism may be in need of cleaning and lubricating. What is the best cleaner and lubricant to use in this area? And, what are the pitfalls I should be aware of before tackling this task? I know it will need further work and alignment, but on the advice of a friend I want to be sure I am not damaging anything due to the stiff tuning first. Thanks for any and all advise you may offer.

Date: Fri, 18 Aug 2006 12:34:14 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Lubrication

Well....I don't think "Silky Smooth" has ever been used to describe the tuning on any R-390 series radio. Noisy, clanky, mechanical feeling and sounding is pretty accurate. All that said it should be free to turn without excessive effort. First I would make sure the dial lock mechanism is not dragging on the disk behind the front panel. Beyond that the gear train may be in need of cleaning and lubricating. I would not recommend spraying it down while in the radio for sure. If you are going to tackle cleaning it properly it needs to be removed from the radio. Not for the faint of heart but it is doable. If you should decide to just lubricate it a bit in obvious places I have used a syringe type oil delivery system and Mobil 1 synthetic lubricants. Mostly their motor oil. Some use the heavier differential lubes, your choice. I do recommend the synthetics though because they won't gum up over time. For a few years while I was pulling a travel trailer with my Chevy Tahoe I was running Mobil 1 oil in the engine and when I changed the oil I would collect the drainings from the new oil bottles overnight and I put that into a small peanut butter jar. I draw from that with the syringe. Half a cup of the stuff will last forever it seems. Another thing that makes these things

hard to drive is over tensioning of the split gears. If the springs are stretched out they may be over tightened causing stiffness in the tuning. It usually only requires about a two tooth offset max to keep the backlash out of the gear train. Sometimes only a one tooth offset works well and leaves the tuning as light as it's going to get but keeps things tight enough and keeps the springs in place. Also make sure all the rollers that ride the brass cams are free to turn...that will create drag on things as well.... Just some thoughts...hope it helps a bit!

Date: Fri, 18 Aug 2006 21:33:22 -0500
From: Rick Brashear <rickbras@airmail.net>
Subject: [R-390] Thanks!

Thanks to all who responded to my request for help on the stiff control, I think the solution was found thanks to you guys. There is obviously a wealth of information here, I hope you'll indulge me while I get educated in the world of R-390 receivers.

While inspecting the top side of the receiver I found a loose wire (white with black stripe) dangling just above the antenna shorting relay. It appears to be a part of a laced group of wires running back into the mid section. Since the the wires on the relay are the same color and since the wire has 13.6 vac in relation to chassis ground I am assuming it is some kind of control wire. I will be tracking it down, but in the mean time if someone happens to know where this loose wire goes or comes from I would really appreciate the info.

By the way, where is the best place to get the little lamps that go in the counter bezel?

Date: Sat, 19 Aug 2006 09:13:39 -0400
From: "WD9INP/4" <WD9INP@isp.com>
Subject: [R-390] Re: Vol 28, Issue 18: R8B tuning mechanical encoder.

I have read that Drake charges a flat $600 repair for an R8B. That was to Canada, but it would probably be the same to anyone in the US. What is entailed in getting to the encoder, and is it reparable for the average tech?

Date: Sat, 19 Aug 2006 10:19:15 EDT
From: ToddRoberts2001@aol.com
Subject: R8B tuning mechanical encoder.

I sent an R8 in for repair to Drake and they were very reasonable. They currently list repair for the R8B at $25 per quarter hour or $100 per hour - they could replace an encoder in well under 1 hour. I have heard trying to replace the encoder yourself is tricky and you could end up with more

problems if not
done right.

Date: Sat, 19 Aug 2006 22:20:33 -0500
From: "Barry" <n4buq@knology.net>
Subject: [R-390] Solder Posts

Just found some interesting solder posts.

http://www.angela.com/catalog/connectors/connectors.html

Some of them appear to be like the ones in the R390A, but they're 6-32 thread instead of 4-40. Anyway, I know a lot of guys were wanting some of the solder posts I was selling. There are some just like them on this page too. Kind of pricey, but if you only need a few, it might be a good deal.

Date: Mon, 21 Aug 2006 11:55:39 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Solder Posts

One Dollar each.

OR: you can contact: Brad.Thompson@valley.net and see what he has. Be prepared for MUCH more reasonable prices.

Date: Wed, 23 Aug 2006 20:18:34 -0400
From: "WD9INP/4" <WD9INP@isp.com>
Subject: [R-390] Chuck Rippel incommunicado?

I wrote an e-mail to Chuck about my R-390A's RF deck and never got a reply. Then I send him a letter with SASE, and got no reply to that either. I'm thinking about getting C603 and C606 refurbished per his website; but since he doesn't answer my communications, what's the use? Is he very busy or gone from his QTH a lot? Does anyone on this reflector know?

Date: Sun, 03 Sep 2006 09:23:33 -0400
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: [R-390] New Fair Radio Catalog

The new Fair Radio Catalog came in the mail Friday, and you can assume that just as every year since I was a young'un, I spent many many hours going over its tiny type to figure out what they have. (Although admittedly the new format is easier to read than the old, I still miss the Dymo labels and typewriter text!) 390A highlights as far as I can see:

1. 390A power supplies still $25 (although it seems they are not listed in

the 390A section but in the transformer section.)

2. "Dented" PTO's for $25, no choice of brand. Wonder if I'd get a Cosmos or ??? If it's not a Cosmos, then it has a real stack of corrector plates, right? Above 2 points sound most interesting to me not so much for 390A refurbs but for general tinkering and homebrewing.

3. Still many assorted parts/knobs/gears etc. available although maybe not as many as in the past (e.g. no mech filters mentioned, no large knob, etc.)

4. Rumors here were that Fair Radio had gotten a large stash of R-392's in the past year but there's not much evidence of this in the printed catalog.

Will call them on Tuesday when they're open again :-).

Date: Sun, 3 Sep 2006 07:40:13 -0600
From: "SAM LETZRING" <sletz@msn.com>
Subject: Re: [R-390] New Fair Radio Catalog

392's listed on their website for $550!

Date: Mon, 4 Sep 2006 22:54:04 -0500
From: "Barry" <n4buq@knology.net>
Subject: [R-390] RF to IF cables

A while ago, I sold some small lengths of the coaxial cable used to replace the interconnecting cables in the R930A to members of this list. I replaced the PTO cable with some of it and it worked great. Today, I finally pulled the RF deck on the current project to look for any troublesome components (it doesn't "hear" as well on some bands and I'm not sure what the problem is). I found one high resistor (over 100k for an 82k value) and replaced the bypass capacitor in parallel with it. I then decided I would tackle the cable replacement and found it's not all that difficult. I removed the connectors and soldered a piece of small (22?) gauge wire to the end of the old coax's braid. I tried to pull it through in one operation, but found it was easier to pull it through the duct and lacing first and then feed the cable back through the hole to the top side. All that's left now is connecting the ends to the output transformer and resoldering the mini-BNC connectors. It really wasn't that hard to do. Even the old metal cable markers will slide nicely back on the new coax. It should look good when I'm finished with it. After this, I need to replace the cables in my Motorola as they are in worse condition than these were. Maybe someday I'll get all this done... Anyone else try this yet?

From: "Jim M." <jmiller1706@cfl.rr.com>

Subject: Re: [R-390] Screw driver for RF deck mounting screws??

I found a long skinny thin 'flat head; driver at Ace hardware. It's not Phillips but the flat head was small enough to get a decent grip on the RF deck screw.

Date: Tue, 5 Sep 2006 05:49:25 -0400
From: "TChirhart" <sparks@codepoets.com>
Subject: RE: [R-390] Screw driver for RF deck mounting screws??

Your local Sears (Craftsmen) has the extended shaft Phillips and blade tip screw drivers that work great. Every 390 tool box should have them.

Date: 5 Sep 2006 14:09:12 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] Screw driver for RF deck mounting screws??

A friend gave me a Phillips-head screwdriver that works great for this. I used mine yesterday to pull the deck for cable and parts work. I don't know where he got it, but I'm pretty sure it's one of those non-descript tools from somewhere like Home Depot or Lowe's. It has a gray handle with an orange tip on the handle and I'm pretty sure I've seen these at various hardware stores. It just happens to have a shaft that's long enough to do the job. I'm pretty sure if you look around, they're not too hard to find. I have a Vaco set that has screwdrivers with extensions. These won't work as the extension is too bulky to fit between the back of the RF deck and the back panel.

Date: Tue, 5 Sep 2006 08:04:31 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] Screw driver for RF deck mounting screws??

I have found that a flea market is an excellent source of tools. We have one where there are a couple of vendors who specialize in tools for the auto mechanic. I have picked up several screw drivers and wrenches that work well for getting into difficult spots. Also, you might try a local auto parts store.

Date: Tue, 5 Sep 2006 10:45:02 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Screw driver for RF deck mounting screws??

Hi Steve, I have a Sears Craftsman #2Phillips Head x 8" that fits behind the rear of the RF deck and back panel. It is the one with the clear handle. Sears item #00941296000 Mfr. model #41296 $5.49 You can order it online if you are not close to a Sears store.

Date: Tue, 5 Sep 2006 10:48:06 -0400
From: <robert.boyd@servicecanada.gc.ca>
Subject: [R-390] R-390/R392/T195 Tube Pullers

Is anyone aware of a source for the 7 & 9 pin tube pullers that were originally shipped with the unit(s)? Hope that this request does not provoke a huge series of guffaws
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Date: 5 Sep 2006 15:07:13 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] R-390/R392/T195 Tube Pullers

Are these what you're looking for?
http://www.fairradio.com/0chinese.htm
Granted, they're only for 7-pin tubes.

Date: Tue, 5 Sep 2006 11:08:49 -0400
From: <robert.boyd@servicecanada.gc.ca>
Subject: RE: [R-390] R-390/R392/T195 Tube Pullers

Barry-great & thanks! Will try them for both....vice-grips can be a shattering experience:-)

Date: Tue, 5 Sep 2006 11:36:11 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] R-390/R392/T195 Tube Pullers

I have found that vinyl tubing purchased at Home Depot or Lowes works OK. I don't remember the sizes I bought, but if you measure the diameter of the tubes and buy tubing with an appropriate tight fit ID, it will work. The pullers show up on eBay occasionally. They seem to bring a high price though.

Date: Tue, 5 Sep 2006 11:45:52 -0400
From: <robert.boyd@servicecanada.gc.ca>
Subject: RE: [R-390] R-390/R392/T195 Tube Pullers

Thanks-that's smart! Buy a foot of each (in Canada unhappily a meter-39.37 inches) and pull for life!

Date: Tue, 5 Sep 2006 13:07:54 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: [R-390] R-390 Question

I have uncovered some circuit resistance measurements that don't

correspond to those given in manual and don't understand what might be the cause. They are in the filament circuit of the R-390 (non A)IF module. The background is that there are 4 series filament strings for the tubes in the IF module. They are as follows (a) V501 through V504 (each 6.3V) with V501 at the ground end and V504 at the hot end; (b) V507 and V510 (each 12.6) with V510 at the ground end and V507 at the hot end through a 22 ohm resistor; (c) V505 (6.3V), V506 (6.3V) and V511 (12.6V) with V511 at the ground end and V505 at the hot end; V506 (6.3V), V701 (6.3), and the ballast tube. Those of you who have a R-390 schematic can refer to it to see what I mean. Voltage measurements taken at the tube sockets give values consistent with the values given in the manual.

Resistance measurements taken at the same points give values sufficiently close to manual values to be considered within component tolerance and ability to read values less than 10 ohms EXCEPT for reading taken at the pin of V504 and V505 (pin 4) that connect to the hot side of the filament transformer. Here the manual calls out 7 ohm and I am reading 0.2 ohm on my DVM indicating an almost direct short. To me this indicates a shorted bypass capacitor. Checking with my capacitance meter I don't find any shorted bypass capacitors. If the resistance is really 0.2 ohm, why aren't I blowing fuses? Any ideas or suggestions?

Date: Tue, 05 Sep 2006 13:27:31 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] R-390 Question

>I am reading 0.2 ohm on my DVM indicating an almost direct short. To me this
> indicates a shorted bypass capacitor.....

Is it possible that the 0.2 ohms is the DC winding resistance of the filament transformer? And if it really is 0.2 ohms from pin 4 to ground, how come that didn't turn up on your other checks at the hot end of the filament transformer!

> capacitance meter I don't find any shorted bypass
capacitors.....

0.2 ohms across 25V would give 125 Amps, which I do think you might notice! Do you make these measurements with all tubes in sockets? It's possible that a tube has a cathode at ground and a cathode-to-heater short that opens up when current is applied. Lord knows that there are plenty of bad tubes with the OPPOSITE problem!

Date: Tue, 5 Sep 2006 14:16:16 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>

Subject: RE: [R-390] R-390 Question

The low value of resistance does show up in the other 2 filament strings also. Pin 2 of the ballast tube is supposed to be 6 ohm and pin 5 of V507 is supposed to be 9.5 ohm. Reading were taken with all tubes in their sockets. 0.2 ohm might be the resistance of the filament transformer, but when you take the reading, there are 4 series strings of tube filaments with some series resistance in a couple of them in parallel with the transformer. I think that's why the manual gives normal readings in the range of 6 to 9.5 ohm. Could be an error in the manual though. That's not unknown. All 4 points in the IF module where the filament connection is directly to the hot end of the transformer read 0.2 ohm on a DVM and 0 on a VTVM. As I stated all reading should be in in the 6 to 9.5 ohm range depending upon which tube the reading is taken. Unfortunately my tube caddy is empty of 6BJ6's at the moment so I can't try substituting tubes. I just bought some more on line and am waiting for them to arrive. My tube tester indicates they are all OK but who trusts a tube tester anyway? The reason I got into all of this is that the receiver lost sensitivity and had no carrier level meter movement. What is an expected carrier level meter reading for the calibrator on say 15MHz? I could just barely hear 15 MHz WWV while on my 75S-3 WWV was coming in way over S9 and I could also hear WWVH.

Date: Tue, 05 Sep 2006 14:26:35 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: RE: [R-390] R-390 Question

> 0.2 ohm might be the resistance of the filament transformer,.....

The DC resistance of the filament transformer will dominate, of course.

> ....readings in the range of 6 to 9.5 ohm.....

Maybe there's an "assumed" step of 0: uncable the PS module? It is almost impossible for there to be a solid short across the filament transformer, something would blow! (And not necessarily the fuse!)

> .....What is an expected carrier level meter reading for the calibrator.....

On my 390A the calibrator will deflect the carrier level meter 3/4 of the way on most bands. Have no idea how relevant this is to your 390!

Date: Tue, 5 Sep 2006 14:47:28 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] R-390 Question

>I get about 40% of full scale with the calibrator signal.

Something you said about cathode grounds started me thinking. I checked the RF gain pot. The schematic calls out 25K ohm and I just measured mine at 6K ohm. Don't know if that has anything to do with my loss of sensitivity problem since in AGC you operate at max gain, but I will replace it.

Date: Tue, 5 Sep 2006 15:39:21 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] R-390 Question

>The Y2K manual shows the RF gain pot to be 5K.... Roy

As you were! I was looking at the IF gain pot rather than the RF gain pot when I said 25K. RF gain pot is called out as 5K.

Date: Tue, 5 Sep 2006 18:43:12 -0500
From: "Richard" <theprof@texoma.net>
Subject: [R-390] Screw driver for RF deck mounting screws

The one in my toolbox is a Sears Craftsman #2 Phillips with 8" shaft length.
Stock number 41296 J WF.

Date: Tue, 5 Sep 2006 19:57:49 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Screw driver for RF deck mounting screws??

The official TK105 tool kit item was a #1 Philips about 8 inches long. As soon as you get over to a #2 point the shaft diameter is to large to get the back screws on the RF deck. The redeeming driver qualities is stiff long slender shaft. Shop around. Any good quality tool bit with enough length will do well.

Date: Wed, 6 Sep 2006 19:57:33 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Recapping question

Great point. Been there done that. If you have to work on a deck, Get the nut driver, small Philips and small wrench and reset all those mechanical ground points. What a difference it can make. You can solve problems you did not even know existed.

Date: Fri, 8 Sep 2006 20:27:39 -0500
From: Tom Norris <r390a@bellsouth.net>

Subject: [R-390] Who had standoffs?

Did I remember a post here a while back about someone having standoffs like what's in the IF deck of the 390A? You know, the ones that are supposedly easy to break though I've been lucky not to have broken any of that sort of tie point ever. Until today.

Date: Fri, 08 Sep 2006 20:47:31 -0600
From: DW Holtman <future212@comcast.net>
Subject: Re: [R-390] Who had standoffs?

Brad Thompson AA1IP <brad.thompson@valley.net> sells them. I bought a sampler pack of 100 assorted pieces for $18.00 plus $4.00 for Priority Mail shipping. Very nice stuff. Should take care of my boat anchor needs for a long time. He also sent me a list of resistors, caps, diodes etc. he sells at very good prices.

Date: Fri, 8 Sep 2006 22:00:25 -0500
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] Who had standoffs?

I bought some and passed them on to list members a while back. They weren't the original style used in the IF deck, but they do have #4-40 internal threads and are probably a bit more durable.

Date: Fri, 8 Sep 2006 21:52:56 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Re-hardware

I've been following the hardware thread with great interest. My winter projects for being snowed in in the Colorado boonies are up 14 BA's for total overhaul. (I'm not sure whether to drool or cry as this point.) Since the SP 600 uses pan head flat slotted cadmium plated screws and star lockwashers What are peoples thoughts about replacing it with stainless steel cross point screws and using SS split lockwashers instead of the star type? I figure if I buy them from McMaster-Carr in thousand unit quantity the price should be very reasonable.

Date: Sat, 09 Sep 2006 11:28:49 -0400
From: Miles Anderson <k2cby@optonline.net>
Subject: [R-390] Re-hardware

The question boils down to what the screws are used for. If the application is simply mechanical, stainless screws with split lockwashers are ideal. If the screws are being used to ground something (like the ground lug on a tie strip), then you should use a toothed lockwasher that bites into the metal

on both the tie point and the nut (or the tie point and the chassis) -- either a star washer or an internal tooth lockwasher. My first choice for screws was always cadmium plated brass because it is highly conductive and doesn't ever seem to corrode. Lately, though, most all milspec stuff seems to use stainless hardware exclusively. If it's good enough for Uncle, I guess I can live with it too.

As an aside, the old tube type Tektronix scopes used plated (chrome I think) steel screws and nuts that rusted like the old Harry when the scope was in a humid environment, but it never seemed to affect performance very much.

Date: Sat, 9 Sep 2006 08:41:41 -0700
From: "Ed Zeranski" <ezeran@ezeran.cnc.net>
Subject: RE: [R-390] Re-hardware

For ground connections to the chassis with solder lugs or tube socket tabs I've been treating the area/hardware with deoxit, solder first then treat. I'm not sure if it will help in the long run but thought it worth a try. Some of my BoatAnchors had odd problems because the ground to chassis wasn't good anymore.

Date: Sat, 9 Sep 2006 12:00:07 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Re-hardware

Good advice. I don't know if anyone else has tried this but whenever I have redone or re-tightened ground lug connections on equipment chassis I apply some Noalox electrician's grease to the chassis ground area and ground lug before assembly. Do any soldering or heating before applying. Keeps the junction shiny and oxidation-free for years and years. I have applied Noalox to joints and hardware used with outdoor antennas and after years out in the
weather the joints looked brand new when disassembled, so I think it should protect the ground joints for a lifetime on equipment used indoors.

Date: Sat, 09 Sep 2006 15:43:30 -0400
From: jcoward5452@aol.com
Subject: Re: [R-390] Re-hardware

I would replace hardware with as close to original as possible for the reasons mentiond. As to split lock washers:I worked for Avantek , a supplier of mil spec RF gadgets and wizbangs for 10+ years and all our hardware that used screws to hold it all together, was pan head phillips, split lock washer and flat washer, all stainless and this hardware combo was specifically called for in all the mil-spec requirement docs.The "ground"

is provided by the contacting surfaces of what is being screwed.The lockwasher is there to provide some back tension against vibration.The flat washer was there to protect dissimilar surfaces from getting gouged and becoming a source for corosion failure.Try submitting a test sample for "salt fog" testing and you'll understand a whole lot by what you get back!I thought it was a pain in the a** to load 0-80 screws with 2 different washers and then get it all started without losing it all or crossthreading the screw in the attempt! But thats why microscopes and tweezers are useful for us ageing buzzards. And, your hard work paid off when you passed the sine sweep and random frequency vibration tests and the most feared "drop test".Centrifuge was another one of those feared tests.I guy I worked with designed a couple of dielectric resonanator oscillators for the 2 and 3 gigahertz applications and sent them off for centrifuge qual.Well, the techs at the test lab misread 1000g's as 10000g's.well the ceramic thinfilm circuits and the ceramic resonator turned back into their elemental nature.After cutting open the cases all that came out was dust and gold flakes.The screws and circuit carriers were still in place though.

Date: Sun, 10 Sep 2006 10:53:26 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Tube Substitutes

By 1969 the accessories on the back of R390's were long gone. By 1975 we could not get the L handle spline wrenches for a TK105 tool kit. We were using a long handle hex driver with a spline bit installed. If you have one of those L handle spline wrenches it may be worth more than the receiver these days.

The fuses were used up and never replaced if your receiver has clips for spare fuses. <snip>

Date: Mon, 11 Sep 2006 06:32:56 -0400
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Re-hardware

I hesitated posting, hoping you'd give in a followup some sort of reasoning for replacing the original hardware with something lesser, but I'll ask now (too little too late) anyway: Is there something wrong about the original screws and star lockwashers? In certain environments even well-plated hardware can show a lot of dullness over the years. If so, use McMaster-Carr's deep stocks to replenish the hardware with the original style. Buying in quantity has a certain attraction but when you start removing star washers you are making a step backwards. If you really insist on doing it differently-but-same-or-better, SEMS screws with built-in star washers are available and substantially more convenient. Generally they are not the "cheapest kind" and have good plating, and while they're available

slotted the phillips kind will be much more available.

Date: Tue, 12 Sep 2006 21:29:32 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Rogers Postings

Roger has kindly given us permission to reprint his postings in the next revision of the Y2K manual. So far I have about 100 pages of his timeless information. This is going in a new chapter of practical information, There is also a chapter on accumulated hints and kinks gleaned from past postings. The R3 is currently awaiting redone pictures. When I get them I can finish the manual. It will use about 20% less paper for the original material due to improved formatting. The parts chapter had been completely redone so that when a specific part number i.e. C406, its value is shown and you don't have to go back to 3 or 4 pages of "same as Cxxx".

Date: Thu, 14 Sep 2006 12:17:59 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: [R-390] The R-390 Cookbook by A.J. Carmody: Beware!

While finding the link to ST 32-152.pdf, "Visual Alignment..", I came across another one called R390_cookbook.pdf, by A.J. Carmody from the Army MARS program. It is intended for the R-390/URR ("Non-A") radio. One of the mods he suggests replaces the two 6082 24 volt series regulator tubes with two of the more common and cheap 6080 6 volt ones. His method puts the two tube filaments in series with a diode to rectify the available filament supply to half wave. THIS IS A BOGUS DESIGN. DO NOT DO IT.

It turns out that a half wave rectified 24 volt supply produces a LOT more heater power than a full wave voltage of 12 volts. The 6080 filaments will run way hotter than they should. They may overload the transformer filament winding, and likely both fail soon. This is a classic dead horse that has been revisited and beaten a number of times on the R-390 list. His other mods don't contain such egregious engineering errors, but some are undesirable in a time when we are less apt to permanently modify our radios. (The parentheses below are mine.)

1) Power Supply Sub-Chassis Modification (the solid state diode mod for the B+ supply. He does not use a dropping resistor to lower the un-regulated B+ to normal levels.)

2) IF Sub-Chassis Modification (Replaces the ballast tube with a 12BH7 or 12BY7.)

3) AF Sub-Chassis Modification (The mod I complain about above -replaces the 6082's with 6080, and runs the new tube filaments way too hot.)

4) Low Impedance Speaker Connection (Uses external 600 to low impedance voice coil matching transformer.)

5) Antenna Input Conversion to 50 Ohms "To replace antenna input connectors with SO-239 Connectors that mate with standard ham equipment." (In this mod, he removes the "break-in relay" completely (I think he means the antenna relay actuator), solders jumpers to various parts of the antenna relay module and connectors, removes the two antenna connectors and replaces one of them with an SO-239 connector. SHUDDER!!)

The last section of this document is a two page procedure to test the radio for signal plus noise to noise ratio and test each RF front end range band for internal noise level at a standardized gain setting. This seems like a good procedure. It uses an audio output level meter, the TS-585, but an AC VTVM with DB scale and a load resistor would work just as well.

Date: Thu, 14 Sep 2006 12:42:17 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] The R-390 Cookbook by A.J. Carmody: Beware!

Thanks for the reminder of a destructive mod for the R-390! Nothing more aggravating than to bring home an R-390 and find it has had unapproved hidden mods done to it, usually with bad results and no schematic or paperwork to back it up. I have seen several that were butchered by removing the antenna relay and an SO-239 installed usually with blobs of solder hanging off the wires and a couple of holes drilled off-center. But even these travesties can be corrected with some TLC! And who can forget seeing an R-390 with the ballast tube missing and usually 2 or 3 big resistors in series with their leads twisted together hanging out in the open just waiting to short against something and jammed into the 9 pin socket? 73 Todd WD4NGG

Date: Fri, 15 Sep 2006 10:16:23 EDT
From: R390rcvr@aol.com
Subject: [R-390] Spinner knob for R-390

Someone on the list used to modify the KC knob with a spinner. I remember seeing a picture of one, but have lost track of his address and name. Does this ring a bell with anyone? The other question is whether anyone has made a geared KC knob to slow down the tuning rate for SSB and CW work. I was laying in bed working out the gearing arrangement for such a critter this am. Must be some type of fever. Oh yeah, its called boat anchor fever!

Date: Fri, 15 Sep 2006 12:41:07 -0400

From: Miles Anderson <k2cby@optonline.net>
Subject: [R-390] Spinner knob for R-390

I answer Randy's question reluctantly for fear that I will draw fire for maiming a museum piece. But yes, I have successfully done a "slow tuning" modification for the R-390A. Of course, it involves boring a hole in the front panel and modifying the front sub panel.

I will be happy to post the shop drawings (if I can find them) if anyone can suggest a site or I will e-mail them to anyone who contacts me off list. The modification requires a machine shop or a VERY careful hand with a drill press, plus disassembling the front panel and the front sub-panel. When completed, it provides a tuning rate of about 15 to 20 kHz per turn (as best as I can recall) for CW and SSB. In addition, the "sense" is correct.

That is, you turn clockwise to increase the frequency. I used one precision anti-backlash gear from Winfred M. Berg Co. that cost quite a few bucks 20 plus years ago when I did the work. Beyond that, all you need is a shaft, a couple of bronze bushings, an aluminum plate, three stand-off posts and a knob.

Date: Fri, 15 Sep 2006 18:30:26 -0400
From: "Drew Papanek" <drewmaster813@hotmail.com>
Subject: [R-390] RE: Spinner knob for R-390

I added a spinner to the KC knob on my '67 EAC a couple of decades ago. I spotfaced an area near the edge of the knob, drilled and tapped a hole. The spinner itself is a Torrington roller bearing cam follower having a threaded stud screwed into aforementioned hole. It looks neat and works well, as well as a spinner on an R-390x could be expected to work... With even gentle cranking the KC counter digit wheels bounce all around and make a hellacious rattle. I would not expect the counter to last long with that kind of abuse. I use it still, but turn it no faster than about the speed one could get without a spinner. If you want a spinner for ergonomic considerations when tuning normally, then do it. But give up all aspirations of bandscanning huge chunks of spectrum with deft flicks of the wrist.

Date: Fri, 15 Sep 2006 18:59:57 -0600
From: "SAM LETZRING" <sletz@msn.com>
Subject: Re: [R-390] 390A---and a bedside radio

Transoceanics are great as both a bedside and a dining room radio. I have rebuilt 6 or 7 of them (have a bunch more in the attic). I have put in a solid state 90 V PS for the plates and run them off 12 V Lead acid batteries (solid state regulator for filaments) Great sounding radio!

Date: Sat, 16 Sep 2006 09:28:58 EDT
From: R390rcvr@aol.com
Subject: [R-390] Slow speed KC knob

I posted the original question about a geared, fine tuning drive for the KC knob. I would also incorporate a spinner for faster cruising too. I still would appreciate any input on the geared knob idea. Miles was nice enough to share his execution of a panel mounted conversion, which I am very interested in, but would also like to explore a true knob contained system, that could be moved from radio to radio without modifying the rig. Yes, I have seen the R-391 and R-389 autotune. I think the mech. will hold up OK to fast band scanning. Perhaps a bit better on the R-390 because of the heavier gearing compared the the A. Would have to be careful about the 10 turn stops!

Date: Sat, 16 Sep 2006 10:09:59 -0500
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] Slow speed KC knob

That's why the 389 has a slip clutch in the drive and knob. The 50 turn PTO has more rugged stops than the 390. Things people do to destroy 389s: Replace the knob with one without the slip clutch, then break a stop and bust the PTO core. Maybe use an electric drill on the knob shaft. Oil the clutch so the motor can't turn the gears.

Date: Sat, 16 Sep 2006 17:53:19 +0100
From: "Lester Veenstra M0YCM" <m0ycm@veenstras.com>
Subject: RE: [R-390] RE: Spinner knob for R-390

Yes I have, since I have one. By the way, getting back to that thread. The Veeder Root turns counting mod you have seen for the BFO knob, does exactly that function, fine precise tuning.

Date: Mon, 18 Sep 2006 11:59:07 -0400
From: <peuhs@bellsouth.net>
Subject: [R-390] Fred Osterman

Just a short question set here: I have the Third Ed. of the: "Shortwave Receivers Past and Present", but of course the est.s. are way off.. Is another ed. available...? Or planned?,.. Has any supp. publication been prepared, in particular a price list?..or if not: What might be a average % figure "ACROSS THE BOARD" to add to the GENERAL BULK of the items for updating evaluation?..(Understanding that many variations would of course, be possible for many sets..In particular the more rare items...). My Thanks...I just have an Op. to buy a couple of items this week, and am not sure, even

checking eBay...(which actually says little anyway, in real pricing)...

Date: Mon, 18 Sep 2006 11:12:43 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] Fred Osterman

Fred told me over the phone sometime around April that he was working on the next edition, but wasn't at all sure when it would be on the market. He'll sell one here if I have the cash, and I expect I will.

Date: Mon, 18 Sep 2006 15:19:23 -0700
From: "Ken Kaplan" <krkaplan@cox.net>
Subject: [R-390] Re: Parts

Go to http://www.qsl.net/kb7rgg and click on General Info and then Source list of all Kinds of Electronic Mechanical and Surplus Parts. You'll find a large and current list of parts sources.

Date: Mon, 18 Sep 2006 18:46:13 -0400
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: Re: [R-390] Re: Parts

Dana, here are three good sources: Radio Daze (www.radiodaze.com), Fair Radio (www.fairradio.com) and Antique Electric Supply www.tubesandmore.com). I've done business with all three. They are reliable and get the parts to you pretty quickly.

Date: Mon, 18 Sep 2006 19:48:33 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Parts

You have done the right thing. You join the QTH reflectors for topics of your interest. When you need a part you do some E-mail on the reflector and ask for what you need. Be careful of what you ask for less you receive exactly what you ask for in the mail. Many many Folks read the reflector and will respond with parts when you ask. They do not set here and advertise. Return on investment does not cover cost of advertising. You will likely get a personal mail back so it does not fill everyone else's in box. We may like to read the mail but lots of transactions just is not fun to read.So the business gets done one on one off the reflector. Let a request go a couple days and see what you get. Not everyone reads the mail every day.

The R390 list will get you R390 parts. Other brands have lists as good as the R390 list for their topic. Do some goggle searches to find some small part houses for new parts to do your one build it items these days. The problem with on line parts is doing enough to spread the shipping cost

over the parts to make it worth your while. I use one and only one credit card on line. If it ever blows up I will know where it went bad. I keep it paid off and suffer no charges for using
it. As many bad things as we say about Radio Shack, they still stock many things. Try their on line catalog as you can go shopping from the keyboard.

James Electronics
Gateway Electronics are on line.

Allied, Newark and McMaster Carr are big houses. Expect a high minimum order.

Date: Tue, 19 Sep 2006 07:57:09 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Parts

I typically use Mouser or Allied Electronics. The only remaining electronics parts store here on the coastal area within what I would consider reasonable driving distance closed up after Hurricane Katrina never to return. Radio Shack is pretty much useless....I've even quit going in to check...pretty much like our local K'mart. We laughed when the hoisted up the "Big K'mart" sign a few years back onto our tiny little store up in my neighborhood. Nothing else changed but the sign....can't find anything I usually need there...but that's another story for another list I guess.Check here....both have good online catalogs.....
www.mouser.com and www.alliedelec.com (I think Mouser has no minimum order..)

Date: Tue, 19 Sep 2006 09:14:49 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Parts

> Where does one locate "parts" for old radio's now a days?

Don't know much in the way of local sources, but lots of places on the interweb: Digikey and Mouser are well-known parts suppliers. Mouser tends to have more high-voltage ceramics than Digikey, more axial-leaded parts, and more old-timey hardware (e.g. knobs, pots, terminal strips, lugs, etc.) Both deal pretty well with small orders (although shipping isn't free and of course will dominate the cost if you're buying one five-cent resistor!) For consumer-type radios, MCM electronics does a pretty good job with belts, knobs, etc. although I've had very little success navigating their website lately. Antique Electronics Supply has a pretty good selection of tubes, sockets, some caps and resistors, etc. for receivers/consumer stuff. They don't have the cheapest prices although in my experience most of AES's prices are cheaper than what local electronics shops were charging

in the 70's. They're on the web at

http://www.tubesandmore.com/

Date: Sun, 24 Sep 2006 13:13:59 -0400
From: "WD4INP" <WD9INP@isp.com>
Subject: [R-390] Imperial R-390A Excessed/Surplussed by Which Branch of DOD?

I've come by an R-390A that I really want to know which branch of the military or other agency excessed it. It's not Navy or Coast Guard. It's probably not Marine Corps. It could be Air Force, but I have an hunch it's Army. The contractor is Imperial and the contract is 37856-PC-63.

Here's what's on a white paper tag on the receiver's back panel:

"5820 00 7555 B441 CC 0029
5820 01092 8435 709B00A [bravo oscar oscar alfa]
RECEIVER R-390AURR 2221"

The second line is divided in a strange manner, and means "5820-01-092-8435". That's a National Stock Number that definitely is a one-for-one ID for the R-390A/URR. The "01" indicates the country that awarded the contract for manufacture is the US. I know that "00, and "01" indicate the US, "28" indicates Canada, and "99" indicates the United Kingdom. NSNs are a creature developed for NATO. I know that some clown out there (Smile, Chuck!) can tell dead certain which branch excessed the set. Also, Federal Stock Numbers (FSNs) were converted to NSNs along about 1970, and I think that the receiver probably was excessed not long after that. Also, other agencies besides DOD can issue NSNs to anything, including Tupperware I suppose that's all pretty arcane information, and few people would give the south end of a north-bound rodent about it. And that proves that I'm a lunatic. Dead certain.

Date: Sun, 24 Sep 2006 12:48:45 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] All Hands Stand By While Arcing and Sparking Slug Rack

That's what I use here, a gen-yoo-wine long shaft 1/8 inch Xcelite "greenie" Works fine every time. Most of the time, since the shrink tubing wears every now and again. Bzzzzpp... and a canful of 2.2k resistors.... heehee

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Date: Sun, 24 Sep 2006 13:05:25 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: Imperial R-390A Excessed/Surplussed by Which Branch of DOD?

IIRC that's a USAFMARS inventory tag, isn't it? Some branch of MARS, my mostly foggy brain is trying to remember.

Date: Sun, 24 Sep 2006 20:31:11 -0400
From: "WD4INP" <WD9INP@isp.com>
Subject: [R-390] AF MARS record keeping, and "chains of custody"

Thank you, SIR! That makes sense. The receiver looks as though it was treated well. Do you know anything about AF MARS and whether they kept record of which command surplussed the receiver? (I think when a term gets out into the civilian world, the military feels the need to come up with a new word, e.g. [to] "excess" [something].) I got the very last R-F deck that Fair Radio had, and it came with the MC CHANGE shaft BENT! I thought and thought about what circumstances might cause someone to handle equipment like that. It had some problems easily fixed that probably got it separated from the rest of the set. Since an R-390A/URR was generally considered "high value,"anyone caught manhandling a set or part of it would be in trouble. It makes me think that perhaps the situation was that nobody cared. Like maybe a hasty withdrawal from Vietnam. It had corrosion consistent w/a tropical climate. I guess you can see where I'm going with this. I would like to be able to reconstruct the "chain of custody" of a set like the R-390A.

Date: Mon, 25 Sep 2006 18:09:04 EDT
From: Flowertime01@wmconnect.com
Subject: Imperial R-390A Excessed/Surplussed by Which Branch of

DOD?

Do not loose that tag. I think the 2221 is your serial number and should agree with the tag on the front panel if it is still there.

Date: Tue, 26 Sep 2006 15:59:41 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] Some practicalities on alignment of the R-390A/URR

I think I found an answer to my question looking through the Radio Daze catalog. They have a very nice set of insulated screwdrivers that are reasonably priced.

Date: Tue, 26 Sep 2006 15:44:51 -0500
From: <r390a@bellsouth.net>
Subject: [R-390] R-390/URR - R-390A/URR Handbook by Paolo Voappiani?r

Back about, oh, ten years or so ago, Michael Crestohl did a review on an interesting book with the title above. There was some talk about it, and I think some folks on the list - the boatachors list back then - even bought a copy. Since then, there hasn't been much said. Some folks were going to help the author translate bits of it, etc. It was a very interesting and exciting book as it gave examples of a factory SSB modified '390A and other goodies. That was ten years ago.Now, according to the publisher, Books In Print, interlibrary loan and every other tool by library assistant wife can get her hands on, that book does not exist, nor did it ever exist. I've seen photos of other folks copies, I couldn't afford one at the time though. If I don't get at least one reply from another old-timer, I'm going to start up another kielbasa/damp-sheep/ballast replacement discussion. This assumes there are any more of us left...

Date: 26 Sep 2006 21:01:35 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: R-390/URR - R-390A/URR Handbook by Paolo Voappiani?r

Also, from http://209.35.120.129/faq-refs.htm :

Books R-390/URR - R-390A/URR Handboook by Paolo Viappiani, 1996, ISBN Number 9-789705-648898, published by Editrice Il Rostro, Milan, Italy (The book is written in Italian)

Date: Tue, 26 Sep 2006 18:26:19 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] R-390/URR - R-390A/URR Handbook by Paolo Voappiani?r

That book will be published once again and in English. I can't say when, but it is in progress now. I can't say anymore. Les Locklear

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Date: Sun, 1 Oct 2006 19:26:33 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] To those that need depot-rebuild PTO's

Apparently BM Japan still has "newish" PTO's for the R-390A, I was going over my bookmarks and took a looksee to see what they had. It's a shame the dollar to yen rate is lousy right now -- $67 for a good PTO. But still, it's most likely cheaper than ebay. And yes, they ship worldwide.
http://www.bm-japan.com/Parts.htm
Run it through google's translator for a rough approximation, or email the owner for info, he's prompt with emails. It's a nifty place, be sure to check out the main page if you're into other green radio stuff or to take a look at the owner's "dxpedition" pix.

Date: Mon, 2 Oct 2006 09:00:20 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] IERC Tube Shields & R-390A parting...

Guys I think the seller is one of our own here on the list....Jerry Kincaid (spelling?) out in Mustang OK. W5KP He's a good guy and I think has been on this list in years past and may still be on the list. I know he's on the Johnson list. I don't search on Collins but I do search on R-390* quite often and saw them earlier in the week with that search method...

On another subject it looks like the parting out of R-390A's is becoming fad now that Fair's supply has about hit bottom. Looks like some of the folks that have been sitting on a group of radios has decided there is much more to be made selling the parts than the whole radio...Sad situation....

Date: Mon, 2 Oct 2006 10:54:22 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] IERC Tube Shields & R-390A parting...

While I would not part out any of mine, I reached that conclusion months ago particularly for the NonA version. I've seen PTO's or IF modules go for as about much as a complete radio. While IMO the NonA is a better radio, it doesn't seem to bring as much as the A. The parts do seem to bring more.

Date: Mon, 2 Oct 2006 10:19:44 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: [R-390] NonA version?

The last time I checked this out, I was unable to find a NonA version listed anywhere in Government inventories or a NSN or the older FSN for a NonA. Is this part of the dumbing down of America? There were two versions of the R-390 series receiver built, not counting the autotune models and several variants.

1. R-390/URR, this was the original receiver built by Collins and also produced by Motorola.

2. R-390A/URR, This was the "cost reduced" version with mechanical filters.

Not very difficult is it? Or, maybe it is for some.

Date: Mon, 2 Oct 2006 10:41:41 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] IERC Tube Shields & R-390A parting...

The big interest in the R-390\URR IF deck is those folks that want to put one in their R-390A. I think that's the only reason for the demand and the high prices. Spares to keep the early R-390 is also an issue I guess with no supply out there but they are more dependable than the "A" in my opinion..at least before the "A" is restored with better caps. I've also experienced the same with the values of the R-390 vs the R-390A...never have figured out why it's that way. I've sold a couple of both and always gotten more for the "A's" I guess it's because of the fear of not being able to get parts when needed because there was still a source for "A" parts but none for the R-390.

Date: Thu, 05 Oct 2006 08:09:34 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Stainless steel panel screws and conical nuts

The "conical nuts" you talk of are really the conical star washers? I had no problem at all taking a flat star washer and mashing it into a cone with the countersunk holes. The "panel screws", are these the rack-mount screws, along with the dress washers? Those are just standard 10-32 hardware, if you really want the "rack mount" versions you can buy them from Bud or Hammond, but any well-stocked hardware source will have these. Clearly what you're asking about must be the rare-hard-to-find versions only obtainable on a full moon at one location deep in the woods, but the only answers I have are standard hardware store stuff

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Date: Thu, 5 Oct 2006 18:54:03 -0400
From: "Charles A Taylor" <wd4inp@isp.com>
Subject: [R-390] The significance of "MFP" .

What is the significance of "MFP" as stamped on the side of an R-390A/URR assembly?

Date: Thu, 5 Oct 2006 16:09:03 -0700
From: "David Wise" <David_Wise@Phoenix.com>
Subject: RE: [R-390] The significance of "MFP" .

Mold and Fungus Proofed

Date: Thu, 05 Oct 2006 19:17:18 -0400
From: jcoward5452@aol.com
Subject: Re: [R-390] The significance of "MFP" .

Moisture and Fungus Proofing.(Mold is fungus). Some call it More F@#%*ing Paint!

Date: Fri, 6 Oct 2006 17:22:56 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] FYI: Msg From Fair Radio re Dial Window Flaps/Covers

Folks had mentioned dial covers. This was in my latest email back and forth with Fair Radio. I don't think they sell them outright anymore unless you were to go by the store and pick one up in person. They've been putting things like that on Ebay piecemeal....

Date: Fri, 06 Oct 2006 19:29:39 -0400
From: jcoward5452@aol.com
Subject: Re: FYI: Msg From Fair Radio re Dial Window Flaps/Covers

That's how I got mine a few years ago.

Date: Sun, 8 Oct 2006 17:41:59 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Calibration

I am always willing to entertain insane as the cause of any problem. I often closed the paper work on trouble calls with an adjustment of the operator head spacing. Likely something went south. You were working on other parts and did not give some little item the attention it though it should get. Now its having a snit. You will just have to track it down and give it its due attention. Likely has nothing in common with what you were doing other than you and it exist in the same instance of God's creation. Just because you were touching it does not mean you caused it.

There is a whole front panel procedure for trouble shooting. You will need to learn it. You do not learn it with a once through. It comes from lots of repetitions. Tubes and connectors get you most frequently. Connectors are easy cures with a resetting of the plug socket pair. Tubes are much more problematic.

Tubes will test good in the tester. This does not make them OK or better. You do need to test tubes in the tester to weed out the plain NO GO's, and shorts. You can see the blue gas glow with the tubes in the receiver.

You may need to do a round of Deoxit on the tube sockets. This stuff takes the crud out of the contacts. If there is a dishwashing machine at hand and other parties are willing or not home, you can run the subassemblies through the dishwasher. Then let them dry naturally for a day or two. This will help clean up the sockets if you are having problems. Pull the tubes. Leave the covers on the IF transformers.

If you do the RF deck. Pull the slug racks and R F cans off the RF deck. Also

pull the variable I F cans and slugs off the RF deck. You can pull the covers off the R F cans and just wash the covers.

Pull the cover off the crystal osc crystals. It is lined with fiberglass and you do not want to soak it. Also pull the cover and fiberglass off the VFO you can then wash the cover less the fiberglass.

Weak cal tones and weak signals can come from any stage having a tube go out. Any sorry pin on any socket can give you the same low output. So as a new owner a good cleaning may be in order. If the receiver is clean and looks good, then you need to go to level two of inspection.

Start rounding up as many spare tubes as you can. Whenever and however you get a chance to pick some up as used or loose collect what you can get. If you need some spares, ask here on the net to buy a few known good used ones at some reasonable prices plus postage.

You mostly set up a signal generator for input and a meter for output. Then you swap as many tubes of a type you have into the same socket and compare them same input and best meter level output. Later you will find tubes with great output levels are also more noisy then some mid range meter readings. Grade them high to low. Think about the signal path through the receiver and put the best of the type forward. You the most forward socket for the type as the test station for a type of tube. The front end 6DC6 is the only one of a kind. Run all your 6DC6's and find the best one.

As you pull tubes to put in the best of the spares, then test the ones you pulled. Save the very best one. put in as many spares as you can. Compare the pulls with the best one you saved. After you change a few tubes, The test station changes. Your changing tubes in the receiver. You need a tube from the old batch to compare the new batch to. You will start finding tubes that read about the same in the tube tester have a whole range of performance and noise in the receiver. If you think you have a bad tube, the school house procedure is to put 150 UV at 455 with 30 modulation into the IF deck and read -7 volts on the diode load by adjusting the IF gain. You also hang a 600 ohm resistor on the Local audio output terminals and measure about 1/2 watt out. About 30DB on the DB scale of your AC volt meter.

Lets call it 7.74 Volts AC

When you turn the modulation off the audio output had better be 30 DB lower than with the modulation on. You may have the 1/2 watt but the IF and audio section is noisy. Here you start swapping tubes in the IF and Audio deck until you get a good signal to noise ratio it you get to 28, 29 OK. If you get over 30 very good.

This is the 1/2 way point in the receiver. You do the test and get a go no go.You start working on the IF and Audio or you know you have good IF and audio and can go back to the RF deck.

Most likely a tube went from OK to weak on you. Maybe just pulling them and reseating them will get you back to where you were. If this does not work then start at the IF deck test and see how that goes.

Do you have a copy of the Y2K manual from off the Internet? It is a must read for any R390 receiver owner. Roger AI4NI

Date: Mon, 09 Oct 2006 08:42:03 -0600
From: DW Holtmnan <future212@comcast.net>
Subject: [R-390] Parting out R-390A's

This weekind one Ebay seller parted out a complete working R-390A. He sold everything, meters, knobs, case, front panel and all modules. He received $854.72. A complete working R-390A probably would have sold for a similar price, maybe a little bit less. I know that we need parts/modules to keep this gear running, but I hate a working radio tore apart for parts profits.

Date: Mon, 9 Oct 2006 10:52:53 EDT
From: R390rcvr@aol.com
Subject: Re: [R-390] Parting out R-390A's

It is a shame. There are some radios that are so damaged or have so many problems that it just doesn't make financial or time sense to restore. And yes, it is nice to be able to buy just the part you need, and know that it came from a working radio, versus potluck, but I hate to see it happen. eBay has not been kind to our radios in that regard. And yes, I do occassionally sell parts, but I have never broken a working radio to do so!

Date: Mon, 9 Oct 2006 11:17:26 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Parting out R-390A's

I agree DW but until buyers are willing to spend more for a complete radio than the sum of it's parts it will remain that way. Also sold that way if there were problems with the radio no one will ever know...except the guy that ends up with the module that had the fault. You list a radio with an issue...as small as it might be to someone who can fix the thing, the price takes a nosedive. (I guess that is why many are listed as "I didn't power it up as I don't have any way to test it".. or "I don't know anything about these") personally try not to pay more than $350 to $400 for a complete

surplus radio in unrestored condition. Usually less. As anyone that has done one properly can attest there is a lot of work involved....enjoyable work but work none the less. A fully restored R-390A can bring upwards of $1500 to $1700 on the auction site...if one is lucky. Usually closer to around $1200. The R-390 is a different and strange story. They usually bring less even though they are a good bit more on the scarce side. Restored they seem to go for around $850...not sure why but that is the case. When you consider the labor involved it don't take much math to figure out how much you can pay for a used but restorable radio and break even on the deal.

With parts availability running out from the usual suppliers whole radio's being privately held are paying the ultimate price by being sacrificed for the almighty dollar.... Laws of supply & demand I guess....

Date: Tue, 10 Oct 2006 11:22:05 -0400
From: flood@Krohne.com
Subject: [R-390] Re Parting out radios

Perhaps I'm just worried about heating my house this winter, but if someone (hint DW) wanted to pay around $800-$850 for my working 67'EAC R390A with glowing meters and covers I'd be seriously tempted. I could live with just the R390 and the buyer could keep the low cost A whole, part it out later, or make a table out of it. I didn't buy it as an investment but at some point I'd be willing to cash in. It looks like that time is almost here. Waiting for the flames, I remain,

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Date: Tue, 10 Oct 2006 10:45:02 -0600
From: DW Holtmnan <future212@comcast.net>
Subject: Re: [R-390] Re Parting out radios

I understand the finances of parting out a radio, I even mentioned that it can be good for the hobby to make parts available for other radios to work again. As long as it is not heading for the land fill. I just kind of hate to see good radios tore apart and sold. This is just my personal opinion, not a slam on others. Everyone has the right to do with their gear as they seem fit.

Date: Tue, 10 Oct 2006 14:05:08 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Re Parting out radios

All good comments from everyone. My opinion is it is better to part out one good radio and possibly get five or ten other broken radios working than it is to keep one complete radio and leave ten others out there not working. I am sure the military did the same thing many times to keep their radios

working. Also I am thankful to Ebay for helping to make these obscure items more available to everyone. I bet there are many times Ebay has encouraged someone to put a radio sitting in a cellar or attic somewhere up for auction instead of sending it to a landfill, even if they didn't understand exactly what the radio was or how it operated. 73 Todd WD4NGG

Date: Tue, 10 Oct 2006 18:46:20 -0400
From: Scott Bauer <odyslim@comcast.net>
Subject: [R-390] Parting out radios

I have 2 that I need parts for. With hope something will show up here on the list. Since we are on the subject, I need a good set of EAC side panels. Fed-Ex ruined what I would have called a museum piece radio and I have seen a lot of them. I also need a nice EAC filter cover for the IF strip. Any sellers? Scott

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Date: Tue, 17 Oct 2006 23:03:48 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Rust Removal "best practices"

Glass bead blasting.....

Date: Wed, 18 Oct 2006 07:44:24 -0500
From: glwebb@gundluth.org
Subject: [R-390] Re: Rust removal

http://www.rustbeeter.com/

Date: Wed, 18 Oct 2006 21:53:21 -0600
From: DW Holtmnan <future212@comcast.net>
Subject: [R-390] Modification?

Saw this on Epay and was wondering if anyone knows what the mod is? It has inputs for 2 L.O.'s and a Sync. Th Ebay tracking number is 200037599271.

Date: Thu, 19 Oct 2006 00:14:50 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Modification?

It looks like an R-1247/URR variant of the R-390A. These had external inputs for the 1st, 2nd and 3rd Local Oscillators on the rear panel that were provided by an external synthesizer for high-stability operation and were supposedly used by NASA in the Apollo space program. The radio can be tuned like a normal R-390A without the external synthesizer. Several small relays inside switch it over for use with an external synthesizer

when needed.

Date: Wed, 18 Oct 2006 22:25:09 -0600
From: Transmaster <22hornet@gmail.com>
Subject: [R-390] New Radios to the collection

Switched my R390 address over to my G-mail account: I am going to have an interesting ability here next week, I am getting a pair of Sunair R-9200 radios. It is going to be interesting to do an A-B comparison between My 67 EAC R390A, and these R-9200 receivers. I was reading up on the R-9200 and it, of course, has excellent spec's. What I find interesting is the basic performance of the R390A is right up there with the R-9200. The R-9200 beats out R390A with much newer technology, computer controls, better filtering, etc. As has been pointed out on this forum many times R390A demonstrates just how good a vacuum tube receiver can be. I am going to have me some fun.

Date: Thu, 19 Oct 2006 01:32:49 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] Modification?

Yea, it's got the rear panel for it, and from the pictures there are some of the cables inside. I wonder if all the "guts" for the rest of it are there? Only the radio is collectable. Used to be folks like Rick Mish would remove and toss the adaptors and other things that were inside.... myself, I have the synthesyser decks, but I'm not sure I'd ever use it either since you still have to tune the radio to frequency THEN tune the very noisy 60's vintage frequency synth decks. Interesting thing, weren't the 1247's (I apologize to Barry for the typo, I'm really asleep right now) normally later model radios? The Manson radios I've seen looked to be 1967 EAC's - or at least later than what appears to be either a 56 or 58 Motorola (with an R-390/URR long tag to fill the empty space).

At least this one has the audio transformer problem solved, like what's been discussed here on the list. Looks like there is one of the small 600:8 ohm can transformers mounted on a bracket just underneath the terminal strip behind the power supply.

Date: Thu, 19 Oct 2006 06:26:16 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] Modification?

Don't they also use some R-390 modules because the corresponding R-390A modules aren't phase-flat and so would have made the radio less usable for D/F-ing?

Date: Thu, 19 Oct 2006 18:55:55 -0400
From: "John Vendely" <jvendely@cfl.rr.com>
Subject: Re: [R-390] Modification?

It's apparently widely believed that the R-1247 was developed for NASA for use in the space program, but this is incorrect. An acquaintance who worked for a NASA contractor in those days once told me that they had indeed tried using a few R-1247s, but only briefly. The associated frequency synthesizers were extremely unreliable, and NASA removed them from service after only a short time, due to the constant problems.

The R-1247 appears to have been originally developed by Manson Laboratories as part of the AN/GRC-129, intended as an improvement on the AN/GRC-26 RATT van. The transmitter for this set was a T-368 modified for SSB, which contained a synthesizer similar to Manson's commercial MHS-400 model, plus the CV-1695, a sideband modulator/frequency converter, also designed by Manson. This synthesizer/modulator/converter arrangement was also very similar to a SSB conversion done by Manson on the Collins AN/FRT-24A. Manson also later marketed their Model 299 synthesizer, also designed for the R-390A, which featured an extra loop providing 100 cps steps.

The Manson Laboratories synthesizers were all variants on the same theme--a serial injection, multi-loop phaselock design developed by them some years earlier. They were state of the art for the early 1960s, particularly in view of their relatively small size, but were notoriously unreliable. Although they solved the R-390A's problems with long term frequency stability, use of these synthesizers greatly degraded its phase noise, one of the R-390A's greatest strengths. The R-390A really is a much better receiver without the external synthesizers.

I have several different types of these old synthesizers, and although they're fascinating and fun to work on, they require constant fussing to keep them operational. They must have been particularly difficult to deal with in a military environment...

Date: Thu, 26 Oct 2006 21:43:14 -0400
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: [R-390] My First Restoration

Thank you, everyone, for your responses on my Vitamin Q question. I'm going to leave them alone. This is my first R-390A. Here's where I'm at:

1. When I got the set, the owner told me it was working but needed recapping. When I first listened to it, I agreed. It sounded lousy.

2. I removed the AF deck and looked around. The problem was pretty obvious. C-603 and C-606 had been reversed. In other words, it had 30 mfds where 45 mfds should be, and there was a two-section unit where a three-section unit should be. Putting them in the correct sockets made things a lot better. Replacing the filter caps made things ever better. It sounded like an R-390A!

3. I replaced C-609, the infamous exploding cap. It had left its tell-tale stain on the circuit board.

4. I checked the resistors. All were within 10% of their stated value. As I looked around the set, I saw that this was a low-mileage set (EAC 1967). Very clean. No gunk on the gears. No hacking.

5. One of the 6AK6s in the AF unit tested weak. I have a new one on order. The voltage check point on the AF deck measures 150V, just as it should.

6. The prior owner had replaced the killer cap in the IF deck with an orange drop so I don't have to worry about that.

My next step will be to remove the IF deck and check the resistors and caps in there. I'm curious to see what I'll find.

Date: Thu, 26 Oct 2006 22:52:25 -0400
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: [R-390] C-103

Another newbie question: I was looking at C-103, the 50 mfd/50V electrolytic on the back wall of the receiver. Here are my questions:

1. How can I determine the polarity of that cap? Is negative the lead with one wire attached or two attached?

2. What does C-103 do? I did not find it in a quick perusal of the schematic.

3. I measured mine. I did not detect any voltage on either prong. Each prong seemed to measure continuity to ground. That has me concerned.

Date: Fri, 27 Oct 2006 23:04:51 -0500
From: "Chuck Curran" <ccurran@wi.rr.com>
Subject: [R-390] An CW Evening with the R-390A

I have only posted 2-3 previous messages to this list, but tonight I had to comment on a pleasant experience with my R-390A. I have a Capehart 1962 model that an 84 year old Uncle gave to me in the spring of 2005. I spent that summer of 2005 "picking through it". I recapped it, realigned it,

and ended up wit a BFO problem, that was tracked down to a plate resistor 10K high. That got fixed fast. I followed the list commentary closely over the last 18 months, yes, lurking, and I really came to appreciate the experience and technical expertise that was so willingly shared with all. Thanks! I was licensed back in 1963 and simply dropped out around 1975 and then got the R-390A, and a Heath SB-101 in the spring of 2005 from my Uncle. I rebuilt the SB-101 first and got on the air. It was nice but I then quickly purchased an Icom IC-743 in March of this year and I was amazed at the enhancements available - ya, I was really out of touch! However, the hook was again set. The entire point of this posting is that tonight I had the R-390A on a 70 foot long wire about 20 feet off the ground and the Icom was on a 250 foot long wire 45 feet above the ground with an Icom AH-4 in-line tuner making the transceiver happy. I just happen to decide to compare the two. I tuned into W1AW on 3580 Khz with the Icom and the big antenna, then also tuned in using the 390A on that little antenna. As a FYI, I am in Wisconsin. I was quite surprised at how much easier it was to copy CW on the 390A - probably not news to this group, but I was still totally amazed. I would never want to use the Icom for CW when the Collins was available, the Collins being at least 3-4 times better. It actually just smoked the doors off of the Icom, which did a nice job, considering I have not mentioned it had the standard filters and no optional added benefits. With the 390A using the 1 KHz band pass, it was dramatically easier to copy the signal, even though both receivers had very, very strong S meter readings. Glad I now have a shelf full of spare 390A tubes, it should keep me going for a long time.

Date: Thu, 02 Nov 2006 10:18:32 -0500
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: [R-390] Wonder tool: Ignition wrenches

I went to the local Sears last night and bought a pouch each of metric and inch open-end ignition wrenches. Previously I had been using nutdrivers where possible to grip all the myriad nuts and spacers and control washers etc. around my radios and other electronic miscellany. But where not possible (which was more times than not) I ended up using needle-nose pliers, which was far from ideal. But the ignition wrenches are so so much better where a nutdriver is not possible.

The Sears inch set covers all the nut sizes from 2-56 up to the nuts used to hold controls onto panels. Each wrench has two ends at different angles that covers most all the situations. They aren't super-duper thin but are a very useful compromise between thinness and small-diameter head. Best $16 I ever spent! I could imagine a super-duper micro-mini socket set being useful for electronics work, too, but still haven't located one. I have a generic 1/4" set that goes down to 3/16" which is small enough for the hex size, but it just isn't all that useful working inside a chassis filled with

parts. With adjacent parts and terminal strips it's unusual for the socket head to actually be able to clear everything in the chassis and get over the nut. When I'm building from scratch, they do great because then I can tighten up everything before I put in the parts and wiring.

What I might end up buying are deep recess sockets for doing control nuts and nuts on front panels etc. Maybe what would be useful inside the chassis is a really thin-wall socket set, don't know if such a thing exists, probably would not be a standard drive size like 1/4". Thinner wall nutdrivers would be moderately useful too (I say that with caution because the most frequent failure mode in my shop is for me to crack/rip/distort beyond usability the business end of a nutdriver.)

Date: Thu, 02 Nov 2006 09:35:48 -0700
From: DW Holtmnan <future212@comcast.net>
Subject: Re: [R-390] Wonder tool: Ignition wrenches

Speaking of tools, Harbor Freight sells a set of four picks for around $3.00, they have a bright green handle and are located at the front of the store by the check stand at the local store, by my house. They are great for many uses. There is one straight and three different curves. I use them for a soldering aid, a pick to poke around in wire bundles, parts etc, and the large curved one is the best tool that I have ever used for putting springs on the racks of R-390's. It will reach down to the RF Deck, grab it and put it in the hole for the rack spring. For a spring tool alone is well worth the price, YMMV.

Date: Fri, 3 Nov 2006 10:34:31 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Ignition wrenches II

<snip> ... When I was repairing medical equipment I used the same type of wrenches from Sears. I had some narrow spots to reach so I judiciously made them thinner using the side of a grinding wheel. The ones I ground down worked flawlessly. Two caveats if you do this: One, take your time so the wrench doesn't get red hot. Quenching it with cold water frequently helps. Secondly one should were a mask to as not to breathe in the chromium plating that is ground off in the process.

Date: Wed, 15 Nov 2006 00:49:12 -0500
From: Scott Bauer <odyslim@comcast.net>
Subject: [R-390] Remanufactured EAC R-390A's

I was speaking to Rick Mish on the telephone yesterday about a repair. When we were finished, he mentioned that he sells completely re-manufactured EAC R-390A'S. I believe he has 4 to sell. I have no business

interest with Mr Mish but I have seen radios (depot Dawgs) that are pretty sorry compared to what Mr Mish is selling. His radios are completely re manufactured, he stands behind his work and it is not just another for sale as is eBay sale. This this batch of EAC's has all EAC modules which is always a plus. My only reason for this post is I have seen people buy some pretty sorry radios for a horrific prices on eBay. There are still completely restored and serviced radios available for less if you know who to ask..

Date: Wed, 15 Nov 2006 08:28:38 -0600
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] Remanufactured EAC R-390A's

Rick sold me a remanufactured R-390 (Collins), and I have been fully and completely satisfied with it and his support of it. _Lovely_ piece of work!

Date: Wed, 15 Nov 2006 09:41:53 -0500
From: "Bruce Hagen" <b_hagen@sbcglobal.net>
Subject: RE: [R-390] Remanufactured EAC R-390A's

Rick did my Motorola 390 about two years ago now. Works great. It is obvious that he knows what he is doing and loves his work.

Date: Wed, 15 Nov 2006 09:02:05 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Remanufactured EAC R-390A's

I have seen some of Rick's work and for the most part it is pretty nice but to say that buying a completely restored and serviced radio from Rick is a way to get one for less is a little misleading. Did Rick quote you a price? If it was less than 2K I would be quite surprised. Rick's radios come from the same places most all of the radio's that are available for sale come from....surplus and I can't imagine many having not been through Depot at some point in their lives. Now for the purpose of generating the most interest in a radio and potential profit Rick might have assembled 4 complete, all EAC radio's from his large stock pile of stuff.

Certainly the 67 EAC is one of the most widely available late production radios.... but I have seen some pretty bad ones. It all depends on the life that was lived while in the service of the US military and for that period after it was discarded by them. My point is that buying a 67 EAC you are not guaranteed it will be better than any other. I've seen some early Collins that was in much better shape than some examples of EAC.

I believe he is doing a good job restoring radio's but to me the term "completely remanufactured" means a complete disassembly of each and every component of the radio (re-kitting), refurbishment of all physical

parts and hardware and completely rebuilding each module and reassembling the radio. Not speaking of removing each module and replacing bad parts as they are found, cleaning, lubricating and reassembly of the modules which is what I would call a restoration... other may correct me and that's OK too! I think the terms are misused quite often....usually by someone with commercial interest....(a seller)

It is financially infeasible to "Re-Manufacture" an R-390A IMHO as a business endeavor. A one off done by an owner for his personal use with no expense spared...yes!

Forecast: I think the days of the $350 surplus R-390A are over....that same radio is probably more like twice that in today's market. Fully restored radios should be expected to cost $1500 and up and I expect all that to climb sharply over the next 2 to 5 years....

It's sad but fact.... I would guess there are more than a few individuals sitting on a large pile waiting for just such a time as this, so I think we will continue to see availability for some time to come... Elsewhere I expect clearing skies in the south and dryer conditions as temps drop to more normal than we have seen in the past few days....all this once we get past the flash flood conditions of early today....:-) Cecil Acuff K5DL (ex WB5VCE) Smile....Life is great!

Date: Wed, 15 Nov 2006 19:51:13 +0200
From: "federico" <federico@dottorbaldi.it>
Subject: Re: [R-390] Remanufactured EAC R-390A's

I fully agree with Mike I bought from Rick an R-390/URR and I sent him an R-389/URR and in both cases I got back very very good receivers.

Date: Fri, 17 Nov 2006 00:05:14 -0500
From: Scott Bauer <odyslim@comcast.net>
Subject: [R-390] Rick Mish/ Radio Prices

A lot of people showed some interest in Rick Mish's radios. He has 4 for sale at $1250.00 each. These are not the museum quality remans. These are fully serviced washed and aligned fully functional radios. 2 are completely EAC. 2 have mixed modules. As I said I have no financial interest in Mr Mish's business so if there is any interest, he can be reached at 1-419-255-6220

Date: Fri, 17 Nov 2006 22:01:04 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Rick Mish Radio Prices

That's a terrific bargain. I've had to pay on average $450+ (not including shipping) for the last 3 "A's" that I bought that weren't even working. Chuck Felton gets close to a grand for his rehab of your "A" plus you pay shipping both ways which is now running close to $100 each way.

Chuck also was selling re-habbed SP-600's a couple of years ago for $2200. It was a nice radio and had a case. If I reman my radios including replacing all the caps and resistors and put them up for sale there will be at least a $2K minimum. And I'm retired I don't have to do it for a living. A HRO on epay just went for over $3,500 and it's matching speaker for over $800.

Cheap Charlie's can piss and moan all they want. If they did their arithmetic as well as they bitched (parts, skilled labor, test equipment) those 4 sets would be sold in a New York minute.

Date: Tue, 21 Nov 2006 05:06:17 -0800 (PST)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] 25 R-390A Receivers on Ebay!

That is old George Rancourt selling those.
Heckuvaniceguy.
He had a few very rare examples in his lot.

Date: Tue, 21 Nov 2006 09:39:31 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] 25 R-390A Receivers on Ebay!

Dittos, George is one of the nicest people I have ever dealt with. Nobody packs equipment better than he does, he knows how to do it right. I am sure someone will want to bring along their own truck to pick these up, but he doesn't say pick-up only so he might be willing to ship them to someone if they're willing to pay shipping costs or get a moving company to pick them up and ship them. 73 Todd WD4NGG

Date: Tue, 21 Nov 2006 10:06:16 EST
From: DJED1@aol.com
Subject: Re: [R-390] 25 R-390A Receivers on Ebay!

Wow! I showed the page to my wife and she said "no way" I visited George several years ago and bought some modules- he suggested I buy a whole radio or two, but I felt that if I got a complete radio I would wind up restoring it rather than using it for parts. It will be interesting to see what these radios go for "wholesale". Wish I had the room (sigh) Ed

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Date: Tue, 21 Nov 2006 14:35:34 -0600

From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] 25 R-390A Receivers on Ebay!

It appears one of the St Julien's Creek blue-stripers has a light gray panel with black lettering - top right pic, top right radio. Still has it's blue stripe. Wonder what else might be in there? Ahhhh, I remember the St Julien's Creek days. Fair Radio was offering theirs "used repairable" for around $185 or so. Them was the days.

Date: Tue, 21 Nov 2006 14:40:15 -0600
From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] George Rancourt Not Getting Out of the Radio Business

I had sent George an email after seeing that stack of radios listed on ebay. His reply – "GOOD AFTERNOON,THESE R-390As ARE FROM MY OWN PILE AND I WILL NOT GET TO THEM CONSIDERING THE MANY OTHERS I HAVE. TNX GEORGE K1ANX" Thought I'd pass it along

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Date: Tue, 21 Nov 2006 15:44:54 -0700
From: Transmaster <22hornet@gmail.com>
Subject: [R-390] sharing a link

I thought I should share a link to a specialized search engine I have used for several years. www.globalspec.com/ this outfit is a engineering search engine. If you are looking high voltage Cap's, or non resonate resistors, antenna stuff , you name it this search engine will find it.

Date: Wed, 22 Nov 2006 16:05:01 -0700
From: Transmaster <22hornet@gmail.com>
Subject: [R-390] Good deal!

Here is a great deal on milspec RG-59 $79 for 1000 feet
http://www.murphyjunk.bizland.com/imagelib/sitebuilder/misc/s

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Date: Tue, 5 Dec 2006 15:10:29 -0700
From: Transmaster <22hornet@gmail.com>
Subject: [R-390] A handy manual

Found this manual on line which looks to be of great use to people who use Military surplus electronics.
http://www.introni.it/pdf/Surplus_radio_conversion_manual_vol1.pdf"

Date: Tue, 5 Dec 2006 20:01:51 -0700
From: Transmaster <22hornet@gmail.com>
Subject: [R-390] Re: A handy manual

Here is a link to the other two volumes of this conversion manual.

http://www.mines.uidaho.edu/~glowbugs/SurpConv.html"
target=_blank >http://www.mines.uidaho.edu/~glowbugs/SurpConv.html
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Date: Mon, 11 Dec 2006 22:53:11 +1100
From: "Kim Briggs Echo Resources"
Subject: [R-390] R-390A build dates & serial numbers

Thanks for the bandwidth & the constant flow of R-390 info. I have an R-390A here in VK7 that is labelled as a Collins Radio built R-390A. The front panel ID shows it as serial number 4478 & is dated 1970. The ID plate is not as per the metal ones as seen on the earlier radios. It is an engraved plastic laminated plate about 73mm long & 36mm high. The second layer is white, so that when the characters are engraved, the black top layer is cut through exposing the white layer below.I have had a look at the various R-390A sites & don't see any mention of Collins produced radios from the 70's. Has anyone seen this type of ID plate before? The rear panel has a Collins WE logo stamped in red that appears to be part of the check process from the original build. I have quite a few Collins radios, but this is my only R-390A. It is complete, but has had some minor mods & some extra holes drilled in the rear panel. Otherwise it looks good, is very clean & has a great front panel with original meters.

Date: Mon, 11 Dec 2006 20:32:02 -0800
From: "Kenneth G. Gordon"
Subject: Re: [R-390] Oh boy... R-648 on Eb*y

I've had several ARR-41s over the years and I always thought they were superb little receivers. And also, not all THAT hard to work on...certainly not any more difficult than an R-390.

Date: Sat, 16 Dec 2006 08:52:46 -0700
From: DW Holtmnan <future212@comcast.net>
Subject: [R-390] Collins 32V-1

Wondering is anyone has any experience using the 32V-1 transmitter with the R-390A as a AM/CW Combo. Would a Dow Key be the way to go? What type of problems does the 32V-1 have? Is there anything special to restoring one? Thank you in advance for any help.

Date: Sat, 16 Dec 2006 12:40:26 -0700
From: Transmaster <22hornet@gmail.com>
Subject: Re: [R-390] Collins 32V-1

The 32V-1 is a great transmitter, I have a friend who has a 32V-2 it is fun

to use. OJ tells me there are nooks and crannies on it's underside that are a little hard to get too but no where near as bad as a SP600. Other than this they are not hard to work on except for the fact they are very heavy and leave your fingers crushed and bleeding if you are not careful. The 4D32 transmitting tube it uses is a good one. I have used my R390A for years tied to my Johnson Viking I, and II transmitters. I use a heavy duty Kendall T-R relay powered by the transmitter. It has dual contacts on the relay one switch's the antenna between the two rigs and the other is tied to the muting switch on the R390A, it works great.

One of the things I have learned which makes it so much easier to work on these old buzzards is old style typewriter tables. These are the small roll around tables with leaves on either side you can raise for more room. They have a lever which pulls the wheels off the ground so so the table will not move. Make sure you get the real old gray colored one with the welded frames; later ones with the chromed legs have light weight casters which can not handle the weight of a nice boat anchor rig.

Date: Mon, 18 Dec 2006 17:55:29 -0500
From: Rbethman <rbethman@comcast.net>
Subject: [R-390] Transformer baking Recovery

Most of us have power, mod, audio, and "other" transformers that have been "due to storage requirements", exposed to humidity. The 90 Deg C temp converts to 194 Deg F. This would seem to be a starting point for a multiple hour bake session. My Electric stove/oven has a 200 Deg F setting. I plan to make some baking runs on xfmrs for periods between 2 to 4 hours.

This SHOULD take care of "simple" humidity issues.

Dealing with REAL MOISTURE issues is someplace I've been. The year was 1975. My team and I were installing a replacement 1500KW, 4160VAC, 230A 60 Hz synchronous generator. We were located on the Island of American Samoa. The military transport folks, for reason never determined, had left this in an unprotected wood shipping crate. This crate sat OUTSIDE for about weeks in the summer tropical environment AND rains. We acquired about 12 floodlights, sockets, wiring, and plugs.

We removed the end bells and confirmed a "Depot Rebuilt" assembly that was indeed SOAKED. We baked it with the end bells OFF for two weeks in a water-proof shelter. Testing was performed with first a Megger, then followed by a "Hi-Pot". We determined that our effort was successful. Several days later, we installed it, aligned it with the prime mover, and then, crossing our fingers, started the generator, flashed its field, and achieved full output voltage. We did a careful step loading until we reached

full power of 1500KW 4160 3 Phase VAC at a power factor of 0.8. It was run for 72 hours in that condition.

It performed flawlessly. To MY knowledge, this piece of equipment operated for at LEAST four years without failure. Baking works! WE just shouldn't have to go to THOSE extremes to safely recover OUR transformers. Unless we have managed to let them get WET. Bob - NODGN

Date: Thu, 21 Dec 2006 05:54:51 -0500
From: "Bob Young" <youngbob53@msn.com>
Subject: Re: [R-390] Dial lights,

The wire for the light was a little short on mine and it broke off at the fixture (maybe due to inexperience) when I tried to put a new one in mine,

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Date: Thu, 21 Dec 2006 15:22:02 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Dial lights,

>The wire for the light was a little short on mine.....

This has been a problem since day two or whenever that first lamp died. The selection of a good flexible wire to "extend" the wire harness is in order. You may need to drop the front panel to do that operation and you will need a bit of shrink tubing to complete the modification.

Date: Thu, 21 Dec 2006 18:27:55 -0500
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] Dial lights,

The wire was probably not as short as it was brittle. If it was short. it was probably broken before because it was brittle. The wire insulation gets brittle near the end due to the constant heat from the lights.

Date: Fri, 29 Dec 2006 07:35:49 -0600
From: "Dave Merrill" <r390a.urr@gmail.com>
Subject: Re: [R-390] Better Late Than Never

> What size/pitch bolts do I need for the front panel of this rack?

I'm using 10-32 thread 9/16" long and they work nicely.

Date: Fri, 29 Dec 2006 15:53:12 -0500 (EST)
From: "David Freeman" <ww8s@zoomshare.com>
Subject: [R-390] Zenith Trans-Oceanic

Off topic, but there is so much general knowledge on this list... Is there a definitive web-site to learn about the older large Zenith Trans-Oceanic radios? I'm interested in getting one, but can't figure out which. I want it to use, so performance is more important, (assuming there are any differences). Seems like there is a large disparity in $$ on e-bay. Are some that much more rare than others, or is it just e-bay lunacy taking over that makes some identical looking radios sell for $200 and others $30?

Date: Fri, 29 Dec 2006 15:30:09 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] Zenith Trans-Oceanic

There is a Yahoo e-group for T/O's.

http://groups.yahoo.com/group/thetransoceanicfanatic/

Date: Fri, 29 Dec 2006 16:33:00 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Zenith Trans-Oceanic

You have it. It is just e-bay lunacy taking over that makes some identical looking radios sell for $200 and others $30? Look at the R390/A prices. I hope you find a nice one.

Date: Fri, 29 Dec 2006 17:14:02 -0500
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: Re: [R-390] Zenith Trans-Oceanic

Check out Ted's Transoceanic page:

http://transoceanic.fortunecity.net/contents.htm
It's a good site and has a lot of good links. The best places to check for a TO are hamfests and swapmeets. Prices are better than on ebay and you can see what you're getting.

Date: Fri, 29 Dec 2006 16:27:29 -0700
From: Transmaster <22hornet@gmail.com>
Subject: Re: [R-390] Zenith Trans-Oceanic

I have a couple of Transoceanic's, a B600 and a Y600 the latter is the last of the vacuum tube models. The vacuum tube models are excellent rigs the most collectible is the R-520 which is a 500 chassis with a military designation. They have a brown covering. The problem you can have with the tube model is some of the tubes they use are very hard to find. They have a ballast tube a 50A1 which is extremely hard to find, but there is a

solid state replacement for. The solid state model the Royal 1000, and 3000 are in my opinion the best of all of the Transoceanic models. The difference between the two is the 3000 has the FM broadcast band. The tuning dial on these two radio is like the megacycle drum on a 51J Collins receiver. They also have the best storage method ever for it telescoping antenna which is stored with in the carrying handle. None of these radios had a BFO. The first model to have this feature was the Royal 7000 whichwas the last of the true Transoceanic's. After this Zenith was not much interested in the famous mark as they where making money hand over fist on TV's. The radio was cheapended until is died a ignoble death as a the Heathkit Transoceanic about 1980. Zenith not only ruined the famous Transoceanic but also destroyed Central Electronics (CE) which made some really high quality ham gear. The purchased CE and realised , after a year, it was not going to make they much money so they literally threw the CE in the trash, hauling the books and the remaining hardware in dump trucks to a land fill. As you might be able to tell I am no fan of Zenith. When purchasing a Tranoceanic there are some cosmetic thing to looks at. On the Vacuum tube models check the push button switch function on the bands. Check the wooden case for soundness, loose panels are not a reason for not purchasing one they can be glued back togather but it does have a impact on the purchase price. On the Solid state models the big thing is corrosion in the battery case. Have fun once the Transoceanic bug bites one just isn't enough they made the true Transoceanic from about 1938 until circa 1972.

Date: Fri, 29 Dec 2006 19:41:17 -0500
From: <b_hagen@sbcglobal.net>
Subject: RE: [R-390] Zenith Trans-Oceanic

It is my understanding that Zenith really only bought CE to obtain control of a couple of patents that were applicable to color TV demodulators.

Date: Sat, 30 Dec 2006 19:11:12 -0500
From: "Bob Young" <youngbob53@msn.com>
Subject: [R-390] correct size bristol wrench for BFO clamp behind the faceplate

Does any one know what the correct size for the bolt on this clamp is? I bought a set with these sizes: .060, .072, .096, .111, .133, .145, .168, & .183, and 4 flute wrenches in .069, & .076. and 4 are too small and six too big, the bolt is smaller than most other in the radio inlcuding the knobs and larger clamps, thanks, I think it's somewhere between .076 and .096.

Date: Sat, 30 Dec 2006 20:12:14 -0500
From: "Bob Young" <youngbob53@msn.com>
Subject: [R-390] Bristol wrench for BFO clamp all set

Bob, if you are speaking of the clamp on the knob extension that must be separated prior to removing the IF deck, it is the same size wrench that fits all the front panel knobs. Since this is a clamp which has probably seen a lot of use, it may have been replaced with another type screw. Look close, it may be a regular Allen head screw. I have seen these Bristol head fittings swapped with other styles on both knobs and clamps. I usually look close with a strong light before I choose a tool on an unfamiliar screw. He was 100% correct, there were two allen wrench screws on the two clamps for the BFO and bandwidth.

Date: Sat, 30 Dec 2006 17:15:47 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: correct size bristol wrench for BFO clamp behind the faceplate

Try that 0.096 again, there is probably some crud in the hole, don't take "no" for an answer! You also have to have the splines lined up just right sometimes. Also, make sure it is what it should be, no guarantees, someone might have put something else in there.

Date: Sun, 31 Dec 2006 15:18:19 -0700
From: Transmaster <22hornet@gmail.com>
Subject: Re: [R-390] Zenith Trans-Oceanic

That could well be true there was a article in ER about the end of CE and what Zenith did.

Date: Mon, 01 Jan 2007 22:38:41 -0600
From: Joe Reda <joer@reda.com>
Subject: Re: [R-390] Zenith Trans-Oceanic

In my humble opinion, of the tubed TOs the best is the 8G005YTZ1 or Z2. That's the model with the push-pull audio output using two 1LB4s. Great sound, easy to work on and nice performers. I wouldn't pay over $75 for one - there's too many of 'em out there. Make sure it has the rod antenna (not bent!), the Wavemagnet (not cracked!), and nothing else is missing on it.

The later 600 series are good also, but then you run into the problem of the high-priced 1L6 converter tube. Really, though, all the tubed TOs are great radios and very deserving of all the care you can give 'em. They're not out of place sitting next to an R-390A.

Date: Thu, 4 Jan 2007 21:10:16 -0800
From: "Ed Zeranski" <ezeran@ezeran.cnc.net>
Subject: RE: [R-390] Zenith Trans-Oceanic

I have and like a 1948 8G005YTZ1 its a nice radio. A 500 and 600 here too, prefer the old sets before the 1L6 because of the tube's hard to get status.

Date: Thu, 04 Jan 2007 23:37:57 -0700
From: "Kenneth Arthur CRIPS" <crips01@msn.com>
Subject: RE: [R-390] Zenith Trans-Oceanic

I sure agree wiith that the 1L6 is a real booger to find. I like the sound the tube type transoceanic's have. The Royal 1000, and 3000 are a childhood fantasy of mine I poured over the ad's in the National Geographic and these two radio where the radios I wanted.

Date: Fri, 05 Jan 2007 07:43:15 -0500
From: Mark Huss <mhuss1@bellatlantic.net>
Subject: Re: [R-390] Zenith Trans-Oceanic

O.K. Kenneth. I won't tell you the secret. But I'll give you ten hints.
1) Zenith contracted with Sylvania? to make a 1LA6 in a miniature tube envelope,

or so the story goes.
2) The more you make, the cheaper the production costs.
3) Comparatively, Zenith did not manufacture that many Trans-Oceanics.
4) unused stock sitting on shelves make no money.
5) The Transoceanic wasn't the only battery powered tube radio Zenith made.
6) the Zenith section of Nostilgia Air makes fascinating reading.
7) Transoceanics, nor even Zenith, were the only ones to use the 1L6 for

portables.
8) Rub her feet.
9) Guns and alcohol don't mix, it ruins your aim and you might miss the Tax

Collector.
10) If it shocked you the first time, don't lick it again.

Date: Sat, 13 Jan 2007 16:11:49 -0600
From: "Barry" <n4buq@knology.net>
Subject: [R-390] Pictures of my Motorola R390A

I've talked a few times about my Motorola R390A and the cabinet I modified
for it. I finally took some pictures of it.

http://www.knology.net/~thelanding/R390A/
I probably need to make a simple web page for them, but at least they're out there now.

Date: Tue, 23 Jan 2007 22:33:42 -0500
From: Michael Crestohl <W1RC@Verizon.net>

A simple question that undoubtedly has a complicated answer.... I used to use a special clock oil to lubricate switches and controls in radios I was restoring but have unfortunately run out. I read that using 3in1 or other such oils is not advisable on electronic equipment. So..... what do you use for lubricating rotary switches, shafts, etc,

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Date: Tue, 23 Jan 2007 22:44:59 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Light Machine Oil for Controls, Switches, etc????

I use Mobile 1 synthetic motor oil in a hypodermic.

Date: Tue, 23 Jan 2007 21:53:27 -0800 (PST)
From: Michael Student <w7ms20wpm@sbcglobal.net>
Subject: Re: [R-390] Light Machine Oil for Controls, Switches, etc????

I use ATF.....

Date: Wed, 24 Jan 2007 09:52:13 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Light Machine Oil for Controls, Switches, etc????

Clock oil would be good, especially if you used the modern synthetic oils. There still are clock material suppliers who would be glad to sell you that kind of thing. Try: http://www.klockit.com/ Their "99125 Long Needle Oiler Price: $21.99 "

s

eems like way too much money.

And their "Precision Clock Oiling Kit" at $50 certainly is too much.
Also try:
www.clockworks.com/
www.merritts.com

For switch CONTACTS, I use Caig De-Oxit or Pro-Gold (or both).
For switch SHAFTS, I use oil.
For switch DETENTS, I use any grease available, Lubriplate being an old

favorite, but which has been reported to dry up after a while. Slick 50 "One Grease", available in grease gun tubes at Pep Boys, is a synthetic grease that seems to work well. For whatever reason, Amazon.com seems to have it: "Slick 50 One Grease 14.5 oz. cartridge " $6.

I use EXXONMOBIL Velocite No. 6 Spindle Oil . Available at Grainger for about $18 a gallon:

http://www.grainger.com
Product number
<http://www.grainger.com/Grainger/wwg/itemDetailsRender.shtml?ItemId=1611574209>4F974

This is "Spindle Oil Light" and appears to be "SAE Grade Lower than 5 Wt, ISO Viscosity Grade 10 ". When I bought mine some years ago, I got the Medium grade (and the price was about half what it is now.) I'd be willing to bet that if you are able to actually locate a machine shop, and went in there with a little bottle, you could talk your way into a few ounces of light machine oil.

Date: Wed, 24 Jan 2007 11:12:13 -0500
From: Murph <Murph2006@copper.net>
Subject: [R-390] Bristol Wrenches

Where can I buy long legged Bristol wrenches. Tried of using needle nose vice grips to reach ! Thanks for your input

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Date: Wed, 24 Jan 2007 10:22:30 -0600 (CST)
From: jhhaynes@earthlink.net
Subject: Re: [R-390] Bristol Wrenches

There is an Xcelite kit 99PS-60 that includes a handle and an extender and a bunch of Bristol wrenches that fit into the handle.

Date: 24 Jan 2007 16:28:50 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] Bristol Wrenches

Someone (VACO?) makes the fluted drive (Bristol) inserts to fit in a standard 1/4" screwdriver-style handle (the kind with two small flats to provide the drive needed). It works perfectly for any of the Brislol screws in the R390A. If you already have the handle, then all you need is the single insert. If anyone needs these, I might could get them from the local shop (seems like mine was about $6.00) and send them to you.

Date: Wed, 24 Jan 2007 11:28:39 -0500

From: Steve Byan <stevebyan@mac.com>
Subject: Re: [R-390] Light Machine Oil for Controls, Switches, etc????

Your local hobby shop that caters to model railroaders should have a selection of lubricants by Labelle Industries. Labelle 104 or 108 should be suitable. Caution - Labelle 104 isn't compatible with plastics; use 108 where the oil might come in contact with plastics. Check out <http://www.all-railroads.com/lablubes.htm> for more information.

Date: 24 Jan 2007 16:39:08 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] Bristol Wrenches

Yes, Xcelite is the brand I was trying to think of.

Date: Wed, 24 Jan 2007 23:47:10 -0600
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Bristol Wrenches

McMaster-Carr.com
Has all sizes of Bristol spline wrenches

Date: Thu, 25 Jan 2007 09:25:11 -0500
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Twin-ax

> Now things are a bit warmer here and I am looking for some twin-ax. I don't have a local computer place to locate any and am curious if there is a reasonable supplier of cable. I only need about 100 feet.

The local computer place wouldn't do you any good. You want to find some place that is deinstalling IBM twinax network cabling. They will have thousands of feet of the stuff sitting in the dumpster, sometimes with appropriate connectors attached. Fair Radio, E-bay, etc. also have it for sale.

Date: Sat, 3 Feb 2007 01:02:28 -0600
From: "Don Reaves" <don@reatek.com>
Subject: RE: [R-390] pOWER cORD

Hank is right, call William Perry in KY and tell him what you need. Chances are good he will have it. He's discontinued his email, wants to do business by landline only. His number is (502)893-8724 (eastern time zone)
http://militaryradio.com/Images/WilliamPerryCompany.jpg

I've met Bill a few times at hamfests. He's knowledgeable and has a vast storehouse of military connectors. I think he has a warehouse like that last scene in Indiana Jones and the Temple of Doom.

Date: Sat, 3 Feb 2007 08:14:32 -0600
From: "Dave Merrill" <r390a.urr@gmail.com>
Subject: Re: [R-390] pOWER cORD

Hubbell Twist-Lock connector is probably what you're looking for:
http://img82.imageshack.us/img82/6249/hubbellca1.jpg
The one pictured is 1-1/8" in diameter. Contact me directly if this is what you need.

Date: Sat, 3 Feb 2007 14:53:43 -0700
From: Transmaster <22hornet@gmail.com>
Subject: [R-390] Customer service

Talk about a contrast:I just purchased a Bird Trueline 43 watt meter from Murphy's Surplus, the Bird it was $119.00 and 7.63 cents postage with FedEx ground. Mike filled my order this last Monday 30 January, and I received the watt meter yesterday, 2 February. The meter is in almost new condition and was made in 1994. Great customer service.! Then there is Sunair Electronics, I have two R-9200 receivers and a RCU-9310 remote. I have inquired about manuals, power plugs and such. When they reply, if they reply, they act like they are doing me a favor. I found I need the back lighting EL panels for the LCD's on the receivers. I had the parts numbers for the panels and entered them in as they required. I supplied the serial number for each of the receivers and asked them is these radio where made in 1994 as the QC stamps indicated. All I have received in reply so far was one pointing out the receivers where no longer in warranty, but no answer to my question., as if I thought after 13 years they would have still been in warranty, then another reply they where sending my request to so-in-so in the parts department that was over a week ago. I guess if you are a non corporate, or Government owner of one of their multi-thousand dollar rigs they just aren't interested.

Date: Sat, 3 Feb 2007 15:23:10 -0700
From: Transmaster <22hornet@gmail.com>
Subject: Fwd: [R-390] Customer service

No I am not venting it is just interesting to see the contrast between these two business's. Mike had the manual for the TR-9000 scanned in and sent me free. This is a transceiver but the receiver section of the manual is the same as for the R-9200 he saved me 90 dollars which is what Sunair charges for a paper copy. I wanted to make it worth his while, he has Bird watt meters for the best price on a used unit I have seen in years. It goes

with out saying he has a new customer. Murphy's has the Electro-Voice 602 hand mic; for $29.00 dollars new in the box, Electro-Voice still builds the 602 for $139.95. I think I know what my next order will be.

Date: Sat, 3 Feb 2007 17:55:42 -0600
From: "Dave Merrill" <r390a.urr@gmail.com>
Subject: [R-390] No more public access to LOGSA Electronic TMs?

Tried a couple different ways today but could not get to the search page without being prompted for a username first. Is it all over for the general public?

Date: Sat, 03 Feb 2007 21:07:47 -0500
From: Barry Hauser <barry@hausernet.com>
Subject:Re: [Milsurplus] No more public access to LOGSA Electronic TMs?

It sure looks that way. The site appears to have been totally redesigned up front. You used to be able to download all those files in the "A" folder/subdirectory without a login/password. The last time I got into the site, got the impression that a few files previously there of interest (e.g., some R-390/R-390A files) were missing. I was about to register, but it required some things the general public would not have and neither do I. I might email their support -- unless someone else already has done so -- to ask if the intention is to keep out the general public. Thinking about it a bit, the Army's main purpose in making documentation available for very old equipment would be as a courtesy and form of support to surplus buyers, and perhaps for some educational purposes, but those being educated would have ID's. However, with the newer approach to surplus -- shred it or sell it to foreign countries -- I guess they are no longer motivated to do so. Of course, the bad guys can readily obtain the equipment and all the
necessary manuals. I don't know if there's a risk in contacting their support. Next thing you know there will be several black SUV's out front and men with sledgehammers to deal with the gear that got away. ;-)

Date: Sat, 03 Feb 2007 21:37:05 -0500
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [Milsurplus] No more public access to LOGSA -- FOLLOWUP

I just called LOGSA on their 24/7 800 number. The YL told me that there is a problem on the site that should be fixed in a few days, so public access should be restored then. I asked also whether any files had been archived off, but she didn't know -- suggested calling back. Now I have to keep an eye out for those black SUV's, not to mentinon the revenuers ;-).

Date: Sat, 3 Feb 2007 19:51:21 -0700
From: Transmaster <22hornet@gmail.com>
Subject: Re: [R-390] Customer service

Another outfit that is impressive is Burghardt when you call them up it is like they where there just waiting for your call. You realize the reason why they have been in business since 1936.

Date: Sat, 3 Feb 2007 20:39:14 -0700
From: Transmaster <22hornet@gmail.com>
Subject: Re: [Milsurplus] No more public access to LOGSA--FOLLOWUP

I wonder if they have a of the Sunair manuals. I know the Fed's purchase Sunair gear, and I have seen rigs with Signal corp markings.I will have to check.

Date: Mon, 19 Feb 2007 20:22:28 -0500
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: [R-390] New Project

I just bought my second R-390A. This one is a yellow-striper (St.Julien's?) but is complete (except for a few tubes), in good cosmetic condition and the tuning mechanisms turn freely. I'm going to be coming to you guys with some questions to get this set running. As always, I am grateful for your help and astounded by your collective knowledge. My first questions pertain to the jacks for the power input and audio output. This is a Navy receiver set up for shipboard use. (See page 2-5 in the Y2K manual). 1. What type of connector will I need to plug into J903, the AC input? 2. Likewise, what type of connector will I need to plug into J902, the audio output? 3. Where can I get these connectors? Might any of you have some that you might like to sell to me? 4. Are there any tricks to wiring and using these connectors? Once I get these connectors, I plan to replace the missing tubes and replace the troublesome caps per Chuck Rippel's page. Then I can fire her up. Joe Connor

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Date: Mon, 19 Feb 2007 22:21:57 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] New Project - Navy Connectors on rear panel

If you have one of the R-390A's with the Navy connector strip on the rear panel you can just take the connector strip off and use the standard connector strips underneath. This would save having to buy or locate the Navy connectors plus give more flexibility to access the rear panel terminals. If you want to retain the Navy connector strip the connectors are standard MS-type mil connectors. J901 and J902 are MS-10SL-4P and J903 is MS-16S-5P.

Date: Wed, 21 Feb 2007 19:45:48 -0500
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: [R-390] Diagnostic Help Needed

I powered up my new R-390A project tonight and the news isn't good. There is static from the speaker but no stations. When I plug the antenna into either of the inputs, there is no change in the static. The only place I seem to get a station is around 780 khz but it's very garbled. I get nothing at 1250 khz, which is an AM station about a mile from my house. Before powering it up, I replaced four missing 5814As with 12AU7s. I also replaced the troublesome caps in the IF deck (as per Chuck's page). I need some step-by-step instructions to diagnose the problem. The test equipment I have is a VTVM and a signal generator.....

Date: Wed, 21 Feb 2007 21:57:30 -0500
From: "Jim M." <jmiller1706@cfl.rr.com>
Subject: Re: [R-390] Diagnostic Help Needed

Some initial thoughts: if the 3FT7 ballast tube (on the IF deck) isn't glowing slightly, then several oscillator tubes (BFO, PTO, etc.) may not be getting filament. Hopefully the band change gears and mechanisms haven't gotten "out of sync". Try turning the calibrator and BFO on and see if you can hear a calibrator carrier every 100 khz. Rock the band change knob back and forth and see if something comes in - sometimes the band switches get corroded.

Also: Some common failures: http://www.r390a.com/Commonfail.htm
Some restoration topics: http://www.qsl.net/k5bcq/r390/r390.html
A large manual is available at: http://www.hausernet.com/r390a/
More of Chuck Rippel's page http://www.r390a.com/

Date: Wed, 21 Feb 2007 22:26:11 -0500
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: [R-390] Diagnostic Help Needed (Part 2)

I was fooling with the set some more and got something very weird.
1. At around 8.0 mhz I got a station (foreign language). Audio was good but the station stayed on over about 60 khz as I rotated the KC control. When I get the garbed station at 780 khz, it stays on over about 20 khz as I rotate the KC knob.

2. The power supply seems good. I checked B+ at F-102 and F-103 and it was normal.

Date: Wed, 21 Feb 2007 19:50:10 -0800 (PST)

From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Diagnostic Help Needed

Download the Y2K manual and study that FIRST.

Check the antenna relay for proper operation.

Clean the whole radio, look for problems while doing that. Make sure all tubes work, look for problems with the sockets. Check all the plugs, look for problems there, too. Check to see that the jumpers on the terminal strips on the back panel are in their proper places. Check that all knobs do the mechanical function they are supposed to do. It could be that the BANDSWITCH is in the narrowest position and the clamp is loose. Or some other such thing. Check the drive train on the KC CHANGE knob to the PTO.
That's a good start, do keep us posted,

Date: Thu, 22 Feb 2007 03:53:54 +0000
From: bavarianradio@comcast.net
Subject: Re: [R-390] Diagnostic Help Needed (Part 2)

It sounds like the PTO shaft may not be turning. Take a look at the Oldham coupler which transfers torque from the KC tuning knob to the PTO. make sure the setscrews are tight and the center piece is there and working. I had a similar problem with my 392 a year or so ago. GOOD LUCK! Ross
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Date: Sat, 24 Feb 2007 06:58:12 -0500
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: [R-390] New Project (Update)

Well, this thing is starting to sound like an R-390A! Thank you for your help.

1. I adjusted the mechanical alignment of the PTO per your instructions. It made a world of difference. Sensitivity improved on all bands. On the 0-1 mhz band, the increase was astounding. I went from virtually nothing to the band being alive with BCB stations. Last night, I did some SWLing and the receiver was impressive.

2. I checked the cams. At 7 +000, they all line up as shown in the Y2K manual.

3. Here are my next steps:
   a. Re-do the filter caps;
   b. Replace the exploding cap in the AF deck; and
   c. Set the IF Gain per the instructions on Chuck's page.

I'll report back when I'm done and get some ideas on where I should go next. Again, thanks. Without your help, I would still be at Square One.

Date: Sat, 24 Feb 2007 21:35:35 -0500
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: Re: [R-390] New Project (More Questions)

Today, I redid the filter caps, replaced the "exploding" cap and adjusted the IF gain. The set is performing nicely, but I have a few more questions:

1. The AF deck had two 3223 tubes in place of the 5814As. Is that an acceptable substitute? I replaced them with NOS 5814s.

2. Some of the caps are Westcaps. Are these like the usually reliable Vitamin Qs or like the unreliable brown/black beauties?

3. The two bands that are relatively weak are 2-3 mhz and 3-4 mhz. Any ideas on where I should look for the problem?

4. WHen I switch from AGC to MGC, I don't get the jump in signal strength I expect.It doesn't overload on MGC, even on relatively strong stations. Is that normal? If not, what should I be looking at?

Again, thanks for all your help. There is nothing better than advice from guys who have been under the hood of these sets.

Date: Sat, 24 Feb 2007 20:14:22 -0800
From: "Craig C. Heaton" <wd8kdg@worldnet.att.net>
Subject: RE: [R-390] New Project (More Questions)

1. 3223's I don't think so, stick with 5814's. Collins had good reasons using the tubes chosen.

2. So far, I've only had experience with BBOD's and Vitamin Q's. BBOD were old, worn out, they served their country well. Orange Drops were the replacement for the BBOD's. Most of the Vitamin Q's were good, not all. Orange Drops used there too. The set was a Motorola 56 vintage.

3. If your set still has BBOD's, next recap, the realign IF and RF sections.

4. Could be old caps (BBOD's), needing alignment. With a receiver worthy of going back on line at a listening post, I would expect: with switch on MGC, with the IF output connected to a scope, RF gain full clockwise, with a strong signal; you should see and hear overload.

You are getting there, don't stop now. After a couple days of recapping, several tries of realignment, it will all come together. The R-390/A will become a working receiver. Then you will want a excellent receiving R-390/A. That's flowertimes's story, I've saved his notes.

Date: Sat, 24 Feb 2007 23:26:30 -0500
From: Scott Bauer <odyslim@comcast.net>
Subject: Re: [R-390] New Project (More Questions)

I believe Tung Sol prints 3223 on some of their 5814A's. The White paint marking the tube with 5814 or 12AU7 rubs off but the permanently marked 3223 remains.

Date: Sun, 25 Feb 2007 23:32:31 -0500
From: Mark Huss <mhuss1@bellatlantic.net>
Subject: Re: [R-390] New Project (More Questions)

On nr 3. Wait until you recap, if you are, and the alignment. One of the preselector Racks (First IF Tuning) is 2-4 Mc, I believe.(it is bedtime, and i did not look in the manual).

As far as test equipment goes, you need a meter, a signal generator with a GOOD Attenuator, and a VTVM. You also need the spline wrench, and a very long #2 Phillips (12-18 inch). You need tube pullers (the chinese finger puzzle type is good), and a 7 and 9 pin tube extender. What I mean by a Good attenuator, the 390 and the 390A are sensitive as can be. Most inexpensive signal generators are a real pain to use on them because the leakage will make it impossible to get good S+N/N. URM-25's are barely acceptable.

A scope and a sweep generator (only has to sweep about +-8 kHz), and perhaps a 600 ohm audio power meter are all the optional equipment you need. A freq counter for the signal generator is handy. And an autotransformer can come in handy as well to drop the 120VAC to 110 VAC (keeps the B+ down if you have the rectifier mod).

Date: Thu, 22 Mar 2007 21:08:27 -0600
From: DW Holtman <future212@comcast.net>
Subject: [R-390] Ebay Prices

For anyone going to Dayton I have complied a list of Collins items that have sold on Ebay. This list will hopefully give an idea about the worth of Collins gear as least as Ebay prices. I will be keeping this up to date every month or so, I will update the web page. I plan on breaking it down into days of the week, months etc. This should give a better idea is items sell more on Sunday or maybe December. http://www.heavymetalradios.com/

Any comments or suggestions would be welcome. Hope this will be helpful and pay back a little of the wealth of knowledge that I have gotten from this fine Reflector as well as the Collins Radio Association (CRA).

Date: Fri, 23 Mar 2007 00:24:24 -0400
From: jcoward5452@aol.com
Subject: Re: [R-390] Ebay Prices

Do eBay Collins prices follow the price of oil and gasoline?I don't mean to disparage the poster's remarks, but it seems that some radios do follow the overall market trends.I guess we are all guilty of trying to get ahead and at the same time we still wonder what happened to the local flea markets.I havn't been to the local swap in the San Jose CA area in years because there was hardly any radio junque there and only computer junk.If you put eBay prices on stuff at a swap you just won't sell anything.I've found that out at the annual military swap I go to and the old anitque commercial radio swap (i.e. AM/FM/Phono tube stuff).The folks that show up already have what you want to sell. As a frequent eBay user and buyer I am grateful for the venue. I have been able to find and obtain collectable pieces and unobtainium parts,sometimes for a song,other times for a dip into the not so deep pockets.But I don't think that eBay priceing can translate to the flea market environment. Good luck DW.I can't afford the trip to Dayton but I hope when I retire I can make the show and see what it's all about.

Date: Fri, 23 Mar 2007 02:30:48 -0400
From: "Bob Young" <youngbob53@msn.com>
Subject: Re: [R-390] Ebay Prices

Ebay prices are a lot higher than ham fest or swap meet prices usually,

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Date: Fri, 23 Mar 2007 07:51:36 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Ebay Prices

> Do eBay Collins prices follow the price of oil and gasoline?

Ebay has way too short of a timespan of data to really follow the trends. And thinking that nothing existed before Ebay or will exist after Ebay (we all know the Internet is just a fad, right?) is just ludicrous.

That said, let's mix the non-Ebay prices with the E-bay prices: Let's see, in 1970 dollars non-Collins (EAC) R-390A's were advertised from $1700 (discount, qty 16) to $2200 (full list). Today we have data that shows they're in the $700 range. In 1970 a gallon of gas cost $0.36, today it's closer to $2.50. If the 390A's had appreciated as fast as gas, they'd be

$12000 and up.

Date: Fri, 23 Mar 2007 08:19:10 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Ebay Prices

As a second example, in the late 50's the list price of a 75A-4 was $695. Today the average E-bay price seems to be $939. Gas prices went up by a factor of 11 over the last 50 years. If radios went up as fast, the 75A-4 would be $7700 today.

Date: Fri, 23 Mar 2007 09:11:04 -0500
From: "Keith Densmore" <densmore@idirect.com>
Subject: Re: [R-390] Ebay Prices

I truly believe the price of our beloved boatanchors, whether bought privately, on ebay or at a swapmeet are the greatest bargains anywhere. 95% of high quality, restored radio stuff goes for less than $1,000. That puts the price of a dream receiver or transmitter at par with an entry level ricebox and within the price range of most people who would want it. Even the super collectable stuff is usually less than 5K-10K. Again no more than the price of a higher end station. Compare that with our brother car collectors from the same period. That restored '57 Chev will set you back up to 50K---your R-390 less than 1,000. and I believe their aquistion costs at the time were probably the same. No question in my mind the value of radio.

Date: Fri, 23 Mar 2007 09:59:44 -0400
From: "rdavis7" <rdavis7@comcast.net>
Subject: [R-390] Ebay Prices

Ebay prices are unpredictible, much the same as hams are. For those of us that live in a major metropolitan area, swaps are within reasonable driving distances. However, the poor amateur that lives in a very rural area has little or no opportunity to view nor purchase his wants , leaving the internet sites the only option. So internet sellers cater to market forces successfully. Finding rare or pristine purchases could take a lifetime of attending swaps. The internet often fills that void. If one observes the usual precautions in dealing with internet sellers, unpleasant events can be mimimized. Sensibility and restraint should prevail when bidding on auction sites. Other venues such as QTH.com are straight forward transactions between buyer and seller. Eliminating selling fees can reduce prices for the buyers. Sellers can win also by eliminating listing fees/selling fees. Ten years ago we didn't have this opportunity, lets just enjoy it. Remember---this is just a hobby!

Date: Fri, 23 Mar 2007 09:35:53 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] Ebay Prices

IMO, people are jacking up the prices to get all they can out of them at our expense.

Date: Fri, 23 Mar 2007 08:52:35 -0600
From: DW Holtman <future212@comcast.net>
Subject: Re: [R-390] Ebay Prices

How long did it take to figure that out. It is no different in Collins equipment than with any of the other millions of items sold on Ebay daily. Everyone is trying to make a buck. I received several E-Mails about the E-Bay prices list that I posted comparing swap meet prices with Ebay prices. In the Salt Lake City area, there are very few Hamfests, usually one in this area this every year. But, I have heard several sellers same something to the effect of I have to get at lease $250.00 for this item, because I can always get closer to $300.00 on Ebay. All sellers anywhere in the country know what items are going for on Ebay, and they generally are not going to lose a lot of money to sell them at Swap meets unless they just do not want to hassle with shipping. I know there exceptions to everything and there are some good deals out there that is keep people going.

Date: Thu, 19 Apr 2007 13:22:37 -0600
From: DW Holtman <future212@comcast.net>
Subject: [R-390] Corrosion??

This is the strangest corrosion that I have ever seen. It is almost a luminescent green. http://www.heavymetalradios.com/Debrow.html

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Date: Thu, 19 Apr 2007 15:25:10 -0400
From: <robert.boyd@servicecanada.gc.ca>
Subject: RE: [R-390] Corrosion??

Yes it's strange! Green usually is related to copper corroding....

Date: Thu, 19 Apr 2007 15:36:10 -0400
From: Gord Hayward <ghayward@uoguelph.ca>
Subject: RE: [R-390] Corrosion??

Nickel also forms bright green salts.

Date: Thu, 19 Apr 2007 15:16:02 -0700
From: "Kenneth G. Gordon" <kgordon2006@verizon.net>
Subject: Re: [R-390] Corrosion??

I have seen that green stuff before. It most certainly IS a bright green, and I was always fascinated by it when I saw it. I never have seen it in very large bits though. Usually when I have seen it is in small bits scattered around the effected piece.

Date: Mon, 23 Apr 2007 16:32:22 -0500
From: "Bill & Becky Marvin" <wmarvin@hickorytech.net>
Subject: [R-390] Good Progress a Few Questions

Well the Collins 390A is slowly progressing. Found a loose first front gear that was really causing great PTO tuning slop.

I have a few questions about two unconnected wires behind the front panel. First is a shielded Wht/Blk wire which is attached to the larger AF bindle but not part of it.....where does this wire connect?? Headphone jack? BFO switch? A non shielded Wht/Red wire by the Line Meter/Switch behind leftside. A Wht/Red wire IS connected to a Line Meter terminal and the Line switch as per wiring diagram. Where does this extra wire go??

I recapped the AF modual.....the RF deck is next.....wish me luck.

Date: Mon, 23 Apr 2007 20:45:13 -0400
From: Scott Bauer <odyslim@comcast.net>
Subject: [R-390] harness needed/ Smoke leaked

I would like to buy a good R-390A harness. I made the mistake of buying a radio on ebay. There were no inside pictures. I knew it was a fairly new EAC from the back picture and s/n 8972. That is all the info I had. When it arrived, I opened it up and about died. I have pulled out almost 20 feet of wire jumpers, mods, rig jobs ect. The odd thing is the radio works very well. That is before I tore out the rat nest. The root of the problem was something in the audio module fried the whole harness there. The previous owner has mounted two big transistors atop th audio unit. I dont know what the idea was but he burned up the harness I hate to part it out. Everything looks new. If someone has a harness, I feel I could make a new radio out of this mess. Oh, I hate to sound picky but this is a newer model with 3 fuses.

Date: Mon, 23 Apr 2007 22:20:26 -0400
From: Scott Bauer <odyslim@comcast.net>
Subject: Re: [R-390] harness needed/ Smoke leaked

I would like to thank everybody for the offers but I no longer need a harness. The damage was not as bad as I thought. Only 2 burned wires were found in the harness from plug P119. Hopefully everything else will

check out.

Date: Tue, 24 Apr 2007 18:37:57 -0400
From: "Charles A Taylor, WD4INP" <wd4inp@isp.com>
Subject: [R-390] Unconnected wires

>I...two unconnected wires behind the front panel. First is a shielded Wht/Blk

That would go to the PHONES jack. Should bed another wire connected to the shield and to the ground of the PHONES jack.

>.....a non shielded Wht/Red wire by the Line Meter/Switch .....

It connects to the LINE METER switch. If you look, there will probably be a terminal on the LINE METER switch that lacks a wire. It would go there.

Date: Wed, 25 Apr 2007 00:59:29 -0400
From: jcoward5452@aol.com
Subject: Re: [R-390] please, check this out. Totally unbelievable

Check at Pasternack.com for these.They have every kind of connector and cable imaginable and can deliver next day for small quantities if you want.They have a minimum order so plan what you need and forget ePay.Some of their cheaper cabling is for one time use;i.e. install and forget. Not intended for "lab" use i.e. multiple users,many connect/disconnects.So be aware of what you are buying. Contact them for info.

Date: Wed, 25 Apr 2007 20:57:47 +0100
From: "Lester Veenstra M0YCM K1YCM" <M0YCM@veenstras.com>
Subject: [R-390] Totally believable

And for more reasonable pricing, from a ham: rfc@therfc.com]

Joel Knoblock W3RFC
The R.F. Connection
213 N.Frederick Ave #11WWW
Gaithersburg, MD 20877 USA
World Wide Shipping via Fedex abd US Post Office (F.O.B.)
Tech Line 301.840.5477
Fax Line 301.869.3680
Order Line 800.783.2666 All Major Credit Cards Taken
Hours: Monday-Friday 9:30am-5:30 pn EST

Date: Fri, 27 Apr 2007 11:44:39 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>

Subject: [R-390] MB Connector Source

The subject of a source for MB type connectors as used in the R-390A comes up occasionally on this list. I was just in Skycraft Surplus in Winter Park, FL and they had a small drawer half full of them. They all appeared to be RFE but clean and usable. Their price was $1 each. I don't think Skycraft does any mail order business, but don't know that for sure. If you are going to be in the Orlando, FL area to see Mickey and also need connectors, you might want to check out Skycraft.

Date: 27 Apr 2007 16:17:05 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] MB Connector Source

I have two five-year-olds (one soon to be six) and we plan to take them to Disneyworld at some point. I've kind of been dreading it (just don't care for the big theme parks), but I've wanted to visit SkyCraft so it might make the trip much more attractive. I think they will do mail-order, but have a $25 minimum.

Date: Fri, 27 Apr 2007 14:26:35 -0400
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] MB Connector Source

Skycraft does do mail-order, but nobody you can get on the phone knows what an MB connector is. Plus, you have to be careful - a lot of the connectors in that bin will not fit anything in an R-390A. They are an unsorted mix of males, females, cable-ends, bulkhead mount - thru-bulkhead mount, and so on. Most of them still have bits of cable attached. I bought a bag of them last year and I'm still picking the bits out. They are hard to wire too - partly because they are small, and partly because they have cables attached. Best to go in person. Plus there is a lot of really cool stuff there besides the MB. It is the first place I have found where you can by mica wafers of a variety of sizes. And you actually get to handle the stuff! It is the way an electronics store should be.

Date: Mon, 30 Apr 2007 21:29:26 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] MB Connector Source

What are the MB connectors? I would do 25.00 at Skycraft and then part them out again in the mail. I did this for the net with the little BNC connector I found at Murphy's in San Diego back when.

Date: Tue, 1 May 2007 09:17:56 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>

Subject: RE: [R-390] MB Connector Source

MB connectors are the small coax connectors used on the IF module and cables in the R-390A. The R-390 used BNC connectors. Why Collins chose to change the connectors for the R-390A I have no idea except it might have been a matter of space or cost? I have a 1969 Newark Electronics catalog that lists type MB connectors.

Date: Tue, 1 May 2007 11:32:04 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] MB Connector Use

You commented, the R-390 used BNC connectors. Why Collins chose to change the connectors for the R-390A I have no idea except it might have been a matter of space or cost? If you were a 33 working on these things 8 plus hours a day 6 days on and 2 days off, you soon thought the MB were a lot easier to work with than the full size BNC. Back in 68 - 75 it looked like a good idea.

I found a bunch of these one time in San Diego and sold them all at cost to the R390 group. I also found a bunch of 3 inch coax with Male BNC on one end and the male MB on the other end. these make nice adapters from the signal generator to the IF deck. These were from Murphy's Surplus in San Diego. When last there in 04 there were still a 100 or so of these in a bin. I had sold these at cost until orders quit coming in. Someone in San Diego might drive out to Murphy's and see if any of these are still around. You do not make any money selling this stuff to the R390 guy's After the time collecting E-mails, addressing bubble packs and doing postage plus parts cost its a break even on your lunch money. You just do it as labor of love. Maybe someone near Mickey's Place can drop in to Skycraft and see what the potential is to make us an offer. See what on hand, find the cost, Think about postage and a padded envelope from Staples and offer up a price. See how many you could move as a one time offer this summer. I had good results accepting checks from the Fellows.

Date: Wed, 16 May 2007 05:37:32 -0700 (PDT)
From: Don Merz <n3rht@yahoo.com>
Subject: [R-390] Re: [Milsurplus] RE: POSTAL MAIL CHARGES

One small (literally) offset to these increases is that the use of the existing flat rate boxes has been extended globally. You can now use the existing flat rate boxes to send anywhere on Earth for $37. Mexico and Canada are less. So we can't ship an R390A at any reasonable cost. But we could ship its power supply pretty economically.

Date: Wed, 16 May 2007 22:18:13 -0500

From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] Re: [Milsurplus] RE: POSTAL MAIL CHARGES

This rate increase really caught me off guard. I sold a radio to a fellow in Hong Kong last week and quoted him the rate (approximately $32). I went to mail it today and they now told me the price is over $63! I would hate to think what it would have been had this been an R390-class radio. Win some, lose some...

Date: 1 Jun 2007 15:52:56 -0000
From: "n4buq@knology.net" <n4buq@knology.net>
Subject: Re: [R-390] Gender of connectors

That being the case, then the description here is incorrect, right?
http://www.fairradio.com/catalog.php?mode=viewitem&item=5697

Date: Sat, 02 Jun 2007 00:32:38 -0400
From: sdaitch@mor.ibb.gov
Subject: Re: [R-390] Gender of connectors

Don't forget there are also reverse gender connectors available and used for specialized purposes. The normal convention for the BNC series is the male connector has the outside twist-on structure and the female connector has the bayonet pins. Reverse gender BNCs would have the center conductor genders reversed.

Date: Sat, 02 Jun 2007 07:32:58 -0400
From: shoppa_r390a@trailing-edge.com (Tim Shoppa)
Subject: Re: [R-390] Gender of connectors

Actually, if you look at what the catalogs call them, BNCs are usually "plugs" (twist-on slots) and "jacks" (bayonet pins). But some of us (not me) call all connectors with pins "male". Others of us (my leaning) call all connectors that are usually plugs "male". Things get really confusing when you get into mixed-gender connectors (things like the half-and-half two-pin BNC used for twinax etc) or reverse gender (BNC's, TNC's, I'm sure there are others I haven't seen). My personal policy is to not call the connector "male" or "female", but to call individual pins as "male" or "female". Remember the Switchcraft microphone connectors (also found on RF probes on some VTVM's and other instruments) where neither end has a pin, just those little nubs? You can sex those and put them in your Funk and Wagnall's!

Date: Sat, 02 Jun 2007 17:53:44 +0000
From: eldim@att.net
Subject: Re: [R-390] Gender of connectors

Here is my last 'TWO CENTS" worth as a contribution to this wonder list. The FXR Type MB RF "T" Adapter that FRS has pictured is incorrectly identified. NO BIGGY, as this was one of the most easy connectors to misidentify when one was always used to using "BNC" connectors.

The R-390A Receivers Chassis Mounted MB Connectors are ONLY "male" or pin gender. Just to show how confusing this can be I did a print our and study comparison of the Federal Logistics "FEDLOG" Data for the FXR # 47325" and the Replacement NSN. Who ever supplied the information description information for the NSN assigned this Connector's Part Number, MADE THE SAME ERROR; which is consistent with the FRS description. It might be noted that this NSN has been discontinued and been replaced with another NSN which has about 10 different part numbers vs 4 part numbers for the earlier NSN. However, the Description under the New NSN CORRECTLY identifies the gender arrangement as male-female-male, or more technically correct: PIN Bayonet Shell, SOCKET Bayonet Latch, PIN Bayonet Shell. Hope this finds you all in good health and enjoying the lovely weather of summer.

Date: Fri, 20 Jul 2007 09:51:23 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Fw: Plugs/sockete WANTED

Our source for odd connectors is William Perry. Try him (I think he no longer has email, but a fax would work). These connectors were also made by Winchester, perhaps first, and are known by that name. See below for more info. Note that the ones used on the PTO's for the R-390 and R-390A are not the same.

wmperry@covad.net
702 (Rear) Beechwood Rd
Louisville, KY, 40207
(502) 893-8724, FAX (502) 893-9220

No web site that I know of.
Email reported 7/03: wmperry@covad.net (and reported now out of service: 2/07)

You call him or send him a note. Then you wait a few days and in your mail box will show up the right connectors. Then you send him a check.. Simple.

"The William Perry Company is a wholesale electronic surplus company located in Louisville, KY. We are a family owned and operated business that has been around for over 35 years. We specialize in wholesale electronic surplus, scrap metal, resistors, military connectors and

commercial connectors. Connector manufacturers include: Amphenol, Bendix, Cannon, Burndy, Cinch and Winchester.Available series types in inventory:: MS3110, MS3112, MS3116, MS3120, MS3122, MS3126, MS3102A, MS3106A, MS3106B, MS3102E, MS3106E, MS3108E, PT-BT-KPT, PTSE-BTSE-KPSE, 97 A/B, CA E/R, D-SUB, STANDARD K, 17, 26, 57, 67, 165 and 48 series, dust caps, bushings, cable clamps, contacts, co-axels, strain reliefs, tools and much more! We can be reached with orders or inquiries at 502-893-8724 or fax number- 502-893-9220. We are located at 702 Beechwood Road, Louisville, Kentucky 40207."

I think what you want are the Amphenol M series "High voltage miniature" connectors. See this link at CDM Electronics:

<http://cdmelectronics.thomasnet.com/category/winchester-electronics-rack-and-panel-connectors-m?>

Date: Fri, 20 Jul 2007 10:20:27 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Fowler

A huge feature in terms of "keeping it running" is the interchangability of modules for modules that were manufactured a few decades apart. If you start insisting on not just all modules being from the same manufacturer, but also having the same original S/N (never mind that out of the factory the numbers probably didn't match), then things get a lot lot harder, and every radio becomes a limited edition of one.

> I subscribe to this list mainly for the technical discussions.

Me too! In fact rather than just being a module-swapper I now am confident about solving and diagnosing to the component level any module.

Date: Fri, 20 Jul 2007 16:49:54 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Re: Top/Bottom Covers

I have the top and bottom covers for the R-39XX series. They are $30.00 each. Plus $20.00 S&H up to 4 sets in USA.
RF Deck (Utah) $17.50
AC power cover w/ clamp $7.00
Oldham coupler disk with new spring $12.50.

Personal checks or money orders OK; Paypal OK would like plus 3.%
Paypal Id is hankarn@pacbell.net; QRZ addy is good.

Date: Fri, 20 Jul 2007 21:23:15 -0700

From: "Gary" <xfrmrs@roadrunner.com>
Subject: [R-390] A Few Parts For Sale.

I have a few extra parts for a R-390A. Knobs, switches, controls, meters, RF deck with no cover, gear assembly, pinch shafts, connectors. What might you need?

Date: Sat, 21 Jul 2007 13:32:52 -0400
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: [R-390] Serial Numbers

I have a Motorola unit and was wondering something. Is it possible to find the unit S/N if the S/N on the tag and on the back of the unit have been scraped off? The order numbers jive with each other on the tag and rear but I'm lacing a SN. I would like to get Dan Arney to make me a proper tag but would really like to get the correct SN.

Date: Sat, 21 Jul 2007 12:42:49 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Serial Numbers

Many times the s/n is marked/stamped or whatever underneath the nomenclature. I have noticed this on several over the years. Not sure if the factory or the military or depots did this.

Date: Sat, 21 Jul 2007 13:49:51 -0400
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: RE: [R-390] Serial Numbers

Are you talking about under the front tag?

Date: Sat, 21 Jul 2007 13:10:16 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Serial Numbers

>Are you talking about under the front tag?

Yes. Les

Date: Sun, 22 Jul 2007 23:29:47 -0400
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: [R-390] Serial Numbers revisited!

Thanks to all that responded. Les, there was nothing under the name plate. Also, I have yet to take out the IF strip. I guess I have watched too much Discovery channel. I started thinking. Hey, they stamp those numbers into

the tag. They have to leave an impression all the way through the tag.

After examining the rear of the tag, I saw no impression. I tries to sand the back of the tag with no luck. Nothing ever showed up. I flipped the tag over and started looking closely at the front. There were six ground areas where it looked like six digits were ground off. I started thing "what the heck" as I sanded the front with 280 grit sand paper.As each of the ground areas started to thin out numbers started to appear. I can make out either 2940 or 2942. It seems that 2 of the ground areas don't cover a number. They seem to be there to fake out someone. I can only remember 4 numbers on any 390A tag but these had ground six digits. Go figure! Am I wrong? Did they have more than 4 digits on a tag?

Date: Mon, 23 Jul 2007 04:07:51 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Serial Numbers revisited!

I have a bunch of original tags and they all have 4 digits only FYI.

Date: Mon, 23 Jul 2007 03:27:21 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] Serial Numbers revisited!

I didn't get the original question, but some EAC radios had sns higher than 10000.

Date: Mon, 23 Jul 2007 15:21:07 -0400
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: RE: [R-390] Serial Numbers revisited!

I was just trying to decipher the scratched out sn on my radio. You really did not miss anything in the other post. I did figure out the sn that was removed from the tag. It was 294. But, I have a new issue. The order number on the tag is 14-PH-56. On the rear of the radio it is 14-PM-56-a1-51. I guess that the tag on the radio is wrong. I think that Wally might be pretty close when he says use the sn from the IF section. I see a sn on the side of the one of the other modules is 5216. I will remove the IF section later tonight. Either way, I don't see that order number in the history list.

Date: Mon, 23 Jul 2007 15:05:05 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Serial Numbers revisited!

That was a contract/order number for spare parts modules. many, many of those out there, and they do not correspond to the receiver contract/order

numbers.

Date: Mon, 23 Jul 2007 20:02:15 -0700 (PDT)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Fowler Industries R-390A on eBay Now

My '67 EAC doesn't have any IERC shields, just WPA's. It came from Griffiss AFB in '93. I think it came from the Syracuse NRS before it hit the auction. When was the last release of these radios before the St. Juliens Creek Massacre? Hard to believe it's been that long ago!!

Date: Mon, 30 Jul 2007 19:10:59 -0700
From: KA6UUP <ka6uup@pacbell.net>
Subject: [R-390] AN/UPM-6B Radar Test Set

Someone is trying to sell the above. It is clean and unmolested. Operating condx is unknown. This is out of my areas of interest. Can anyone tell me what is a fair price for this or is there any interest in it?

Date: Mon, 30 Jul 2007 20:43:14 -0600
From: "Colin Irwin" <colin.a.irwin@gmail.com>
Subject: [R-390] Suitable equipment racks for R-390A's

I'm looking for a 19" equipment rack to install my R-390A in. I was wondering if anyone could point me in the direction of a suitable brand / website? Any experience with a particular brand of racks, accessories one might need (i.e., braces, etc.), suitability for R-390's in particular, etc. would help.

Date: Tue, 31 Jul 2007 05:41:07 +0000
From: ELDIM@att.net
Subject: Re: [R-390] AN/UPM-6B Radar Test Set

What we have here is a vintage RADAR TEST SET for primarily testing the RADAR IFF/SIF of the APX-6 Transponder which was used in aircraft as well as Ground Radar Equipment. The basic AN/UMP-6 was spelled out in the T-39 Aircaft Manual (1T-39A-2-1). I believe we had this Test Set at our SAC Radar Bomb Scoring Site at JOPLIN BOMB PLOT back in the 60's.

Unless you are playing around with RADAR, I would consider this item ONLY Valuable for it's case and hopefully usable parts. Last Acquisition Cost to the Government was ONLY $1900., which I am almost certain was WAY BACK WHEN perhaps in the 50's and very early 60's. If there is a manual, that would provide great insight to the Date of Acceptance and perhaps manufacturer. Plus a look a the tube complement can provide you a list of tubes that it contains. It is supposed to have a Video Probe which if

I am correct would bave a BNC connector, a green probe body and is switchable from X1/X10/X100 and usable up to 2 KV. The test set is mounted in a case that if I recall was rectangular and about 16" tall x 14: wide x 18" Long. The top may have rolled curvature on the front and rear plus may have been hinged.

I may have one of these in the dark recesses of the ole warehouse, however they are pretty much buried at this time as we are inventoring for the GREAT EXODUS. My formula for deciding price is, to look at the weight, material it is made of, plus most importantly "WHAT CAN I USE IT FOR?" in determining a value. i.e. If it weighs 50 pounds and has aluminum case and internal construction, I initially price it at at aound 15-25 cents a pound. If it has a manual, then I investigate the value of the tube and accessories. If it has a probe I add $5-10 depending on condition.

Normally, I don't buy these for over $25.00 especially sight unseen. I have a ton of test sets, but ONLY have those pertaining to AIRCRAFT on our Inverntory. Really not much demand for RADAR TEST SETS. The AN/UPM-9B measures from 47 to 4100 PPS, with a Repetetion Rate of 0.7-5.0 USec., it will measure BW, Freq, Pwr, Sensitivity, Coding and Decoding. Hope this info helps. Time to eat a late supper.

Date: Thu, 2 Aug 2007 10:20:26 -0800
From: "Tom Elmore" <tom@telmore.com>
Subject: [R-390] Is it Imperial or Motorola ?

A while back I was given an R390-A receiver from the estate of an SK friend of mine. When Bob was alive he often referred to this receiver as being made by Motorola but has Fowler stamped several places on it. Bob was usually pretty accurate about things radio related so I wonder if Fowler and Motorola were in business with each other?

Date: Thu, 2 Aug 2007 13:51:43 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Truth in Advertising?

Easy to tell it's an EAC....chassis plating is all but NIL...Typical ploy to snag the search engines attention.....hoping to find someone that is out looking at the Fowler auction and just happens upon his EAC.... Won't change the final selling price much I don't imagine....

Date: Fri, 3 Aug 2007 00:49:27 +0100
From: "Graham Baxter" <graham@delphe.co.uk>
Subject: [R-390] Spares needed please

I am restoring a low serial EAC from the 67 contract. It has all EAC

modules with very closely matching serial numbers, although the PTO is a Progrestron (not sure how that came to be in it). A previous owner has discarded the audio output transformer in order to fit an eight ohm one. He has also discarded the dual 47uF octal based electrolytic. Can anyone please sell me a 600 ohm output transformer (working) and an electrolytic not necessarily working, suitable for rebuild? Slightly less pressing, I am also short of the three green headed screws and washers which attach the crystal oscillator box to the RF gear plate. I also have no screws for the top and bottom covers, nor for the rack cover plate. Here in the UK it is hard enough to find american screws, never mind tasteful stainless ones to suit an R390A If anyone can help, please allow for shipping to England, postcode PE6 9NP in your price. I have a ready primed PayPal account!

Date: Sun, 5 Aug 2007 10:24:38 -0400
From: "W8BVH" <w8bvh@sbcglobal.net>
Subject: [R-390] Re: new search

I subscribed to this reflector about a month ago and have found it to be quite interesting and fresh. The reason for signing up was to see if this was the correct reflector that might be discussing the R-391. I looked for a reflector on the list but found none. I have a R-391, serial # 105. Along with it I have a Crosley Loudspeaker assy. LS205-A and a Signal Corp Standard Oscillator, TS39B. They all seem to be complete, except for the powersupply for the R-391 autotuner. All are very dirty but not all dented up ect. Is this the place??? Thanks for your time and interesting comments.

Date: Sun, 5 Aug 2007 12:03:23 -0400
From: "Jim Temple" <jetemp@insightbb.com>
Subject: RE: [R-390] Re: new search

From time to time, the R-391 is discussed.
I can e-mail you the manual if you do not have it. Let me know.

Date: Sun, 5 Aug 2007 14:03:41 -0400
From: roy.morgan@nist.gov
Subject: Re: [R-390] Re: new search

This is the place. I'm very interested in the R-391 just now because I will be starting the overhaul of one very soon. I'll be glad to send you my collected notes and tips file tomorrow. In the meantime: - the manual for it is available on line - do get one and print it out

- do NOT apply power to the auto tune mechanism till you have lubricated it and satisfied yourself it will run (If you burn out a motor due to dried up grease, you may be out of luck.)

- I have a picture that shows how to make a fan plate to mount a common muffin fan on the side of the radio to keep the regulator section cool. This radio really does need that. I'll be glad to share experience and findings as I overhaul the one here that I'll be starting soon.

Date: Sun, 5 Aug 2007 15:43:02 -0400 (EDT)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: [R-390] R-391 updates

I've been slowly working on three writing works in progress. There have been too many life issues coming up for me to finish them quickly, so please bear with me. Nonetheless, they still may be helpful to someone restoring an R-391, especially the autotune.

1) my boatanchors web site - http://www.pdq.com/boatanchors

2) my R-391 restoration

article:http://login.pdq.com/boatanchors/r91/R_391_repair.txt

and

3) my R-390/R-391 manual, which is a combination of materials from TM-5820-357-35, R-390 instruction manual and material from my article, located here: http://login.pdq.com/boatanchors/r-391/TM-391-2007.pdf

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Date: Sun, 5 Aug 2007 15:18:20 -0500
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] Re: new search

Don't go out of your way to get the autotune power supply, unless completeness is your passion. That supply ran four 391's with one large transformer and selenium rectifier. Output was 28 volts at 24 amps, IIRC. Don't think there was a filter capacitor. The power only went to the motor, through a marvelous switching system. As Roy Morgan said, don't even think about tearing up all of those pot metal castings until you can turn the shaft by hand, or maybe with a six volt battery. An old, dirty receiver probably has oil and grease that is no longer slippery. Best to clean and relube. Ah, but don't take apart the stacks of sliding stops if you can help it. Complex reassembly. And don't lubricate the clutches. They are supposed to work by friction (or is that the 389?).

If everything turns smoothly as is, you may have a radio that didn't work and wasn't used. The MC and KC knobs do have the locking screws in the center, right?

I wish you a cheery Good Luck. You should know that saying that does not help you, it only makes me feel better.

From: "Paul H. Anderson" <paul@pdq.com>
Subject: RE: [R-390] Re: new search

The original one is the PP-629, and was used to power the autotunes on a pair of R-391's and a CU-286 antenna tuner. I have used 10A labmda 28 V DC power supplies to good effect for a single R-391.

> As Roy Morgan said, don't even think about tearing up all of those
> pot metal castings until you can turn the shaft by hand, or maybe
> with a six volt battery. An old, dirty receiver probably has oil
> and grease that is no longer slippery. Best to clean and relube.

I don't recommend using 6 volts - that will more likely just heat the motor and not turn it. Make sure everything turns by fingers first. The oil and grease turns to glue after 50 years, so you need to get it out. I'm sure this depends to some degree on past maintenance and how hot the receiver has been getting since the last lube job.

> Ah, but don't take apart the stacks of sliding stops if you can help it.
> Complex reassembly. And don't lubricate the clutches. They are supposed
> to work by friction (or is that the 389?).

The clutches need to slide - the old sticky grease won't let them slip when they need to, and it will tear the unholy patooties out of the autotune driveshaft and gears.

> If everything turns smoothly as is, you may have a radio that didn't work and wasn't used.

Heh - I ran across a 67 EAC that was like that - very nice, but had a loose clamp deep in the RF deck that was why it was cheap.

> The MC and KC knobs do have the locking screws in the center, right?

Remember not to tighten these too tight - just a smidge tighter than finger tight is all it should take.

> I wish you a cheery Good Luck. You should know that saying that does
> not help you, it only makes me feel better.

Yeah, good luck - every R-391 deserves a great home and a tender restoration!

Date: Sun, 5 Aug 2007 20:01:05 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] A Little Help Needed

We should warn the new fellows about short leads on the dial lights.

In the early days the dial lights had enough wire to hang yourself with. Over time the wires broke and thus become a bit shorter. Today some are impossibly short to get the cover off and change the dial lights. If you own such a receiver, its time to drop the front panel and install some wire extensions. Heat shrink tubing makes this job much nicer to than it was in the past. There are many lamps in the bayonet style with different filament voltages and current. I do not have the lamp number at hand or I would list it here.

Date: Sun, 5 Aug 2007 20:04:52 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Re: new search

You are in the right place. Much of the R391 is like the R390 and R390/A Several Fellows here have R391 with working auto tune. As you get to specific problems ask questions here. Someone will offer you some help with whatever you need.

Date: Sun, 05 Aug 2007 20:43:01 -0400
From: Charles A Taylor <WD4INP@isp.com>
Subject: [R-390] R-398/URR vs. 51-J
To: <R-390@mailman.qth.net>

I understand that the R-398/URR is essentially equivalent to one ofCollins's civilian sets.
Question: Which one is it? 51J-4?

Date: Sun, 5 Aug 2007 20:50:51 -0400
From: "Keith Densmore" <densmore@idirect.com>
Subject: [R-390] RF Deck Covers

Does anyone know a source for an original or repro RF cover? Thanks to all who responded with help for aligning T-207, T-401. Also thanks to all with suggestions, help on the low sensitivity on 7 meg band. Great group!

Date: Sun, 5 Aug 2007 19:52:35 -0500
From: "Larry WA9VRH" <wa9vrh@dishmail.net>
Subject: Re: [R-390] R-398/URR vs. 51-J

If you mean the R-388 it would be the 51J-3.

Date: Sun, 05 Aug 2007 20:53:02 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] RF Deck Covers

Keith, I have UTAH covers in stock and am having some R-390/301 covers made.

Date: Sun, 5 Aug 2007 23:18:13 -0500 (CDT)
From: jhhaynes@earthlink.net
Subject: Re: [R-390] Query about R-388

Isn't it the 51J3? The R-388 I have came without mechanical filters, and I believe the 51J4 has mechanical filters. Believe there might have been a plug-in kit to add mechanical filters to the 51J3.

Date: Mon, 6 Aug 2007 00:27:10 -0400 (EDT)
From: John Lawson <jpl15@panix.com>
Subject: Re: [R-390] Query about R-388

Ummm, no. 51J-3. The 51J-4 has (among other things) a second 'width' lever concentric with the BFO knob. The R-388 does not have this feature... at least no 388 I've ever seen has it. BTW, there's a pretty nice-looking 51J-4 on eBay now, ending tomorrow afternoon, $499 minimum bid, to 'takers' yet....

Date: Sun, 5 Aug 2007 23:06:52 -0600
From: Transmaster <22hornet@gmail.com>
Subject: Re: [R-390] Query about R-388

There are two models of the R388, the R399/URR, and the R388A/URR. they are militarized versions of the 51J3, and the 51J4. The major difference is the R388 series has 100 ohm Impedance for the antenna input verses 75 ohms for the civilian 51J. To get this impedance there are several parts which are not installed on the R388. These parts can be installed to give the R388's a 75 ohm input but this can be done with external matching units. The R388 /51J3 has crystal filters, and has a crystal phasing control. The R388A / 51J4 has mechanical filters. My R388/URR is my favorite receiver, I have a EAC R390A which is in good repair and I still like R388 better, heck I have a Sunair R-9200 digital receiver and I still like the R388 better.

Date: Mon, 6 Aug 2007 08:09:45 -0800
From: "Scott" <scott@becklawfirm.com>
Subject: Re: [R-390] Query about R-388

A military R-388 is the same as a civilian 51-J3.
A military R-388A is the same as a civilian 51-J4.
I have examples of both----to my knowledge, Collins built them all.

Date: Tue, 7 Aug 2007 02:38:54 -0700
From: "ELDIM" <eldim@att.net>
Subject: Re: [R-390] A Little Help Needed

The R-390A receiver uses two #328 Lamps which are which are rated at 6.0 volts 200 ma., 0.600*MSCP, life expectancy is 1000 Hours. There are several other bulbs that you can use. Some with a lot less current draw, thus much dimmer. If you would like a list posted, just let me know.

Date: Tue, 7 Aug 2007 14:20:57 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Dail Lamps Again A Little Help Needed

If Glen passed you the data for the R390 and R390/A dial lamps, would you add it as a topic in your Pearls of Wisdom. Glen, please post what you have for us again. Over the years the topic has come up several times. Most of us do not have parts manuals on hand to look up the part numbers. Hank has posted the #328 number again for us. There have been the red painted lamps mentioned for Navy Radio Room operations. Several other color lamps have been sited from time to time. Lets beat this horse up once more and collect it for the pearls of wisdom and an insert into the Y2K Manual. Thanks Every one for your input
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Date: Tue, 07 Aug 2007 14:52:05 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] A Little Help Needed

Here, unedited and unconfirmed, are bits of info I found in my notes files:

328 Original bulb
328AS10 A longer life (different filament materiel same volts same amps.)
328AS15 A longer life (another filament materiel same volts same amps.)
328R The rugged one. less light same volts same amps.

For the NON-A: (Prices were in 2001)
The 327 is a 28 volt bulb which is correct for the R-390.
Mouser stock number is 606-CM327 at 50 cents each. You could also get a 376, stock number 606-CM-376 for 79 cents which is rated at about 6 times the life of the 327.

(later): Lamp # 328, 6.3 Volts, 0.2 Amp, MTBF 1000 Hrs.

For the R-390A. Mouser 606-CM328 $.93
Lamp # 381, 6.3 Volts, 0.2 Amp, MTBF 20,000 Hrs.

For the R-390A. Mouser 606-CM381 $1.27
Lamp # 387, 28 Volts, 0.040 Amp, MTBF 7000 Hrs.

For the R-390. Mouser 606-CM387 $.47

Hope this helps. Use the #328 my R-390A. Must be close to 4000 Hrs on them.
About 900 Hrs on the R-390 with the #387.

Date: Tue, 7 Aug 2007 16:37:47 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Dail Lamps Again A Little Help Needed (long)

The dial lamp issue has been discussed at length. It may be found under "Restoration_general" in the"Pearls". Roy's post today says it all re exact replacements. Here are snippets re LED's from "Pearls":

>Date: Mon, 13 Aug 2001 19:52:32 -0500
From: "Richard Biddle" <theprof@texoma.net>
Subject: [R-390] White LED 328 dial lamps

I came across an article in Electronic Design on LED lighting. I went to one of the sources, LEDTronics
(http://www.ledtronics.com/ and they had LED replacements for the #328 lamp. Colors range from red to white to blue.

>From the catalog: T1æ (5mm) Midget Flange-Based LED's

Part Number: F200-0CW-005B
Color: 8000K Cool White SiC/GaN
Retail Price: $9.50
Illumination Angle: 120
Voltage (V): 5/6 V (B)
Typ Current (mA): 160
Typ Intensity (mcd): 15

B = BiPolar AC/DC

Haven't bought any as yet, but I thought it looked
neat.

>From: "Jerry Kincade" <w5kp@direcway.com>
Subject: Re: [R-390] Dial Lamps
Date: Fri, 3 Jan 2003 10:52:13 -0600

Amen, Barry - I'd also love to have some specifics from somebody who has adapted the display illumination to use either green (or even better orange) diffused-lens LED's. I'll bet a coat of flat white paint on the inside of the dial cover would reflect a nice, even-colored glow on those white dial numbers, and they would show up great on their flat black background. How cool would that be? For the coup de grace, add a tiny little pot (inside, of course) to control the LED brightness! :-)

>Date: Fri, 03 Jan 2003 12:14:03 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Dial Lamps

The LED's work and they aren't all that expensive these days. Digikey has some *very* bright ones for a couple of bucks each. Compared to say a R-1051 there's a lot of room in a R-390A to mount a couple of them and a dropping resistor. The main issue is the same one we keep chasing all over the place here. They are DC parts so you have the possibility of RFI when you put them in. Running two back to back still gives you a non linear load. Anything non-linear and you get crud.

>Date: Fri, 03 Jan 2003 14:43:37 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Dial Lamps

There was a thread a while back about taking a dead light apart. You then installed a dropping resistor and a small LED in the base. The net result was a half wave rectifier and a test for the reverse breakdown of the LED being > 10 volts. The main problem mentioned was that the LED used was a narrow beam type and it didn't light up the window as well as a pilot light.

>From: ToddRoberts2001@aol.com
Date: Fri, 3 Jan 2003 16:34:19 EST
Subject: Re: [R-390] Dial Lamps

Mendelson Electronics have several interesting T 1-3/4 lamp based high-intensity multi-chip LED's @ 40 cents each. They are rated 6VDC @ 35ma and come in RED, AMBER or GREEN colors. They come already mounted in a T 1-3/4 midget flange base for drop-in replacement.
Don't know if they would operate from 6.3VAC but would be fun to experiment with! Go to www.meci.com and click on their LED Listings.

>Date: Tue, 6 Jul 2004 22:26:47 -0700 (PDT)-
From: John Kolb <jlkolb@cts.com>
Subject: Re: [R-390] Re: LED lamp replacement

While there may be a possibility of RFI generated by the LED's or (blasphemy) solid state diodes, I'm more curious about the light output. The light out of LED's is rather directional - how well do they work in the R-390?

>Date: Wed, 7 Jul 2004 04:17:26 -0400
From: "JamesMiller" <jmiller1706@cfl.rr.com>
Subject: Re: [R-390] Re: LED lamp replacement

I prefer the "soft" on and off times of filament lamps over the instantaneous on-off of LEDs. My filament dial lamps sort of "ramp up" when they come on, which is the true behavior that should be observed in this genre of radi? . Ever drive behind a car with those obnoxious LED brake lights, especially the Cadillacs?, They flash on instantly... no soft warm up time. It's
grating on the nerves.

>Date: Wed, 07 Jul 2004 17:02:34 +0200
From: "Bryce Ringwood" <BRingwoo@csir.co.za>
Subject: Re: [R-390] Re: LED lamp replacement

The LEDs I have cast an eerie bright whiter than white light - very unpleasant. I guess you could use a ballast tube to soften the start up time*. Have any of you had RFI from a filament light ? Some sort of weird RF can be generated between the filament and metallic deposits on the glass envelope in old lamps. So I'm told.

>Date: Wed, 07 Jul 2004 11:24:09 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Re: LED lamp replacement

That's the little known process of a monode turning into a diode. It does it all by itself. No physicists needed.

>Date: Wed, 7 Jul 2004 10:40:06 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Re: LED lamp replacement

Put a big electrolytic in parallel with them...that should do it!

So that all came forth from this group in the distant past of 2000-2004

Thanks, W. Li Mercer Island, WA

Date: Wed, 8 Aug 2007 17:19:27 -0500
From: Tom Norris <r390a@bellsouth.net>
Subject: Re: [R-390] Dail Lamps Again A Little Help Needed

I've done such a thing to at least a couple of 390A's. Works pretty well, but can be a pain to get the light to diffuse like the pilot lamps did. The white LEDs are *white* very white and if not filtered properly or fed with a regulator you get a nifty headache inducing strobe effect when you turn the dial quickly.

Date: Tue, 14 Aug 2007 17:58:33 EDT
From: TVComlGuy@aol.com
Subject: [R-390] ARR-41

I have an ARR-41 that the megacycle control is bound up tight. It looks like the gears are way out of sync. I have a manual, but this manual doesn't show how to sync them up.

Date: Tue, 14 Aug 2007 19:23:09 EDT
From: TVComlGuy@aol.com
Subject: Re: [R-390] ARR-41

Thanks for the response to my problem with the ARR-41. It's not the knob. I have opened the front panel and the gears are still bound up.

Date: Tue, 14 Aug 2007 20:48:40 -0700
From: John Kolb <jlkolb@jlkolb.cts.com>
Subject: Re: [R-390] ARR-41

If there's an answer, I'll be listening also.

Date: Mon, 20 Aug 2007 19:16:59 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Another new member

Welcome to the reflector. Wander over to the site below. Use a good bandwidth from, homework the library and you can down load a copy of the original R390 TM for your receiver. The Y2K manual covers the R390/A receiver The R390/A TM and Y2K manuals are good reads but you will want the R390 TM for your receiver. Watch the mail, there are reproduction machined Knobs available. Original KC and MC knobs are next to unobtainable. Nice that you have original meters. Front panel reproduction plates are also available. Read the TM once from cover to cover once you get a copy. Check all the tubes once in a tube tester to weed

out the shorts and opens that happen from moving these old receivers from place to place. Check if the 26Z5's have been replaced with diodes. A popular mod.Check the 6082 regulator tubes.There are several good ideas to get some fans on those hot tubes.Watch the mail for web pages and pictures. Check the plug in filter caps. These get leaky and will provide power hum. Check the IF deck (easy) to see if the big diameter plastic caps have been changed out. These are failing from old age. There are also some under the RF deck that need changing. But it is easy to look at the IF deck to see if these parts have been replaced. Once you have all the tubes lit, read through your manual, and have done a front panel operational inspection, you will have a clue as to what does not work. Post some mail here with the problems you find. You will get plenty of help to get the receiver working. Please tell us what you find as you go. Its history and many of us readers learn a lot about how the receivers are holding up from the mail that gets posted.

Date: Mon, 20 Aug 2007 19:38:13 -0400
From: "Al Parker" <anchor@ec.rr.com>
Subject: Re: [R-390] New Member

Ken may know, but maybe Roger doesn't, there's a very good AR-88 list available, actually RCA, but most activity is re: AR-88's and variants:RCA mailing list RCA@mailman.qth.net

http://mailman.qth.net/mailman/listinfo/rca
go to the last item to subscribe.
Guys with good info there.

Date: Mon, 20 Aug 2007 18:38:38 -0500
From: Robert Nickels <W9RAN@oneradio.net>
Subject: Re: [R-390] New Member

I think the 390 crowd will indulge a bit of AR-88 chatter ;-) Welcome also Ken, and I'm anxious to hear your comments also. I'll say that I find the AR-88 one of the neatest radios in my collection. I'm not sure everyone would agree with my attributes of "neat", but there is something about the sound of the receiver, which I think is a combination of selectivity, overall gain vs. noise floor, and the audio response - that make it very pleasant to listen to. I also love the gear driven tuning which makes it a great bandscanner, which of course (obilgatory R-390 comment here) - makes it a nice complement to the 390. Since most were built during the "Great S Meter Famine", I retrofitted one from an SX-28, but it fits perfectly and even reads the correct way and has the same yellow-orange discoloration! I like RCA and Radiomarine receivers, and also have a CR-91 that needs a bit of help so I'll look for tips from you and Ken. Oh, and my AR-88 was "free", if you don't include the cost shipping from the UK! It works well

enough that other than switching it to 120V, I haven't done a thing to it.

Date: Wed, 22 Aug 2007 01:10:34 +1200
From: kenny <igloo99nz@yahoo.co.nz>
Subject: Re: [R-390] New Member

> Wow, thanks for making me feel so welcome! I got lucky in regards to
> obtaining my 390s...There are very few of them here in New Zealand
> that I know of, in fact one only in Christchurch where I live and the
> > owner understandably did not want to part with it. I had initially
> started to look on ebay but the shipping costs some people told me put
> me off. I had started to resign the fact that I was just going to have
> to pay a lot more than I was comfortable with to get my hands on one
> of these radios then I stumbled across a guy in the States whom I just
> happened to ask if he would sell me one and he said yes! And the
> shipping costs were less than half the average I was getting quoted on
> ebay. To make a long story short...he gave me my start in 390s and I
> bought my other three from him as well. To him I am eternally grateful!
> The AR-88s I found here in Christchurch one is a LF version in
> remarkable original condition, it obviously has been well looked
> after. The other one, well, the well-intentioned previous owner had
> 'restored' it but it is a little unstable so that will be other
> project for another time.
>
> I have a few manuals here including the Y2K and a few key websites
> bookmarked, I have read the Cost Reduction Report and a few other bits
> and pieces but I have so much more to learn about these great radios!

Date: Mon, 27 Aug 2007 18:44:39 -0700 (PDT)
From: Rasputin Novgorod <priapulus@yahoo.com>
Subject: [R-390] Collins R-390A, new owner

I'm new to the list, and just received a R-390a. It is in original condition/unrestored, but apparently working. Someday I'd like to do a through restoration but don't have the time right now, though I'd like to start using it.

1) Is there anything I should immediately check? Things that could do damage or harm if they fail and are likely to? Perhaps the power supply filter caps, fuses, power cord?

2) Is there anything I could do in an evening, to improve it's performance (e.g. run all the tubes thru a tube tester)? I have access to good test gear (HP), and am reasonably competent. Suggestions and advice appreciated,

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Date: Mon, 27 Aug 2007 21:26:00 -0500

From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] Collins R-390A, new owner

The filter caps are good to check. If they're not getting warm and the set isn't producing AC hum, then they should be fine. There is a blocking capacitor in the IF deck that, if it goes, will destroy whatever IF filter is currently chosen. It is pretty easy to replace as the IF deck comes out pretty easily. You just have to get the BFO aligned when you put it back in, but that's pretty easy too. Perhaps others can suggest some other common failure points that might be critical.

Date: Tue, 28 Aug 2007 14:45:19 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Collins R-390A, new owner

Tom pointed out the major two problems. Power hum leads you to checking the filter caps.

The filter coupling capacitor C553 in the IF deck for the mechanical filters is the next major item to inspect for. Considering that if it fails, it will let the mechanical filters also be burnt open for no good reason.

Inspection is a two clamp four green screw and four connector operation. Cheap and easy to do.

The next item is all the old 0.01 large dia 1/2 inch long 1 1/2 inch likely brown but some times black (depending on production run) by pass caps. C553 listed above is one of these caps.

If your IF deck has lots of space and many nice new smaller caps in it then you have a deck that has been reworked. If your deck has about a dozen of the old large plastic caps then you will want to consider replacing all of them over time.

There are also a couple under the RF deck. If you have a need to pull the Rf deck off the chassis you will want to replace the large plastic caps under that sub chassis deck as well.

There is one small electrolytic in the audio deck that liked to leak as far back as the late 60's. You may want to look in the Audio deck as well and inspect that cap. Have you found the R390 web pages with the TM's Y2K manual and the Pearls of Wisdom?

Date: Wed, 29 Aug 2007 14:52:54 -0500
From: "Larry WA9VRH" <wa9vrh@dishmail.net>
Subject: Re: [R-390] The Wire Man

http://thewireman.com/index.shtml

Date: Tue, 4 Sep 2007 11:24:41 -0600
From: "DW Holtman" <tubestuff@comcast.net>
Subject: [R-390] Collins/R-390 Gear Prices.

I have updated my web page with Collins/R-390 gear prices which have sold on Ebay. This latest update has some items that I had not tracked before. It is for one calendar year of prices. If you have been to my web page before, you might have to reload the page to show the updates. Also, I posted a list of Drake Prices.

If interested, please go to http://www.heavymetalradios.com/

Date: Tue, 4 Sep 2007 20:06:27 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] new 390a, looking for parts

I hope someone replied direct to you about the parts you seek and offered you some parts.

There are tool holders on the back panel of the R390/A receivers. As a fellow who looked at thousands of them from 1968 to 1975 at several locations in the world, I can say I never seen the tools mounted on the tool clip on the rear of a receiver.

Item 1 was a long slender Philips screw driver. You want one about 8" or longer if you can find it. You would like a slender shaft like with a #1 point instead of a #2 point. You want the slender shaft as a fat shaft will not fit in behind the RF deck to the RF deck green screws.

Item 2 is that spline bit. All R390/A splines were the same size. Replacements had various sizes and some plain hex bolts were also used as replacements. Find a set of hex Allen wrenches in a tool catalog on line and cheap. Buy two sets. You will want to save one in the correct size. From the second set, find the correct size and grind the angle part off to leave you with a straight bit. Go swap meet shopping and find a long driver that accepts Allen bits. These bits are held in with a small set screw. Buy one that had a bit large enough to accept the spline bit. Insert the bit into the new handle and you have an R390 spline wrench.

Send Murphy Surplus in San Diego an E mail and ask them for two each of the Mini BNC to Male BNC with a short 2" -3" cable. Theses were located in a bin across from the front counter with all the other odd cables assemblies. They were $2.00 dollars each back in 2004. There were about a

100 parts on hand back then. That was after I brought a bunch and mailed them out to every one that wanted some back then. I have since retired from San Diego to South Carolina. These are not exact replacements, but they couple to the IF deck and let you cable a signal generator to the BNC. You can use the cable assembly to patch out the back panel if you are going to use the 455KC output.Murphyâ€™s Junk. Murphy's Surplus Warehouse: Located at 401 N. Johnson Ave: El Cajon, CA.

MURPHYS SURPLUS WAREHOUSE:
401 N. JOHNSON AVE:
EL CAJON, CA. 92020 (NEAR SAN DIEGO) 619 444 7717
FAX 444 6750
EMAIL murphy@cts.com

Date: Tue, 4 Sep 2007 19:23:38 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] new 390a, looking for parts

There was a fellow that used to be on this list that made replacements for the tool set. I bought one from him. He had built a stainless steel rod bent in a 90 at one end and the proper spline in the other. Also included a long skinny #1 phillips. It was cool. I did a restoration on a radio and it came out so nice that I put the tools on the rear to finish it off and sold the radio. Wish I had kept them but the did look nice in place on the rear of that near perfect 390. I'm not sure if I have the info on the guy or not...I think he no longer frequents the list.

Date: Tue, 4 Sep 2007 20:31:49 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] new 390a, looking for parts

I hope the tool set is still available. An original L shape spline is a cool tool. I would like to get a reproduction one if available.

Date: Tue, 4 Sep 2007 19:57:24 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] new 390a, looking for parts

Wally's Wacky World - Wrench Works.....But, the link is a dead one.

Date: Tue, 4 Sep 2007 18:58:09 -0700 (PDT)
From: Rasputin Novgorod <priapulus@yahoo.com>
Subject: Re: [R-390] new 390a, looking for parts

I want to thank you all for such excellent and helpful advice. I originally wanted the tools, because I presumed they were some kind of exotic custom

alignment tool, etc. But I understand the #1 is a long, skinny Phillips, and #2 is a Allen key screwdriver, (both of which I've got in my toolkit) so I'm not looking for them anymore. I'll leave them for someone with a "completeness" fetish (me showing uncharacteristic restraint). Are there any special tools I should lookout for to work on 390A's? I've got about two dozen non-metallic alignment
tools, inherited from an TV-radio repairman.

> Send Murphy Surplus in San Diego <snip>

That's a really good idea, I'll do that. For those of you with a "parts" radio, I'm still looking for the short IF coax that connects between the IF terminal on the back panel j116 and the IF module j-514. But any coax about 6" long with Mini BNC's on each end will work. Please let me know. Sincerely Blair

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Date: Wed, 05 Sep 2007 08:36:47 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] new 390a, looking for parts

Bristo #2 is NOT an Allen key screwdriver. It is a spline driver. Many many spline setscrews have been mangled by sticking allen keys in them...

Extension cables allowing you to operate modules out of the deck and give you access to their bellies are very worthwhile. The IF module cabling as is can be twisted enough to give you access to the bottom, and there would be little call to get extension cables for the power supply, but I've found RF deck and AF deck extenders very useful. Without these, tube socket test adapters to allow you to probe around the tube pins are very handy. The most useful tool of all: a second working 390A with modules for swapping out and making measurements on!

Date: Wed, 5 Sep 2007 08:45:29 -0400 (EDT)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: Re: [R-390] new 390a, looking for parts

> .....It is a spline driver.....

It is a .096 inch 6 spline Bristol wrench. McMaster-Carr has them. It might be named a 6 spline key on their web site.

Date: Thu, 06 Sep 2007 21:05:50 -0400
From: Scott Bauer <odyslim@comcast.net>
Subject: [R-390] Dirtiest, Greasiest, Most Rusted R390

Yes, I believe that I have in my possession the dirtiest, greasiest, most

rusted R390 that anyone can possibly imagine. There is not one spot that is clean. My thoughts tell me this is in worse condition than, or may be a blue striper without the stripe.Were 390's de-commissioned before the A's came out? Inside some of the knob holes is dark blue paint. The terminal strips and fuse holders are broken. The gear train is binding somewhere.

A few of the RF slugs are cracked vertically. All of the transformers are rusted along with the power supply transformer. The line filter is missing and I dont have a spare.

I dont believe one should part out radios that are are complete but where does one draw the line? I guess I will see if it works before I do any cosmetics. So, does anybody have a working line filter? I may have found something keep busy with this winter.

Date: Thu, 6 Sep 2007 21:50:26 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Dirtiest, Greasiest, Most Rusted R390

If you have the time and skill give it a bath and restore it. If not consider selling it to someone as is who would like to give it a try. Parting it out is a long slow poor return venture. Note that Hank has had to keep his day job to support his R390 habit.

>Were 390's de-commissioned before the A's came out?

Not at all. Many R390 went to Germany, Berlin, Ethiopia and lots of Army Signal Corp locations. When the R390/A come along they went to newer field station locations like Okinawa, Viet Nam. Korea was mostly R390/A with a fair mix of R390. The receivers served side by side and were doing well when I got out of service in 1975.

>The line filter is missing and I don't have a spare.

Consider a new socket from a computer power supply and a butch plate. Use a couple good caps to the chassis to provide hash filtering and still not trip the GFI and AFIA (Arc Fault Interrupt) breakers. Some heat shrink and varnish on the inside of the receiver on the rear of the socket should keep the line voltage off your fingers

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Date: Fri, 07 Sep 2007 08:58:41 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Dirtiest, Greasiest, Most Rusted R390

Take all the modules out, including the RF deck if you can manage it (you will want a green gear unless you feel up to a gear train mechanical re-

synchronization).

Remove the slug racks and all the transformers.

Put bits of tape over the IF can holes if you want to (blue painters masking tape works very well). Then wash it.

Wash everything. Use 50/50 mix of household ammonia and 409. Paint brushes get the cleaner into small spaces. Rinse well.

Put the modules in the oven at 110 or as low as it goes for an hour, then leave them in over night with the heat off to dry.

Put some 100 watt lamps shining on the chassis at close distance if the weather is not sunny, dry and hot.

You may be amazed at how clean the thing is then.

Date: Fri, 07 Sep 2007 16:38:39 -0400
From: Charles A Taylor <WD4INP@isp.com>
Subject: [R-390] source for Bristol spline wrenches

Someone just recently answered the question for someone as to what the correct designation is for the particular spline wrench that we use on our favorite receiver. Please resend it as I inadvertently deleted the reference. I have been fortunate so far in that all R-390As that have crossed my bench have had the`wrench on the back apron. And didn't someone manufacture a bunch of them in the standard bent bar?

Date: Fri, 7 Sep 2007 19:31:04 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] source for Bristol spline wrenches

It is a .096 inch 6 spline Bristol wrench.
McMaster-Carr has them.
It might be named a 6 spline key on their web site.

Date: Sun, 9 Sep 2007 17:06:05 -0500
From: Jim Green <jagreen3@sbcglobal.net>
Subject: [R-390] I got my R-390/URR

OK, I finally got my R-390/URR. I put it on the bench and follows is a list of the problems I discovered:

1) The function switch:
1a: When the function switch is in the off position and the receiver is

plugged in the receiver is actually in standby mode. In other words, the dial light is on and so are all the filaments. When I switch the function switch to standby, there is no change. 1b: The receiver behaves the same when the function switch is in AGC as it does when it is in MGC. In other words, AGC does not function.

2) The Mc tuning knob: 2a: some fool cut away the skirt of the tuning knob to gain better access to the binding ring. 2b: When I turn on the crystal calibrator and step through all the bands they all work except form 3Mc to 4Mc. I suspect a weak crystal in the crystal ocelator sub-chassis. Probably Y404 (12.6 Mc).

3) The KC tuning knob: The kc tuning knob is a complete un-original replacement.

4) The bandwidth switch: The band width switch seems to function ok, but there is a very narrow step between 8 and 16. All the other clicks are evenly spaced.

5) The Power Supply: V801 and V802 (both 26Z5W tubes) are missing. There are 2 each 100 ohm resistors wired in series with the leads passing through the center hole of the tube sockets. I haven't taken a close look, but I suspect a previous owner replaced V801 and V802 with solid-state diodes and replaced the ballast tubes with the two 100 ohm resistors. I'm not a complete tube purist so the solid-state diodes don't bother me all that much. However, I don't like the idea of the resistors replacing the ballast tubes. I think I will undo that mod.

6) The manufacturers tag: The tag is missing. I don't know why people felt the need to remove these, but there it isn't. There enough parts inside that say Collins on them that I suspect this one was manufactured by Collins not Motorola.

7) the green gear is missing. Cosmetically the receiver is quite good. It's clean inside and the tuning dials turn freely. The best thing about it is it came in a genuine shock mounted cabnet. On the whole I think it's worth fixing. I have a few questions:

1) How does one go about removing the crystal oscillator sub-chassis? I need to do this to check out the crystals.

2) Where can I get the following parts:
2a: The green gear
2b: replacement tuning knobs
2c: a replacement manufacturers tag

3) Does anyone know what could be going on with the function switch? And/or the AGC?

4) Is the small step between the 8 and 16 position on the bandwidth switch normal? Can it be adjusted or repaired?

5) Is it safe to remove the front panel without the green gear?

Any other things I should be aware of?

Date: Mon, 10 Sep 2007 07:53:50 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] I got my R-390/URR

> 1) The function switch: <snip>

Sounds like the power microswitch has welded itself shut. This happens often enough to be a Frequently Reported Problem. Solution: either replace the switch or open the switch and pull the contacts apart. Good luck with the other problems, which aren't in my knowledge base.

Date: Mon, 10 Sep 2007 10:52:47 -0400 (EDT)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: Re: [R-390] I got my R-390/URR

> 2) The Mc tuning knob: <snip>

Dan Arney should have new ones.

> 4) The bandwidth switch: <snip>

This sounds like a mechanical problem - you can pull the IF deck and make sure things are ok under there. The most likely problem is just mechanical limits of the switch. Is it going to 0.1KC ok?

> 5) The Power Supply: <snip>

This is probably an acceptable mod - some people put dropping resistors in to drop B+ just a little bit, because the 26Z5W tubes drop more than a pair of diodes do. You just want to make sure it's safe electrically and thermally speaking. If it appears safe, I'd just use it the way it is for awhile.

> 6) The manufacturers tag: <snip>

Dan Arney makes these, also.

> 7) the green gear is missing.

Dan Arney makes these... you don't really need them that badly if you're comfortable with aligning the RF deck (it isn't that hard once you "get" what they're trying to do).

> Cosmetically the receiver is quite good. It’s clean inside and the tuning
> dials turn freely. The best thing about it is it came in a genuine shock
> mounted cabinet. On the whole I think it?s worth fixing. I have a few
> questions:

You've got an amazing radio - you've got a keeper with a few cosmetic and electrical issues!
>
> 1) How does one go about removing the crystal oscillator sub-chassis? I
> need to do this to check out the crystals.

Getting to the crystals is a pain - I think you need to pull the RF deck, then the crystal deck, then remove the insulated, heated cover which I recall was annoying.

> 2) Where can I get the following parts: <snip>

Dan Arney makes all of these, plus locking pins for the R-391.

> 3) Does anyone know what could be going on with the function switch?
> And/or the AGC?

You can drop the panel, pull the switch, pry it apart and gently burnish the contacts, I believe, and it should/may work for many more years. New switches are occassionally (rarely) available. Better just to dig in and fix what you've got. Failing that, just put the radio on on a switchable power strip.

> 4) Is the small step between the 8 and 16 position on the bandwidth
switch
> normal? Can it be adjusted or repaired?

It doesn't sound normal, but I don't have one in front of me. I'm sure it can be repaired, just about everything about the radio can be.
>
> 5) Is it safe to remove the front panel without the green gear? Any
> other things I should be aware of?

I think you can pull the front panel without losing alignment. You lose alignment when the RF deck comes out. Even then, the green gear is a

convenience, not a necessity. Enjoy that radio - it sounds very nice! Paul

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Date: Mon, 10 Sep 2007 21:11:29 -0500
From: Jim Green <jagreen3@sbcglobal.net>
Subject: [R-390] More on my new (old) R-390

I got the function switch to work. It was the power micro switch. I also got the bandwidth switch to work. One thing I didn't mention before is my zero adjust clutch doesn't seem to be working. I think I know why. I'm pretty sure the knob is not the correct one. It looks like the shaft is threaded and the knob is a set screw type for 1/4 inch shaft. I don't know what the original knob was supposed to be like. Any suggestions would be helpful.

Date: Tue, 11 Sep 2007 09:29:48 -0400 (EDT)
From: "Paul H. Anderson" <paul@pdq.com>
Subject: Re: [R-390] More on my new (old) R-390

A portion of the shaft looks threaded, but the set screw knob is correct. It is even more correct if it is the same appearance as the other knobs, but has no white line on it. It is unique in that regard. You can always fill in the engraved part of a regular small knob and paint the knob, of course. I don't have the mechanism in front of me, but if you have the manual, and the front panel down, it won't be hard to figure out any adjustments you need to make, provided the mechanism isn't broken with pieces missing. You might actually need to screw it down fairly tightly to get it to lock the tuning mechanism.

Dan (Hank) Arney can be reached at hankarn@pacbell.net - I've bought a bunch of stuff from him, including his reproduction R-390 covers (top/bottom, RF deck, crystal deck back panel cover, R-391 tuning knob locking pins, tags, R-391 tuning chart, green gears, powder coated tuning knobs, powder coated front panel, and more). You'll have to check with him to see what specifically he has in stock, of course. As far as I know, he does all the stuff himself or farms it out. All is top notch quality.

Date: Tue, 11 Sep 2007 12:01:09 -0400
From: wabate <wabate@verizon.net>
Subject: [R-390] WTT 390A Data Plates

I just got another 390A. Pretty dirty but its all there and everything works. It even has the meters but it is missing the data plate. I now own two A's without their data plates! I have two data plates as spares, one is a Motorola and the other is a Collins. My luck, they are the wide spaced mounting holes and I need the narrow. The Motorola plate is in very good condition and the Collins has one small mar. I really don't want to redrill my panels so does anyone have one or two in similar condition they want

to swap? I prefer at least one Stewart-Warner as that is the manufacturer of one of 390A's. In case you forget, the narrow spacing holes are 2 5/16" apart and the wide spaced holes are 2 13/16" apart.Thanks, Bill, K3PGB

Date: Tue, 11 Sep 2007 21:44:00 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] TM 11-5820-357-35 Radio Receiver R-390/URR

I went to the web site to reference the R390 TM for Jim. http://www.r-390a.net
I did not see the R390 TM on the list. My print copy is 9 March 1962 two staple bound three hole punched. http://www.r-390a.net/faq-refs.htm

Is there a Navy TM posted for the R390?
Do we need to get the R390 TM scanned and posted?
Does any one have a TM 11-5820-357-35P parts manual for the R390? This may be a 34P parts manual.

There is a world of difference between the R390 and the R390/A receivers. Many fellows have R390's and we need to get the original TM on line somewhere for them. We are not about to do a difference manual between the R390/A and the R390 for the Y2K manual.

Date: Tue, 11 Sep 2007 22:47:15 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] TM 11-5820-357-35 Radio Receiver R-390/URR

I did find the TM and down loaded it from the BAMA site. I sure hope it stays posted there. I did a search on TM 11-5820-357-35 and found it.

Date: Tue, 11 Sep 2007 23:14:09 -0500
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] TM 11-5820-357-35 Radio Receiver R-390/URR

I have a PDF copy of TO 31R1-2URR-414/TM 11-5820-357-35P. It is the basic pub dated 4 Nov 1959 and change 3 dated 27 April 1964. The document is 33 pages long and is 3.3M in size.

Date: Wed, 12 Sep 2007 06:45:47 +0100
From: "Lester Veenstra M0YCM K1YCM" <M0YCM@veenstras.com>
Subject: RE: [R-390] TM 11-5820-357-35 Radio Receiver R-390/URR

Can I get a copy so I can post it on www.r-390.com?
Anyone out there with any other R-390 documents?

Date: Wed, 12 Sep 2007 23:06:02 -0500

From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] RE: R390/URR RF Decks AVAILABLE NOW

Guys I have had a email disaster and lost all of my listings. I now have the R-390 RF deck covers ready to ship .Also the R-391 lock pins .

Date: Wed, 19 Sep 2007 06:39:51 -0700 (PDT)
From: Rasputin Novgorod <priapulus@yahoo.com>
Subject: Re: [R-390] source for Bristol spline wrenches

I found this source... <http://www.mgs4u.com/bristol-wrench-spline.htm>

Date: Fri, 21 Sep 2007 19:46:19 -0500
From: Tom Frobase <tfrobase@kitparts.com>
Subject: [R-390] Tap for R-390A reeiver

I ended up purchasing 12 bottom taps for R-390A knobs set screws 8 - 36, I'll share $3.00 PP, I shipped one with the last knob powder coat job, I want to keep 5; so six are available ...

Date: Sat, 22 Sep 2007 11:18:36 -0500
From: Jim Green <jagreen3@sbcglobal.net>
Subject: [R-390] Dan Arnie's Prices?

I have request prices from Dan Arnie (Hank) 2 or 3 times now and all I have gotten back from him is this:

"Jim, I have tags but no way to stamp the numbers. I have original tags with S/Ns on them different prices on the S/N . For Green gear placement you need a manual to see where it goes, I have knobs, covers, RF Deck covers, spare fuse cover, OSC overs, no tools, tube puller or pin straighteners. Have some 8-36 set screw.Hank KN6DI"

It's good to know what he carries, but before I can place an order I need to know how much he is asking for his wares. Can anyone else tell me what his prices are? I know he is an honerable businessman and am willing to send off an order for the parts I need with a check to cover the price of the items and shipping. If someone has this top secret info please pass it along so I can get on with my R-390 restoration project.

Date: Sat, 22 Sep 2007 12:04:36 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Dan Arnie's Prices?

I have had and am still having related virus problems on my computer.Lost all of my email s and address book. I have to reboot anytime I want to

check my email.

The Green gear is $27.50 plus S&H
New R-390 Tags are $27.50 each with no S/N.

Original tags are 4 S/N # are $37.50, 3# are $47.50 and 2 # are $57.50. all plus $3.00 S&H.

Personal check is fine. Paypal please add 4% ID is my email addy QRZ .com addy is good.

Date: Sat, 22 Sep 2007 12:42:18 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: [R-390] Request from someone seeking Rick Mish at Miltronix

I received this e-mail from a friend in Italy regarding the whereabouts of Rick Mish:

Les,

"Do you know anything about RickMish ? It's a lot of time since I last heard from him and it seems that his latest e-mail address: radiomon@buckeye-access.com is no longer active. In the past two months I tried (several times) to contact him also by phone: (419) 255-6220 and by letter unsuccesfully. In his last e-mail of June 13 he told me that he would have gone out of business in a short (due to the current difficulties concerning his radio job). So I am seriously worried about the matter, you know that Rick is a very good friend of mine."

If anybody has any information regarding rick, you can contact me and I'll forward the information to Italy.

Date: Sat, 22 Sep 2007 14:27:52 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Request from someone seeking Rick Mish at Miltronix

Rick is fine, I just sold him an order and shipped it last week and received his money 3 days after I shipped it.

Date: Sat, 22 Sep 2007 15:15:47 -0500
From: mlmccauley <mlmccauley@tx.rr.com>
Subject: [R-390] a long time lurker pops his head up

Name is Mike, WB5MYY. I bought Motorola R-390/A s/n 2755 a LONG time ago from a fellow on the west coast who held out that it had been taken out of service working. Thus far, I have not powered the set up. Examination

by an untrained novice eye indicated that the set shows no signs of extreme wear or mechanical damage.

The time is finally right for me to put some time into the radio in order to fully determine its condition, such that I can decide if I want to commit to the substantial time investment that will be required to properly rebuild it, or not.

I'm wondering, other than powering the set up slowly (over ? hours), what "killer" parts should I replace to reduce the probability of any vital components being trashed at startup. I have heard of such, but I want to make very sure I have all bases covered before I throw the power switch.

Also, is there a list of generally accepted pre-power up checks? No need to reinvent (retype?) the wheel here, if a reference document exists somewhere that contains this information, referring me to it will be great. I have zero hours of experience with these sets, either as a user or repair technician, so please don't assume that I know any "standard" set of things to do or not do. Thanks in advance for the help!

Date: Sat, 22 Sep 2007 14:51:16 -0400
From: Carole White-Connor <carolew@bellatlantic.net>
Subject: Re: [R-390] Dan Arnie's Prices?

I've bought parts from Hank Arney and he is absolutely the best. Quick service, quality parts, fair prices.

Date: Sat, 22 Sep 2007 17:10:13 EDT
From: DJED1@aol.com
Subject: Re: [R-390] a long time lurker pops his head up

Probably the first thing I would do is to download the Y2K manual, so that I had a good source of information. I would ohmmeter the B+ at the fuses to make sure there are no shorts, and I would check or replace C553, the cap that separates the B+ from the mechanical filters. I would then bring up the radio slowly using a variac. On second thought, I would probably check all the tubes before trying to fire the radio up, just to eliminate on possibility of problems. Once the radio is up and running, then there may be any number of things to do, depending on the results. You can read the Y2K manual, or post problems here if you need help. Good luck with the radio. I picked mice.ne up in 1973 and it's been a delight ever since.

Date: Sat, 22 Sep 2007 17:05:31 -0500
From: mlmccauley <mlmccauley@tx.rr.com>
Subject: [R-390] THANKS! (a long time lurker pops his head up)

Many thanks! This is exactly what I was looking for. I'll DL a copy of that document and see to the stuff you guys pointed out. I really appreciate the help. Now I've got a solid starting point.

Date: Sat, 22 Sep 2007 17:32:16 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Dan Arnie's Prices?

The tags are priced by the original tag numbers if it has XXXX (1234)as an original S/N it is $37.50, with three XXX (123) it is $47.50 and with two XX (12) is $57.50 per tag. Since I moved to TX I have not found anyone with a mechanical stamper and I am not happy with the manual stamping that I can do by hand due to my uneven line up and hit of each number, Way Too Many NIT PICKERS out there. I have tags for nearly all of the BA's and the contracts. Before you get all huffed up on the price I saw an original XXX S/N go for over $100.00 on you know where,

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Date: Sun, 23 Sep 2007 13:14:46 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] RE: Younz of Japan

Please contact me as I now have the R-390 RF Deck covers and 391 lock pins so I can ship your parts. I had a virus and lost all of my emails and address book.
Sorry for the BW guys,

Date: Mon, 24 Sep 2007 23:36:40 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] WTB: Bristol spline tool

McMaster-Carr has both flavors short and long. P/N 7049A31 is the long Bristo wrench 3 1/8 long six flute 0.096 "L"

Date: Tue, 25 Sep 2007 13:54:25 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Bristol spline tool availability

http://www.mcmaster.com

Date: Tue, 25 Sep 2007 14:27:18 -0400
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] Bristol spline tool availability

I bought some Bristol spline inserts for my Xcelite 99 handle through Amazon. COM from an outfit called Sacramento Electronics at a reasonable price and quick delivery.

Date: Tue, 25 Sep 2007 13:33:50 -0500
From: Robert Nickels <W9RAN@oneradio.net>
Subject: Re: [R-390] Bristol spline tool availability

Hank has a typo in the above number, try p/n 7048A31, or just go to catalog page 2780 or search for "bristol key wrenches"/

Date: Tue, 25 Sep 2007 14:33:31 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Bristol spline tool availability

I am about to lift the phone and call:

Max-Gain Systems:
http://www.mgs4u.com/Bristol-spline-L-keys.htm

to order some spline wrenches. They have kits, and *apparently* also sell individual wrenches. They have: L-wrenches in short and long Bristol spline screwdrivers (a straight bit mounted in a handle specifically made for that size bit.) at least four different kits of L-wrenches

The prices seem reasonable. The kits are shown at:
http://www.mgs4u.com/Bristol-spline-hex-keys.htm

It would seem to me that for mounting a tool on an R-390A you have, their long L-wrench is the thing: S-096-6L

If you want to make your own authentic original looking tool, get some stainless rod, bend it, drill the end, and somehow mount a replacement bit from them for:

"The Bristol spline screwdrivers have replaceable bits, retained by a setscrew in the recess of a precision-machined bushing which is broached to the unique size and shape of the bit for positive, non-slip engagement."

Another source is:
Newman Tools, Inc.:
http://www.newmantools.com/hand/splinekey.htm

Cooper Tools apparently supplies Xcelite sets to retailers:
Cooper Tools, Inc (Xcelite):
http://www.cooperhandtools.com/brands/xcelite/index.cfm

Mouser only lists ONE of the Xcelite bits as being available, all the others are called "obsolete":

These guys have what you may need: McMaster Carr:
http://www.mcmaster.com/
search for: "Spline L-Key"
10-Piece Short-Arm L-Key Set— Includes four-flute diameters 0.069" and 0.076", plus six-flute diameters 0.060", 0.072", 0.096", 0.111", 0.133", 0.145", 0.168", and 0.183". Packed in a plastic pouch. 7048A55 Per Set $13.08 (Sept '07)

NOTES:
1) max-Gain Systems sells genuine American made tools from the Bristol Wrench Company, apparently the originators or at least the most well known maker of these things. (The Bristol Tool Company is a different place!)

http://www.bristolwrench.com/spline.pdf
Bristol Wrench Co.
P.O. Box 4317
Salem, OR 97302

Phone: 503-371-9655
Fax: 503-371-9662

2) The R-390 knobs take the .096 six flute spline wrenches. The 75A-4 main tuning knob is different. The HP signal generator I have takes very small sizes for the smallest knobs. The SX-88 bandswitch and band switch knob take yet a different one. Some of the SX-88 knobs use FOUR-flute wrenches, I think. I will be able to report on Max-Gain in a little while.

Date: Tue, 25 Sep 2007 15:12:15 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Bristol spline tool availability

Just got off the phone with them: they are happy to send me the L-wrenches I need at $1.95 each for the .096 and .111 sizes and $2.49 for the .133 size. He'll mail them USPS priority tomorrow. With luck, I'll have them to use on Friday.

Date: Tue, 09 Oct 2007 16:01:12 -0700
From: Richard Loken <richardlo@admin.athabascau.ca>
Subject: [R-390] Hank's R390/URR RF Decks covers

Hank, I received your R-390/URR RF deck cover today and a lovely piece of work it is with a glorious silk screen location guide on top and that yellow-gold colour we all know and love. Is there a rectangular state that we could name this plate after? Maybe call it the Colorado plate (and its right next

to Utah)... I copied this to the list so everybody could know what I think of your work. So what size screws do those long forgotten mounting lugs expect to receive?

Date: Tue, 09 Oct 2007 21:26:59 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: [R-390] Re: Hank's R390/URR RF Decks covers

Richard, Thanks for the pat on the back Hi Hi. 6-32x3/8 pan head Phillips SS work just fine.

Date: Fri, 19 Oct 2007 16:08:31 +0000 (GMT)
From: triodes@optonline.net
Subject: [R-390] Lord or Barry Mounts for CY-979A Cabinet

Can anyone advise the correct Lord or Barry part number for the shock mounts for the CY-979A cabinet? I am not sure if the ones furnished with my cabinet (that I acquired last weekend) are correct for the CY-979A. I believe the Lord or Barry part number should be screened right on the shock mount itself. The mounts that came with my cabinet are manufactured by Barry, and the load rating is 20 lbs., which seems a bit light considering the combined weight load of the cabinet and the receiver. Any help would be very much apprecated!

Date: Fri, 19 Oct 2007 09:30:26 -0700 (PDT)
From: Michael Melland <w9wis@yahoo.com>
Subject: Re: [R-390] Lord or Barry Mounts for CY-979A Cabinet

HT2-35. Lord BTR series mounts. 35lb rated each

http://www.lord.com/Portals/0/VibrationMotionNoise/btr_mounts.pdf

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Date: Fri, 19 Oct 2007 20:59:09 -0400
From: Charles A Taylor <WD4INP@isp.com>
Subject: [R-390] name that connector

Sometimes important thing escape my mind. What is the name of the class of "mini-BNC" connectors used in the R-390?

Date: Fri, 19 Oct 2007 18:49:48 -0700
From: "Ed Zeranski" <ezeran@ezeran.cnc.net>
Subject: RE: [R-390] name that connector

Tyco has a series called...'Mini-BNC' 75 ohm for RG-179 etc. Do a search for Tyco Mini BNC maybe a source will pop up.

Date: Sat, 20 Oct 2007 10:17:28 -0500
From: "Dave Merrill" <r390a.urr@gmail.com>
Subject: Re: [R-390] Lord or Barry Mounts for CY-979A Cabinet

Mac supplied four Lord HT2-50 on the cabinets he was selling a few years ago which was probably overkill - i.e. 4 x 50 = 200 lbs. On another CY-979 cabinet I have the mounts are marked: Lord J-5209-89 MT-1179A/U 17-30.

Date: Sat, 20 Oct 2007 18:05:14 -0400
From: roy.morgan@nist.gov
Subject: Re: [R-390] name that connector

Mini-Bnc = "MB". By the way, normal for these connectors has the male center pin in the chassis mount connector, and having the bayonet studs on its outer periphery.

Date: Wed, 31 Oct 2007 10:41:09 -0400
From: Charles A Taylor <WD4INP@isp.com>
Subject: [R-390] source for 0.096" spline keys

Someone sent an e-mail address to me for a source for 0.096" spline keys as used on R-390A. Would whoever it is resend that e-mail address, PLEASE?

Date: Wed, 31 Oct 2007 10:57:38 -0400
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] source for 0.096" spline keys

It's Max Gain Systems: I wrote: The place to get *genuine* Bristol Wrench Company USA produced, highest quality tools is at Max Gain Systems. I recently got long L-wrenches
in three sizes for about $2 each. If you call now, they would be in the mail to you tomorrow, or maybe today:
>Max-Gain Systems:
>http://www.mgs4u.com/Bristol-spline-L-keys.htm
>221 Greencrest Ct., Marietta, GA 30068-3825
>Phone: (770) 973-6251
>Fax: (815) 461-7730
>Email: <mailto:info@mgs4u.com>info@mgs4u.com
>
>These folks have straight wrenches chucked in screwdriver handles, one for
>each size, short arm and long arm individual wrenches, and kits. Their
>SS-508 kit is likely to do all you need, and is priced at $14 plus $2 sh.
>They have a special to get a very nice allen wrench kit in addition for a
>modest amount more. "Special combination price! The HS-206 if

purchased
>WITH the SS-508 Bristol spline L-key kit are priced at $18.95 plus $3
>shipping in US and possessions, $4 worldwide. Ask for the "HS-206
combo". "
>
>(Note that allen wrenches are sized from flat to flat, not max outer
diameter.)
>
>R-390 receivers use the 6-flute .096 size.
>HP instruments with very small knobs use the smaller or smallest HEX
wrences
>
>I have three suggestions:
>
>1) Do not order from Snap-On. You'll pay as much for one wrench as you
do for all you need from Max-Gain. Do not go down to Sears or any other
>place looking for these - they don't have them.
>2) order from Max-Gain and get the best available
>3) break the sharpness of the end of the wrench with a very fine
>sharpening stone to make it easier to get it into the set screw
>
>The Xcelite 99-series wrench inserts with handles (Tee and screwdriver
>type) are very good also. They make a kit with handle, extension, and
>nine wrench inserts. Mouser lists these inserts as individual parts but
>most of them are described as "discontinued". The Xcelite tools are not
>discontinued by Xcelite, or their distributor which is:
>
>Cooper Tools apparently supplies Xcelite sets to retailers:
>Cooper Tools, Inc (Xcelite):
>http://www.cooperhandtools.com/brands/xcelite/index.cfm
>
>Another source is:
>Newman Tools, Inc.:
>http://www.newmantools.com/hand/splinekey.htm
>
>Call Max-Gain now.

Date: Fri, 02 Nov 2007 19:47:05 -0400
From: Jon Schlegel <ews265@rochester.rr.com>
Subject: [R-390] Cleaning modules

I'm new to 390's and am looking for a good way to clean modules out of my Motorola unit. There is a light to moderate coating of dust that's somewhat "hardened" over the years and I can imagine that some sort of a good scrub down would remove. Is doing something like this a viable approach?

Date: Fri, 2 Nov 2007 21:12:17 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Cleaning modules

As long as you rinse everything off *very well*, simple green works pretty well. Drying it quickly is a good idea to. So is disconnection the power first. Also avoid kielbasa while doing the cleaning ....

Date: Fri, 02 Nov 2007 21:19:16 -0400
From: Jon Schlegel <ews265@rochester.rr.com>
Subject: Re: [R-390] Cleaning modules

Simple Green? Is it a common cleaning product? BTW, I'll make a note about the power thing.

Date: Fri, 2 Nov 2007 21:33:53 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Cleaning modules

Simple green, it's sold in all the finest stores. Walmart, Home Depot, Lowes, maybe even Wegmans. Probably not Wegmans, not high end enough...It's a lot like other janitorial grade cleaners. There's nothing very special about it. There probably are a dozen other products that work every bit as well. The reason I like the stuff is that it's water based. You don't have all the ventilation issues you do with solvents. Disposal with water cleanup is also a lot easier than getting rid of solvents these days.

Date: Sat, 03 Nov 2007 05:03:25 -0400
From: Barry Hauser <barry@hausernet.com>
Subject: Re: [R-390] Cleaning modules

Simple Green, like Formula 409, Fantastic, etc. is an ionizing cleaner -- it can leave behind salt compounds. There have been reports of the stuff saturating phenolic and ceramic insulators -- as in rotary switches and tube sockets -- and turning them conductive enough to arc. At least, that's what I read a few years ago. May well be that those who apply Simple Green liberally - then maybe flush with distilled water - are lucky most of the time. And maybe it depends on the specific insulators involved. Most ceramic tube sockets and switch parts are glazed -- but not all surfaces. The flat sides of phenolic wafers are glossy -- but not the die cut edges. Probably depends.... Anybody ever try one of those steam cleaners?

Date: Sat, 3 Nov 2007 12:34:25 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Cleaning modules

It has been reported that running the modules through the dish washer and then leaving them on out in the sun for a warm days works wonders. The standard dish washing powers (cascade) are not to aggressive but get the job done. The whole receiver out in the yard on a table with simple green and the garden hose works wonders. Leave the parts to dry for the afternoon. If you have an air compressor. Then you can alternate between simple green, brush and rag, air, clear water and then air again.

Date: Sat, 3 Nov 2007 14:40:07 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Cleaning modules

I've used the original Formula 409, a brush and the garden hose. I blow the modules off with my compressor carefully and let them sit in the sun. Then they go back inside where the A/C pulls the rest of the moisture out of them for several days before applying power. Works great.

Be aware that Simple Green that is not fully washed away reacts with aluminum. Guys were cleaning up in the airframes of General Aviation aircraft and corrosion problems started occurring. It has been pretty well publicized in those circles to stay away from Simple Green for that reason. I wouldn't worry as much about it in a radio but make sure you rinse extremely well!

Date: Sat, 03 Nov 2007 15:40:40 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] R-390/URR

I use the dishwasher on the back panel with the harness, audio and rf deck full cycle hot dry and no problems. I use Awesome that is available at .99, Dollar General and others with great results. Spray on and agitate after a few minutes and hose off with high pressure and blow with compressed air and dry out side.

It also eats grease for lunch and dinner on the gear train. I use toothpicks to split the gears prior to the water bath air and sun dry then lubricate with Mobil 1 with a pin oiler. No problems with any print on chassis only over spray of water on a Hallicrafters dial audios. I only do the back panel on my total overhauls. The harness looks new.

Date: Sat, 3 Nov 2007 16:32:12 -0500
From: "Joel Richey" <richey2@mindspring.com>
Subject: [R-390] Cleaning 390A

hello everyone, I have rebuilt many 390A's, I used engine cleaner (Gunk), a

couple of cans and sprayed em good and let it set for 20 minutes or so and hosed em off in the driveway and boy, they came out looking like brand new, had to relube every thing but it worked great, just my opinion but it worked great.

Date: Sat, 3 Nov 2007 18:02:12 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Cleaning modules

I do a serious job of spraying everything out with clean HOT water after I use anything like Simple Green. You do need to displace all of it from the radio when you are done. Compressed air sprays out the water.

Date: Sat, 3 Nov 2007 18:10:15 -0500
From: "keller family" <kellerfamily01@charter.net>
Subject: [R-390] Cleaning Modules

I have had very good results using plain old 90% rubbing alcohol that I got at Sam's club. It cleans all the stainless and aluminum surfaces very well just using a rag, and you can brush it into cracks and such to flush out gunk. The best thing is that you don't have to rinse it. The last thing I used it on was an extremely dirty SP-600, and it came out looking almost new.

Date: Sat, 3 Nov 2007 19:53:59 -0400
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Cleaning Modules

The only problem with using rubbing alcohol is what's in the other 10%. The stuff *should* be 10% water. In some cases it's got some lanolin or glycerine (!!) in it. That apparently makes it "super" for your skin. It leaves a bit of "stuff" if you use it for cleaning radios. Hopefully a quick look at the label will let you know what they did or didn't put in the stuff you are about to buy.

Date: Sun, 4 Nov 2007 20:46:10 -0600
From: "keller family" <kellerfamily01@charter.net>
Subject: Re: [R-390] Cleaning Modules

Bob, the alcohol I used didn't have anything but water in the other 10%, so I guess that's why it left everything so clean.

Date: Sun, 4 Nov 2007 22:10:38 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Cleaning Modules

If you go for the discount brands, you get water. If you buy the fancy stuff

you get water and other things. This is one case where spending more money does not get you the better product.

Date: Mon, 05 Nov 2007 09:22:24 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Cleaning modules

>Simple Green? Is it a common cleaning product?.....

To Jon and would-be Simple Green users: yes, it is a common cleaning product. And no, you really should not use Simple Green: The Army aviation repair establishment published a maintenance note in their magazine oriented toward aircraft mechanics to the effect that Simple Green had been tested and shown to create corrosion in aluminum. A couple of observations:

- We may think we are rinsing well, but some of the cleaner may still be deep inside crevices and between parts that can't get a good flow of fresh water.
- The modules in the R-390 are not Army helicopters and they certainly don't cost as much and are not dependedent upon to preserve the lives and limbs of people who use them

Sooo.. if you like Simple Green, go ahead. Just let me know if I am tempted to buy one of your radios. Restorers I know use a 50-50 mixture of 409 and household ammonia. The R-390/URR and R-390A/URR modules I cleaned not too long ago look new.

- apply with a squirter, brush vigorously with a paint brush, or parts brush.
- rinse well with lots of water
- dry with moderate heat (the summer sun in Arizona, or your oven at 120 degrees – convection ovens work great!) Heat lamps or just plain lamps placed close and a small fan will do.
- re-lubricate EVERYthing, and treat all switches with Caig De-Oxit (and pots with Caig MCL if they are not sealed shut). Accept no substitutes, they have new names now, see ww.caig.com for details and a trial kit of small tubes.

Remove all modules from your R-390x radio. Remove the RF deck and remove all the slug racks and transformers. Wash everything as above. The meters are sealed so don't worry. Your radio will look like new.

> BTW, I'll make a note about the power thing.

Make sure you have a three wire line cord while you are at it. Put in an inrush current limiter.

Date: Mon, 05 Nov 2007 09:38:55 -0500
From: Roy Morgan <roy.morgan@nist.gov>
Subject: Re: [R-390] Cleaning modules

Would-Be Simple Green Users, I have located the one page article from the Army maintenance magazine. It appears to be from: "PS 573 AUG 00" and is entitled: "All Aircraft SIMPLE GREEN - AN AIRCRAFT WASHOUT"
'Glad to send a digital copy to anyone.

Date: Mon, 05 Nov 2007 10:24:52 -0600
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] Cleaning modules

Ammonia works well too. I found it to work better when restoring an old Fisher 800B receiver unit.

Date: Mon, 5 Nov 2007 11:35:10 -0500
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: RE: [R-390] Cleaning modules

I wonder about the use of ammonia to clean modules containing copper wiring, etc. Ammonia (ammonium hydroxide) will react with copper to form an ammonia copper complex that can be identified by a dark blue color. As long as it's completely removed rinsing nothing should be harmed. Noting Roy Morgan's comments about Simple Green and aluminum, a similar condition might exist with ammonia and copper.

Date: Mon, 5 Nov 2007 11:00:16 -0800
From: Fernando Quinones <n2fq@sbcglobal.net>
Subject: Re: [R-390] Cleaning modules

I can attest to that. I've done four rigs and let them dry out in the sun also. Just keep the dog away..hi. Plan on doing it to my 30L1.
I have some picture of the 390A wash on my web page if interested.
The receivers still work. Go figure...

Date: Mon, 5 Nov 2007 16:32:23 -0600
From: "Richard" <theprof@texoma.net>
Subject: Re: [R-390] Cleaning Modules - WARNING ABOUT ALCOHOL

I found out the hard way that 90% IPA will remove a lot of things that you might like to keep. Stay away from plastics, paints, and other sensitive surfaces. On the plus side, if you want real 95% pure alcohol with only water try Everclear or Golden Grain. I used that back in the seventies for video and audio tape heads. It also mixes well with soft drinks :)

Denatured alcohol from the paint store is not bad either - it burns with a clean oderless flame. Doesn't mix well with soft drinks...

Date: Mon, 05 Nov 2007 20:52:23 -0600
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] Cleaning modules

I used it for cleaning the chassis which had a lot of grime that other cleaners wouldn't clean up. I didn't do wire bundles, etc. The Fisher came without a cabinet, so the chassis is exposed with lettering for tubes, etc. It still took a long time to get cleaned up.

Date: Tue, 06 Nov 2007 14:47:18 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] source for 0.096" spline keys

Max-Gain Systems:
http://www.mgs4u.com/Bristol-spline-L-keys.htm
221 Greencrest Ct., Marietta, GA 30068-3825
Phone: (770) 973-6251
Fax: (815) 461-7730
Email: <mailto:info@mgs4u.com>info@mgs4u.com

Date: Tue, 6 Nov 2007 15:04:25 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] source for 0.096" spline keys

McMaster-Carr also sells individual .096 six-flute spline hex keys in short arm or long arm sizes or individual straight drivers as well as spline hex key sets. _www.mcmaster.com_ (http://www.mcmaster.com)

Date: Fri, 9 Nov 2007 10:05:53 -0600
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] Cleaning modules

We used a lot of DuPont 409 on the hardware when I was in the military and cleaning all manner of stuff. Be aware that 409 *DOES* eat epoxy paint and some lettering, and that it has to be washed out well before it has a chance to start eating bare metal.

Date: Sat, 10 Nov 2007 08:58:29 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] Cleaning modules

Well, according to the guy on TV, OxyClean is the best for getting out tough stains...

Date: Sat, 10 Nov 2007 09:59:18 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Cleaning modules

For about $100 Grizzly will sell you a sand blasting cabinet. About an hour with a sand blaster will make any module "nice and clean".

Date: Sat, 10 Nov 2007 11:33:21 -0500
From: "Jim M." <jmiller1706@cfl.rr.com>
Subject: RE: [R-390] Cleaning modules

I threw my 390A in the back of the pickup this morning and went to the car wash. Did a fine job. Truck and 390a are both real shiny now.

Date: Mon, 12 Nov 2007 14:31:56 -0800
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] PTO Connector

If you are ever in San Rafael, CA (Marin County, 35 mins North of SF), you MUST drop in at Electronics Plus. It has been run by two (twin) brothers for about 40 years. It is the "old" style electronics store, with bin after bin of components, kits, tools and books. Yes, they have a good selection of vacuum tubes, as well as a free DIY tube tester. They have odd-size batteries, lamps, switches, and all the rest. They actually have a stock of twist-lock can electrolytics. (I have no connection with them, except that I have spent enough there that I should be a part-owner by now). Yes, they are expensive, but they have stuff that nobody else has. They are also great with kids' science projects - they have a rack of electric motors, gears, and will actually take the time to explain things (what a concept!).

Date: Sat, 17 Nov 2007 13:49:56 -0600
From: Robert Nickels <w9ran@oneradio.net>
Subject: Re: [R-390] Ebay Auction

> I was only commenting that it is not good practice to stack the 2
> radios close together like that if someone got the idea it is OK to do that from the picture.

Well...it really *is* OK to do that. The "bible" aka TM 11-856A describes installation of the R-390A/URR in the following cabinets:

Cabinet, lightweight, tabletop CY-917/URR
Cabinet, med. duty, floor mount CY-1119/U
Cabinet, mobile mount, CY-979/URR
Cabinet, mobile mount, CY-1216/U

The CY-1119/U cabinet is a 76" rack that is part of FRR-33, FRR-34, FRR-38, FRR-39, FRR-40, FRR-41 - each of which includes 2 or 3 R-390A receivers mounted in a similar fashion. What does the "bible" say about how to do this?

Para. 14b (2): "To install the receiver in a standard cabinet such as Electrical Equipment Cabinet CY-1119/U, remove the top and bottom dust covers from the receiver".

Later, in the section on ventilation: "In all types of installations, allows as much ventilation as possible. Do not operate the receiver with dust covers in place unless extremely dusty or sandy conditions exist. And: "In fixed installations, operate the receiver with the tube shields removed (para. 13e). This will reduce the bulb temperature of the tubes and will prolong tube life. Whenever possible, allow space at the back of the cabinet or rack for circulation of air".
That's what I've done with my stacked R-389, R-390, and R-390A - with no problem. In short, it's the dust covers and tube shields that we should pay attention to, not vertical installation in a rack. Yet how many R-390A owners have bought replacement dust covers and IERC tube shields "to restore authenticity"?

Date: Sat, 17 Nov 2007 19:18:44 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Ebay Auction

If you look at a picture of an FRR-38 installation you will see the gov't used spacers between the R-390s both top and bottom. So apparently the gov't did *not* think it was *OK* to stack R-390s directly on top of each other or other equipment when mounted vertically in a rack.

Date: Sat, 17 Nov 2007 21:45:47 -0500
From: "Richard Spargur" <k3ui@comcast.net>
Subject: Subject: Re: [R-390] Alignment tools

Couldn't find the Radio Shack alignment tools. My local store says they are discontinued. In my Army Security Agency dazzze, we were issued TK-105 Electronic Tool kits. They included the GC 5004 nylon tool. It was an excellent tool for adjusting the trimmer capacitors on the R-390, R-390A and R-725 receivers, and another alignment tool which could also be used like the AT-6241 tool listed below. They work. Go to the web site listed below to look. Insulated adjustment screwdriver 5004 has no metal. This alignment tool is 7" long. It is a 7" long nylon bar with flat screwdriver tips on both ends.

Stock Number: 318X805
Model Number: 5004
Description: GC Thorsen, Alignment Tool, non-metalic
Price: $2.25 each; 12+, $2.15 each;

And a

The 318X005 is a Jonard Non-Metallic Alignment Tool.
This Two-in-one non-conductive thermoplastic tool is 7" long.
Stock Number: 318x005
Model Number: AT-6241
Description: Non-Metallic Alignment Tool
Price: $1.50 each;

These can be found at the Specialized Products Company;
http://www.specialized.net/ecommerce/shop/; You can also call toll-free:
(800) 866-5353 or (817) 329-6647.

Date: Sun, 18 Nov 2007 12:25:02 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] A Few R390A Issues Zero Adjust

If you do not just love the receiver you are going to get from Rick Mish, I am going to suggest you seek some help from a qualified mental health expert. Every one says that when Rick gets done with a receiver there is just nothing else that needs to be done. Some have suggested that the only reason Rick stops working on a receiver is because he needs to sell it to raise money for
parts on another project. I have never seen one of Rick's receivers, however I have never heard any thing but good words about his work. He is an expert.

Date: Sun, 18 Nov 2007 11:35:38 -0600
From: "Grant Youngman" <nq5t@tx.rr.com>
Subject: RE: [R-390] A Few R390A Issues Zero Adjust

I have two Mish radios -- 1967 EAC R-390A, and an R-390. Both are wonderful radios. I currently have the R-390 on the bench because of a problem with the calibrator module (still undiagnosed), but that is several years after acquiring the radio which has been flawless otherwise and is my favorite receiver. Rick does a great job on these things.

Date: Mon, 19 Nov 2007 09:17:35 -0500
From: "Dana Cobb" <objoyful@tampabay.rr.com>
Subject: Re: Subject: Re: [R-390] Alignment tools

GC Electronic makes all sorts of alignment tools. Here is the page on their web site you may want to look through.

http://www.gcelectronics.com/order/SubCatPDF/alignment%20tools%20Kits%20380-387.pdf.

Allied electronis carries this line. Also RADIO DAZE in NY has several of their products. Can be ordered on line from either one.

Date: Mon, 10 Dec 2007 08:36:50 -0500
From: Michael Crestohl <W1RC@Verizon.net>
Subject: [R-390] NAVSHIPS 0967-063-2010 Copies Available

In 1996 I produced some half-decent copies of the 1970 Navy NAVSHIPS manual for the R-390A. The originals are pretty well much unobtanium. It is my understanding that the NAVY required the old issues to be turned in and they were destroyed. I got my hands on an original and made the copies from it.

I recently found two of the copies I made back in 1996 and since I now have an original I am offering them up to members of this august group. The cost will be $35.00 plus postage. If I get a number of orders I will consider doing another print run.

This is very time-consuming as you can imagine but am willing to do it because the NAVY manual is BY FAR the best technical reference available for the R-390A. It is NOT a rehash of the Army/Air Force manual set. If interested please reply by e-mail.

Date: Tue, 11 Dec 2007 20:39:18 -1000
From: "pete wokoun, sr." <pwokoun@hotmail.com>
Subject: RE: [R-390] More on the NAVSHIPS 0967-063-2010 ManualReprints

To set the record straight, the Y2K manual was not developed from the 15 April 1970 0967-LP-063-2010 manual. It was from the 15 May 1985 manual which has the index number of SPAWAR 0913-LP-009-1400 or EE125-AB-OMI-010/P610 R390A/URR. This was the last manual for the R390A issued. Since an '85 original manual looks a lot like photocopies and not printed, it could very well be copied from the '70 manual. But it would also have any corrections and updates included.

Date: Sun, 16 Dec 2007 20:28:02 -0500
From: Scott Bauer <odyslim@comcast.net>
Subject: [R-390] anodize or not

Can one purchase anodize to re-finish side panels in a spray can?

Date: Sun, 16 Dec 2007 20:31:47 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] anodize or not

I think you will find that the finish on the side panels is something like Alodine. I have "touched up" a number of things with a small bottle of the stuff and a brush. To get a really good look you need to send the panel out to somebody who is set up to do it right.

Date: Sun, 16 Dec 2007 18:58:56 -0700
From: "DW Holtman" <tubestuff@comcast.net>
Subject: Re: [R-390] anodize or not

I don't think it can be bought in a spary can. But it can be done at home. Here is a link to an aviation supplier that sells the materials to do it.

http://www.aircraftspruce.com/menus/cs/metalprepsupplies.html

Taking all of the pieces from an R-390A cabinet (PTO cover etc) and having it professionally done runs around 40 to 50 dollars. Take a look in your local yellow pages. The only catch is you must spend a lot of time sanding with very fine sandpaper to remove ALL scratches. Any defects will show up in the finished product.

Date: Sun, 16 Dec 2007 19:02:56 -0700
From: "DW Holtman" <tubestuff@comcast.net>
Subject: Re: [R-390] anodize or not

I should have said Alidone, not Anodizing. Anodizing applies a not conductive coating to metals.

Date: Sun, 16 Dec 2007 19:04:59 -0700
From: "DW Holtman" <tubestuff@comcast.net>

I should have mentioned is called Alodine, not anodize. A metal that has been anodized, will not conduct., it is an insulator.

Date: Mon, 17 Dec 2007 20:58:57 -0500
From: Scott Bauer <odyslim@comcast.net>
Subject: Re: [R-390] anodize or not

Jay and group. I want to thank everybody for the needed help. I always get Alondine and Anodize mixed up.
>

> 'Gold' or 'yellow' alodine is still done by many plating shops. Alodine is often >done as a prep before painting so let them know it's not going to be painted >and you want it to look as uniform as possible. For best results either orbital >sand with 220 grit or bead blast down to bare aluminum to obtain a uniform >pattern.
>
> There is also 'gold' colored anodize. Stay away from that since anodizing is not >electrically conductive. If you're lucky you'll find a shop that won't stick it to >you too hard on a small lot.

Date: Tue, 1 Jan 2008 21:23:53 -0800
From: "Chris Kepus" <ckepus@comcast.net>
Subject: [R-390] R-390A set screw size

Has anyone bothered to replace the Bristol set screws in the R-390A with allen or socket headed set screws? Purpose of same would be to simplify and standardize things for the next time a knob would have to come off, etc. Does anyone know the thread size of these set screws? 4-40, 6-32, 8-32 ? In looking at the McMaster-Carr set screw selections, one could use the "flat" or "oval" point set screws to avoid the shaft marring problem, but I wonder if the holding power is sufficient with these.

My dream would be that one of you out there with lots of different equipment, i.e., R-390, 75A-X, 75S-X, 51J-X, Hallicafters, Drake, etc., has already written down the Bristol wrench or allen wrench size needed on every knob of their equipment and, most importantly, is willing to share the knowledge, or knows where on the web it is located..... And while I'm at it, my dream (actually is part of the same dream already mentioned) is to find the person who has a list, by receiver, of all the capacitors needed to recap same and, most importantly, is willing to share the knowledge, or knows where on the web it is located.....

Date: Wed, 2 Jan 2008 00:50:47 -0500
From: roy.morgan@nist.gov
Subject: Re: [R-390] R-390A set screw size

> Has anyone bothered to replace the Bristol set screws in the R-390A with
> allen or socket headed set screws?

No.

> Does anyone know the thread size of these set screws? 4-40, 6-32, 8-32
????

Eight Thirty-Six.: The driver needed is .096" diameter with 6 flutes.
I recently got a tap for the purpose of cleaning out the threads after

refinishing. Size 8-36.

> In looking at the McMaster-Carr set screw selections,

There was a post on the Collins list just today about where to get the Bristol set screws: If I remember right, McMaster Carr does not list in the catalog the Bristol set screws, but if you call them, or email them, they likely will find some for you. (Wanna split a box of 100 or a gross?) The Bristol Wrench Company makes the wrenches (L-keys, screwdriver handles with bits, and T-drivers:
http://www.bristolwrench.com/ They do not seem to make the screws. You can and should get Bristol drivers made by the Bristol Wrench Company from Max Gain Systems: http://www.mgs4u.com/

Date: Wed, 2 Jan 2008 09:35:02 -0600
From: glwebb@gundluth.org
Subject: [R-390] Sticking fasteners to tools

When I started working on medical equipment (34 years ago) I found a lot of the fasteners were made of stainless steel. They won't stay on a magnetized tool. I tried several methods with varrying rates of success. Screwholders: Ususally hold until you've got the screw deep and almost to where you can start it and..BOING! it's gone. Various tapes: they work , but not very neat and they take time. Greases: They also work, especially the silicone based vacuum greases, but they are messy and may attract dirt.

I found that the dental wax the kids (and adults) get with their braces works the best of anything I've tried. A little bit is enought to stick a screw to a driver. And there is hardly any mess left. Look in the toothpaste aisle at your local store.

Date: Thu, 3 Jan 2008 07:58:54 +1100
From: "Bernard nicholson " <vk2abn@bigpond.net.au>
Subject: [R-390] Bristol set screws

Chris The bristo set screws are used on most Collins radio gear that I have come across, the ART13 uses them from WW2 , their advantage is that they have an increased surface area when compared with an Allen Screw, and consequently can be tightened to a higher tension , changing them all at your radio site to standardize , would eventually create great confusion once the radio passed on to a new owner which they all eventually will, it would also take away from its value for the purist collector , in my view it would be an act of sacrilege even an act of apostasy?

Date: Wed, 02 Jan 2008 16:22:31 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Bristol set screws

Their value varies more to supply and demand. Put a note inside that hex set screws were used just for the next guy. I, approaching 60, wonder IF the next generation will be something OTHER than a Scrapyard or Landfill!

Date: Wed, 02 Jan 2008 16:35:33 -0500
From: Jon Schlegel <ews265@rochester.rr.com>
Subject: Re: [R-390] Bristol set screws

Breaking loose an extra tight set screw is nerve wracking enough as it is. Stick with the Bristols. You won't have to worry about them wallowing out like small Allen's often do.

Date: Thu, 3 Jan 2008 09:55:55 +1100
From: "Bernard nicholson " <vk2abn@bigpond.net.au>
Subject: Re: [R-390] Bristol set screws

Seriously the Allen screws cant be tightened to the same degree , some of the collars in this gear really need to be very tight!

Date: Thu, 03 Jan 2008 18:56:33 -0600
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] Bristol set screws

Might be time for theropy! If anyone is interested I found about 10 more 8-36 TAPS, send me an email off line ... tom, N3LLL

Date: Thu, 3 Jan 2008 23:51:31 -0800
From: "Chris Kepus" <ckepus@comcast.net>
Subject: RE: [R-390] Bristol set screws

Thanks to those who responded to my inquiry. OK...Here's what I got out of the responses: Stick with the Bristol set screws primarily because *IF* the correct size Bristol wrench is used, the amount of torque that can exerted without damaging (or ruining) the set screw socket is likely to be higher than with Allen sockets /wrenches. Whew! I am surprised that it would take that much torque to tighten set screws so the knobs wouldn't slip when turning them. No wonder about the tales of anquish from those who are unable to remove a knob or shaft connector due to the galling on the shaft caused by too much torque !!?? I haven't dug deep enough into my 390A yet to experience a switch or control knob that needs a lot of torque to twist.

Date: Fri, 4 Jan 2008 08:23:29 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] Bristol set screws

The gears are attached to the shafts with the same kind of set screws. Some gears see a *lot* of torque. Having one set screw on the knobs and another on the gears is a real mess.

Date: Fri, 4 Jan 2008 22:05:51 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Bristol set screws

I wonder if anyone has been able to find a current source for new stainless steel spline socket set screws? For example in the size 8-36 used in the R-390A front panel knobs? I have done some looking online and see there are a few suppliers of military fasteners that might be an answer. The spline socket set screws seem to be part of a mil fastener group called AN565. Cup point seems to be a common style for the set screw. Most of the fastener suppliers require an RFQ - request for quote. The spline socket setscrews are probably too obscure nowadays to be a stocking catalog item. Will continue investigating.

Date: Fri, 4 Jan 2008 22:20:32 EST
From: JRFKE5RI@aol.com
Subject: [R-390] Bristol set screws

There has been quite a bit of discussion regarding the torquing of set screws. Granted that is where Bristol (spline) wrenches are a must. But the real issue is having the ability to loosen them. If you have ever tried to loosen a stripped, plain vanilla Allen screw, you will appreciate the extra griping power of a Bristol.

Date: Fri, 4 Jan 2008 19:45:34 -0800
From: "Brian Bjerkelund" <k7ais@msn.com>
Subject: Re: [R-390] Bristol set screws

Forgive me if I'm a little basic here.....with either Allen or Bristol wrenches, keep the driving end sharp and squared up. Gentle use of a bench grinder will do fine and will help not to round off the little Bristos and things.

Date: Sat, 5 Jan 2008 10:13:45 -0500
From: roy.morgan@nist.gov
Subject: Re: [R-390] Bristol set screws

BUT, a very slight smoothing of the very sharp edge (with an Arkansas slip

or the like) can help get the wrench into the set screw where you can't see and are having difficulty seating the wrench. (Recent experience with an SX-88.)

Date: Sat, 5 Jan 2008 16:03:32 EST
From: Flowertime01@wmconnect.com
Subject: Fwd: [R-390] Bristol set screws

Sooner or later someone will find a NOS box with about 98 of 100 of these 8 x 36 set screws with a spline key on a shelf some where and offer them to us in the mail with 4 or 5 in an envelope stuck to a bit of tape to keep them from getting lost in the mail. You may try to get up as much information as you can along with the spline key size, and stock numbers of the one each part in a bag. Then put a post on the want to buy at E-pay. Dave Medley does R390's and if you really need a couple you can always send him an E-mail and ask for a couple at his cost. He also likely has the clamp bolts with the spline heads. But by 1975 we were just using a 4-40 bolt with a standard Allen key head.

You can still get the small knobs from Fair Radio with a spline screw in them just for the replacement. I think a project of love to find some 8 X 36 set screws with any type of key head is in order. As Hank and Dave will tell you, you will never make any money at it. But it sure will earn you a lot of points that never expire and will be redeemable into the next life.

Does any one have an E-pay account who would put a post up for us if we collect the data?

Date: Sat, 5 Jan 2008 13:06:02 -0800
From: "Brian Bjerkelund" <k7ais@msn.com>
Subject: Re: [R-390] Bristol set screws

> BUT, a very slight smoothing of the very sharp edge <snip>

Yep, these tired old eyes and fumbling fingers would have to agree.....

Date: Fri, 22 Feb 2008 14:43:07 -0500
From: Barry <n4buq@knology.net>
Subject: [R-390] OT: Other Radios You Like

I've been thinking of getting another BA and was wondering if you guys have any recommendations with regards to a 75A-4, R-388(51J-3), 51J-4, or an SP-600. I'd really like to be able to have general coverage (hence making the 75A-4 not a good choice) and was wondering how these radios stack up against each other. Things like filtering, general "sounds good", etc., would be appreciated. I'd probably want to do some CW work with it so

the provision of a CW-width filter is a big consideration; however, I want it sound good on SWL-ing activities too. Also, if you know where any of these radios might be for sale (besides eBay), I'd appreciate that too.

Date: Fri, 22 Feb 2008 14:55:40 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] OT: Other Radios You Like

As for one that fits what you describe, the SP-600s seem to fit the bill nicely. 540 Kc to 54Mc coverage. Great audio! Crystal "phasing" for narrowing selectivity. Does AM, SSB, and CW very nicely. SWL is nice. Just my $0.02, after having owned Hallicrafters, National, and all other assorted radios also including the ubiquitous R-390A.

Date: Fri, 22 Feb 2008 15:43:22 -0800
From: "Chris Kepus" <ckepus@comcast.net>
Subject: RE: [R-390] OT: Other Radios You Like

Thanks for throwing out a question that has some likeness to throwing out raw meat to a pack of hungry wolves...:-0 I am sure you will get a lot of ideas and opinions. I am fortunate to have a SP-600JX-17, 51J-4, and R-390A next to one another in a rack and can listen to them simultaneously. I also have a NC-183D, SX-100 and GPR-90 that can be heated up and enjoy very much.

My favorite band spanner when I am in a hurry to assess the bands is the SP-600. One can cruise a lot of frequencies real quickly. It has nice audio for SWLing. Tuning in SSB and CW are possible...made easier with the variable BFO tuning because the SSB-CW tuning rate is too fast with just the main tuning knob. If you really want to make QSOs (as opposed to just copying random CW from time to time) you will not like the SP-600 for that activity. It's not impossible, just too fast for my taste. Mine is stock, very stable, and could benefit from a product detector. The crystal filter is actually fairly selective but then when trying to tune with the main dial, it becomes increasingly difficult. The only time I used the SP actively for QSOs was when I had a BC-453 Q-5er attached. That was quite a versatile receiving package and worked extremely well....especially if you liked twiddling knobs.

To cut to the chase, the receivers on my short list are the R-390A and the 51J-4. I go back and forth between them because, to me, each has their advantages over the other. They both do it all (AM, CW, SSB, etc.) and with some simple modifications, they do it remarkably well. I think the R-390A has the potential to be the winner simply because if one is not afraid of doing some mods, its performance can be enhanced to the point of "spectacular" in all respects. Although I am not an electrical engineer or a

former electronic tech (and therefore lack their technical knowledge and practical experience) I do believe that the R-390A is a great choice. As I continue to pare down my toys it also seems to have the edge when it comes to ease of repair (my opinion strictly from reading and listening). A dark horse also in the running is my Drake R4-C. I now have a FS-4 for continuous coverage. It was my receiver of choice for SSB and CW back in the late 70's, early 80s. But it is another Rx that can really play in the major leagues with some popular modifications. I don't think it meets the Boatanchor criterion, however. :-) Good luck. It's a hunt that you'll enjoy immensely.

Date: Fri, 22 Feb 2008 20:58:31 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] OT: Other Radios You Like

Well, I might get kicked off this list but I just wasn't fond of the tuning and/or audio from the R390As I had. Granted they were rock-solid, very precise, and that geartrain is pretty cool; however, I'm for something that's more of a band-cruiser. I was hoping I might find either an SP-600 or 51J-4 that someone twists my arm to take ;) Thanks guys. I knew you all would provide some great info.

Date: Fri, 22 Feb 2008 20:54:41 -0700
From: "Sam Letzring" <sletz@msn.com>
Subject: Re: [R-390] OT: Other Radios You Like

I personally vote for the SP-600 and the HRO 50/60. I have a R390A- fully restored and operational- an SP-600 in progress, an HRO-60 with all coils and two HRO-50's in the process of being rebuilt. By far the HRO's and the SP-600 have the best audio- love to listen to the HRO- very good audio out of the 6V6's! Just finished rebuilding a 1934 Zenith (5 bands) with push-pull 42's driving a 12" Jensen electrodynamic speaker! Now that's what a radio should sound like! Never liked to listen to SW with earphones on!

Date: Fri, 22 Feb 2008 22:09:22 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] OT: Other Radios You Like

I've read the mail on this one for a while. I think a well done SP-600 is a fantastic radio. I think the Racal RA-17 would be a good choice too. Andy Moorer can fix you up with a good SP-600 JX as a starting point. You'll have to do the restoration work which is part of the fun. Once done you will have a radio that is a joy to cruise the bands with. Check his web site at www.jamminpower.com

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Date: Fri, 22 Feb 2008 22:13:27 -0600

From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] OT: Other Radios You Like

I've heard the SX-88 is a dog relatively speaking. I think it's value is based on it's very limited availability... One radio that you did not mention that is a fine band cruiser and one of the nicest looking is the SX-28A. Push-Pull 6V6's....man it's great for BC work. Not the best for CW and SSB though. Love them old radio's....

Date: Sat, 23 Feb 2008 12:03:25 -0500
From: "Bill" <kirklandb@sympatico.ca>
Subject: RE: [R-390] OT: Other Radios You Like

Ok, I'll jump in. If you are going to chose a radio, I would recommend playing around with them. They all have their own quircks, features etc.

The SP-600 has the smoothest tuning I've ever come across. It is a wonderful radio to work on. Even replacing the caps in the RF deck isn't so bad. Going from one end of a band to another can be a pain as requires many turns. The bands are basically set up harmonically. I can tune in CW/SSB OK on 14 MHz but you do have to fiddle with the RF gain to keep it low enough. I havent' tried SSB at say 21 MHz but it will be harder to tune in because the tuning rate get gets faster as the bands get higher.

R-390(A) is a big radio. I may get shot but consider a R-388/51J4 as the little brother. All have linear tuning over 1 MHz. Very nice esp at higher frequencies, e.g. 21 MHz SSB. However, if your desired station crosses the 1 MHz boundary, its a band change and you have to crank the PTO all the way to its other end. Tuning is not as smooth or rapid as the SP-600. The tubes in the 51J series are relatively easy to come by. Similar to the r-390(a)/51J is the 51S-1. Again it has linear tuning/gearing. More compact modern looking. RF section is pain to work in - very tight.

Date: Sat, 23 Feb 2008 15:25:52 -0600
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] OT: Other Radios You Like

I have one or more of all that have been mentioned, with the exception of the SX-88 I had, My RACIAL RA-117 got legs went bye bye in my move to TX. Along with my pristine HRO-500 with like new LF-10, plus never had any of the TMC receivers. I have over 200 receivers and by far the the smoothest tuning is on the R&S EK-07 hands down with course and fine tuning, A true band cruiser in 13 bands. Hank KN6DI

Date: Sat, 23 Feb 2008 18:54:53 -0500
From: Scott Bauer <odyslim@comcast.net>

Subject: Re: [R-390] OT: Other Radios You Like

Has anybody used the Watkins Johnson receivers? I want one but am afraid to spend the money. Some radios can be very expensive and still be junk.

Date: Sat, 23 Feb 2008 18:22:44 -0600
From: Robert Nickels <w9ran@oneradio.net>
Subject: Re: [R-390] OT: Other Radios You Like

Scott, Terry O is the man when it comes to W-J - his website may be of help:ins

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Date: Sun, 24 Feb 2008 09:30:48 +0900
From: "Osamu Hazawa" <pomerol@mocha.ocn.ne.jp>
Subject: Re: [R-390] OT: Other Radios You Like

I own a WJ-8718 for about 5 years. Excellent and robust receiver. There are not so many knobs to touch but it's enough. I'll choose an R-390A and a WJ-8*** if I were said "You can bring 2 radios to heaven.". (They are too heavy to bring though) Osamu
http://www4.ocn.ne.jp/~pomerol/MyPage/menu4_2.html

Date: Sat, 23 Feb 2008 20:12:55 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] OT: Other Radios You Like

I haven't had the chance to use one of the "newer" ones, BUT - The Type 906A1, VHF/UHF, 30 to 300 Mc, is great! It even has a video out connection. I listened to ALL air traffic, (Military), ATC, AWACS, Tankers, and Fighters the day of Sep 11, 2001.

Date: Sat, 23 Feb 2008 22:48:32 -0500
From: roy.morgan@nist.gov
Subject: RE: [R-390] OT: Other Radios You Like

One aspect of the 51S-1 that may not have been mentioned is its front-panel simplicity. The darned thing is a bore to operate! You set the mode, the frequency and the gain(s), and you are all done. For those of us who like to twiddle lots of knobs and enjoy trying to change the receiver settings to get improved performance, the 51S-1 is kind of a disappointment.

But it will just sit there and do its job more or less unfailingly, stay on frequency, and simply run well. That, of course, is what Collins designed it to do. I plan to make an attractive wood case for mine (with a fan and a

speaker), put it in the living room, and enjoy the thing in a way compatible with the family environment. (The EK-07 and the R-390's can stay in "the shack".)

Date: Sat, 23 Feb 2008 22:58:41 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] OT: Other Radios You Like

I had considered an R8[B] as well. I've never had a radio with synch detection and would like to see how that plays; however, I still have a soft spot for the tube gear...

Date: Sat, 23 Feb 2008 23:15:39 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] OT: Other Radios You Like

While we are on the subject of solid state radio's...you might consider the RX-350. Not as costly as the RX-340 but with many of the bells and whistles... It's no longer made but will at least be repairable as will the Drake for years to come at reasonable cost. Not likely with one of the WJ rigs....work on those is very expensive if needed. Another thought...the best bang for the buck continues to be the Icom R-75. Add the required mods for fixing the Sync detector and improving the audio a bit and you have a very nice radio for not a lot of money...

Date: Sun, 24 Feb 2008 00:40:18 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] OT: Other Radios You Like

We went down this path in September, on the AMRADIO list. We all could probably post what we did then, except here and now. Not trying to be a smart a**! It is just funny when you sit down and look at the overlap on the different groups, and the topics that appear on each. The similarities are interesting. I agree with Cecil's observation regarding the WJ equipment. Repairs are going to be VERY expensive. They started as CEI, went into some funny split with BAE taking over some, and Watkins-Johnson doing some. Now I have lost track of who is who. Oh well, such is how the worm turns.

Date: Sun, 24 Feb 2008 09:09:03 -0700 (MST)
From: Richard Loken <richardlo@admin.athabascau.ca>
Subject: Re: [R-390] OT: Other Radios You Like

Well, in my opinion, Your Mileage May Vary. I will opine about the negative aspects of digital radios first: I have a Sony ICF-7600D and it is indeed convenient to dial up a frequency and it is also convenient to have a few

dozen frequencies stuffed in its memory ...IF... you can remember which of those channels has the frequency you want. I also find I can never remember how to use the seldom used functions like putting a frequency into memory - I have to look it up in the manual every darn time and (as last week in Burlington Ontario) I do not carry a library of manuals with me on my travels.

On a analogue radio - every knob has a purpose and a label so I rarely forget how to do something and a browse of the front panel labels will overcome those "senior's moments". My Sony has the usual assortment of multipurpose obscurely labeled little rubber buttons which do not tweak my memory. I also have poor vision and cannot read a lot of the labels or the obscure hieroglyphics on the display without a magnifying glass - these are rarely problems on some elderly Zenith Transoceanic.

Now about synchronous detectors. My Sony (fortunately) will switch between a diode detector and the sync detector and I can select sidebands and tweak the tuning but... the diode detector sounds better when things are good so I don't want to use the sync detector all the time. The synch detector is not a miracle worker: it does a good job of cleaning up a badly distorted signal but it does not make it into push-pull 6V6 armchair copy, it just makes it readable.

Alas, radio is no longer cool - all the best 22 year olds listen to radio on their computers or for a monthly fee on satellite radio so a lot of the nice digital synchronous detector radios are no longer available except on the used market. Sony has stopped importing their toy radios into Canada and they will not allow their US vendors to sell across the border and Drake has gone out of the shortwave radio business so a lot of our favourite solid state radios are in the same catergory as our boatanchors: obselete, unsupported, and in limited supply. Parts for digital radios are going to run out long before we run out of 6K7's, now ain't that weird.

> boatanchors), and the R8B is the best of the bunch. (The Drake SW8 is the
> second-best, IMO, then there is a huge gap to everything else.)

I keep intending to buy an R8 so it can grace the shelf beside my two Drake 4-lines, I should do that sooner rather than later.

Date: Sun, 24 Feb 2008 12:33:44 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] OT: Other Radios You Like

Actually I prefer ECSS to syncro and any of these radio's will do that nicely. The R-75 with the KIWA mods comes real close to the R8B in all

regards...I've played with both. It's not quite the R8B in the syncro department but it's real close and for a third the price. The DSP is limited but quite handy at times. The sleepers are things like the Icom 746pro....very hot receiver. That is what many SWL hobbyists are buying nowadays....amateur transceivers.

Date: Sun, 24 Feb 2008 13:48:31 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] OT: Other Radios You Like

Could someone take a look at the 51J-4 advertised here and perhaps answer a question for me? http://tinyurl.com/yuqs6c

The faceplate doesn't appear to have any lettering for the bandwidth position. Could this be a 51J-4 with a 51J-3 faceplate (or are there other differences that would make this improbable)? Just curious.

Date: Sun, 24 Feb 2008 13:56:23 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] OT: Other Radios You Like

Hmmm. If so, maybe this is the front panel that went with it? http://tinyurl.com/27kakc

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Date: Sun, 24 Feb 2008 15:11:51 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] OT: Other Radios You Like

Looks like it could be two possibilities. Someone put an R-388 faceplate on a 51J-4 or someone could have added a mechanical filter conversion kit to an R-388, then added a 51J-4 name tag. I don't think the other R-388 on eBay with the 51J-4 front panel is related, they are located in different parts of the country. Hey someone could buy both, swap front panels and be all set!

Date: Sun, 24 Feb 2008 14:18:09 -0600
From: <wb5uom@hughes.net>
Subject: Re: [R-390] OT: Other Radios You Like

Well, everyone has their favorites and opinions....Mine would be that for AM Broadcast The Drake R8-B of course, and my McKay Dymek DR-22C as well. The R-390A (which mine is in the hands of Rick Mish at this moment) of course has already been discussed. For SSB all of the above (R390A with the SSB converter)and the Racal 6217 except that with SSB you have to get the hang of tuning the DR22-C ! And to think, all of this started for me (including my business) with a Realistic DX-160 and 100' of

wire. back in 1967

Date: Sun, 24 Feb 2008 14:20:20 -0600
From: Robert Nickels <w9ran@oneradio.net>
Subject: Re: [R-390] OT: Other Radios You Like

Barry, I first thought this was a 51J3 or R-388 to which the 354A-1 mechanical filter conversion kit has been added. (You can download the 354A-1 manual from teh www.collinsradio.org website). As far as I've been able to tell, the two receivers are identical except that the J4 has the mechanical filter module installed at the factory, and of course the nameplate, which sure looks legit on the pic of this one. Inspection of the wiring to the mechanical filter module may give you some clues. But you may be correct in thinking the front panel has been replaced with one from an R-388. Collins supplied a water-slide decal with the conversion kit and that's what was used on the one I have. It looks fine at a distance but when you look up close, you can see it's not the same as the rest of the lettering. So given there is no silk screen or decal, it's a pretty sure bet the panel on this one has been replaced at some point, as they are mechanically identical. Also, the lever used to select the mechanical filter is not like any I've seen, but this could have been a repair job. It shouldn't make any difference in how the receiver operates, just boils down to what you are after. Price is good, so far...

Date: Mon, 25 Feb 2008 11:57:17 -0500
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] OT: Other Radios You Like

I have a WJ-8716 with the optional preselector. With the preselector, intermod from local broadcast stations is not a problem. Compared to a 390A, the crystal filters in the 8716 are brick-wall type things. Sensitivity of the 8716 is superior to everything else I own. AGC or even MGC on the 8716 is not well-adapted for ham-type uses. I am used to receivers (either tube or solid-state) having some compression and some form of blanking or ANL in response to nearby QRM or big QRN impulses. Maybe spec-wise the 8716 looks wonderful (after all, spec-wise isn't compression something you want to avoid?) but it is not so easy to just "listen through" in the presence of QRM or QRN like I can with most of my other, simpler, receivers.

Date: Mon, 25 Feb 2008 12:43:54 EST
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] OT: Other Radios You Like

My impression of the crystal filters in the WJ 8716/8718 is the shape factor is rather sloppy on the 3.2KHz 'AM Narrow' filter and the 0.3KHz

'CW Narrow' filter. The 3.2KHz filter is a 10.7MHz CF filter and sounds more like a 4 + KHz wide filter in my radio. The 0.3KHz CW filter is a 455KHz CF filter and sounds more like 600-700Hz wide to my ears. The USB/LSB filters sound excellent in the WJ though. Those are my only complaints about the radio. Otherwise sensitivity, stability, readout etc. are excellent. The 455KHz mechanical filters in the R-390A sound far superior in shape factor to my ears compared to the 10.7MHz crystal filters used in the WJ 8716/8718.

Date: Mon, 25 Feb 2008 09:55:00 -0800 (PST)
From: Masters Andy <nu5o@yahoo.com>
Subject: [R-390] OT: Other Radios You Like

Tim raises a good point about his WJ. I have thoroughly enjoyed this discussion because I always wondered about a lot of the radios mentioned. Where I live, near Memphis, TN, I have an acid test that I use to evaluate selectivity. We have a local high power AM station on 640 Khz (WCRV), I take the radio and then tune it to 650 Khz (WSM in Nashville, TN). If I can hear WSM and NOT hear WCRV, the radio is good. WCRV watches its modulation and is a good test. My R390A did not pass the test but a 651S-1 and the new Flex-Radio I have tried did so with flying colors. Others to fail were the IC-75A with the Kiwa mods, a 51S-1, IC-756PRO II/III and my old Sparton-although the Sparton with its loop antenna built in was able to reject 640KHZ by simply turning it to null the local station. When flying WSM used to be a clear channel station and we could use them as a NDB from hundreds of miles out to thousands of miles depending on time of day. My other test is purely subjective and that is the sound of the audio. My R390A has the Kleronomos audio mod and the audio sounds fantastic out of it. The Sparton has been modified to a single ended 6V6 biased in class A and it has the edge on sound. I figure you guys have collectively saved me $1000's on what I always wondered about. THANKS! Andy Masters U50/P29AM/7Q7AM

Date: Mon, 25 Feb 2008 12:13:15 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] OT: Other Radios You Like

As you can see from this thread we have all been on the search for the "Holy Grail" of receivers....and I think most will agree that it doesn't exist. Many very pleasing radio's are found along the way though and the hunt is certainly a lot of fun. It's also quite subjective so one mans jewel is another's junk.... I haven't heard anyone mention much about the Racal 6790/GM. I have always wanted to play with one of those in top notch shape. Probably nothing special but just one more on my list.

Date: Mon, 25 Feb 2008 13:16:50 -0500

From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] OT: Other Radios You Like

I would like to add that listening to an AM station in ISB (one sideband to the left ear, the other to the right) is an amazing experience. It does not eliminate selective fading but instead makes you much more aware of it. There are ham-band direct conversion receivers that do I+Q/I-Q demodulation independently to the two ears. Again, instead of hiding stuff, it is remarkable for its ability to bring out stuff you might not otherwise notice or hear. I don't particularly like direct conversion receivers overall but it's a treat to put the band inside my head :-).

Date: Mon, 25 Feb 2008 12:18:17 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] OT: Other Radios You Like

Interesting Andy. 10 khz spacing is quite demanding. There are so many variables. I can't imagine if all were set to a common bandwidth for testing that performance would not be close to the same. I know the SDR's have great flexibility in setting the bandwidth....I guess it all depends on how many buttons and knobs one has at his disposal to dial up a solution. No doubt the 390A has few but I would have expected better out of the tracking preselecting front end.... Which antenna connector do you use the balanced or unbalanced. The unbalanced is a compromise because it skips part of the front end tuning. 10Khz is still a pretty stiff requirement....but I've seen my (now Les Locklears) Leary SP-600 slice and dice with the best of them.

Date: Mon, 25 Feb 2008 12:23:46 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] OT: Other Radios You Like

Well I have done that with the R-1051 series receiver. You need a radio with two IF's and two AF sections to pull it off. Or two similar receivers. If you combine the audio outputs you do pretty much eliminate selective fading because it happens to each sideband at a different time in most cases. With the stereo headphone technique you hear one ear go down and then back up and then the other many times. Detected audio is preserved in one ear or the other allowing one to not miss much that's being said. It's one off the few things that the R-1051 really excels at!

Date: Mon, 25 Feb 2008 13:25:03 -0500
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] OT: Other Radios You Like

Although I own a WJ-8716, it is not a particularly fun radio. The user

interface might have been stylish 20 years ago but it sucks compared to both older knobs-for-everything radios and newer menus-for-everything radios. And I DON'T LIKE MENUS. It is great for utility etc. stuff (i.e. "tune to 10.875MHz and listen on USB") but not particularly fun for scanning bands.

For me, fun is my Heath HW-16. QSK on this radio beats everything else. And yes, it's way better than my Ten-Tecs in this regard. Having the receiver's front end tube be able to directly withstand the output of the final, and no AGC, it really makes it feel like I can hear the band with my key down. Others like direct conversion receivers (e.g. HW-8) but I'm not so fond of them.

Date: Mon, 25 Feb 2008 12:42:21 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] OT: Other Radios You Like

I was listening the other day to some long forgotten frequency in the 17.8 MC (yeah I'm that old) range on the John R. Leary SP-600 and it was fully readable, not so on my Kiwa modified Icom IC-R75, nor the Eton E1. So much for modern technology.....;-)

The basic superheterodyne receiver has been around since the 1930's, not much has been done to improve on this design other than bells and whistles. Having owned 128 receivers over the years in a seemingly fruitless search for the "Holy Grail" of receivers, I realized many years ago it does not exist. Having stated that, my choice for a "Hollow State" receiver is the Hammarlund SP-600 in its many variations, but the JX-17 wouldn't be one of them due to its crappy AGC action. Solid State receivers?

The Drake R8B would get my nod, due to its superb synchronous detector, but low marks for the dismal mechanical encoder vs. the optical encoder in the original R8. I sold my R8B because of that very problem after correcting it.

I have divested myself of almost all the boatanchors, except the Leary SP-600, a beautiful Philco 40-144 wood tabletop radio, the aforementioned Icom R75 and Eton E1. If I go before my wife, she won't have too much to get rid of.

The Leary SP-600 will go to my grandson Jake so he will know that the Japanese (Sony in particular) didn't invent radios. All that said and done, it has been a fun ride trying all these various receivers and seeing first hand what works and what doesn't.

Date: Mon, 25 Feb 2008 18:58:25 -0500

From: Scott Bauer <odyslim@comcast.net>
Subject: Re: [R-390] OT: Other Radios You Like

I have a favorite that I dont believe has been mentioned. It is both sensitive and selective. Covers 100 kc thru 30 megs. It has a cult like following, will run off D-cells or house current. It received a full 5 star rating in the Osterman book It is simple to operate and great to have around to use when the power goes out. It is the Famous Yaesu FRG-100. Boatanchor? No. Great radio that is fun to use? Yes.

Date: Mon, 25 Feb 2008 18:09:36 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] OT: Other Radios You Like

Good fairly simple radio....Another is the Palstar....good little radio. I noticed someone mentioned earlier what started all this in their lives.... My first SW rig was an Allied Radio Shack P-Box Shortwave Radio kit. One transistor regen. I remember listening to Radio Moscow and HCJB as a kid in 1970....it was pure magic! Also remember listening to Hams on AM using my families Telefunken console...they still have it and I guess I'll inherit it at some point.

Date: Mon, 25 Feb 2008 19:11:47 -0500
From: Scott Bauer <odyslim@comcast.net>
Subject: Re: [R-390] OT: Other Radios You Like/ FRG-7

Correction. I meant FRG-7. The Frog

Date: Mon, 25 Feb 2008 21:17:19 -0500
From: Michael Crestohl <W1RC@Verizon.net>
Subject: [R-390] Re: OT: Other Radios You Like

I agree with Les Locklear's assessment: " in a seemingly fruitless search for the "Holy Grail" of receivers, I realized many years ago it does not exist. What it boils down is what pleases you and meets your needs the best. In my case this has been my findings: I'll probably get my butt tossed off this list for this, but here goes: My favorite tube-based receiver is my Collins 51S-1 My favorite solid state receiver is my ICOM PCR-1000 Software Defined radio receiver.

Date: Mon, 25 Feb 2008 21:43:28 -0500
From: Bob Camp <ham@cq.nu>
Subject: Re: [R-390] OT: Other Radios You Like

There are a *lot* of different filter sets out there in 6790's. You can find them set up with Collins mechanicals all the way up to the "secret" filters

for that not to be named / we gotta take the tags off the radio / agency.

Date: Mon, 25 Feb 2008 20:47:36 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] SP 600 Anthology

Now that the Y3K project is winding down I'm off to my next "labor of love". I've started what I am tentatively calling "An Anthology of technical references for the Hammarlund SP 600 and its variants" It is somewhat modeled after the Y3K R-390A project. A number of TM's will be edited for their particular strengths as there were so many issued beside the TM 11 851, which will be included. Andy Moorer has graciously given permission to use the material on the Hammarlund site. I also plan to put in a section on all the improvements I can find. To that end I would appreciate it is someone could send me a copy of the article "Souping up the Super Pro" by John R Leary, WGHWN in the January 1979 issue of CQ magazine. I do have one article "Updating the SP 600" by Douglas Blakeslee from the Aug. 1970 issue of QST. I'm sure there are more out there that I'm not aware of. Any personal circuits are welcome.

Date: Fri, 29 Feb 2008 08:57:16 +0000
From: Sheldon Daitch <sdaitch@mor.ibb.gov>
Subject: Re: [R-390] OT: Other Radios You Like

Moving into the land of the relatively scarce. The RCA SSB-3A receiver. Two racks, transistorized at the 1200T and 1300T units, but nearly every thing foward to the antenna is still tubed. The 400 unit has a Collins PTO, but the circuits for harmonic generation are solid state, as well. AFC so it locks to the pilot carrier of the received signal. Dual diversity built in, but not capable of frequency diversity, only space diversity with two antennas. Very good audio, if working right. If anyone is an IEEE member, this link will go to an article discussing the earlier version of the SSB-3 receiver, the all tube unit.

http://ieeexplore.ieee.org/Xplore/login.jsp?url=/iel5/10933/4051933/04051959.pdf?isnumber=4051933[]=JNL&arnumber=4051959&arSt=1782&ared=1788&arAuthor=Becken%2C+E.D.

Date: Fri, 29 Feb 2008 15:39:43 -0500
From: "Perry W. Remaklus" <Perry@willbell.com>
Subject: [R-390] R-390A NAVSHIPS 0967-063-2010

Today, I received my copy of W1RC's superb reproduction of NAVSHIPS 0967-063-2010. Just having clear reproductions of the photographs makes it well worth the price. Congratulations, Michael, well done.

Date: Fri, 29 Feb 2008 21:03:30 +0000 (GMT)
From: triodes@optonline.net
Subject: [R-390] CY-979A Cabinet Metal Nomenclature/I.D. Plate

I just acquired another CY-979A cabinet; this one is for my R-390. It is complete, except that the metal nomenclature/I.D. plate that is affixed to the top of the cabinet with (4) machine screws is missing. Does anyone have one of these ID plates for the CY-979A? Hopefully, someone out there in R-390/R-390A-land can help me out.

Date: Fri, 29 Feb 2008 15:23:19 -0600
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] CY-979A Cabinet Metal Nomenclature/I.D. Plate

I have them $25.00 mailed.Paypal is fine email is my ID or QRZ for smail

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Date: Fri, 29 Feb 2008 17:34:52 -0500
From: "Harold Hairston" <k4hca@alltel.net>
Subject: Re: [R-390] R-390A NAVSHIPS 0967-063-2010

I would not have expected anything else. I can't wait to get my hands on my copy!

Date: Fri, 29 Feb 2008 20:11:07 -0500
From: "Tom Bridgers" <Tarheel6@msn.com>
Subject: Re: [R-390] R-390A NAVSHIPS 0967-063-2010

Received mine today also. I echo Perry's comments. You did an outstanding job! Well done.

Date: Fri, 29 Feb 2008 20:21:59 -0800
From: "Chris Kepus" <ckepus@comcast.net>
Subject: RE: [R-390] R-390A NAVSHIPS 0967-063-2010

This is torture! This is one of the few times it's miserable being on the left coast. Darn mail takes longer to get here. OTOH, it was 65 degrees, sunny, and no wind here in Placerville, CA, located in the low Sierra Mountain foothills.

Date: Sat, 01 Mar 2008 08:18:09 -0500
From: Michael Crestohl <W1RC@Verizon.net>
Subject: [R-390] Re: W1RC R-390A NAVSHIPS 0967-063-2010

Thanks Perry, Tom, Harold et al for the high compliments. This has been a very interesting and involved project and one that is far from finished. It is still a work in progress, so to speak. The bunk of the manuals are still not

ready to ship. The bottleneck is the foldout pages. There are 13 of them. Ten of them are larger than 11X14 and some require as many as four sheets to be joined. I was hoping to engage the services of students but this was unsatisfactory because they are not familiar with the process or the diagrams. Therefore they all have to be done by hand - my hands! Folding is also an issue. This is tricky too. I would have to say that this aspect of the project is probably the most unlike the originals that were printed on one sheet of paper. The cost of doing this would have doubled the cost of the finished product. I learned the secret only after all the printing was completed and will be happy to pass it along to anyone foolish enough to attempt such a project in the future. It won't be moi.

The good thing is that the process has become pretty mechanical now and I can do them while watching the news, etc. My 9 year-old is also helping me in a limited capacity by inserting the finished foldout pages into the manuals. I do them in batches of ten because the bindery prefers them in that size lots. How long will it take to complete the project so everyone has their manual? Don't know for sure but I am guessing that I will probably have them all out by tax time. It has been about 10 weeks since most of you sent your checks and I appreciate your patience. So, if you are still waiting my plan to ship out the remaining manuals will follow this protocol.

1. Those who were kind enough to allow me to cash their checks in advance of the production.
2. Those who are in other countries and sent cash or money orders.
3. The remainder will go out in the order their checks were received. You will know to expect it soon when you see your check has been cashed.

Bottom line: This project has fairly low priority in the general scheme of things but I am working on it as time permits.

Date: Sat, 01 Mar 2008 09:38:50 -0600
From: GDM <1gdm3@charter.net>
Subject: Re: [R-390] Re: W1RC R-390A NAVSHIPS 0967-063-2010

Got mine yesterday. Very nicely done. When Michael had previously described the folding issue, I was not entirely clear as to the extent of the challenge. Guess I was thinking along the lines of simply folding over a large piece of paper two or three times. When you see the actual manual, its more like origami! Michael, you should get partial credit toward folding your 1000 cranes.

Date: Sun, 2 Mar 2008 18:44:08 -0500
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: [R-390] Navships manual

A couple of pics of the Navships manual that Michael made...

http://members.cox.net/beerbarrel/Picture%20024.jpg
http://members.cox.net/beerbarrel/Picture%20025.jpg

Date: Sun, 2 Mar 2008 18:53:20 -0500
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: RE: [R-390] Navships manual

Forgot....Office Depot bound mine for 3 bucks.....and did a good job too!

Date: Mon, 3 Mar 2008 22:55:50 -0600
From: "Don Reaves" <don@reatek.com>
Subject: [R-390] NIB R-390

Somebody in the Birmingham area should check this out. Don

http://www.amfmtek.com/ One thing you might be interested in is that Claude had a collection of seven R-390 receivers, one of which is still in its original box and never been used. You can see it on the website. The other receivers are in various states from complete to some parts missing.

Date: Mon, 10 Mar 2008 21:31:31 -0500
From: Jim Green <jagreen3@sbcglobal.net>
Subject: [R-390] I got my R-390 working!!

> Well, it's been a while since I posted an update. I got my R-390/ URR (not A) at a hamfest in Baraboo, WI last summer. It came with the original shock mount cabinet. I think I paid $300.00 for it. It worked fair to poorly from 8 Mc up, and was > completely deaf from 8 Mc down. A visual inspection yielded the following:
>
> The Kc knob is not original.
> The Mc knob has part of the skirt cut off.
> The manufacturers tag was missing.
> The shaft for the zero adjust knob was missing and had been replaced with a machine screw. The knob was clamped onto the machine screw, but slipped when the clutch was tightened. I made a replacement shaft in the machine shop I happen to have in my garage.
>
> The cam follower was missing from one of the 1st IF can rack lift arms. I made a new cam follower in the machine shop and installed it.
>
> The cable that carries the signal from the VFO sub-chassis must have been damaged at one time and a very kludgy repair had been performed. I

couldn't stand looking at it so I removed the VFO sub-chassis and replaced the cable.
At this point the receiver was almost completely deaf. I found this rather depressing so I walked away from the project for a while. A friend of mine offered to help me get it going so yesterday I hauled the beast over to his house andwe started in.
> Basically all it needed was an alignment. A previous owner had tried to perform an alignment without the cam follower. Once I had replaced the follower it was all messed up. Now it's properly aligned it hears quite clearly all the way from 500 kc to 32 Mc. Some of the Xtals in the Xtal oscillator are more energetic than others, but it's nothing I can't live with for now.
>
> The only issues I have left are the following:
>
> There seems to be a bit of backlash in the tuning. I can turn the Kc knob roughly 10 degrees without any movement of the Veeder root. The ALC does not seem to be functioning properly. I can detect no difference between the ALC position and the MGC position. The Function switch is working properly. Pin seven of V511 shorts to ground when the position switch is in the MGC position (like it should). Perhaps I'm missing something but shouldn't the AGC prevent
> distortion when listening to a very strong signal? It seems to me that I shouldn't have to ride the RF gain when the ALC is in. I couldn't find any information in the manual. Any recommendations?

Date: Tue, 11 Mar 2008 14:06:20 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] I got my R-390 working!!

Some ideas to help with the remaining problems.
You can deal with them one at a time as you want.

New old stock MC KC knobs are @RARE@ but some nice reproductions are available. Real work cost real money. But not like you see on E-Bay. Ask on the R390 mail when you are ready to buy a new knob.

>The manufacturers tag was missing.

This is normal. The meters were hazard waste. You either pulled the tag and sold the receiver as unknown scrape. Or you pulled the meters and sold the receiver with no meters and a tag. Most preferred on tag. It come off easy. Reproduction tags are about 25 - 30 dollars from Fair radio in Ohio. Again real work cost real dollars.

>Xtals in the Xtal oscillator are more energetic than others, but it's

nothing I >can't live with for now.

Again this is normal and do live with in. Think of finding the poorest band and then maybe replacing a couple crystals. No assurance the replacement will help. Some times its just a leaking trimmer cap in the IF deck. These come apart and can be cleaned. But its a real job to do the crystal deck. You may try it once in a life time and then do all of them. Just to see if it brings some of the weak bands up a bit.

>I can turn the Kc knob roughly 10 degrees without any movement of the >Veeder-root.

This is a slip in the zero adjust clutch. The clutch could be dirty. Mostly its a zero adjust shaft that does not completely come free of the clutch pins and thus lets the clutch slip. The are several gears between the KC shaft and the Veeder root. Some times the right angle bevel gears are not set up closely. This lets you have some lash in these gears. This can be adjusted out. Eye ball all the gears to make sure some of the anti lash springs are not missing.

>There seems to be a bit of backlash in the tuning.

A good gear train cleaning and lube may be in order. Some of the cams, gears and parts can have friction. The anti lash springs are weaker than the friction. One end or the gear trains move before the other end moves as the anti lash springs get exercised. The KC should move very easily.

>The ALC does not seem to be functioning properly. I can detect no difference
>between the ALC position and the MGC position. The Function switch is >working properly. Pin seven of V511 shorts to ground when the position >switch is in the MGC position (like it should). Perhaps I'm missing something
>but shouldn't the AGC prevent distortion when listening to a very strong >signal? It seems to me that I shouldn't have to ride the RF gain when the ALC >is in.

You may need to pull the IF deck (easy) and the RF deck (hard) and determine if your decks have been recapped. We think the R390's had good caps while the R390/A were built with some big brown or black plastic caps that have over time failed in all sorts of ways. Some of the R390 also had these bad caps. The AGC circuit through the IF and RF deck has several of these decoupling caps. The caps are away from the AGC jumper on the back panel and have resistors in the circuit. So if one of these caps shorts at an IF or RF tube grid, the stage acts as if it is always in MGC. The resistance test at the function switch or AGC jumper looks good as you get

a short and some resistance for MGC and AGC. The short may not be seen at a tube grid stage because of a resistor between the poor cap and the grid. The poor cap may pull several stages some and degrade AGC operation. When you tune a strong station in AGC does the carrier level meter give you a strong meter reading. If the meter circuit is not acting well, then you need to look between the detector and the meter. Again lots of caps in here to provide problems.

When you are ready ask the Fellows here for some help in stepping through the AGC functions. The R390 and R390/A are alike. The part number change to confuse the bureaucrats but the circuits are essentially the same.

Date: Wed, 2 Apr 2008 13:29:58 -0500
From: "Craig Anderson Ext 1365" <Craig.Anderson@saintpaul.edu>
Subject: [R-390] Generic CY-979A nameplate

A couple of years ago I bought a generic CY-979A nameplate from someone on this list and for the life of me I cannot remember who. Anyone out there know who I am talking about? I think he also made generic Collins R-390Anameplates.

Date: Wed, 2 Apr 2008 18:43:02 -0500
From: "Mac McCullough" <w5mc@austin.rr.com>
Subject: Re: [R-390] Generic CY-979A nameplate

Would an original work for you? I have a few .. seems like 2 perhaps, in the cabinets I received 11 years ago. Several were damaged beyond the point of being able to offer them for sale .. but I kept the parts and all that I could strip off of it .. mac/mc w5mc

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Date: Wed, 2 Apr 2008 23:23:18 -0500
From: "Mac McCullough" <w5mc@austin.rr.com>
Subject: Re: [R-390] Generic CY-979A nameplate

the name tags are gone, sorry i didnt have more .. mac/mc w5mc

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Date: Thu, 3 Apr 2008 01:36:30 -0400
From: "Tracy Fort" <beerbarrel@cox.net>
Subject: RE: [R-390] Generic CY-979A nameplate

Dan Arney I think has them for about 30 bucks if I'm not mistaken.

From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Generic CY-979A nameplate

Craig, I have them. $27.50 mailed.

Date: Fri, 28 Mar 2008 03:19:39 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] Recon

You come to the right place for Help. We do a lot more R390/A here than the R390's just because the Cargo Gods have given us many more R390/A than R390's. Dave Medley now a very senior citizen did R390 support for years. He still has parts. you can look up his web site if you need R390 only type parts. Hank does R390 and R390/A parts if you need things like knobs that were
common. Do a search on R390A Y2K manual

Visit the R390/A web site for documents Search for TM 11-5820-357-35 and down load a copy (the ARMY R390 TM of everyday maintenance

Army MARS "R-390 Cookbook by A. Carmody It was written for the R390 (NON-A) More to follow I have to go punch a time clock.

Roger L. Ruszkowski AI4NI

You will want a spline wrench to fit the spline bolts and RF slug rack adjustments.
Do you have a power cord with the connector that fits the receiver? Is it safe?

Place a ground strap between the receiver and ground.

The receiver since the day it was constructed would trip ground fault circuit breakers that were invented long after the receiver. The receiver will also trip the new arc fault breakers now required for bedroom circuits. If you have to run your receiver on a fault breaker, the input filter that allows more current to ground than a fault breaker tolerates, can be changed out with a more modern computer line filter that does not upset the fault breakers. This change also reduces the shock hazard of ungrounded receivers. However, NEVER operate the receiver with out a good ground.

The balanced antenna input is the same as the Twin coax used for early IBM computer networks. These connectors and that cable are available surplus. One pin can be grounded and the receiver feed through the other pin with a single wire feed. Mostly coax.

Some times, one balanced input lead is moved over to the unbalanced input and the antenna is then mated to the unbalanced input connector, while the other unbalanced input is shorted with a wire in the twin coax input.

Do a search and see Chuck Ripples R390 web page for antenna solutions.

Hang the front plate over the edge of the picnic table in the back yard and give it a bath with soap and water. Chase the water with compressed air. Rinse the gear train with cheap alcohol. Avoid the WD40. Blow out the gears with compressed air. The current preferred lube is Mobil synthetic oil. Just visit the station a few times and raid the empty quart cans. This will yield a life time supply of gear train oil. Good lightweight motor oil was used in the 50's and 60's. Blow the extra out with air.

Pull the IF, power transformer and audio decks. Current practice is to just run these through the dishwasher. Leave the RF, PTO and Crystal Osc decks in place for now. Once you become experienced you may want to pull these decks. Just to see what is under them.

R390's had good caps in them. The R390/A's had some sorry plastic brown or black capacitors. Eyeball the IF deck and audio deck for any of these fat round plastic caps. Most were .1 or .01 by pass caps. Some 20 plus in the whole receiver. The audio deck has an electrolytic coupling cap. This thing liked to leak and the fluid eats up the printed circuit board in the audio deck. Do an eye ball inspection on that.

The plug in electrolytic capacitors in the audio deck for the power supply are near unobtainium. Your receiver likely does not have original caps. They have been replaced at least once since the 1950's so they may be good for some more years.

Current replacement choices for the plug in electrolytic capacitors in the audio deck are at least the following five. You can re stuff or have the current cans re stuffed. You can stuff some new caps into relay cases with 8 pin octal sockets And plug these in to get the job done. You can build some very nice packaging for the new caps. You can kluge some caps into the sockets. You can kluge some caps under the audio deck. If you chose to kluge please do not commit the fact in text on the reflector here. It will cause some readers much angst. However some receivers have been acquired with said poor workmanship in place and the receivers were working. We think this is a great tribute to the Collins design that it will accept such abuse and still function.

Under the power supply and audio deck are sets of 47 ohm 2 watt resistors. Check these for value.

Your power supply likely has the 26Z5's solid stated with a single diode. In this case the resistors in the power supply are no longer critical. The power supply mod maybe of any level workmanship. The diodes may or may not be robust enough. Recommendation is some modern inexpensive 1KV 1

AMP or even 2 AMP. If you need to do this then read the archives for some very good advice. The tube shield base is likely bent over to prevent a tube from being inserted into the tube socket.

Good modifications unwired all of the tube sockets except for the diode mounted on two pins of the socket. (plate and cathode pins) The tube shield was left neatly as unbent as reasonable. Two of the 47-Ohm resistors get left just as surge suppressors and to reduce the wiring changes. Most modes just added the diode from one plate pin to the cathode pin on each tube socket.

You will want to check the 47-ohm resistors in the Audio deck. These balance the load through the 6082 series regulator tube sections. If a 6082 is run into the ground, it burns one or more 47-ohm resistor. There is no consensus on how to by pass the series regulator in the R390. Most consider it worth the maintenance trouble. The much cleaner B+ is worth the extra heat and maintenance requirements.

The R390 when new had at least one alternate power supply. You changed out The 120/ 240-volt AC power supply deck for a 24-volt DC power supply deck. The DC deck had a 24-volt DC motor in and 250 volt DC generator out at about 1 amp. The R390 filaments are all wired in 24-volt strings. This power supply made a lot more noise than the 60-hertz transformer. So there is this elaborate voltage regulator circuit in the R390 for clean B+. Back around 2000 with the Y2K problem some of the Fellows were looking for some of these power supplies for the R390. I do not know that one was actually found. I had seen one of the supplies in 1968 at Fort Devens in the schoolhouse where I learned to maintain the R390 and R390/A receivers. In 1970 I seen a van in Korea that once had eight of these R390 receivers in it but the receivers were converted to 60 hertz and I never did locate the 24 volt power supplies stashed anywhere. The management back then though the 24-volt power supplies had been shipped to more needy people. I then asked why we were trying to keep a van and truck chassis running if it was missing the essential parts. The reply to that question was unsatisfactory.

Anyway this fine mess leaves the R390 with a serious B+ voltage regulator. It produces much heat. Current preference is to maintain it and use it as is. The R390 is considered to have better sensitive than the R390/A and the voltage regulator gets most of the credit for the difference in receiver performance.

Next is the ballast tube in the IF deck. If you still have one use it until it dies. It will die. It was and is the most failure prone item in the receiver. Current choice one is to rewire the tube socket for a 12BY7. This tube just happens to use 12 volts at the same current as the 5749 BFO and VFO

tubes. But the filament pins are no the same as the active pins in the ballast tube. Another choice is a resistor plugged into the active pins of the ballast tube socket. You may find any of these options installed in your receiver.

The OFF / ON device under the function switch is a micro switch. When the receiver is left on for long periods the switch sticks and then the receiver will not turn off. Like wise the switch will stick open from setting around unused. Some disassembly and poking will return the switch to operation.

Test all the tubes in a tube tester. Make sure the correct type of tube is installed into each socket. Worry not about tube shields at this time. That is a whole weeklong topic by its self.

Dial the receiver around to 7+000 and eyeball the mechanical alignment. The holes in the cams need to line up with some marks on the RF deck. The KC and MC change operation should be smooth. The MC detent stop is likely worn and the receiver will not like to stay on the MC. New detent springs are still available.

Check the cam racks. Your racks may or may not have little rollers on the bottom of the rack arms. The little rollers need to move like bearings. Flat spots are not good. Check the slugs. These need to move smoothly in the tubes. Eyeball the slugs in each rack. All the slugs in a rack should have the same color spot or spots. Some times a slug will break and some one may not have installed the correct slug into the receiver. These can all still be had.

If you find you need any part for your receiver, post some mail here with what you need. Some one will post back and provide the exact details of where to find the part. Many Fellows have a spare deck or some hand full of some part. Some Fellows have one or two of the tubes by the 100's. It does not pay to advertise. We just all read the mail and when some one asks, we post back with an offer. Fair Radio in Ohio has many R390/A parts and some R390 parts. If you need some RF deck parts, slugs, racks, gears, clamps, gear springs, these parts are all available. Ask here first, read your mail and see what options you have for any one part you need. You may want six things and find they come from six different sources.

Sooner or later you will want a spare set of tubes for the receiver. Not some thing you need to get started with.

Check the fuses. The 20 Amp DC fuse goes no where. The AC is 3 amps and the B+ is Â¾ amps. That 20 Amp DC was for the other type power supply.

Once you do a eyeball of the RF deck mechanical, check all the tubes, check the knobs and switches for operation, do the IF deck, audio deck and power

supply deck visual inspections for capacitors, burnt resistors, ballast tube and power supply diodes you are ready to apply power.

A couple schools of thought for power on. Some like it slow and easy. Some just throw the switch. Both methods work. The outcome of either process is repairable. One is not necessarily more destructive than the other. Your personal experience may vary from that of other readers.

Always read Les's mail.

Beware of Barry, Barry, Barry and Barry. I can never keep these guys straight. But they know a lot.

Once you have the receiver on you get into another whole field of problems.The filaments are in strings. So do eyeball all the tubes to make sure they glow nicely in the dark. Weed out any with a blue glow.

Any antenna should get you some input. The receiver is double conversion over 8MHz and triple conversion under 8MHZ. Often the receiver will not work under 8Mhz.

The RF deck is in octaves. .5 - .999 1 - 1.999 2 - 3.999 4 - 7,999 8 -15.999 16 - 31.999. So some time an octave will be bad. This tells you have a RF deck problem. A cam clamp, slug problem or transformer problem in one of the octaves.

Once you get the receiver on and operating then you can begin to do a semi annual maintenance procedure on the receiver. When the receivers were run 24x7, after six months you have 4380 hours on the tubes. So about every 5000 operating hours you need to do a good maintenance procedure. Back when this was a 4-hour process. Maintenance men did two receivers a shift six days out of 8 days. Think about 8 hours on a good weekend day.

Download the R390/A Y2K manual. The alignment and test procedure in the manual will work on the R390 just fine.

If your receiver fails you in any way, post some more mail. Try to describe your problem as best you can. This gets you better replies.

Please tell us how your experience goes. This reflector is for the R390 owner operators and we owner operators read it to share and gain experience. Do not keep all the fun you are going to have to your self. There are many more readers of this reflector, than Fellows you see posting answers back to questions. These readers want to know what you are experiencing with your receiver. All the post go into an archive. Over time we see trends building in the archive. Pearls of Wisdom grow out of these

repeated problems.

R390's are in the minority. Now that you have brought one to our attention and are about to bring it back to life, we do not want it lost again.

Happy hobby Time to you.

Roger AI4NI

Date: Wed, 9 Apr 2008 10:42:56 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] RE: R-390 Digest, Vol 48, Issue 10

In support of which I advance my experiences:

In my experience, the maintenance and operation manuals for classified equipment are themselves classified at the same level as the equipment they cover, since the maintenance manuals tell how the equipment works and is repaired, and since the operation manuals tell how to use the equipment.

My experience also is that classified equipment is tagged with the equipment's classification, and with any special-access requirements and/or compartment labels. None of the versions of the R-390 or R-390A manuals I've seen -- from the very old (1950s) through the most recent 1960s/60s) -- have had any classification markings whatever, whether printed on the original or stamped on later.

This includes my original depot manitenance, field maintenance, and operation manuals from the Army. Moreover, the Collins R-390 and/or R-390A document

I've seen carried no classification markings at all, but discussed the internal economy of the receiver in enough detail that it certainly should have been
classified if the hardware was.

Date: Thu, 10 Apr 2008 09:20:08 -0700
From: "Dennis A. Deaton" <d.a.deaton@roadrunner.com>
Subject: [R-390] RE: R390A Classification

Hopefully I can shed a little light on this, three ways. First, my own R-390A, S/N 433 from the first Collins contract. I first saw it when I was in High School back in the early '60's. It was in the ham shack of the school's Electronics Lab. It had been acquired as part of a DoD gift to industrial education back in the 1950's. Many years later, a classmate of mine

became the chairman of the industrial arts department of that old high school. He, in turn was given the order to clean out all the "old junk" in the building as they were relocating the department to a different facility. He contacted me and asked if I wanted the receiver. Of course I had to think about it first - only about 2 micro-seconds - before I said yes. It's sitting on the bench in my garage, in the rebuild process now. The obvious thing is this. The DoD would NOT give away a piece of CLASSIFIED equipment to a high school.

Second, my experience as an Electrical Engineer and Project Manager for DoD. I worked at various labs and agencies over a 31-year period from 1971 to 2002. Over that time I would come into contact with various types of equipment, both CLASSIFIED and UNCLASSIFIED. When a piece of equipment is CLASSIFIED, it is plainly marked as such and has classification stickers plastered all over it. I worked on many pieces of countermeasures equipment that were so marked. The design documents for those equipments carried the same classification markings as the equipments themselves (usually a higher classification level). I've seen a lot of R-390As over the years in a lot of different locations (including "monitoring" stations). Never did I see any classification stickers on R-390A receivers. The microwave lab that I ran at Point Mugu had one on the bench just for us to zero-beat the 10 MHz clock in our frequency counter with WWV. The receiver was not CLASSIFIED. The lab was not CLASSIFIED. It did not have any special security measures that are needed for a CLASSIFIED facility using CLASSIFIED equipment. I also did some work at an un-named facility in Colorado. That place IS a secure facility. It has racks of new digital receivers that were built by Collins and WJ. None of them are marked as CLASSIFIED either. However the facility is secure and, more importantly, the receiver's use is CLASSIFIED. It's a matter of application.

Third, if you look at the original R-390A design documents that are available on the web at various places, you'll see that they are usually marked as "Sensitive" or "Restricted". That is merely an internal Collins marking that was there to prevent industrial espionage from competing firms "Sensitive" and "Restricted" are not DoD classifications. The MIL-SPEC, MIL-R-13947B, for the R-390A is not CLASSIFIED either. If the receiver was to be a piece of CLASSIFIED equipment, it would carry the same (or higher) classification markings as the receiver. I hope that this helps sort out the myths from fact.

Date: Thu, 10 Apr 2008 15:16:34 -0400
From: "Don Heywood" <wc4g@knology.net>
Subject: [R-390] Receiver classification and cabinet comment

Hello all, during all the years I have been involved with the R-390 family

starting in 1963 on the submarine Sailfish, have any of the equipment or technical manuals been classified.

I do however have an R-391 manual which is marked "restricted", this is a preliminary draft and probably was marked for company security. This is the one with the interesting spelling, i.e. "alinement"...

Concerning the cabinet issue, no one has yet to mention that a lot of the extra heat generated is due to the higher household voltage nowadays.

I use bucking transformers on all my equipment, including the Collins A-line and S-line equipment save the 30L-1 and 30S-1...Most of my gear sees 113VAC. I do point small fans at the side of the R-390's regulator tubes.

I have never had any heat related problems with the "A" models, even in a proper cabinet, receiving the proper AC input.

Date: Thu, 10 Apr 2008 17:11:42 EDT
From: JRFKE5RI@aol.com
Subject: [R-390] R390A Classifcation results

Here are the results of my investigation which included responses from many people in the security services who used them or maintained them from their first introduction until their final phase out. The consensus of opinion is that the receiver itself, was not classified unless it had special modifications or was part of another classified system. I am one hundred percent certain that this conclusion is correct. Wikipedia should take note!

Date: Thu, 17 Apr 2008 20:17:17 -0700
From: Mike Hardie <mike46@shaw.ca>
Subject: [R-390] Terminal Post For IF Deck

While replacing a cap in the IF deck a terminal post broke. Anyone know where to get a new one? It's the small (about 3/8" long) one, brown, attached by a flat head 4-40 screw. Doesn't have to be original or brown, just an approximate fit.

Date: Thu, 17 Apr 2008 23:32:18 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Terminal Post For IF Deck
To: Mike Hardie <mike46@shaw.ca>

Contact Brad Thompson in NH. He has them.

Date: Fri, 18 Apr 2008 14:01:10 -0700

From: "Scott Overstreet" <scott@becklawfirm.com>
Subject: Re: [R-390] NAVSHIPS R-390A Manual Reprint

My Navships manual arrived here yesterday and WOW---what a beautiful job! Plain and simple Michael, you have done your fellow 390 hobbyists a real favor---that is, the ones that ordered a manual from you-----we are the lucky ones! Now, Many many thanks and then some more for all the efforts you put into the job---I have done some manual duplication and I know what you have been through. And, thanks again--and a big 73

Date: Wed, 30 Apr 2008 11:51:28 -0400
From: Bob Young <youngbob53@msn.com>
Subject: Re: [R-390] WTB: R-388/URR or R-390A

I have also used all 4 for BCB DXing and agree that the R390/URR is probably the best out of the bunch for BCB DXing although mine is not finished. I have had very good luck with both 390A/URR's and SP-600's also. A 388/URR is also a good BCB receiver but does not seem to be quite as sensitive as the rest of them but I wouldn't count it out either. My 390A was rebuilt by Chuck Ripple a few years ago so is in top notch condition and is also an excellent BCB DX radio. My SP-600 has analog readout good enough to pretty much know where you are give or take a kilocycle.

Date: Wed, 30 Apr 2008 16:57:58 +0000
From: "Bill Kirkland" <kirklandb@sympatico.ca>
Subject: Re: [R-390] WTB: R-388/URR or R-390A

I am curious as to why you think the R-388 is 10 dB deafer on BCB? I am a ham bander but I take it BCB is the AM broadcast band? I've worked on several
R-388's,51j-3/j-4 and fine them quite sensitive on my test bed.

If memory serves me correctly, the main complaint is that the 51J's have perhaps TOO much gain on the BCB band and hence may suffer accordingly. (e.g. front end over load, intermod due to the strong local stations). The 0.5 to 1.5 MHz band goes through 3 mixing stages whereas the other bands go through 1 or two mixing stages. The final IF on the 51J's is 500KHz. The SP-600 uses 1 mixing stage for the lower bands with a 455 Khz IF.

On the higher bands they use a 1st IF in the 3 MHz area and then down convert to 455KHz. I haven't dug into my R-390's/R-390A yet, but since it is built like a brick sh*t house, I would suspect that they have done a better job of optimizing gain distribution within the Rx or have better RF front end filtering on the BCB band than the 51J's do.

Date: Wed, 30 Apr 2008 12:23:28 -0600
From: "Kenneth Arthur Crips" <crips01@msn.com>
Subject: Re: [R-390] WTB: R-388/URR or R-390A

I have in good working order an 1967 EAU R390A/URR, as well as a nice R388/URR. My favorite of the two is the R388. As you know doubt know the R388 is the military version of the Collins 51J3, and the R388A is the same version of the 51J4. I have both the R390A, and the R388 in the same rack. The way I usually DX is I use the R388 to hunt and the R390A to zero in. Some of the reasons why I like the R388 is it is easy to work on and it does not use any hard to get tubes, so you don't have to wonder when your 3TF7 is going to crap out or the one of 26Z5W's in the power supply are going to go. Having said this about the R390A there are easy work a rounds for both the ballast tube and the rectifiers, so if these hard to get tube fail is isn't a big thing. I also have an SP600 the JX-17 version. I don't include it here because my radio needs to be overhauled it is very deaf. I plan on getting the Hi-Rez restoration video to help me this monster working up to snuff . The major thing I don't like about the Super Pro 600 it is a booger to work on in mechanical sense. As somebody on this forum remarked in past years SP600's are like digging into a burrito, you have to take stuff apart. to get to something you need to take apart, so you can take something apart to get at what you need to work on. It seem like whenever I work on my SP600 I end up with smashed fingers, bleeding, speaking in far distant tongues.

The prices on R390 of both types are simply outrageous. For some reason the R388's do not get the high prices the R390's do. My choice would be an R388. I have compared My R390A, and R388 with my R9200 Sunair commercial full digital receiver. I can tell you there really isn't all that much different between the two with my my antenna which is a dipole in an inverted "V" up 40 feet with 65 feet of insulated multi strand copperweld wire. The R390 beats out the R388 when you are trying to listen to that weak station that is perched on a frequency next to World Wide Reborn Missionary Radio ;) Because neither the R390 or the R388 have a product detector SSB reception is not the best, with for HF AM broadcasting isn't really a big thing. But once you start listening you will get interested in listening to utility stations, Military, and especially the Coast Guard. These station are always side band. The best thing you can do is to get yourself one of the sideband adapters. The one I have is a ELDICO SBA-1, there are many others. The SBA-1 gives my R390A, a product detector, notch filter, improved audio, etc. You may have watched the show Deadliest Catch, listening to the Coast Guard during the crab seasons out of Dutch Harbor is like listening to the wild West. Then there is the "Night Watch Net" which shift around in frequency but if you happen to catch it you can listen to one after another as the com' station at USAF bases check in. Then you can listen to the Military HF aircraft frequencies and listen to some of the air

traffic. I once listened to a flight of B52 on their way to Serbia on a cruise missile attack. Then there was the mysterious aircraft over the Pacific that came up on the Pacific air traffic control frequencies and asked permission to climb through commercial air corridors and was climbing to 95,000 feet.

Between the R388's, and the R390's you really can't make a bad choice. It is one of those "whatever you get the best price on" deals.

Date: Wed, 30 Apr 2008 12:31:40 -0600
From: Transmaster <22hornet@gmail.com>
Subject: Re: [R-390] WTB: R-388/URR or R-390A

My R390A is, of course, and EAC model,

Date: Wed, 30 Apr 2008 16:02:44 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] WTB: R-388/URR or R-390A

Well I wondered about prices on the R-388 after your note so I hit Ebay to see what was up and the last one that sold on there went for $960. That's right up there with the prices of the R-390 and "A". Strange thing is the R-390/URR (the man's radio) usually doesn't bring the kind of money the "A" does. They are harder to find and are more dependable....but cost less....go figure. I'd choose the R-390/URR over all of them for a long term keeper and daily driver. That along with a nice SP-600JX.

Date: Wed, 11 Jun 2008 08:37:23 -0400
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: [R-390] New set screws for R-390/R-390A knobs

I got tired of trying to find dropped or missing set screws for R-390-series knobs, so I had a bunch of them made up. For $25, I will send you: 20 pieces, 3/8" 8-36 6-point Bristol spline stainless steel NEW set screws and 20 pieces, 1/4" 8-36 6-point Bristol spline stainless steel NEW set screws These have full-cup ends and still have the machining oil on them. They fit the old knobs perfectly. The original short one is 3/16", but I kept cross-threading them so I got them a little longer. That works much better. The $25 includes shipping within CONUS. Ask me about foreign. Some discount for multiple purchase. PayPal preferred to jamminpower@earthlink.net (which is also my email address for questions/orders).

Date: Wed, 11 Jun 2008 22:17:02 -0400
From: "Ed & Mary Wambold" <n3lhb@embarqmail.com>
Subject: Re: [R-390] Broken pin on J-709

> I've got some damage to J-709. Specifically, pin H is broken clean
> off, close to the connector housing. Does anyone have any suggestions
> on fixing this? I still have the pin itself. Thanks!

When I am missing a pin, I just tin the remainder and tack solder a piece of tinned wire or the pin itself back in place. Seems to work ok for me...

Date: Thu, 19 Jun 2008 13:39:10 +0000
From: ml.denison@comcast.net
Subject: [R-390] R-725 manuals

Here I be. As you can tell, I don't post much, pretty much a lurker since I sold off my couple of R-390A's. I still have my R-725. Judging by your message, you're looking for documentation. I have none. In any case you can email me at: ml.denison _at_ comcast.net

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Date: Thu, 19 Jun 2008 06:59:01 -0700 (PDT)
From: John Flood <kb1fqg@yahoo.com>
Subject: Re: [R-390] AN/TRD-15/23 Manuals

Try these two links: So far they are the only online documents relating to the system that I have found online. I have also found a photo of a unit in operation if you haven't found that yet. If you find anything else on the R-725, please let me know.
http://www.tpub.com/content/directionalmeters/TM-11-5825-231-20P-1/
http://www.tpub.com/content/directionalmeters/TM-11-5825-231-10-HR/

Date: Thu, 19 Jun 2008 12:29:28 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] AN/TRD-15/23 Manuals

Is this the system that uses (-ed) the "Elephant Cage" antenna system you are talking about (aka Wullenweber)? FLR-9 and/or FLR-10. If so, google that and see what it may lead to. Also check the list archives. I'm sure the topic has been covered in times past.

Date: Sat, 21 Jun 2008 19:46:27 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] modified R390A

Did you find the R390/A receiver drifted, or was it the read-out that drifted? The read out would have had a time base crystal for what was essentially a frequency counter. The counter would have summed the VFO, and LO plus 455Khz and provided a display. Back in 1974-75, the goal was to get a counter that would do 50MHz in TTL logic for under $100.00. It was a "73 Magazine" type project. My 1968 military version had Nixie

readouts and filled a 19" rack with "repairable" logic chips. I remember when we got Texas Instrument logic chips to repopulate the wire wrap back plane with these new little black chips in 1970. There were several versions of digital readouts built for the R390/A. Most were several hundred dollars back then and done mostly for the WOW factor. Today you use a micro processor chip and a surplus LCD display.

The receiver is still rock solid and the display counter drifts as much as every because the processor crystal is just not very stable.

Date: Mon, 21 Jul 2008 08:46:39 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Wanted 9 pin plugs (tube plugs) with shell/shrouds

Hams doing this these days use a piece of PCB (9-pin or 7-pin pattern as necessary) with steel or bronze pins soldered to it. Official spec for pin diameter is 0.040 inches or 18 AWG. Or they take a dud tube and cut the glass at the base using, for example, really hot nichrome wire wrapped around the base, then solder to the base. Look at the pictures of 1L4 replacements etc. Some of them put a PCB with solid state components back into a glass tube! I have in the past had some Amphenol phenolic 7-pin and 9-pin shrouds like you're looking for... but the phenolic has NOT stood the test of time and usually after one or two uses it just crumbles into dust. If you do roll your own, I highly highly encourage you to use glass epoxy (e.g. PCB).

Date: Mon, 21 Jul 2008 18:51:08 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] Wanted 9 pin plugs (tube plugs) with shell/shrouds

Here is a source on the west coast. They were originally used for car cassette player cables solder pins with a screw top. Scan about half way down on the page. 73, tom, N3LLL

http://www.apexelectronic.com/connectors.htm

Date: Sat, 26 Jul 2008 06:59:30 -0600
From: "DW Holtman" <tubestuff@comcast.net>
Subject: Re: [R-390] re: neat tool (OT)

The Hakko also works great on tube circuits. It does not destroy components or tube sockets. Try it. You might need a nozzle with a bigger opening.

Date: Sun, 27 Jul 2008 00:20:48 -0500
From: "Jim Shorney" <jshorney@inebraska.com>

Subject: Re: [R-390] re: neat tool (OT)

The Hakkos are nice, I use one at work. You've GOT to keep it clean, don't let the tip clog. We have a wire cleaning tool that you run down through the tip every so often, I do it frequently. Very frequently.

When it sucked poorly, I found I had to take the pump diaphragms out (easy to do) and clean the accumulated flux off with alchohol. It really sucked after that! :) You also need to loosen the tip up now and then, or it will become one with the heater. Wish I had one at home, but a bit pricey for me.

Date: Mon, 6 Oct 2008 20:33:03 -0500
From: <srife@swbell.net>
Subject: [R-390] Unable to ZERO ADJ

Is it possible to access and un-stick the clutches on the Zero Adj from another angle than the side of the R-390A? I have it mounted in a rack and would have to take it out to access the clutches from the side. Is top or bottom access possible? I may not even be able to get the top or bottom covers off without taking it out. I've never worked on one, so I'm not sure, but being in the rack it appears it would be difficult to access. Please excuse my ignorance on this, but just looking for a shortcut.

Date: Mon, 6 Oct 2008 21:03:48 -0500
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] Unable to ZERO ADJ

Dissassembling the clutch requires dropping the front panel and with it rack-mounted, you'd most likely have to remove it from the rack. I doubt you could clean it all that well without disassembling it either. Good news is the clutch can indeed be disassembled, cleaned, and re-assembled without too much difficulty. The biggest problem is realigning the little spring washers and all the clutch disks but if you watch how it comes apart (assuming it was put together correctly) you should have little problem putting it back together.

Date: Tue, 7 Oct 2008 20:53:10 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Unable to ZERO ADJ

If the receiver is on rails and not hanging from the front panel bolts, you can drop the front panel on the receiver in the rack. Not recommended but then every one thinks any one can just hump these receivers any where any day. You can slide the receiver out far enough to get the IF band switch and BFO shaft extensions loose.

Also pull a wire harness screw near the local audio on the bottom side. If it is a table mounted rack you may not be able to get to this. With the screw out you just get a bit more free play in the wire harness. Then slide the receiver back into the rack and remove the hardware to drop the front panel. You can let the panel hang from the wire harness up side down. You risk breaking a short wire to the front panel some where. Watch what you do. It is repairable. If the Zero adjust just needs the dial washer fixed or some simple cleaning you can do it with the receiver in the rack on the rails. You can at least examine the problem and see if more work is needed.

Date: Tue, 21 Oct 2008 12:45:30 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: [R-390] Re: Hakko 880 (OT)

My kids gave me the Hakko 880 desoldering tool. It is extremely efficient at desoldering PC boards, and has some use in our BA's as well. Although expensive, it is easy to use, and clearly much neater than other methods I have used over the years. It is the only thing that successfully desolders multi-pronged devices. Watch out not to overheat stuff though.

Date: Tue, 21 Oct 2008 16:02:34 EDT
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Re: Hakko 880 (OT)

I agree! I couldn't live without my Hakko 472B. Works extremely well at desoldering wire junctions on tube sockets, terminal strips and inside tight places in the R-390A and other tube radios. Cleans up messy soldering jobs that someone else may have done before. Allows me to do repair work that would have been almost impossible without it.

Date: Tue, 21 Oct 2008 16:29:21 EDT
From: JRFKE5RI@aol.com
Subject: [R-390] Hakko

I have used Hakko equipment for many years, both in my Ham Radio work and as an avionics repairman. It is the BEST.

Date: Sat, 25 Oct 2008 14:09:03 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: [R-390] re: R-383 receiver (OT)

Went to the Mt Baker Hamfest in WA today. Not a lot there BUT saw two interesting items. There was a R-383 receiver... maybe 10 metal octal tubes 0.54-32MC in 6 or 8 bands... filthy dirty for $100. The front dials and plates looked 30's vintage, but all controls moved OK. Any info on this receiver? Did not sell. A similarly dirty BC-1004 was gone in 15 minutes

for $100. No 390's or 388's though. Anyway, I already have enough to keep me busy for decades (!)

Date: Thu, 6 Nov 2008 22:42:13 -0600
From: Tom Norris <nu4g.radio@gmail.com>
Subject: [R-390] Non-Seller's Remorse?

In the past, I've sold, traded, given away a lot of gear. About half the time I would later be overcome with Seller's Remorse. This week I was offered a fairly large sum for my CY-979A - which was bought from Mac several years ago in an offer to the list, but only assembled about a year ago and looks basically brand new. I declined the offer and am going through what can only be described as "non-seller" remorse. If I'd sold the cabinet, I'd regret it until my dying day. (normal seller's remorse) But what do you call "non-seller" remorse, if it's sole purpose is to prevent the above? Foolishness for not accepting A Huge Chunk Of Money, or simply an attachment to a non-replaceable item? All this time I figured I'd jump at an offer from a collector, but I just couldn't bring myself to do it.

Date: Thu, 06 Nov 2008 23:10:43 -0500
From: "Jim Shorney" <jshorney@inebraska.com>
Subject: Re: [R-390] Non-Seller's Remorse?

It's a condition known as "Boatanchor Addiction Disorder", or B.A.D.

Date: Fri, 07 Nov 2008 10:27:51 -0500
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] Non-Seller's Remorse?

According to the Merck manual, "Boatanchor Addiction Disorder" is diagnosed when the patient has so many radios in their house that they are no longer able to get out the front door.

Date: Fri, 7 Nov 2008 17:06:13 -0600
From: "William J. Neill" <wjneill@consolidated.net>
Subject: Re: [R-390] Non-Seller's Remorse?

This is a very provocative commentary. I have five racks that include a complete AN/FRR-38, AN/FRR-39, and AN/FRR-40 as well as all sorts of other exceptionally heavy stuff that consumes a God-awful amount of electricity and keeps my home warm during South Texas winters. I oughta get rid of all of it because it is increasingly taking up space although all of it did serve a significant purpose in holding down the slab of the house during Hurricane Ike several weeks ago. Regardless, I've got lots of memories tied up in all of that stuff and find myself, after four decades, of trying to figure out where monetary value overwhelms sentiment.

Date: Fri, 7 Nov 2008 22:02:16 -0600
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] Non-Seller's Remorse?

Monetary value has little to do with it. While you were younger and your life stretched ahead of you, you bought stuff to work on as you grew older. More likely, you bought it because you couldn't buy it back then. Nostalgia is extremely inefficient, although it makes you feel good, for a while. As someone said, "Life is like a roll of toilet paper. As you get closer to the end, it unravels faster." Sell off that stuff, and don't wait for the highest bidder. Your heirs, if any, will appreciate the inheritance. Otherwise, they will have to pay to have it hauled away. Seen too much of that ... Use the money to buy a widescreen HDTV and some old movies. Great nostalgia without the weight and space.

Date: Sat, 22 Nov 2008 08:45:15 -0500
From: Steve Hobensack <stevehobensack@hotmail.com>
Subject: [R-390] Y2K Manual

It's my experience that having the actual manual in front of me when working on the R-390a is much better than fumbling through a PDF version on a computer. I think I'll transfer the PDF to a CD and have a print shop make up a real manual. What is the price of doing this? I think there is a little over 300 pages. Is it better to print double sided or one sided pages? Thanks

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Date: Sat, 22 Nov 2008 08:51:32 -0500
From: "Al Parker" <anchor@ec.rr.com>
Subject: Re: [R-390] Y2K Manual

I agree, and have done that. With the lg no. of pages I like double sided & a 3-ring binder. Our local "UPS Store" abt once a yr has a half price sale on copies, so it's 3 or 4 cts/pg, not bad at all. Staples, etc., are usually higher, just shop around by fone. Where can you buy a hard cc manual of that size for <$10?

Date: Sat, 22 Nov 2008 09:25:19 -0500
From: "Kim Herron" <kim.herron@sbcglobal.net>
Subject: RE: [R-390] Y2K Manual

Just a thought here, guys. IF you have a laser printer and it will do two side, do the manual yourself and have them print only the foldouts. That's even cheaper and faster.

Date: Sat, 22 Nov 2008 17:38:31 -0500

From: "Bill Coleman N2BC" <n2bc@stny.rr.com>
Subject: Re: [R-390] Y2K Manual

Paper certainly has it's place, but keep the PDF... the later versions of Adobe reader have a great search function, lots faster than flipping pages!

Date: Sun, 23 Nov 2008 06:05:04 -0600
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] Y2K Manual

I concur with Don, I bought my own spiral binder a few years ago on eBay, minimizes space and the resulting book can be folded in half minimizing space on the bench. I keep "C" size drawings of the schematics I use the most. I have a laptop by the bench, but I still prefer a good old paper manual. But then again I still use my analog volt meter as well ... 73,

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Date: Sun, 23 Nov 2008 09:03:05 -0500
From: "Rich Baldwin" <rbaldwin14@nc.rr.com>
Subject: [R-390] Spiral Binding Machine FS

I have a nice, manual spiral binding machine that I would like to sell. I have used it for several years in making manuals to augment my hobbies. I would like $50.00 for it plus shipping. It is somewhat heavy as it is a punch tool that precision punches the multitude of rectangular holes along the left edge of pages with one stroke. You would then need to buy the spiral spines at an office supply store where they are pretty inexpensive. I also use clear covers and solid back pages to finish the job. I have lots of the NOS clear covers if you are interested. I can send a picture if you are interested.

Date: Thu, 27 Nov 2008 12:16:57 -0600
From: Jerry K <w5kp@hughes.net>
Subject: Re: [R-390] Need R-390A dial cover

Hello, Don. Long time no read. I just "re-joined" the list after a three or four year hiatus from working on 390A's, and I'm surprised at the low traffic level. Back when, this was the liveliest list around! Is nobody working on these things anymore? I'm just getting ready to start on a '54 Motorola R-390A that followed me home a few days ago. It has a dial cover, but the inside clips that hold the clear window are missing, as are the screws that hold the clips. If anybody has the screws/clips for the window glass, or a complete dial cover, please contact me off list. Looks and paint wear don't matter, as long as the metal doesn't need body work. I'll strip and repaint it as part of the overhaul anyway.

Date: Thu, 27 Nov 2008 15:49:28 -0600

From: Jerry K <w5kp@hughes.net>
Subject: Re: [R-390] Need R-390A dial cover

And come to think of it, if the dial cover came with a used but straight refinishable front panel, that would really make my day... I just know some of you have a few of these stacked under the workbench--how about it?

Date: Fri, 28 Nov 2008 12:31:33 -0800
From: David Byrne <kapnkid@ameralinx.net>
Subject: [R-390] new to the list

Hello all, Dave, KD7TOA. I've been lurking on the list for a while. With the help of a friend who is the expert, we are fixing up an R-390A. My fixer-upper was missing the glass in the dial cover, but I found that a microscope slide will fit in there nicely. It's a little wider than the edge of the clips so a tiny bit of silicon glue or other adhesive at the edge of the glass will keep it from shifting. A pair of clips the right size could be cut from a beer can with scissors for the non purists.

Date: Fri, 28 Nov 2008 19:36:26 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] new guy

Speaking of sysadmins and retro addictions...

<snip>....I do modern technology for a living, I sure as H___ do not have to do it for recreation.<snip>

And people ask me why I walked out the door after 20 years at Hughes and Raytheon at age 55. 20 years of leading edge computers was all I wanted. My R390 still pulls more signals out of the air than I want to listen to anytime. And I and hundreds of others know what to do to it if it don't. And it doesn't need a patch and new software release. If your R390 don't work you fix it
your self. You do not call me to figure it out for you.

It was state of the art. It is state of the art. And all you can do for it is give it a bath from time to time to get some of the fingerprints off of it.

Roger L. Ruszkowski AI4NI

Date: Fri, 28 Nov 2008 21:01:26 -0400
From: "Guido Santacana" <laffitte@prtc.net>
Subject: [R-390] Sad Story

Someone recently said that there was not much activity here. Well, here's a

story for your entertainment. Since 1979 there was always at least one R390A in my shack. In fact, the first one came from Fair with original maintenance manual and twinax connector. From then on I amassed no less than 7 of these receivers, 3 R390URRs and 4 R390As with one R392 and one R388. Even a 75A4 landed here for free. Most of the R390s came from older hams who had obtained them as surplus from the big local army, airforce and navy bases that unfortunately are no more except for one. I repaired and re-aligned each and every one of them. One solitary EAC R390A was loaned to a good SWL friend who promised to take good care of it and give it back when he did not want it anymore. In 2001-2002 health issues forced the sale of a lot of my collection. Nothing was sold on e-bay. I used the lists. Just a couple of R390s went for a trade before that. At the end I always thought that I had my "spare" in my friend's shack. When things went back to normal, I decided to get that R390A back. Well, I found that my friend divorced and his XYL disposed of his shack in the dump including a top of the line modern receiver. Trying to get at least some $$ for the set was useless so this ended the possible presence of this venerable receiver in the shack. In this 100 x 35 mile island I doubt that another one may be found. So now I wait to see what comes up at a reasonable cost because as that guy used to say on TV "prices are insane!" I hope everyone had a happy Thanksgiving!

Date: Fri, 28 Nov 2008 22:15:30 -0500
From: Norm - WA3KEY <norm@wa3key.com>
Subject: [R-390] Lucky R-390A find on eBay...

I've been a subscriber (in digest form) for many years but only post once in a while when in need of a hard-to-find part. A few weeks ago an R-390 caught my eye on eBay. It was listed as a Stewart Warner and only featured one small, out-of-focus picture with covers on. The brief description read "working," "selling for a friend" and the odometer was on "28,185." I was looking for a reasonably clean, working radio for restoration or possibly parts (I already have 5 others), so thought this one might go for a reasonable price. It did, and I won the auction for $760.

Upon arrival I peeled away the bubble-wrap and the first thing that caught my eye was what I thought was a reproduction top cover. I pulled the radio out of the box and was happy to see a front panel that looked like new and a back panel that featured an original line cord with metal 3-wire plug neatly stowed in its clip. I popped the top cover and my jaw dropped. Aside from a thin layer of dust, it looked like a new radio. As I carefully removed the modules, one-by-one, they all revealed EAC markings ... not Stewart Warner as indicated by the nameplate.

Long story short - all the tubes were either GE or RCA (except for the ballast, of course) and bore the same "68" date codes as the original font

panel meters. Even more remarkable was that aside from the 0A2 and 26Z5's (which run hotter) all the silk screen markings on the tubes remained fast even when rubbed with a damp cloth. This was a new radio! The only sign of age was a
hardening of the insulation in the line cord and slight yellowing of the white lines on the knobs. A close inspection of the "green" screws revealed no scratches and the tubes almost seemed welded in their sockets for not having been touched in 40 years. As expected, they all tested as new in my TV-7D/U.

All the radio required was a good cleaning with compressed air and a dry paint brush and some soapy water on a cloth. Some Tarn-X was applied to the silver plated surfaces with Q-tips and a few of the knobs had some small paint chips to touch up. Electrically, the radio came right up to spec with the exception of transformer Z216 in the high-IF which failed to peak and was replaced.

Since most of us will never get to see what a new R-390A looks like, I took photos of all the modules before reassembly and posted them at my Web site. Thirty high-resolution photos tell the story at www.wa3key.com/r390a (r390a-01.jpg thru r-390a-30.jpg) I e-mailed the seller informing it was the cleanest R-390A I've ever seen and inquiring as to the radio's origin, but he never replied. Enjoy the photos... 73 de Norm - WA3KEY norm@wa3key.com

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Date: Tue, 2 Dec 2008 11:44:55 -0500
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] R390 Final Engineering Report?

>> The coil info comes from the R-390 Final Engineering Report,...
>>
> Is this report available? I'd love to have a copy.

Gord, Yes, in digits, at that.

Here it is: http://www.r-390a.net/
click "references"
http://www.r-390a.net/faq-refs.htm
then see: Collins The Final Engineering Report on Radio Receivers R-389( )/URR and R-390( )/URR 1953-Sep-15, Collins Radio Company
(Courtesy of Bill Hawkins)
The direct link is: <http://www.r-390a.net/faq-eng-r3.pdf>

Date: Wed, 3 Dec 2008 21:58:00 -0500
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] R-390A Wrenches

> Am I correct in the proper wrench to use is a Bristol and not an Allen ??

YES YES YES

> Can anyone tell me the sizes I should get

0.096 six-flute. This is the only one you need for the R-390 knobs and gear clamps. Buy from Max Gain Systems (unless you have other tools in the Xcelite 99 handle/insert series and want to buy only the inserts for handles or T-handles you already have). Be not fooled. Get the originals made by Bristol Tool Company. www.mgs4u.com/

Date: Thu, 4 Dec 2008 13:23:42 -0600
From: "Bill Breeden" <breedenwb@cableone.net>
Subject: [R-390] Re: R-390A Wrenches

Tecra Tools sells the individual Xcelite 99 series blades and handles. They are a handy source for extra .096 blades. Xcelite uses the term "spline" instead of "bristol" to describe their 4 flute and 6 flute bristol drivers. Scroll to the bottom of the page at the link below for the 6 flute spline blades. http://www.tecratools.com/pages/service/blades.html

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Date: Thu, 4 Dec 2008 20:15:21 -0500
From: "Richard Spargur" <k3ui@comcast.net>
Subject: [R-390] R-390A Wrenches

Your are correct youu need a bristol wrench. The R-390 and R-390A uses the #8 spline (aka Bristol Spline). The size I ordered from McMaster-Carr was the .096 inch. I use it to align it, remove knobs, but it will not reach all the gear clamps. I can manufacture a tool just like the original spline tool used with the receiver except instead of using an aluminum rod I use a brass rod. It lasts longer and is also non-magnetic except for the spline insert. Attached is a picture of the one I made for myself. The cost will be the cost of the materials, gas, and shipping probably around $8 to $12 each. Let me know if you want one. I am not in the business of making tools and will do it for the fun of it and to keep R-390s and R-390As alive. I am also happy to tell anyone who wants to know what materials I used, where I got them, and how I put them together so you can make you own. I have attached a picture of the one I made and use personally. I assume the list server will delete the picture. If anyone is interested in it email me directly. It is the same size and the original tool issued with the early receiver models.

Date: Mon, 8 Dec 2008 11:53:31 -0600
From: "Tisha Hayes" <tisha.hayes@gmail.com>

Subject: [R-390] Identified: R-390A mini BNC connector type

I finally found out what the mini BNC connectors on the R-390A are designated as. This has been a question asked by many on the R-390A reflectors and on the Hollow State News, no answer was readily apparent. Since I have a large amount of coaxial inter-series adapters as part of my professional work, I decided to pursue an answer to this question through the Amphenol tech-rep. Here is what I found out;

The series connector is designated as MB. It is not rated for a specific impedance like 50 or 75 ohms. The specification has a wide variety of impedance's that the connector will work with, ranging from 50 to 150 ohms. I also found that the connector, chassis plug, Tee's and terminators are still available through a variety of sources. Since this is a little-known specification without any widespread knowledge of it's applications the parts are available cheaply from some surplus sites. At the higher end, there are still suppliers who can make custom cables with the MB connector. One surplus site that has the connectors is Surplus Sales of Nebraska. Of course, their prices are on the high end of what is considered surplus but they have a decent array of connectors. This can be found at http://www.surplussales.com/Connectors/MB.html

These are a direct fit and I have purchased connectors and tested them on my R-390A. This may be a great tip on rebuilding the R-390A when the coax cables are seriously deteriorated or when connectors are badly corroded.

Date: Mon, 8 Dec 2008 14:00:02 -0600
From: "Phil Mills" <pmills7@comcast.net>
Subject: [R-390] mini bnc connector

Digi Key has mini BNC connectors which I presume are the same as the MB connectors. However, their prices do make Surplus Sales of Nebraska look like a bargain basement seller.

Date: Mon, 8 Dec 2008 16:47:05 -0600
From: "Tisha Hayes" <tisha.hayes@gmail.com>
Subject: [R-390] MB Connectors

I think that the weakness of the standard for the MB connector and the rise of other connector types led to the demise of the MB connector. It really does not have a standard impedance rating and is a bit freakish. I suspect that there is probably some excess inventory that has been sitting on shelves for decades now. For those of us who need to make an extender cable or replace a bad connector end they should be about as easy to find as an unused ballast tube.

I have not had much success in finding the standards doc on the MB connector family, just occasional references to it's capability. Unfortunately when you try to look it up using google, you need to filter through all of the *MB* results and ignore references to a multi-pin connector that is called MB by a Japanese company.

Date: Tue, 09 Dec 2008 12:57:45 -0500
From: wa4aos@aol.com
Subject: [R-390] 1985 R 390A Fowler Manual

I recently came across a near mint 1985 R 390A Manual written for the Department of the Navy. I ASS-U-ME, that it was written by Fowler for their 1985 run of R 390A's. This is a blue manual loaded with all sorts of great info, some, that?I have not found in any of my other 390A manuals. It has 1985 written on the cover and a number of places in the print. Included are a number a large fold out schematics. I am missing page 3-12 and was wondering if anyone on the list might have a copy of that page that I could beg, borrow or steal. As far as I can tell, the page is not important but I would like to have the manual complete. Perhaps, if there is interest, I will have some copies made. I would offer a free copy and cash to the person who can provided the missing page.
Any help or advice would be appreciated.

Also, I read with interest the info regarding 390A front panels released this morning. Presently I have about 80) 390A's and plan to pick up more in a large purchase in January. More information about Hanks Timesaver sander would be of interest.

Date: Tue, 09 Dec 2008 19:04:03 -0500
From: bonddaleena@aol.com
Subject: [R-390] Re: new cleaning technology

If you want the panel 'clean' with NO damage, have it 'soda blasted'. Yes, these companies use a coarse version of good 'ole baking soda. I saw the results at the recent "Turkey Rod Run" in Daytona, Fl. I has seen it used on various TV car programs. However, this vendor had samples of Glass Beaded sheet metal and 'Soda Blasted". No contest! Soda's the way to go!!! (and I have a large glass beader!!)

Date: Thu, 11 Dec 2008 21:53:48 -0500
From: "Richard Spargur" <k3ui@comcast.net>
Subject: [R-390] #8 Fluted Spline Wrench for R-390A

I have completed making enough of the tools for the people who expressed interest earlier. The cost for one fluted #8 Bristol wrench is $9.50. That

includes 1st class mail postage with delivery confirmation and no insurance. Without insurance the mailing will be at your risk. If you want it to be insured the post office wants $1.70 more for insurance from $0 - $50. With insurance (your choice, but without is your risk) is $11.20 per tool. A couple of people wanted three. The cost of postage will change. The cost of three with postage is 31.20 and includes the $1.70 for insurance. The insurance fee does not change from one to three wrenches. If you still want the wrenches let me know again. I would prefer a money order. My address is correct on QRZ.com, or I can provide it individually. When the money order clears the bank I will mail the tools via 1st class mail. Any of the other common options for mailing are available, but cost considerably more, and will increase the cost of your shipment. [Richard Spargur] I tried to attach a photo, but the listserver stripped it off. Upon request I can send you a picture of the first nine tools I made.

This tool is strong and does not have as flexible a bit as some commercial tools which can be problematic working with some of the clamps on the gears. The bit is very hard and will not wear down as fast as some of the other tool variants. This tool does have some flexibility in the tip to give you some indication the spline is tight before snapping, stripping the head, or breaking the clamp. The two inch long bit will flex slightly. This tool also allows you to twirl it in your fingertips when aligning the RF deck. I enjoy this tool and originally made it for myself. Again if you wish to make you own I will tell you how I made them. There is no magic in it, just having the right materials and tools.

Date: Fri, 12 Dec 2008 12:44:15 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] R-390A IF Module Layout

The BEST pictures with notations of components is the Y2K manual available on-line. The photos are in color.

Date: Fri, 12 Dec 2008 12:53:25 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] R-390A IF Module Layout

I ALSO used - TM 11-5820-358-35. This is the "Field and Depot Maintenance Manual". The pictorials are in black and white with all components under each chassis called out by part #, with the same treatment for the TOP of each deck/module. It has been so long ago that I obtained it, that I could NOT say where I did so.

Date: Fri, 12 Dec 2008 12:27:53 -0600
From: "Tisha Hayes" <tisha.hayes@gmail.com>
Subject: [R-390] zero adjust clutch

I had a problem with the zero adjust mechanism on one of my receivers, it doesn't dis-engage the drive so I can zero out. I have since purchased a new zero adjust mechanism from Epay (like $8.00) and will install it the next time I drop the faceplate. After contemplation I may find that it is the clutch mechanism that the pressure plate drives. Good thing I have a spare RF deck and all of the gearing. I wouldn't mind replacing one gear but tearing the entire drive train apart is something that is not just an afternoon project. I have seen that gear make it's appearance every few weeks on the ePay place. Usually it is in the $5 - $15 range. Maybe you can find someone who has a tremendous pile of blue-striper's who can pull one for you. If you can, gradually accumulate a complete set of spare modules. Then you can make mods/upgrades on the radio, one module at a time. This is also a tremendous benefit in troubleshooting.

Date: Fri, 12 Dec 2008 14:34:34 -0500
From: Barry <n4buq@knology.net>
Subject: Re: zero-adjust clutch.

My first R390A, a '54 all-Motorola unit, had similar problems with the zero-adjust clutch. Someone had hacked a replacement clutch plate which I replaced but it still didn't work as well as I'd have liked. I tore the clutch mechanism apart a few times, cleaning, deburring, etc., but it never released as easily as the one on my Teledyne did. I think Roger has commented that this was rather common and a good solution was never found. Some clutches released nicely and some didn't.

As for collecting replacement decks, that's a great idea, but I'm trying my best not to have so much "stuff" around anymore. I just don't have room for it. It kind of scares me to get this R390A as I know I'd work on it and then it would need realigning and I wouldn't have the gear for that and I'll start buying more stuff. It doesn't end. I have a nice frame that I've restored complete with a p/s for which I was originally going to obtain the various modules and build another one but have decided I don't want to undertake that. I don't want this stuff laying around when the undertaker undertakes me.

Date: Sat, 13 Dec 2008 10:17:37 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: [R-390] Re: zero adjust clutch

The suggestion is that replacement decks make trouble-shooting easier. I agree.

Clearly, having a working deck that one can quickly substitute for a suspected malfunctioning deck is quick and definitive. That said, you only

need to have maybe one of each: audio, IF, Xtal, and power supply. The volume occupied in the shop is very small, and inconsequential when you consider all the other stuff piled up in our shops! Of my three A's, one is a cosmetically and mechanically abused Motorola, but the '51 Collins and the '62 Capehart units are well preserved. I have used the Motorola modules as my "backups" for the others. Nothing has been thrown out, as yes, stuff is getting harder and harder to find. Luckily, both the Collins and the Capehart have the "glow-in-the-dark" meters. As for stuff lying around in the shop when we all eventually go to the great shack in the sky.... have a notebook located in a secure location that has specific instructions to one's heirs on how to redistribute our collections to others on this list who appreciate BA's... along with all of our assets (such as they are).

Date: Sun, 14 Dec 2008 20:14:29 -0600
From: "Tisha Hayes" <tisha.hayes@gmail.com>
Subject: [R-390] The final word on the R-390A mini-bayonet connector

Here is a bit more information on the MB connector. I found several suppliers who can provide connectors. At Hutton Communications they carry the connector from RF Industries. I was able to pull a data-sheet and pricing (about $6 each). Here is the link to their web site;

http://www.hol4g.com/ac/Product.aspx?number=RFI-RFM-2000&p=164805&sc=3886

>From other sources these are also known as "Kings KM-59-23" or "Dynair 921 22133 01". A quick search of the RF Industries web site will show the cross reference information to RFM-2000. The bulkhead female connectors I purchased are in Ampenol original packaging
with the product ID shown as 554/67/555 and others with 554/67/556. From Amphenol there is no longer a trail to a currently manufactured component. I belive that there is still some number of MB connectors left over from old stock to give us some options going forward for repairs. From other suppliers, I have found sources for the cable connectors, chassis mounts, T connections,covers, terminations and inter-series adapters to BNC. If doing searches for this connector it is important to remember that it is called "Mini-Bayonet" and not BNC. You cannot look for a connector by it's impedance as the MB connector really doesn't fit any defined characteristic impedance.

Some of the Mini-Bayonet connectors also appeared to have been made by "Automatic Metal Products Corp" with date stamps from 1967. There is not a product code shown on the connectors. Automatic Metal Products Corp (out of Brooklyn NY) appears to have made quite a few RF components for NASA, the aerospace industry and military contracts. Somewhere along the line they disappeared off the face of the earth (pun intended since they

made things
for the space program).

The RFM-2000 part number is shown as part of a Carnare LV-61S series (this contains a great many of the more common connectors we are used to. Only the RFM-2000 has a description of "Mini Bayonet" "Mini Bayonet Female Crimp Cable Jack; Kings KM-59-23". There seems to be a variety of coaxial cable types supported by the RFM-2000 connector. Including; RG-59, 59A, 59B, 62, 62A, 62C/U; Alpha 9059, 9062, 9830, 9840, 9845; Belden 8221, 8241, 9169, 9204, 9228; Canare LV-61S; CommScope 5555, 5560, 5563

Date: Sun, 14 Dec 2008 22:23:48 -0600
From: "Don Reaves" <don@reatek.com>
Subject: RE: [R-390] The final word on the R-390A mini-bayonet connector

It does help, Tisha. You have provided more info on the MB connectors that we have had in toto on the list in a long time, and some of our archived info is wrong or obsolete, if not confusing to newcomers to the R-390A interconnect cabling conundrum. Most us have just scrounged used/surplus connectors and cable assemblies when and where we could find them. It's good to know they can still be purchased new. Thank you.

Date: Mon, 15 Dec 2008 16:48:57 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] The final word on the R-390A mini-bayonet connector

When I went to the Surplus Sales of Nebraska link that Tisha gave, one plug says for RG-178, and another connector says for 5/32" cable. One has to search carefully. However, ANY source is "indeed" scarce!

Date: Mon, 15 Dec 2008 16:12:49 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] The final word on the R-390A mini-bayonet connector

>..... plug says for RG-178, and another connector says for 5/32" cable.

Yes, it appears one of those may be correct for the R390A connectors and one may not be (the one for 5/32" cable). R390A cables are about 0.090". The silver-plated ones for RG178 may work.

Date: Mon, 15 Dec 2008 19:11:09 -0500
From: Jon Schlegel <ews265@rochester.rr.com>
Subject: Re: [R-390] The final word on the R-390A mini-bayonet connector

I remember reading someplace that the cable used in at least some of the

paths in the 390's is higher impedance than 50 ohms or even 75 ohms. Unless the path is operating as an actual transmission line (termination impedance = cable impedance), a lower impedance cable may add extra shunt C to the circuit.

Date: Mon, 15 Dec 2008 23:52:59 -0500
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] R-390A Restoration Progress (at last)

Be careful with the switch cleaners.
Use it very sparingly.
Excess can be absorbed into the switch.
When this happens, the switch might swell and misalign the wiper tothe contacts.
You may have to soak the switch in alcohol to get the cleaner out of the switch.
The cleaner should be applied to the contacts only.

Date: Thu, 18 Dec 2008 17:43:26 +1300
From: ken <igloo99nz@yahoo.co.nz>
Subject: Re: [R-390] The OD discussion

I have a total of six BAs and I decided to box them all up except one... I am not going to play with any other radios until the one that's unboxed is completely finished. Then I'll unbox another one and start work on that until they are all done. An early New Years resolution for me is to complete at least one full restoration per year...sounds like a long time (it is!) but with my mentality on component choices I'll be working when the budget allows.

Date: Thu, 18 Dec 2008 16:29:48 -0500
From: "Perry W. Remaklus" <perry@willbell.com>
Subject: [R-390] #8 Fluted Spline Wrench for R-390A

I received my fluted spline wrench from Richard Spargur, K3UI today and he has done a real professional job.

Date: Mon, 22 Dec 2008 00:22:55 -0800
From: "Scott" <scott@becklawfirm.com>
Subject: [R-390] Rat Track Solvent?

A while back, I remember conciderable disscussion on various cleaning materials for various problems and places in the 390. I'm not doing a 390 just now (three to go) but the solution to my present problem might be useful in sombody's 390 restoration.

Recently, I said OK to a request to fix a repeater that suddenly quit after years of trouble free service. I found a critical wire chewed in two and several more "almosts". The fixes were easy but a problem remains in the cleanup. Rat trash and droppings (OK to read as a common four letter word) swept and vacuumed out of the rack easily but the brown "tracking" residue remaining on the base surfaces and apparent rat trails is resistant to everything I have tried----water, dish and laundry detergents straight and with water, 409, alcohol, "Goo-off" and paint thinner. The crud releases from vinyl wire with a lot of scrubbing using one of the detergents and water but nothing I have tried lifts the crud at all from a painted, bare, galvanized or plated metal surface. What works?---any and all practical suggestions will be tried and their performance reported and I apologize for stretching the 390 boundry a bit.

Date: Mon, 22 Dec 2008 03:03:10 -0800 (PST)
From: "KC8OPP Roger S." <kc8opp@yahoo.com>
Subject: Re: [R-390] Rat Track Solvent?

I have had good luck with WD-40 and scotch bright pads, careful on the painted surfaces.

Date: Mon, 22 Dec 2008 08:44:56 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Rat Track Solvent?

If Gumout Carb Cleaner won't touch it I don't know what will... I wouldn't use on painted surfaces though....or at least try it in a small out of the way spot to see if it is going to soften the paint. Only other thing I have used as well is good old lacquer thinner. Both of the above are flammable and require they be used in well ventilated areas so be careful.... Another serious concern is to wear a mask when removing rat droppings. Hanta virus is a serious thing. (Probably spelled it wrong?)

Date: Mon, 22 Dec 2008 10:31:28 -0500
From: "Paul Anderson" <paul@pdq.com>
Subject: Re: [R-390] Rat Track Solvent?

Keep in mind that the acids in animal excrement will tend to change the surface of the metals and perhaps other materials (plastics). I would expect anodized, plated, or bare aluminum or steel surfaces to be marred by the extended presence of such things. I had a bunch of automotive parts ruined by urea from animal urine (the parts were badly stored, but it was made worse by the acids) - radios would be no different.

Date: Mon, 22 Dec 2008 14:33:27 -0500
From: Roy Morgan <k1lky@earthlink.net>

Subject: Re: [R-390] Rat Track Solvent?

Oh, noble rat/mouse dirt cleaner-upper, do not be afraid. Do not shirk from your duty. You can do this. Steel yourself and go to the grocery store. Get 409, ammonia and rubber gloves. Mix up the following remedy:

Half 409. straight from the bottle

Half household ammonia, straight from the bottle.

Do not mix close under the nose. Apply with paint brushes trimmed to half their length for stiffness, parts cleaning brushes (yes, Harbor Freight items work ok) and whatever else you can find with a handle.. wear rubber gloves. Rinse well, preferably with warm or hot water. Do not be tempted to move to Arizona to get warm winter sun and dry air. Just put a couple of lamps nearby to warm the thing as it dries. Behold the cleanest repeater you have seen.

Date: Mon, 22 Dec 2008 14:03:23 -0600
From: "Jerry Boman" <mdg11fbf@gmail.com>
Subject: Re: [R-390] Rat Track Solvent?

Hi, have not tried it on a radio but pure ammonia should cut the urine and pure vinegar should cut the sh...droppings. Post back if it works!.

Date: Sat, 27 Dec 2008 09:42:15 -0600
From: "Tisha Hayes" <tisha.hayes@gmail.com>
Subject: [R-390] Chuck Ripple parts list

He may not be on the list but you can reach him through the email address on
his web site. It took him a few days for him to respond but he is out there. We corresponded a few weeks ago.

Date: Sat, 27 Dec 2008 10:17:06 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: [R-390] re: Chuck Rippel's parts kits

It was back in 1998 when Chuck was an active member of the list. He had a lot to contribute, and was a source of many handy hints re the care and feeding of the 390's Many of the components in his kits were from ATC. I bought a few kits back then.

Tubes: (2) 3TF7, (6) 5749, (4) 26Z5W, (7) 5814A, (3) 6C4,
(1) 6DC6, (1) 0A2WA, (3) 6AK6, and (4) 5654

Parts: (2) Z216, (1) T208, (4) coil slugs for RF deck, (2) T501/502,
(1) T503, (7) 8-50 pf trimmers, (7) 3-12 pf trimmers, and
(2) 5-25 pf trimmers.

Freebies: AC input adapter, antenna box, odds and ends Price for both of the above was something like $150. Sounds like a lot, but really is not when you consider that these were unused hard-to-find components. His wife did a fabulous job of packing them up. Nothing was damaged in my shipments.

Date: Sat, 27 Dec 2008 12:43:59 -0600
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] re: Chuck Rippel's parts kits

Ditto here also. Ihave a filing cabinet drawer full of the kits, tubes and parts.

Date: Sat, 27 Dec 2008 11:04:08 -0800 (PST)
From: Charles Rouse <rouseokc@sbcglobal.net>
Subject: [R-390] Re: R-390 Digest, Vol 56, Issue 46

Chuck is still around. He just finished a 390 for me and sent it back about a month ago.

Date: Sat, 27 Dec 2008 15:51:23 -0600
From: Jim Green <jagreen3@sbcglobal.net>
Subject: [R-390] Wanted: AM Synchronous detector

I would like to buy a used Sherwood Engineering model SE-3. Must be in good working condition and from a non smoker. Cosmetic condition is not important. I would prefer a rack-mount cabinet, but the standard cabinet is acceptable.

Date: Sat, 27 Dec 2008 15:15:35 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] re: Chuck Rippel's parts kits

> Ditto here also. Ihave a filing cabinet drawer full of the
> kits, tubes and parts.

Hmmm, I have the same weakness. My stores are in a pair of see-through Costco vertical clothes bins with four deep and five shallow drawers. Each shallow drawer can hold 70-odd tubes vertically in their JAN boxes. Mounted them on plywood bases with *real* industrial grade rubber wheels so they can be rolled into a corner when not in use. At least now I can find stuff now that I got them out of card-board boxes. Heavy stuff like

transformers etc go at the bottom. Homemade cable racks adorn the rear so that all my test cables can hang down like skis. My area is so small that roll-arounds are the only way to have stuff easily at hand. A short roll-around 4 foot high 19 inch steel rack holds the scope, URM-25D, and various meters.

Date: Sun, 28 Dec 2008 00:26:56 +0000
From: odyslim@comcast.net
Subject: Re: [R-390] re: Chuck Rippel's parts kits

I am lucky as I live alone. The whole basement is my radio room :-) Split down the middle. One side radio listening positions, the other storage and work bench. I added A/C and heat as well as dedicated electrical circuits.

Date: Sat, 27 Dec 2008 16:43:20 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] re: Chuck Rippel's parts kits

Nope, not here, all R-390A/URR parts are in the back of the 19" rack below the speaker. New dog, Alsatian/Beauceron, has to share under-table space with parts and tube caddies for the T-368E/URT, one R-390/URR sits on same table.

Date: Sun, 28 Dec 2008 02:12:52 -0500
From: Bob Young <youngbob53@msn.com>
Subject: [R-390] Chuck Rippel's parts kits

He did an R-390A for me several years ago and did a great job, it's still within maybe 200-300 hz end to end, maybe less and the tuning knob still turns like butter. It's still my go to receiver. I have to tweak a few things but it's been used a lot since I got it back. I wish he still did post here in fact he was surprised this list was still going when I told him I had gotten the idea here.

Date: Sun, 28 Dec 2008 04:38:59 +0000
From: odyslim@comcast.net
Subject: [R-390] clock

Has anyone installed a clock in their R-390x? I am thinking of installing one in the VU meter hole and thought I would ask if anyone has done it or given any thought to it.

Date: Sun, 28 Dec 2008 07:08:08 -0600
From: Dave Mayfield W9WRL <wrl@gwltd.com>
Subject: Re: [R-390] clock

Scott just my thoughts. Why in the heck would you want to do that? I like to keep my equipment all original, not to mention if you ever wanted to sell the radio I think a lot of guys would look at that and figure someone has been screwing around with a nice radio, you might say that they could just remove the clock, which is true but it would make me think that someone may have done other things to this radio so I don't know what I'm buying. Bottom line is if I saw this radio for sale with a clock in it the value would be lower in my mind. I have a clock on the wall works great.

Date: Sun, 28 Dec 2008 11:24:26 -0800
From: "Dan Merz" <mdmerz@verizon.net>
Subject: RE: [R-390] clock

Scott, my first thought was to adapt one of the analog black face wrist watches to a defunct meter case but there may be a problem with accessing the setting controls. Since future value has been mentioned, perhaps you should look for a Russian tank clock smaller than those currently listed on ebay. I'm sure when this radio surfaces later, after you sell it, in a listing, there would be considerable speculation and interest in a one-of-a-kind radio that was mysteriously linked to the other side by the Russian tank clock. I would offer that filling the hole with an interesting clock might not necessarily decrease the value of a radio with an otherwise empty hole. In any case, we know that all radios sold from the likes of us are offered with complete documentation on all mods so at least the next future potential buyer would have nothing to fear when he saw the clock !!! Of course, he or she might prefer an original meter and offer you even less than the bargain price that you put on the receiver.

Date: Mon, 29 Dec 2008 09:01:40 -0500
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] clock

Well, the VU meter has dubious utility in many "listening while in front of the radio" situations. It's different if the radio is being used in a diversity system or feeding received signals to a remote monitoring point. Maybe one of those 99-cent sticky-backed LCD clocks would satisfy both the "don't modify" and "more useful than a VU meter" camps :-) But like Scott, I seem to recall that for electrically operated front panel clocks, a common form factor in military/test equipment clocks seems to match the VU meter cutout. I have some run-hour meters that fit in the hole, for example.

Date: Mon, 29 Dec 2008 08:50:11 -0600
From: Jerry K <w5kp@hughes.net>
Subject: [R-390] Filament runtime meter to replace Vu meter

I'm currently rebuilding an old depot dawg that's been rode hard but at

least not put away wet. It has both meters and they work fine but I'm thinking of installing a filament-hours meter in place of the Vu meter just for the heck of it, and to have something useful in the hole (I'll swap back to the original Vu meter if I sell it someday). I've been using R-390A's since 1961 and I've never, not once, ever personally looked at the Vu meter to get any useful information (I don't run diversity RTTY or whatever else was in Uncle Sam's mind when he specified that thing). At least a filament-hours meter might provide some useful maintenance info down the road.

Anybody know of a source for small hour meters that will fit this application? Seems to me something that would work off rectified 6VAC from the filament or front panel light bulb chain would be appropriate, so I'm thinking a small LCD or mechanical odometer type 6VDC hour meter that will fit the hole would be my uncle here. Have any of you done this, and if so where did you find a meter? Probably lots of 12V versions around, but 6V might be a little harder to find.

Date: Mon, 29 Dec 2008 08:14:43 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: [R-390] Re: clock??

Crossed my mind for a μsec.... nope. Doesn't look right. I use the big one on the wall to tell time. If you have an uncontrollable urge to change the look and feel of a R390, a useful gizmo *might* be a small B+ meter in the place of the VU meter. I put one in a Hammarlund HQ-100 in place of the clock when I was a kid. Runnin' & duckin'

Date: Tue, 30 Dec 2008 01:29:18 +0000
From: odyslim@comcast.net
Subject: Re: [R-390] Re: clock??

Hey, Thats a good idea. I like it. I had a reply from Dan about a tank clock which I like too. also a thought about an hour meter. I think the B+ meter is a real winner. Thanks

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Date: Mon, 29 Dec 2008 21:23:59 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] Re: clock??

I was thinking of a plate with some really odd-looking connectors with wires running from the back down to some unknown area of the wiring harness and a "NASA" label underneath it on the front.

Date: Mon, 29 Dec 2008 22:46:11 -0500
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Re: clock??

The plate should be satin black, with all black wires running back and a prominent label: "Warning! This modification was done by XXX agency. You do not have the clearance to know what it is. If you mess with this, we'll have
to cancel the next sunspot cycle."

Date: Mon, 29 Dec 2008 22:15:48 -0600
From: "Tisha Hayes" <tisha.hayes@gmail.com>
Subject: [R-390] re:Clock

I guess the thing that has always bothered me the most about the R-390A is the dingy look that the panel meters have. The greyish-greenish low resolution escutcheon, reminiscent of ASCII art or a 320x240 printer output, inconsistent contrast between the lettering/ scale and the black background.

Sure most of those suckers are radioactive from Ra 226 paint but they could have given more care in the escutcheon design, they look more like an afterthought. I have been spoiled by looking at Westinghouse panel meters in electric generating plants and substations that look like pieces of art. Going into a substation at O'Dark Thirty in the morning to resolve a problem, the metering all needs to be clear and legible. I would like to re-do all of the meter faces with black on white lettering, S units and dB scaling for RF, mV and dB scaling for AF, maybe add a few more scales for B+, line voltage, AGC level to the line meter. Add a few "hidden" switch positions to the line meter switch to monitor B+, line and AGC.

I have the training to remove the Ra 226 from the panel meters (I still teach radiation safety and decon, and before I went for an electrical engineering degree I was working on my physics degree). I could do the strip-down safely and contain the waste in a way to render it safe for decades (encapsulate in acrylic resin and drop it in an old lead pig). Of course I would not want to go into buidness of doing that work but it might be fun to do it on my own rigs. (NRC nightmares and permitting, euck).

Right now I am working on my gigantic console project and hanging equipment in racks, I still need to make an antenna switching matrix and do quite a bit of programming on the touch panel computer mounted in the rack for decoding digital modes (need to put those Dovetrons to work other than spewing data to a COM port on a laptop). The R-390A panel meter project is pretty low down on the list well after the roofing filter mods and rehabbing every spare module in my collection. It would seem almost sacrilige to tear out the line level meter to put in a clock but with some rework, the line level meter could serve many other
functions that are important to the operation of the R-390A

Date: Mon, 29 Dec 2008 22:33:44 -0600
From: "Richard" <theprof@texoma.net>
Subject: Re: [R-390] clock??

How about something more subtle. Install a bubble level in an old meter case. That should get the tyros really scratching their heads trying to get their line level.

Date: Wed, 31 Dec 2008 07:57:34 -0600
From: "Dave Merrill" <r390a.urr@gmail.com>
Subject: Re: [R-390] re:Clock

Never one to be above sacrilege, here's my quick shot at this:

**http://tinyurl.com/HourMeter

Doesn't look too bad, but it probably could be improved with an escutcheon similar to the removed meter and perhaps a 1/4 inch build-out so it matches the height off the panel of the Carrier Level meter. The Hour Meter is about 2-1/4 inches deep so it j-u-s-t clears the IF deck, so some build-out would help there too. Needless to say, I used a spare panel for this test; no running R-390A was desecrated. The example meter runs off 120 VAC 60 Hz. I have a few of these NOS meters somewhere in my storage locker(s) so if anyone is serious about installing one, contact me off list. Happy New Year to all and thanks for all the interesting contributions to the list!

Date: Sun, 4 Jan 2009 12:45:25 -0700
From: w9ya <w9ya@qrparci.net>
Subject: Re: [R-390] Now *this* is a really nifty idea...

Even with the best of instruction and many decades of daily practice, without good solder ANYONE will have a tough time doing a good joint. To wit; be sure to get solder designed for hand soldering work. Eustatic stuff comes to mind, and these formulas ARE avialable in stuff that does not use rosin in the core. BUT **you** have to be the one that uses the right stuff.

Date: Sun, 4 Jan 2009 13:48:49 -0600
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: Safety: RE: [R-390] Now *this* is a really nifty idea...

Too bad more people can't get their first job in an explosives plant. As an amateur fireworks maker in my formative years, I learned some respect for explosives. My first job was in a blasting cap plant. I paid close attention to the safety instruction, both formal and on the job.

Kim, if you've got a jerk like that, write up something that says he was advised of safe procedures, but rejected the advice. The damage he does to himself and to the lives and property of others is now his fault. Get him to sign it in as solemn a manner as possible. You might even have a story about how Sam Hall did similar things and wound up broke and in jail. The guy must have some respect for the law. If not, you have a potential case of "going postal." He should find work elsewhere.

Date: Sun, 4 Jan 2009 14:04:28 -0600
From: "Barry" <n4buq@knology.net>
Subject: [R-390] Can someone tell me...

How much current can 20-gauge (or other gauge) wire handle for normal chassis-wiring applications. The wire I have is stranded, silver-plated, Teflon-coated stuff (very nice wire). Looking at the various charts on the internet, the values seem to be all over the place so not sure what to trust. Perhaps they're based on different A/circular mil -- dunno.

Date: Sun, 4 Jan 2009 14:05:19 -0600
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] Now *this* is a really nifty idea...

Yes, you need the right solder! And the right heat, and flux, and a clean mechanical joint that will not move while it cools. Look up "eutectic solder" to find out why the right alloy makes a difference. A eutectic alloy of tin and lead is 63/37%, but most radio solder is/was 60/40. Soldering copper pipe (before the plastic pipe industry helped to declare insignificant amounts of lead as poisonous) helps to broaden soldering skills.

Date: Sun, 4 Jan 2009 14:15:10 -0600
From: "Bill Hawkins" <bill@iaxs.net>
Subject: RE: [R-390] Can someone tell me...

Current-carrying capacity isn't just a matter of wire size. The wire is just a resistor (unless the frequency is high). The problem is heat dissipation. It matters where the insulation melts or catches fire, and how many wires are in a bundle, and what covers the bundle, like conduit. Short wires may be cooler than long wires because of the heat sink effect at the terminations. Basically, if the wire gets hot, it's too small. Just like picking the right wattage for a resistor.

Date: Sun, 4 Jan 2009 12:27:57 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: [R-390] re: Safety and PFY-EEs

Recently, I have been tutoring a newbie. He has been an office type for over 30 years shuffling papers, and was intrigued to learn more about my hobby as a future *retirement* activity. His interest was triggered by an evening cruising through the international SWL bands on the R390A.

In regards to the *new* solder, I suggest stockpiling a few rolls of the old Ersin Multicore 60/40 tin-lead 5-core rolls seen at hamfests. Three pounds will last us decades.

After many hours, he can solder moderately well, but still has a hard-time understanding simple concepts such as layout and mechanical alignment. After a while, I realized that he does not think in three-dimensions... something that Tisha's newly minted PFY-EE's clearly lack as well.

I was astounded to see how today's adults have NO concept re electrical and mechanical safety. Since *shop* is no longer taught in schools (under the mistaken belief that their students were all gifted and destined for careers in politics and finance), today's adults are woefully ignorant of the basics.

So my plea to all of us is to teach our kids and grandkids the rudimentary basics of doing stuff with our hands.. something sadly lacking in today's educational system.

Date: Sun, 4 Jan 2009 13:48:49 -0700
From: w9ya <w9ya@qrparci.net>
Subject: Re: [R-390] re: Safety and PFY-EEs

It *IS* much easier to use 63/37 based solder. It has a MUCH smaller range of plastic temperature, i.e. the range between molten and solid, so it is MUCH HARDER to get the so-called "cold" joint when using it, all other factors being the same.

Date: Sun, 4 Jan 2009 13:52:17 -0700
From: w9ya <w9ya@qrparci.net>
Subject: Re: [R-390] Now *this* is a really nifty idea...

Thank you for the validation. I have been able to find ALL the solders I would normally use in both 60/40 and 63/37 formulations, even the older rosin core stuff. Lately I have been using mostly (smt work) "no-clean" cored stuff. This is
NOT the same as water soluble solder, which should be avoided as it requires
cleaning and is very acidic.

Date: Sun, 4 Jan 2009 16:20:27 -0500

From: "Bruce Ussery" <twc9198764412@earthlink.net>
Subject: Re: [R-390] Now *this* is a really nifty idea...

In the electronics lab where I work we routinely work on boards with parts down to 0402 size chip caps, etc. (Several of us are over 50 so we would be useless without a good microscope.) If one of us techs sees one of the young EEs go into the lab when no one else is around, someone QUICKLY goes to help him lest he might try to solder something and create a mess for us to clean up (or worse, damage a very expensive pcb). I don't hold their lack of hands-on experience against them; they just didn't start soldering and building stuff at age 9-12 like some of us. At least they do try to learn and get better at it. It's quite a contrast to replace a 200-plus pin processor or tiny chip caps and resistors at work, then come home and work on a boat anchor where the smallest part is a half watt resistor or ceramic cap with its giant leads. And I get to use big diameter solder that I can see with the naked eye at home. The smallest I can routinely find at work is .015 dia. Sometimes that's just too big and I use my stash of .010 dia. I've been hoarding for years. Parts have scaled down a bit.

Date: Sun, 4 Jan 2009 17:12:50 -0600
From: "Tisha Hayes" <tisha.hayes@gmail.com>
Subject: [R-390] Re: Can someone tell me...

Remember to derate the current handling capability of a conductor if it is bundled. Many of the published ratings for conductors vary because of the application they are placed into. Wiring in conduit, wiring in trays or bundles. Applications like communications, audio, industrial control, etc.. each have their own de-rating standards. You could go through NEC to see the closest fit for your application, unfortunately most of the NEC standards do not list specifications for wiring smaller than 18 AWG. You will also have I2R losses based upon wire gauge and this is dependent upon the length of a run. Usually the bigger limiting factor is with heat losses (and where that heat goes), in bundles with other conductors, the entire bundle heats up. There is not much shown on the temperature rating of the different insulation types (PVC, teflon, kapton, kynar) or the environmental conditions (existing temperatures in the area where the wiring is located). There are dozens of tables that do not cross-reference well into other tables, I would suggest being very conservative with current ratings and when in doubt, go with a larger wire gauge.

Date: Mon, 12 Jan 2009 17:13:34 EST
From: Flowertime01@wmconnect.com
Subject: [R-390] R390 Things to know

Several years ago I had my Hickok-6000 calibrated by one of the last of the tube-tester technicians, I have since forgotten his name. Anyway, he sold a

selection of tube socket contact-cleaning brushes for a lot of dollars, so much so I never purchased any. Over the years I've tried a number of methods for cleaning the contacts with mixed results. Whatever tool I used was in conjunction with ethyl-alcohol, DeOxit or a Caig product. Generally, the best device was a series of small pipe cleaners designed for art work and sold in a local hobby shop.

This weekend I found the best tool so far and it was right under my nose in the grocery store. While looking for a stiff floss for my wife, I found some very tiny, tapered, nylon-bristled interdental brushes. These are sold in the floss section under the GUM brand, stock number 3614, in a green blister pack for $2.50 (seven brushes and holder). A drop of DeOxit on the tip of the brush easily cleans the tube socket contact. And, they can be washed gently and reused.

Date: Sun, 25 Jan 2009 02:45:04 +0000
From: odyslim@comcast.net
Subject: [R-390] window glass

Hello gang, I wonder if anybody has a piece or 2 of the window glass? I actually need 3. I broke a glass piece I had. I also had another that someone had glued in. The crazy glue is visible and it bothers me to look at it. any suggestions?

Date: Sat, 24 Jan 2009 20:56:34 -0600
From: "Francesco Ledda" <frledda@verizon.net>
Subject: Re: [R-390] window glass

I replaced the glass from plastic from a standard CD housing. I used a Dremel tool to cut to measure. It looks great.

Date: Sun, 25 Jan 2009 07:04:01 -0600
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] window glass

If you're really good at it, you can cut the width down with a glass cutter. I was "almost" successful doing this several years ago and suppose that a real glass cutting man could do it correctly.

Date: Sun, 25 Jan 2009 08:21:28 -0500
From: Jon Schlegel <ews265@rochester.rr.com>
Subject: Re: [R-390] window glass

Thinner glass perhaps from an old picture frame may help the cutting process. The metal escutcheon/bezel that the glass fits in has nice roundy corners and don't know if that would interfere with the clean sharp

corners of the cut glass. Some creativity may be needed if this is a problem.

Date: Sun, 25 Jan 2009 09:02:05 -0500
From: "Don Heywood" <wc4g@knology.net>
Subject: Re: [R-390] window glass

Sometime ago I was told that a "microscope slide" is a direct replacement for the R390X glass.

Date: Sun, 25 Jan 2009 08:47:07 -0600
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] window glass

Lab microscope slides work also.

Date: Sun, 25 Jan 2009 12:45:34 -0500
From: "Richard Spargur" <k3ui@comcast.net>
Subject: Re: [R-390] R-390 Digest, Vol 57, Issue 34

Window glass is too thick. When I worked in a large shop working on R-390As we would very occasionally get a broken glass plate. We ordered a box of about 1 inch wide, quantity 25 microscope slides in it. The slides easily fit and required no cutting down. I would double check the 1 inch or 3/4 inch wide by measuring. The slides worked well. Three years later I think we still had over 20 of the slides left. There are a lot of places to get slides from. They are common. Removing the super glue I take a lot of time, finger nail polish remover, and queue tips diping the queue tips in solution and gently rubbing it on until the glue disolves. There is a big down side which you may want to think of another solution. The acetone in the nail polish remover will also disolve the paint if you are not careful. Use the nail polish remover solution as a last resort.

Date: Mon, 26 Jan 2009 00:37:27 -0500
From: "Richard Spargur" <k3ui@comcast.net>
Subject: Re: [R-390] R-390 Digest, Vol 57, Issue 34

I still have a couple of fluted #8 spline wrench tools that I made. They are replicas of the ones made for the R-390, R-390A and other derivatives with the exception I use a brass handle instead of the softer aluminum. If anyone would like one let me know. $9.50 which includes first class postage or add $1.70 for insurance if you want it. Please reply direct if you want one.

Date: Mon, 26 Jan 2009 10:02:42 -0500
From: "Perry W. Remaklus" <perry@willbell.com>
Subject: Re: [R-390] R-390 Digest, Vol 57, Issue 34

I purchased one of these from Richard and he did a first class job and the price is very reasonable. It really gets down into those hard-to-get-to places---no skinned knuckles with this one!

Date: Mon, 26 Jan 2009 12:11:25 -0500
From: "Tom Bridgers" <Tarheel6@msn.com>
Subject: [R-390] Spargur's Spline Wrench for R-390's ... Superb Craftsmanship

I also purchased Richard's spline wrench and I was immediately impressed by his craftsmanship. His work is excellent, and the price is reasonable.

Date: Tue, 27 Jan 2009 15:01:41 -0800 (PST)
From: "Drew P." <drewrailleur807@yahoo.com>
Subject: [R-390] Window Glass

A piece of plastic cut from an old jewel case for a CD works well. Finally, a use for those otherwise useless "30 day trial" CD's we all get.

Date: Mon, 02 Feb 2009 11:23:50 -0600
From: Larry Strong <l.strong@mchsi.com>
Subject: [Collins] Help 75A4

Recently purchased a 75A4 with speaker and manual and also with the 35U-1 pass filter. Works good except the S meter. Flip the switch to Cal and it works then back to on and works for a little while then quits. Any help would be appreciated.

Date: Mon, 02 Feb 2009 18:11:06 -0600
From: "Dr. Gerald N. Johnson" <geraldj@storm.weather.net>
Subject: Re: [Collins] Help 75A4

Likely the switch has silver contacts. They oxidize and won't conduct low voltages unless the oxide is broken down with higher voltage, like a volt. I had that in my 51J-3. I replaced the switch with on having precious metal (gold is good) contacts. No more problem. Or it could be a bad solder connection in the S-meter circuit between the switch and the tube.

Date: Thu, 5 Feb 2009 12:49:33 -0500
From: Roy Morgan <k1lky@earthlink.net>
Subject: [R-390] Spiral-making tool website?

A while ago there was posted (here I think) a website showing how to make a tool to put spirals in component leads. The tool had two small brass tubes and a pin or drill shank to make the spiral for sliding over the clipped

lead of the part to be replaced. Does anyone remember the website?

Date: Thu, 05 Feb 2009 11:52:06 -0600
From: Robert Nickels <ranickel@comcast.net>
Subject: Re: [R-390] Spiral-making tool website?

I keep thinking I "gotta make one"! - here it is:

http://www.skywaves.ar88.net/commrx/Maintenance/Comprepl/component_replacement.htm

Al Klase deserves credit, and if you come with any improvements, please pass them along.

Date: Thu, 05 Feb 2009 10:49:04 -0800
From: "Dan Merz" <mdmerz@verizon.net>
Subject: Re: [R-390] Spiral-making tool website?

Hi, the resultant pigtail is called a "quig". I wonder if this is an acronym for "quick pigtail" and now wonder if I can add the word "quig" to my scrabble dictionary. Every other weird non-word seems to be in there. This looks like a very useful device to produce a quig, and it's now on my list to make also, though the pin vise version may suffice. I'll try that first. Thanks.

Now if someone would just tell me the best way for splicing some old cotton covered, outer- shielded 7 conductor (stranded wire) cable without producing a large lump. Maybe use small brass tubing to butt connect the wires?? It always seems to boil down to insulating the wires from one another after the connections are made. With two or three conductors, I've slipped shrink wrap on each conductor prior to connection and moved it over after connection. Maybe there's a better way?? Dan.

Date: Thu, 05 Feb 2009 14:15:37 -0500
From: "Miles B. Anderson, K2CBY" <k2cby@optonline.net>
Subject: [R-390] Spiral making tool -- Splicing

If you don't mind a long cut in the outer jacket it's easiest to stagger the splices in the individual conductors along the length of the cable so that no two splices touch one another.

Date: Thu, 5 Feb 2009 15:23:21 -0500
From: "Patrick" <brookbank@triad.rr.com>
Subject: Re: [R-390] Spiral making tool -- Splicing

It reminds me of the IBM wire wrap tools.....both hand power and

electrically....good old days..... 1400 and 360 series.....what made IBM.

Date: Thu, 5 Feb 2009 16:23:47 -0500
From: "Dana Cobb" <objoyful@tampabay.rr.com>
Subject: Re: [R-390] Spiral making tool - splicing

I used a tool like this to wrap wire pairs on a cross connect frame in telephone company central offices many years ago.

Date: Thu, 5 Feb 2009 21:13:50 -0500
From: David Goncalves <davegoncalves@gmail.com>
Subject: [R-390] Anybody need R-390 Transformers?

I have the following left over from an R-390 I worked on. Anybody need them?
Email back for details. RF Section Transformers: I have all but one of the Z201/Z207/Z213 transformers.

Antenna Input Module
C-type antenna connector, unused.
Date: Sat, 14 Feb 2009 17:46:08 EST
From: Flowertime01@wmconnect.com
Subject: Re: my first Hamfest - found a 390A, not sure what to do about it

Never, never, never,never walk past an R390 or R390/A.
No such thing as two high a price.
No such thing as one that is not repairable.
All the parts are still available.
If you think you see one that requires more skill than you have to fix.

Think again. You can do it. You may need to learn a few things along the way
but not many. The R388, R392 and other can get very pricey and not provide you a good ownership return on investment. You have to listen to a lot of VLF beacons to get back several hundreds of dollars worth of experience. But HF R390's make it easy to get in lots of listening value. But even these receivers have real value. Roger AI4NI

Date: Sat, 14 Feb 2009 17:50:13 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] my first Hamfest - found a 390A, not sure what to

Best get busy, or you could decide what you need to let them go as is. I know E-pay is not well spoken of but, it is the best adience and will likely get you the most for these @@@RARE@@@ receivers.

Date: Sat, 14 Feb 2009 18:14:31 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] my first Hamfest - found a 390A, not sure what to

I would be interested in what modern radio you can buy for $650 that will perform at the level of a finely restored R-390A does. If you are talking about all the bells and whistles like 1000 memorys and scanning and 1hz digital displays etc...you are not talking basic radio performance. It's the same reason I will have over $750 in an old Drake R4C by the time I have it where I want it. It will perform in the same realm of receivers costing three times that but won't have all the bells and whistles. It's all based on what it's worth to you...personal value! And as long as they can be sold on the auction site for $750 to $1500 they are not something to be passed up for $350 if you have the spare change to buy it...I think that's where Roger is coming from. Just my 2 cents worth though...

Date: Sun, 15 Feb 2009 15:24:48 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] my first Hamfest - found a 390A, not sure what to

Point accepted, I exaggerated We have seen prices too high. But I did qualify it with walk by. As really there with money in one hand and receiver in the other hand. You and seller locked gripping money and receiver eye to eye wondering am I doing the right thing. Do I let go of the money or the receiver? Now you are close enough and personal enough. If you can turn loose of $300.00 plus dollars without it impacting your domestic life, The price could be right. Any purchase that could impact your domestic life is wrong. You need to be working on the domestic aspects of your life over your radio life. Every thing must be in context and in bounds. I do not mean to promote economic disharmony in any ones life. I have enough karma to atone for already in this lifetime. Roger.

Date: Sun, 15 Feb 2009 20:11:29 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] my first Hamfest - found a 390A, not sure what to

I'll be honest...if I buy one for $350 and spend countless hours doing a proper restoration including refinishing the knobs and front panel there is no way it will be offered up for sale for under $500. There is way too much work involved and lots of folks that just aren't capable of doing it or just don't have time to do it. At even a return of $6 per hour with the hours it takes to do one and the cost of parts and materials you will be lucky to break even at $750. (if you call $6 per hour breaking even on your time....I don't) Now buying one for $350 and spending countless hours for personal use is a great way to spend your time and easy to justify in just the relaxation factor alone. But usually once you have done one or maybe two

beyond that you are selling them.

Date: Tue, 17 Feb 2009 12:43:00 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Question mainly on connectors

I have several of the cable connectors left over from a cannibalized harness. I used two of them to make an extender for the PTO. The rest of them have the wires cut just past the connector. If interested in these, let me know. I can send pictures of what I have and I'll let them go very reasonably.

Date: Tue, 17 Feb 2009 20:33:58 -0600
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] Question mainly on connectors

I have a few octal plug's I use them on my R-390 voltage regulator modules if you are interested in a couple contact me off line ... tom, N3LLL

Date: Tue, 17 Feb 2009 18:55:37 -1000
From: "rjcote" <rjcote@hawaii.rr.com>
Subject: Re: [R-390] Spiral-making tool website?

Don I did mine by making the splices along the wire distanced from each other by the length of the shrink (3/8 to 1/2" long). The the diameter of the wire is not very much out of size to the original. Remember to push back the outer cover weather it is shielding or clother covered. Then when done, milk the outer cover back over all the splices. All that shows, then is the place where the cover was originally cut. I use a bit of 3M scotch coat over the remainder.

Date: Tue, 17 Feb 2009 23:06:08 -0600
From: Robert Nickels <ranickel@comcast.net>
Subject: Re: [R-390] Spiral-making tool website?

Speaking of quigs, my friend Fred Olsen who's not a member of this list sent me the following link after it last was discussed, showin another way to make a tool that's even simpler:

http://www.antiqueradios.com/forums/viewtopic.php?t=79721&highlight=coil+winding+tool

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Date: Wed, 18 Feb 2009 12:46:16 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Connectors

The coax connectors are "MB" series. In the archives of the mail list I included extensive information on what these are, where to find the remaining stocks, etc...

Date: Thu, 19 Feb 2009 15:08:12 -0600
From: Robert Nickels <ranickel@comcast.net>
Subject: Re: [R-390] Spiral-making tool website?

As several of you have noticed, the Antique Radio Forum page which I passed along the other day has evidently suffered a breakdown and it doesn't seem to be recovering very quickly.

However, thanks to tabbed browsing, I was able to save the images and you can view them here at the URL below.

http://smg.photobucket.com/albums/v652/ranickel/Quigs/

Self-explanatory, but you can, of course "quiggle" the end of a component lead directly if you wish. To each his own, but I think Hippocrates was onto something when he said the first rule should be "do no harm", and IMHO this approach to component replacement does the job with minimal collateral damage.

Date: Thu, 19 Feb 2009 17:31:34 -0800
From: "Dan Merz" <mdmerz@verizon.net>
Subject: Re: [R-390] Spiral-making tool website?

Bob, thanks for posting this jewel, Dan.

Date: Thu, 19 Feb 2009 21:01:39 -0500
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Spiral-making tool website?

Nice tool. The hole in the end of the Exacto handle with piece of safety pin (or drill) is a fine idea, and the least expensive way to do this that I've seen yet. Of course the Exacto handle can be returned to normal duty instantly. And: if anyone has any 78 phonograph needles, they work fine for the shaft.

Date: Fri, 20 Feb 2009 15:31:48 +0000
From: "Bill Kirkland" <kirklandb@sympatico.ca>
Subject: Re: [R-390] Spiral-making tool website?

Brilliant. BTW Judging from the BBOD's that I have removed from several sp-600's, Hammarlund used a similar approach. All the BBOD's that I have removed have one solid lead to the cap, but the other lead seems to be

clipped short and extended with a pig tail.

Date: Fri, 20 Feb 2009 11:03:44 -0500
From: "Al Parker" <anchor@ec.rr.com>
Subject: Re: [R-390] Spiral-making tool website?

I think that's how the BBOD's were made..... Looks like a little glob of solder real close to the body. I don't think Hammarlund did it. I haven't tried to see just what's under the glob, but I don't think it's big enuf to hide more that a turn or 2 of a squig. I've got a jar full of them, I'll look more closely, even have some NOS ones.

Date: Fri, 20 Feb 2009 11:20:50 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Spiral-making tool website?

This philosophy is great "in theory". The realities of practice are, of course, somewhat, if not entirely, different. There "may" be a need to use this method due to deteriorating standoffs. Perhaps one is making a repair that leaves the original device in place on top of the chassis for appearance, yet place a NEW
component in the circuit. Those that maintain this "stated" philosophical view are simply purists t hat do NOT deal with reality.

Date: Fri, 20 Feb 2009 09:56:26 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] replacing components

Geee, this is all so complicated! I just carefully clip as much wire as possible near flush with the lug joint, including wire that was wrapped around the lug. Heat it up, and all of it falls off leaving a clean lug.

The new component's lead gets securely fastened mechanically by wrapping it 270-360 degrees around the lug, and a fresh solder joint completes the electrical connection.

Date: Fri, 20 Feb 2009 13:05:54 -0500
From: "David C. Hallam" <dhallam@rapidsys.com>
Subject: Re: [R-390] replacing components

Some times it is nearly impossible to get to the lug. Older radios often are a rats nest of wiring having buried connections where it might be necessary to remove several other components to get to the one you want. The spiral wrap connectors are a very useful tool.

Date: Fri, 20 Feb 2009 13:10:56 -0500

From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] replacing components

I agree! There are times that simply desoldering, using either a solder sucker and/or wick leaves you with situations where you have no support any longer. The "large" oil filled cap on the IF deck, if not up to par, leaves you with:

1) Performing an N4BUQ machining problem. (Barry -- Fine job!)

2) Leave the cap in place. Solder a replacement under the deck - BUT - without using the "bad" cap's terminals.

I've procured new stand-offs, soo when the old ones break, I "can" replace them as needed. It is a '51 "contract" Collins R-390A St. J's "blue-striper". These things have issues! I've had to procure a "spare chassis". The "finger-stock" riveted to the chassis was corroded badly. I use a Weller station that is variable. YMMV The quiggle idea is NOT my first, second, NOR third choice. It is a last ditch effort!

Date: Fri, 20 Feb 2009 13:26:27 -0500
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] replacing components

I myself am not a recapping junkie, nor a "everything has to be original as assembled in Cedar Rapids" junkie. I do have a sort of vengance out for certain components but prefer to blow them up rather than take them out. (We called it "margining" back in the good old days.) I happen to think it's nuts to replace every single capacitor when it gets so extreme that even the ones that are run with 3% of their rated voltage in filament bypass use are accused of being "leaky". I think quiggs/spirals are a fine way to fix a radio without having to disassemble it all the way down to where the lugs can be seen.

Date: Fri, 20 Feb 2009 10:35:28 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] replacing components

All you guys have a point, where there is a rats nest of wires going to just one lug (pot lugs come to mind) that is buried close to the chassis or an apron. There a spiral gizmo covered with heat shrink makes for a nice splice. Some one pointed out that Collins (or maybe Tek or HP) had a memo that forbade splices.

Date: Fri, 20 Feb 2009 12:38:48 -0600
From: Mike Andrews W5EGO <mikea@mikea.ath.cx>

Subject: Re: [R-390] replacing components

I listen to my R-390 and R-390A receivers, and I try to fix 'em when something craters. They're damned impressive pieces of work, but (to me, anyway), they're not objects of religious significance, and if I have to use a quigg or spiral to secure a component in a crowded area -- something there's no shortage of in either radio -- I'll do it. That does not mean that everyone has to do it, or that I do it every time I replace a component. I don't insist that anyone else put the roll of toilet paper so that the loose end feeds frontwards or backwards, either. I see good reasons for both orientations, based on circumstances. Mr. Horse is a grease spot now, anyway. Can we go back to talking about ukkumpucky and Sherwood SE-3s again? Please?

Date: Fri, 20 Feb 2009 13:53:12 -0500
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] replacing components

Actually, on the subject of ukkumpucky, I have restuffed electrolytic cans in the past. It was kinda fun to do, mechical-wise, but got old pretty quick. My attitude today is more along the lines of just sticking modern electrolytics under the chassis and leaving the cans intact. Or on a 390A, just getting an octal plug and putting some lytics on it. I do have to admit that while I still listen to my 390A's regularly in the basement, I have acquired a taste for loctal-tubed Zenith Transoceanics, mostly because I'm actually allowed to put one in the kitchen! Getting a 390A in the kitchen, with a nice 10" or 12" speaker, that would be SWEET. Maybe time to convince my wife that it's time for a kitchen remodeling, and oh, BTW, that cabinet is going to be 19" wide?

Date: Sun, 22 Feb 2009 22:40:34 -0600
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] blue striper

I have 35 of the blues and 15 more in process of complete restoring. They have been completly torn down, frames alodined, recapped, panels and knobs powder coated.

Date: Tue, 10 Mar 2009 16:58:03 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Fw: Bringing a '51 contract Collins mfrd R390 back to life

Dave Medley has a stock of R390 parts. He has a web page at: http://r-390.com/
I am 60 and Dave is much older. Give him a few days to respond to your E-

mail.
He does have the R390 parts and will help you. R390 stuff is not cheap and Dave has held this stuff for years. But there is no reason you can not bring the receiver back to life. Good luck with the project and let us know how it progresses. If you need help with repair, alignement, once you get beyond the parts problems drop us some more mail and We can help you with that also. You want a copy of:
TM11-5820-357-35 as a PDF file from the net for your R390
TM11-5820-358-35 is for the R390/A

35 is depot manual

10 installation manual

20 is users guide

20P is tube set parts.

35P is depot parts manual

Roger Ruszkowski AI4NI

Date: Tue, 10 Mar 2009 17:19:55 -0400
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] Fw: Bringing a '51 contract Collins mfrd R390 back to life

I have large stocks of all R-390 (and R-390A) parts EXCEPT the R-390 IF deck.
(please don't ask for one tiny part, like a gear or something - I'd rather send you a "junker" guaranteed-unrestorable deck for $25 that you can disassemble yourself and get lots of usable parts, rather than spending an hour trying to extract just the part you need) I believe Dan Arney has a good stock as well.
We both have to charge money for the parts. Sorry. I "guarantee" the modules in that if for some reason it can't be restored by just replacing the widely-available parts, I'll replace it until you get one that can be restored. BTW, modules have no tubes or shields (I can sell you tubes and shields, but you might as well go to Fair Radio or Antique Electric Supply or somebody). Slug racks and Oldham couplers may or may not have springs. You can download the R-390 maintenance manuals from my web site for free, if you are willing to wait for them - they are large. James A. (Andy) Moorer www.jamminpower.com
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Date: Wed, 18 Mar 2009 12:50:51 -0700 (PDT)
From: wli <wli98122@yahoo.com>

Subject: Re: [R-390] a small point re Bristo

Ran across an interesting article re general guidelines for restoring comm gear on an British website. We have already hashed over much of what they say. One interesting tidbit came up: those special screws used in shaft clamps and knobs are called *grub screws* and are manufactured as a Bristol Multiple Spline screw. So to be accurate: these are Bristol screws, and not Bristo. Often they are secured with a green Glyptol varnish. To free up, heat the core with a hot tiny soldering bit for a few seconds, then it should break the seal using a Bristol key.

Date: Wed, 18 Mar 2009 16:00:13 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] a small point re Bristo

I agree, Bristol is accurate... but many military tech pubs used the wrong spelling.

Where I work all the power techs call "bus bars" incorrectly, they call them "buzz bars", but 99% of them have never worked outside the company and all the internal training materials call them "buzz bars" after decades of inbreeding so they don't know any better. I would guess the military trained techs worked the same way with respect to Bristo vs Bristol.

Date: Wed, 18 Mar 2009 15:42:17 -0500
From: "Bill Hawkins" <bill@iaxs.net>
Subject: Re: [R-390] a small point re Bristo

Yes, spelling or typewriter malfunction.
The typist probably didn't know either word.
Engineers are not good copy editors, so once a mistake goes unchallenged, that's the way to spell it.

Date: Wed, 18 Mar 2009 23:06:31 EDT
From: JRFKE5RI@aol.com
Subject: [R-390] Bristol Screws

Here is some background information. Bristol Wrench Co. - Bristol Spline Wrenches Developed by Bristol, the multiple spline drive system is recognized by design engineers as the superior method of transmitting torque because nearly 100% of wrenching force is applied at right angles to the load bearing spline surfaces of the socket. Other drive systems dissipate a significant amount of force into radial thrust, tending to expand the socket rather than tighten the screw. The substantial and effective wrench engagement inherent in the Bristol design addresses the problems caused by other fastening systems such as cam-out, socket

reaming and "rounding" of wrenches.

Decades ago, Bristol engineers invented the Bristol Spline Drive System for use in electromechanical instruments. They required screws and wrenches that could stand up to industrial environments, vibrations, and frequent removal and resetting. Bristol wrenches have been in continuous production in the United States since their original introduction.

Source: Bristol Wrench Company
http://www.bristolwrench.com/spline.pdf
(http://www.bristolwrench.com/spline.pdf)

Bye the way, if you try to use a standard Allen (hex) wrench, your screwed. No pun intended. John Felton KE5RI

Date: Thu, 19 Mar 2009 14:22:29 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: [R-390] (no subject)

That is great info. I had no idea re the history behind these weird screws. It all makes sense thinking as a *mechanical engineer*. I guess the increased cost of manufacture prevented them from being a universally accepted fitting.... too bad for the rest of us. That said, all the earlier posts cautioning against overtightening can not be ignored. I use a straight one secured in a small diameter holder, so I do not over-torque.

Date: Thu, 19 Mar 2009 15:40:16 -0700
From: Richard Loken <richardlo@admin.athabascau.ca>
Subject: Re: [R-390] bristol wrenches

How do the mechanical features of Bristol fasteners stand up against Torx fasteners? It seems to me that Torx came about for similar reasons some 50 years after Bristol...

Date: Thu, 19 Mar 2009 17:45:05 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] bristol wrenches

Torx and other fasteners came about in an attempt to keep people from "arbitrarily" dismantling things in public places, and equipment where they do NOT need to be poking around, i.e., cell phones, hard drives, and other items.

Date: Fri, 20 Mar 2009 09:42:17 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] a small point re Bristo

> I agree, Bristol is accurate... but many military tech pubs used the wrong spelling.

Indeed. I've never seen any proposed reason for why the manuals use "bristo". One possible reason is that the tool in lists of tools and parts would be shown as: "Wrench, briso., hand." or some such form with an abbreviation. And military manuals use the word "alinement" not "alignment". Either way, I understand what to do.

> Where I work all the power techs call "bus bars" incorrectly, they call them "buzz bars",

Maybe that is from the idea that if you touch the buss bar, it buzzes your finger. Electricians of old were not as safe as most are now.

> ... the military trained techs worked the same way with respect to Bristo vs Bristol.

If I remember correctly, at one time the Navy, and possibly other services too, taught basic electricity with the idea that the current flowed in the direction of electron movement. So, the positive terminal of a battery would be shown with the current *entering* that terminal. Then, there was a reconciliation with the rest of the world and all the training materials and schematics and so on got changed. This likely was before WW-II: I don't have any examples of that convention.

Date: Fri, 20 Mar 2009 11:49:14 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: [R-390] RAL/RAK installation

At this link: http://www.virhistory.com/ham/trip-07/p1010048.jpg
the RAL and RAK are shown with a little box mounted on top. Does anyone know what they are?

Date: Fri, 20 Mar 2009 14:54:28 -0500
From: wf2u@ws19ops.com
Subject: Re: [R-390] RAL/RAK installation

I don't think they're external BFO's... The RAK/RAL are superregenerative receivers. There is no separate BFO in them, the carrier is regenerated by the regeneration control which is advanced to the point where the CW is audible. An external BFO for the RAK/RAL would have to be able to generate all the frequencies the receiver covers and be extremely stable, as the signal injected has to be the received frequency to beat with it. This

couldn't have been accomplished with the tecnology of the times in a small box like that... My feeling that they may be crystal marker generators for getting quick calibrated reference points on the receiver tuning chart (no direct frequency readout on the RAK/RAL). BTW I have both in my collection and the RAL (the HF one) is quite a good performer on the ham bands. It's sensitive, stable and has very low internal noise level. It has a fabulous tunable audio filter which makes it easy to tune around the crowded ham bands. If anyone has experience with "direct conversion" receivers, the audio sounds somewhat similar, with extremely quiet between signals when the regeneration is set just right.

Date: Tue, 24 Mar 2009 17:39:58 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Front Panel Diode Load

>I'm refurbing a basket case R-390A. Getting ready to install the front
>panel & I have one dangling shielded wire in the harness. It's near the
>1/4 phone jack, the shield is connected to the jack's ground lug and the
>center conductor has no home. I'm pretty sure this is the front panel diode load, >but I get no continuity to the rear diode load connection. I don't see the front
>panel diode load in any of the doc that I have. Anybody know for sure?

Bill the front panel phone jack is the front panel phone jack. It comes off the local line output through a couple resistors. The coax center conductor should be the tip of the phone jack while the shield is the conductors shield to the ring of the phone jack. Lots of the wire harness in the R390 is shielded wire (coax). It keeps the cross talk and coupling down as signals are routed around the chassis. The diode load jacks were single pin test point jacks. The front panel was drilled with a 1/4" hole and the test point mounted. Hope this helps. Roger AI4NI

Date: Tue, 24 Mar 2009 18:28:42 -0400
From: Bill Coleman <n2bc@stny.rr.com>
Subject: Re: [R-390] Front Panel Diode Load

I was less than clear in my post... The front panel I'm working on did not come with the R-390A chassis that is getting it... The original front panel for that chassis is long gone. I found a Navy mod for the front panel Diode Load "Test Point" and that is indeed what the orphaned wire is for - the headphone jack has all of it's wires accounted for.

Date: Tue, 24 Mar 2009 19:27:35 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Front Panel Diode Load

So the diode load wire is a shielded wire from some where. The shield was stuck to the phone jack as a close ground point. The center conductor would go to a one pin jack mounted into the 1/4 hole in the front panel. The jacks were like what you see on the front panel of a volt ohm meter.

Date: Sun, 22 Mar 2009 11:06:11 -0500
From: "Don Reaves" <don@reatek.com>
Subject: [R-390] useful restoration ebook

Ran across this eBook, "The Restoration of Valved HF Communications Receivers" by Chris Parry. Useful info from a UK viewpoint. Mentions R-390, covers mechanical filters, recapping, etc. 96 pages, pdf format.
http://www.vk2bv.org/radio/parry1.htm

Date: Sat, 28 Mar 2009 09:40:58 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] SERIAL 163 FOLLOW UP

David makes a very good point re *tag our mods* I am sure we all do it. We all have a notebook re our units. One binder per unit, right? Keep it like a high school lab notebook: real detailed with sketches and numbers. On each unit on the Utah cover, there is a blank space on which to place a yellow stickie. Here you list each mod by title so you know what you did to that particular unit. Trust me, after a few years go by, you'll never remember what you did back then in a moment of intellectual brilliance.

Date: Mon, 27 Apr 2009 01:28:47 +0000
From: wb3fau@att.net
Subject: [R-390] R390A contractors and numbers of units

Here's some general questions for users of these receivers. How many units were built? Did they also sell separate subchassis to the gov't? The original design was by Collins, but later, they let other builders bid on the contracts? Were the contracts awarded by lowest bid? Does anyone know how much one cost? I understand there were about 12 different contractors? Are there still any new unused units- in storage hidden away by different gov't agencys?
I have other questions, but this ought to be plenty to get this group humming along.

Date: Sun, 26 Apr 2009 22:07:20 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] R390A contractors and numbers of units

I found what is apparently the latest production list at: r-390@mailman.qth.net

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Date: Sun, 26 Apr 2009 22:14:26 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] R390A contractors and numbers of units

OOPS, I meant to say:
http://www.hausernet.com/r390faq/CONTRACTSL.htm

Date: Tue, 28 Apr 2009 01:06:51 -0500
From: "Don Reaves" <don@reatek.com>
Subject: [R-390] TM 11 4000

Does anyone have access to tech manual TM 11-4000, titled Trouble Shooting and Repair of Radio Equipment? Supposedly, the later 1958 (obviously not the 1945 edition) uses an R-390A as a training example with expanded foldouts and schematics. I'd like to confirm this.

Date: Tue, 28 Apr 2009 02:30:13 -0400
From: Physicist <physicist@cox.net>
Subject: Re: [R-390] TM 11 4000

I have it somewhere, and yes, it uses the R390A.

Date: Tue, 28 Apr 2009 09:15:18 -0500
From: "Don Reaves" <don@reatek.com>
Subject: Re: [R-390] TM 11 4000

Thanks to all who replied. TM 11-4000 April 1958 refers to the R-390A, not by name but by picture and description. I'm adding this TM to my list of references.

Date: Tue, 28 Apr 2009 09:18:39 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] TM 11 4000

That's good to know. If anyone has a machine-readable copy of this (PDF, by preference), I'd like to put it up on my website, right next to the R-390 and R-390A pages.

Date: Tue, 28 Apr 2009 09:46:46 -0700
From: David Wise <David_Wise@Phoenix.com>
Subject: Re: [R-390] TM 11 4000

It would be right at home on the FAQ page (www.r-390a.net) . Great resource, but it hasn't been updated in a couple years. Who owns it? Al Tirevold?

Date: Tue, 28 Apr 2009 15:43:03 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] TM 11 4000

If ANYONE has this in a PDF format - PLEASE let us know!! LOGSA is essentially completely out of bounds now! And they will NOT communicat with you UNLESS you have a .GOV or ,MIL address:

> Classification: UNCLASSIFIED
> Caveats: NONE
>
> Sir/Ma'am,
>
> Per DOD IA security policy, the LOGSA Help Desk is not permitted to communicate with commercial e-mail addresses.
> Please respond from a .mil or .gov e-mail address and we will be able to assist you.
>
>
> Thank You,
>
> Scott Madden
> LOGSA Help Desk
> Contractor/JACOBS TECHNOLOGY
> Com:256-955-7716
> DSN:645-7716
> logsa.helpdesk@conus.army.mil

Date: Tue, 28 Apr 2009 13:04:39 -0700
From: David Wise <David_Wise@Phoenix.com>
Subject: [R-390] LOGSA (was TM 11 4000)

Pity they've stopped doing commercial email - when did they stop? I talked with the help desk by phone a few years ago, haven't needed to since. But the site is still there, and although I didn't dig deep, it seems to offer the same selection and capabilities as usual, so what do you mean by "out of bounds"?

Date: Tue, 28 Apr 2009 17:21:03 -0500
From: "William J. Neill" <wjneill@consolidated.net>
Subject: Re: [R-390] LOGSA (was TM 11 4000)

"Out of bounds" = need to know. Over the past two years, US Govt has restricted access to many "security sensitive" Web sites. I'm on a few DHS, DA, DIA, and DoD mailing lists that are no longer open and accessible and

am amazed that I haven't been purged because for all practical purposes, 98% of the content remains UNCLAS although 2% is now at FOUO level. To meet the requirement for a ",gov" e-mail address, I use my graduate school e-mail address and in some instances, have had to obtain recommendation of an academic advisor who, for my purposes, is a recently retired director of counter intelligence at CIA. I've shared some of the "sterile" DA INTEL stuff on this list in the not so distant past but cannot do so anymore if I wanna stay on the list. Most sites now have a "gateway" along the lines of, as an example, Army Knowledge Online (AKO) that requires issuance of a password after confirmation of validity of request for access.

Date: Tue, 28 Apr 2009 17:01:19 -0600
From: "sam letzring" <sletz@msn.com>
Subject: Re: [R-390] LOGSA (was TM 11 4000)

I have a .gov e-mail- but couldn't find TM 11 4000 on the site- very difficult to navigate, also tried title. If anyone can give me some hints how to navigate the search page I can try again tomorrow.

Date: Tue, 28 Apr 2009 19:10:20 -0500
From: Frank Donnelly <goober@centurytel.net>
Subject: Re: [R-390] TM 11-4000

I just found a used issue of the TM 11-4000 on www.idsabooks.com. I bought it for $10.00. The item description said only one found. I think it said it was 177 pages. I will let you know when it gets here.

Date: Tue, 28 Apr 2009 21:04:17 -0400
From: Physicist <physicist@cox.net>
Subject: Re: [R-390] TM 11-4000

I know I have a copy - I dont remember if I scanned it or not, and I havent found it on any of my CDs. Its not on the R390 CD, or the Addendum CD (at least not on v1.10) I have it, but it probably has not been scanned by me or edited. I do remember it being a beast in size.

Date: Wed, 29 Apr 2009 08:36:38 -0400
From: "Tim Shoppa" <tshoppa@wmata.com>
Subject: Re: [R-390] LOGSA (was TM 11 4000)

Out of curiosity, of all the PDF's and other documents floating around on the public internet at all our favorite R-390A sites, how many of them came through LOGSA via the web? How many of them were scanned from decades old paper copies (possibly from the pre-web LOGSA when they distributed stuff on paper) by netizens? Just curious. Even a few years ago I tried navigating around the LOGSA site when it was more open, and it was

a very frustrating site to make any kind of progress with. I look at the new site and wow, what a bunch of useless flash crap, it looks ten times worse than a few years ago.

Date: Wed, 29 Apr 2009 10:04:56 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] LOGSA (was TM 11 4000)

I respectfully suggest that we can't have answers to these questions. I do remember that at least some of the digital manuals for my HP signal generator came from LOGSA, but for the majority of the things in my digital library, the sources are "lost to history" as they say. This reminds me of the time a few years ago that I brought a manual for the ARR-15 radio to Kinko's to copy for someone. Year: about 2001. Year published: about 1946. The manager studied the first couple of pages, discovered a notice that reproduction was prohibited except by permission of some long-abandoned Navy organization, and refused to copy the thing. I managed to be polite and left with out any comment. I also made a mental note to take any such pages out before I try that again.

> ... few years ago ...the LOGSA site ...t was a very frustrating
> ... the new site ...a bunch of useless flash crap,

Indeed. I visited there yesterday for the first time in *quite* a while and gave up quickly. I did manage to launch a search for the elusive TM 11-4000 and got a "not found" reply. By the way, I did click on "Text Version" and got an interface that was pretty much as I remember it. This is after I found and immediately abandoned a fancy version with a two-hundred item list of things to click on. One more resource lost to the foolishness of the contractors that were allowed to decide or suggest what the site should look like and do. Roy

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Date: Wed, 29 Apr 2009 11:56:36 -0400
From: "Dana Cobb" <objoyful@tampabay.rr.com>
Subject: Re: [R-390] TM 11 4000

"TM 11-4000 Troubleshooting and Repair of Radio Equipment (April 1958); 177
pages, 121 illus. Price $22.00 {Item No.545} "

Doing a Goggle search, I found the following vender: http://www.military-info.com/ This is a site that sells military paper copies of manuals. Everything from communications via carrier pigeons to satellites. They do NOT except credit cards or PayPal. They have an on-line form you can print out and mail to them with a check or money order. They do except "moneygrams" and WesternUnion. They ship worldwide. Bring up this site,

On the left you'll see "Our subjects include", On the right you'll see "How to Order". scroll down and click on "Communications", then Click on "Test equipment". You'll see TM 11 4000 listed about half way down. They will ship either USPS or UPS. when they get cleared payment. Regards to all; Dana Cobb - K1RQ Bradenton, Fl.

Date: Wed, 29 Apr 2009 12:27:35 -0400
From: "Michael, W1RC" <subs@w1rc.net>
Subject: Re: [R-390] TM11-4000

I have an original of this manual in my library. It does indeed use the R-390A as an exemple but does not specifically identify it. Years ago I approached the Army Labs at Fort Monmouth NJ with a FoA request to obtain pdfs of a couple of the R-390A manual set that were listed on LOGSA but for whatever reason were not downloadable by me. I received the .pdfs on a disc at no charge. So, perhaps this may be an avenue of approach. I'll look up the point of contact and see where it may lead. See you at NEAR-Fest Friday and Saturday.

Date: Wed, 29 Apr 2009 13:11:00 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] LOGSA (was TM 11 4000)

How many, using a number, would be difficult to say. I know I've gotten several dozen that way. I have the TS-505D/U manuals that came that way as an instance. The site "stinks"!

Date: Wed, 29 Apr 2009 12:27:35 -0400
From: "Michael, W1RC" <subs@w1rc.net>
Subject: Re: [R-390] TM11-4000

I have an original of this manual in my library. It does indeed use the R-390A as an exemplar but does not specifically identify it. Years ago I approached the Army Labs at Fort Monmouth NJ with a FoA request to obtain pdfs of a couple of the R-390A manual set that were listed on LOGSA but for whatever reason were not downloadable by me. I received the .pdfs on a disc at no charge. So, perhaps this may be an avenue of approach. I'll look up the point of contact and see where it may lead. See you at NEAR-Fest Friday and Saturday.

Date: Thu, 30 Apr 2009 17:29:08 -0500
From: "William J. Neill" <wjneill@consolidated.net>
Subject: Re: [R-390] TM 11-4000

As a matter of information, TM 11-4000 is carried as an active inventory item in DA PAM 25-30, Consolidated Army Publications and Forms Index:

Date: Thu, 30 Apr 2009 19:24:39 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] TM 11-4000

However, once again searching LOGSA returns NO entry for that
PIN: IDN: 990004
PIN: 016073

Date: Thu, 30 Apr 2009 22:51:58 -0400
From: "Dana Cobb" <objoyful@tampabay.rr.com>
Subject: Re: [R-390] TM 11-4000

TM 11-4000 Troubleshooting and Repair of Radio Equipment (April 1958); 177 pages, 121 illus. Doing a Goggle search, I found the following vender:

http://www.military-info.com/ for the above mentioned TM manual posted here previously. This manual has been around since 1945 and obviously been updated through the years. The one we are interested in uses the R 390 as a reference and is 177 pages not 198. I ordered one from the vender mentioned above. For the same shipping price ($6.00 US via USPS) they will ship additional manuals of your choice (They got a LOT !!) at no additional shipping charge. I saw a manual on guided missiles systems, but pasted. Already met several of the folks from homeland security...grin.. When I receive the paper copy of this manual, I'll report to the group. Warmest regards, Dana Cobb - K1RQ Bradenton, Florida AT&T... retired.

Date: Tue, 5 May 2009 20:29:05 -0400 (EDT)
From: larrys@teamlarry.com (Larry Snyder)
Subject: [R-390] subchassis mounting nuts Q

This may be an old question, but the archives aren't terribly searchable. My 390A ('58 Motorola + possible mongrel-ism) has a couple of apparently stripped nuts in the deck where the back end of the AF chassis attaches. Is there a decent fix for this, or am I bound for kludgeville?

Date: Tue, 5 May 2009 22:31:20 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] subchassis mounting nuts Q

I assume that they are PEM nuts - specially formed nuts that are pressed into the chassis plate. Google PEM Nuts for details and drawings. The problem is that to get a stripped nut out, you have to deform the aluminum that is holding it in, and any replacement nut will not clinch properly. The hole diameter for them to work right is critical. You may be able to add a

piece of aluminum below the hole to hole a new PEM nut, but likely there is something below there to prevent that.

Date: Tue, 5 May 2009 21:41:15 -0500
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] subchassis mounting nuts Q

You might be able to drill them out, tap the hole to the appropriate size, and use a theaded insert.

Date: Wed, 6 May 2009 13:16:18 -0700
From: David Wise <David_Wise@Phoenix.com>
Subject: Re: [R-390] subchassis mounting nuts Q

How about a little dab of JB Weld?

Date: Thu, 7 May 2009 18:01:44 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] subchassis mounting nuts Q

One real answer is an item called a "rivnut"
You find them in sizes that match the threads.
You drill out the current nut.
Drill a bevel with a bigger bit.
Insert the "rivnut."
Crunch it like a pop rivet by running a bolt and nut against the "rivnut".
This gives you a captive nut right where the original nut is located.
The trick is to shop the Internet and find some in the correct thread and in quantities under less

t

han a 1000.
There are two styles of "rivnuts"
One style is flat top and finishes with a raised washer like top.
The other style is beveled and finishes flush on top.

Roger Ruszkowski

Date: Thu, 7 May 2009 21:34:02 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] subchassis mounting nuts Q

I'm glad to know about these things. Some folks have put washers under the R-39x modules where the mounting screws are to provide some ventilation. I'm not sure it does a LOT of good, but even a small amount of air movement can help considerably. Use of the raised washer like top rivnut would do that.

Date: Thu, 7 May 2009 21:55:31 -0400 (EDT)
From: larrys@teamlarry.com (Larry Snyder)
Subject: Re: [R-390] subchassis mounting nuts Q

Thanks, Roger. I'll go looking for the 8-32 flavor of those. That is a good long-term fix. Meanwhile, I stole the toothpick trick from the woodworkers and put a hairpin of #22 or #24 solid wire through the PEM nuts in question and the AF chassis cranked right in. I sliced off the ends of the wire that would be under the IF chassis, and left the other ends long enough to grab should the AF chassis need to come out again. It's a happy camper....

Date: Fri, 08 May 2009 11:35:00 -0400
From: frankshughes@aim.com
Subject: [R-390] source for rivet nuts - small quantities

http://www.mcmaster.com/#rivet-nuts/=1sa4bm

Date: Sat, 16 May 2009 16:24:56 -0700
From: Brian Vietri <bvietri@msn.com>
Subject: [R-390] R-390A/R-1247 Data Plates follow up

To clear confusion, I have an R-1247. It has the extra BNC's on the back for the Manson Labs Synthesizer. I was just wondering why this has two data plates? And why the Motorola R-390A data plate was not removed and replaced with the R-1247 data plate during the Manson Labs Modification? Being from an Aviation background, I am use to seeing a new data plate installed with mod status. Thanks for all the input.

Date: Sun, 17 May 2009 15:10:26 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] R-390A/R-1247 Data Plates follow up

These things come up as property book issues. Property books being the military's way to keep track or all the stuff on any given base. Lots of officers on any give base have a property book that is an inventory of stuff. They are each responsible for the stuff on their list. Every quarter the officer grabs a couple senior NCO's and they take a walk. Each item on the oficers property book is located. If some thing is not found, everyone gets upset. Not found things cause paper work. And we all know how much management hates unexpected paper work. Someone "owned" the original R390/A. Just because it was modified did not relieve the owner of his property. The military just does not deal well with change. So it has two tags. One is the original tag. This tracked the R390 from its procurement by the military to its scrap surplus sale from the military. The second tag

was "an authorization" to "modify" the receiver from its original form to its new form on a one of change. Several, many were changed. But not all receivers were changed. So the second tag was the military's way of tracking the small number of receivers that were modified for special uses. Hope this helps. Keep both the tags on your receiver. It is part of its history and is thus special. @@@RARE@@@. Roger Ruszkowski

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Date: Wed, 20 May 2009 13:45:33 -0700
From: "Michael Hardie" <mike46@shaw.ca>
Subject: [R-390] Megacycle Change Detent Lube?

When the Megacycle change knob is turned it feels like metal grinding on metal. The gears seem OK, if the detent pawl is backed right off everything works smoothly. A small amount of silicone grease was applied around the edge of the detent "disc" but there wasn't much change. Is there a recommended lube?

Date: Wed, 20 May 2009 19:15:44 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Megacycle Change Detent Lube?

The current century lube of choice is some Mobil 1 synthetic oil. Pick up an empty can from the trash of your local Mobil Station and have a large supply. Buy a whole quart and treat your lawn mower and receiver forever.

The big ring of the megacycle shaft with the detent notches in it grinds into the detent stop spring plate. It will cut a notch through the stop bump on the spring plate. This is because the spring plate is adjusted to tight. It is adjusted to tight because the whole gear train is not clean and lubed. It takes to much friction to keep the MC setting still as the KC is changed. Once you clean the whole gear train and lube it, much less friction is needed to keep the MC from falling out of the detent. You install a couple of washers under the detent spring plate to move the grove off the detent ring. Adjust the spring plate to just hold the MC shaft in the detent. Moveing the spring plate wear off the MC shaft detent plate will make the MC shaft operation much soother.

Hang your receiver off the front edge of the table. Get your foot out of your combat boot. Tuck the aglet (the little plastic end cap) of your combat boot shoe lace into the KC knob hole. Wrap the lace around the KC knob twice. If the weight of the boot will not unwind the lace off the knob, your gear train needs cleaning and lubing. That test may not be exact or scientific but it should give you some idea of how easily the gear train should move. If your receiver is giving you a sore wrist your receiver may need maintenance.

Undo the RF slug rack springs from the rack tops.
Remove the springs from the RF deck.
Take the RF slug rack out of the RF and variable IF sections of the RF deck.
Clean the little roller wheels and lube with Mobil 1 synthetic oil (any grade).

Take the receiver out side on a sunny day to the picnic table.
Hang the RF gear train over the end of the table.

Take care not to get any stuff (any stuff = water, lube, cleaner, crud or any stuff) into the fiber bushing at the top of the antenna trim can on the RF deck.

You will need to turn the receiver up side down and clean top to bottom and bottom to top.

Compressed air helps a lot. Brush in some cleaner and blow it through. Turn
the gears a ways and clean some more. Work top down and bottom up.

A wet vacuum works nice. You can use some duct tape to make a small diameter pick up.

You can brush in some solvent and vacuum it out.

Oil heavy and blow out as much as you can. This will work it in every where and still get the excess out. You can do this without getting the antenna bushing messed up. You can just wipe it often and quickly if you do get it moist.

The two shafts MC and KC go through front panel bushings. It is worth the time to loosen the nuts and align these bushing for minimum friction. You may want to move the VFO around a bit and gap the oldham coupler a bit to releave any gear train binding from the VFO. The VFO front bushing may need cleaning and lubeing.

Look into the dial lock and ensure the lock is not dragging on the KC dial lock plate. Check that the Zero adjust comes free from the Zero adjust clutch and is
not dragging. Hope this all helps you to get a nice smooth gear train.
Roger Ruszkowski

Date: Sun, 24 May 2009 10:28:12 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Megacycle Change Detent Lube?

If I remember right, this is one place the manuals call for grease. I use "One Grease" from STP, the grease version of the Teflon-containing One-Lube that's been suggested here in the past. A possible cause of the grinding is that the detent spring has been worn to the point it has sharp edges rubbing against the detent wheel.. If this is the case, you need to replace or repair the detent spring. Otherwise, the detent wheel will become worn quickly and scraped away.

Date: Sun, 24 May 2009 16:17:10 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Lubing the R-390A

I love Mobil 1 synthetic oil and as I have to buy three gallons every six months for my car I always end up with extra in the container. It does a fine job of general lubrication in almost every boat-anchor I own but I use a synthetic tungsten disulphide grease for certain parts of the '390 or the SP-600. I got myself in trouble at one time by lubing up a SP-600 liberally with Mobil 1 and the magical friction driven dial drive became "too slippery" and spinning the dial only resulted in an occasional jump on the tuning disk. It became a major undertaking to restore the slight drag necessary for the Hammarlund SP-600 to it's silky smooth operation. (hint, polishing those brass friction wheels and the edge of the tuning dial just made things all the worse).

Even on the R-390 there are places where an excellent grease is a better choice, those tiny little rollers on the RF tuning deck. The challenge was finding a very high quality grease that would not separate out into it's constituent components (oils that run, greases that harden). My quest led me to a specialized tungsten disulphide grease sold only in five pound containers. The breakdown temperature on where the grease separates is somewhere around 320 C, the coefficient of friction is incredibly low at 0.015 (teflon-teflon surfaces are around 0.04, steel-graphite 0.09, even sapphire is 0.2) and it has an extraordinary high pressure rating (where you end up compressing the grease film away and end up metal on metal).

On a side project that took me into the tungsten disulphide grease was while trying to find a good grease for the bolt roller on an M1A rifle. For anyone who ever owned an M1A or was issued an M14 rifle you will recall the nasty task of packing the bolt roller with the specialized little grease cup or your thumb. I digress...

It takes an incredibly small amount of this grease in very specific locations to do it's job. I do not lather it on but when I disassemble any radio gear-train or drive I use a small syringe to put a microscopic dot of this grease onto gear shafts (I still have this obsession about using metal polish on gears to make things nice and shiny, it is sort of like cleaning my kitchen

sink). It is more like a watchmaking operation. The one downside of this grease is it is darned near impossible to de-grease your thumb when finger packing a roller bearing.
http://www.lowerfriction.com/pdfs/hightempgrease_bro.pdf

With a five pound tub of grease I have enough to restore radios for the next 700 years so I use it on door hinges, farm equipment, rack rails and the occasional squeaky fan bearing. On the R-390A I was able to take the tuning smoothness down to a lightly placed index finger on the knob to move across the dial. Spinning fast I just hear the click, click, click as the stops wind down. I spent the most amount of time dealing with the slight binding of the tuning slug racks in the RF deck where the rack sides touch the RF deck frame (magic grease applied with a Q-tip worked there too).

Date: Wed, 27 May 2009 08:39:57 -0400 (EDT)
From: David Austerman <daveaust@pol.net>
Subject: Re: [R-390] Megacycle Change Detent Lube?

My detent spring wore through and I put a few washers to move it out a mm or two. This just brought a new un-worn part of the spring surface in contact with the detent and there is plenty of room to do this. Works great. Many people have probably done this. Saved me from finding another spring altogether.

Date: Mon, 01 Jun 2009 09:49:05 -0400
From: Jon Schlegel <ews265@rochester.rr.com>
Subject: [R-390] Yet another use for "DeoxIT"

I was getting tired of those squeaky, stictiony, semi-corroded binding post threads on equipment like my GR-1650A Impedance Bridge. Always wondering what kind of lubrication to use, the use of DeoxIT finally made it's way into my noggin. A few drops of the liquid from the squeeze bottle on the threads seemed to do the trick. No more stictiony squeaks.

Date: Sun, 07 Jun 2009 11:14:15 -0400
From: Optonline <stevejxl@optonline.net>
Subject: [R-390] R390A restoration.. x 2

Pardon my naivet?, but I am new to the R390A list and recently came into ownership of two not-so-well-kept R390A's and the dual-unit rack in which they were mounted. Both units are Collins '55 contacts. I've lusted after one of these since childhood, and now I have two in need of serious TLC.. And yes, I did by the complete set of Rippel videos. :)

I have begun the restoration and have a few questions..

Unit A has a missing top slug rack cover plate and the Oldham coupler spring is nowhere to be found. Unit B is missing one black "plug" on the Veeder-Root front panel window. Any ideas where to find them?

I would like to not re-use the stainless hardware that I removed due to it's condition. Does there exist compiled a McMaster Carr (or similar) parts-list of hardware? I can certainly do this myself, but I'd like to not re-invent the wheel.

Both units are silk-screened front panels. While not physically trashed, I would like to get these repainted/restored (silk-screen is beyond my expertise). Who do people recommend?

After stripping the chassis to the wiring harness, the inner portion of the chassis cleaned up rather well. Unfortunately, the sides are fairly scraped up (it's not easy to slide 85lbs of receiver in and out of a rack) and was wondering if I should leave it this condition, or pull out the orbital sander and polish these up.. I'd love an opinion on this.

I would sincerely appreciate any input the group could provide me along the way. My full-service shop and I are certainly up to this task (I am an RF Engineer by trade), and I cannot wait to have these beauties adorn my radio-room!

Best Regards,
Steve Uckerman, N2JXL

Date: Sun, 7 Jun 2009 12:17:54 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] R390A restoration.. x 2

Congratulations. You did very well indeed, especially in getting the rack. How are they mounted in the rack? Angle-irons to support the bottom edges? Just by the front? (bad idea) Other: _____?

> After stripping the chassis to the wiring harness, ...

Number One Son found a nice hydraulic lift last week at a garage sale, quite obviously designed for racking heavy equipment. There were two of them, actually, but he didn't get the second one for me. He may recover from the tongue-lashing ... . I'd leave the sides as-is, unless you absolutely insist on having everything as pretty as possible.

> I would sincerely appreciate any input the group.....

Before-and-after images probably will be of interest to many of the people

on this list. Certainly I'm interested.

Date: Sun, 7 Jun 2009 18:11:20 EDT
From: DJED1@aol.com
Subject: Re: [R-390] R390A restoration.. x 2

Re: parts availability: Fair Radio is the first place I would try for spare parts. It's doubtful they would have the PTO spring, but they might have a bezel, and I know they sell repro covers for the R-390A. I've been happy with their store of spares- I ordered a replacement microswitch and got a NOS replacement. I don't know of anyone with a silkscreen of the front panel, but an alternative is to ask Fair if they have etched panels, which are easier to restore. Good luck and keep us informed on your progress.

Date: Sun, 7 Jun 2009 18:05:03 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] R390A restoration.. x 2 (Tisha Hayes)

Congratulations on picking up two of the radios at the same time. I have a few suggestions on sources for the items you mentioned. The slug top cover plate has a nickname of "Utah plate" (due to it's shape). I had the same problem and found that Fair Radio Sales sells a variety of newly manufactured replacement plates. Note, these are not manufacturer original and do not have the labeling showing the adjustment points. https://www.fairradio.com/ You can also buy a replacement odometer display (shown on the same search results from Fair Radio). Fair Radio is a bit pricey but no-where near as bad as Surplus Sales of Nebraska. I have never itemized the screws as I have a big stash of stainless hardware and always replace anything that is cad plated (more of a problem on the Hammarlund SP-600 radios). There is a source of the front panel screws that you can buy; http://r-390a.us/parts.htm The "Complete Restoration Kit" also has quite a few capacitors, the 10 turn pot and the inrush current limiter (highly recommended). Regarding the front panel, Keep an eye out on eBay for the engraved front panels. They look much nicer than the silk-screened variants and you can paint them any color or shade. I see engraved front panels appearing every few weeks and I am certain that many list members have a collection of front panels from their "blue striper" collections and you may be able to buy two panels from someone off the list.

Date: Mon, 08 Jun 2009 22:03:50 -0400
From: Optonline <stevejxl@optonline.net>
Subject: Re: [R-390] R390A restoration.. x 2

First off.. Thanks for all the notes of encouragement.. I think I'm going to save them for future reference when I get to the RF deck. That is a disaster!

I've received a few questions regarding my cleaning.. well, nothing too complicated. Simple-Green is tough to beat when it comes to cleanup. I use this with a small brush and q-tips to help cut the dirt up. Then using distilled water (my water is really hard), I carefully "wash" the "goop" off the module. This usually takes a few iterations.. Lather, Rinse, repeat.. :) Be very careful to not "bathe" the coil stock in the IF transformers. Yes, it is clean under the cans too (this is done last). Patience and elbow grease. After cleanup, I take a soft cloth (T shirts work great) and rub (gently) with a small bit of Nevr Dull, being careful to not remove the alodine coating. Once complete, I bake the entire module in a small convection oven for 2 hours at roughly 130-150 degrees to bake out any residual moisture. Viola.. This took most of Sunday to accomplish.

I had a few minutes at work this afternoon, and ordered a boatload of Sprague Orange-Drop's in anticipation a recapping I'm sure is inevitable. FYI, Allied Electronics was the cheapest. My bill for the SOD's was roughly $50, and I purchased enough to recap both rigs twice over, and keep a few spares of each in stock. I'm working on a Stainless order, it's easier to just replace the cruddy nuts, bolts, and washers then rack up the fingers polishing 4-40 screws!

Date: Wed, 10 Jun 2009 16:50:10 +0000 (GMT)
From: stevejxl@optonline.net
Subject: Re: [R-390] R390A restoration.. x 2

Yes, much of the #4 hardware is either mangled, or severely discolored. I do try to re-use what I can, although some of the hardware I pulled off was way too discolored. Funny you should mention a tumbler.. I own a small one for my CNC work and it is invaluable. Between the tumbler and my ultrasonic cleaner, there is not much I cannot handle.. :)

> >
> > I'm working on a Stainless order, it's easier to just replace the cruddy
> > nuts, bolts, and washers then rack up the fingers polishing 4-40 screws!
>
> There are several easy approaches to doing this - if they are just cruddy,
>the stainless will clean right up.

> 1) a reloader will have a walnut shell vibrating tumbler that would clean them right up.
>
> 2) the deposits are either a varnish of old smoke goo, which some solvents will readily remove, or a deposit of other dirt/gunk/corrosion... a pass with several solvents should clean it off - put the hardware in a tin can, fill with something you want to try, shake then see what it does. End up with using a bathroom rust

and stain remover, and it should cover all the possible stuff on it...
>
> 3) if the hardware is physically mangled, then by all means replace it
>
> The stainless steel cleans up really really well, and is a lot cheaper to do it this way. I didn't mention it before because I thought it was chewed up.

Date: Wed, 10 Jun 2009 12:46:43 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] R390A restoration.. x 2

A dishwasher also does very well by stainless steel hardware, though containing #6 and smaller stuff can be problematic. I use a mesh bag, sold for washing my wife's thin socks. I'll have to look into getting a tumbler in any event, as it can be useful in so many ways.

Date: Thu, 18 Jun 2009 00:35:02 -0700 (PDT)
From: stoth47@yahoo.com
Subject: [R-390] Need a MC knob clamp and BFO extension shaft clamp

I need a replacement bristol screw clamp for the megacycle knob on one of my R390A's - the existing one will not hold firm on the shaft no matter how much it is tightened down and the knob keeps slipping.? I also need a bristol screw clamp for the BFO?front panel extension shaft. Anybody have any spare hardware that is available??? You can hit me off list. Also, where can we get spare bristol screws for the clamps?? I checked McMaster Carr for both bristol and six spline set screws and couldn't find them.? Maybe I'm searching on the wrong description?

Date: Thu, 18 Jun 2009 09:33:12 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Need a MC knob clamp and BFO extension shaft clamp

Are the faces of the clamp at the middle of the screw meeting? Maybe the clamp has stretched or the shaft is a bit too small. If so, try filing those faces a bit. That may restore proper operation.

> Also, where can we get spare bristol screws for the clamps? .....

You might try the Bristol Wrench Company to locate sources. They make the (best) wrenches:

Bristol Wrench Company (the originator of the tools):
http://www.bristolwrench.com/
Their table on spline wrenches (also found at Max-Gain Systems in partial form)

http://www.bristolwrench.com/spline.pdf
Bristol Wrench Co.
P.O. Box 4317
Salem, OR 97302

Phone: 503-371-9655
Fax: 503-371-9662

If that fails, there are a number of suppliers of military hardware, but you would rather not pay their prices, I'm sure. May I suggest that if you wind up using an allen screw, even if only temporarily, you paint the head of the thing a bright color to alert yourself or another worker that it's not the same as the rest.

Date: Thu, 18 Jun 2009 09:41:36 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Need a MC knob clamp and BFO extension shaft clamp

I just read the rest of my notes file on Bristo-Bristol and found this:

From: "Charlie" <pincon@erols.com> Mar 2006
...
I have a source for Bristol set screws that I bought in order to supply the correct ones with the new production Dakaware knobs I purchased a few years ago. As I am contemplating another large quantity knob buy, I find that unfortunately, the Bristol set screws have gone up considerably in price.

Date: Thu, 18 Jun 2009 10:40:17 -0400
From: "James A. \(Andy\) Moorer" <jamminpower@earthlink.net>
Subject: [R-390] Bristol set screws available

It appears time to send this out again. Here's the pitch - contact me off-list at jamminpower@earthlink.net:

I am pleased to offer two bags of NEW MANUFACTURE Stainless-Steel set screws for the R-390 and R-390A line of fabulous vintage vacuum-tube shortwave receivers. There is one bag of 20 pieces of the 3/8", 8-36, 6-point Bristol spline set screws (full-cup end) and one bag of 20 pieces of the 1/4", 8-36, 6-point Bristol spline set screws (also full-cup end). I got tired of trying
to scrounge vintage set screws and had a bunch of these made up. They still have the machining oil on them. They fit the R-390/R-390A knobs perfectly. Yes, I know the original used a 3/16" length rather than 1/4", but I had trouble with the shorter ones - I kept cross-threading them - so I had

mine made 1/4". Works great.

$25 includes shipping in CONUS. More for foreign. Modest discount for quantity. PayPal preferred. Check or money order accepted.

Date: Thu, 18 Jun 2009 21:19:05 -0500
From: Richard <theprof@texoma.net>
Subject: Re: [R-390] Bristol set screws available

I bought some of these earlier this year. Well worth it.

Date: Tue, 30 Jun 2009 00:15:55 -0400
From: Optonline <stevejxl@optonline.net>
Subject: [R-390] R-390A Rebuild.. Arrgghh!!

Might anyone on the list have a few of the small solder-post standoffs? It seems I have a few that just fell apart the minute I hit them with the iron.. Very frustrating! I'm more than happy to pay for them.. Any help is so much appreciated! Best regards, Steve Uckerman N2JXL

Date: Tue, 30 Jun 2009 09:49:34 +0300
From: Sheldon Daitch <sdaitch@kuw.ibb.gov>
Subject: [R-390] Crystal Oven mods

Charles Fitch has written an interesting article on repair of crystal ovens, if you can't find what you need.See:
http://www.rwonline.com/article/82884

Date: Tue, 30 Jun 2009 20:47:14 -0400
From: "Steinbrecher, Wallace E MAJ NG NG NGB"
<wallace.steinbrecher@us.army.mil>
Subject: Re: [R-390] Solder Posts

Are you looking for the ceramic-bodied posts that mount with a screw? I have several NOS I can send you if that's what you are looking for.

Date: Sun, 5 Jul 2009 23:01:54 +0000 (UTC)
From: odyslim@comcast.net
Subject: [R-390] Adler R-390A FS

Well folks, just when you thought you have seen everything, something even more rare comes along.

A friend of mine asked me to put a bird in every bodies ear. He is going to put an Adler Electronics R-390A up on eBay. The radio has all Adler modules not just the tag. Its the real McCoy. The Adler is in as found

condition. It has not been hacked or modded. He has never turned the power switch. The best part is it is in extremely good condition. I believe a little soap and water would bring out a pristine VERY rare Adler R-390A. ONLY 5 MADE! Get out your lunch money!
Look for it on eBay real soon Please dont reply to me. Please dont shoot the messenger :-)

Date: Sun, 5 Jul 2009 21:26:40 -0400
From: Paul Anderson <paul@pdq.com>
Subject: Re: [R-390] Adler R-390A FS

So what's the story behind these? Another Naval ship order gone awry? ;)

Date: Sun, 5 Jul 2009 20:33:39 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] Adler R-390A FS

No; the wrong set of specs got stapled into an anchor contract. Fortunately for all of us, the contract monitors got things stopped before too many got made. Think of it as the inverted-Jenny-stamp of radio receivers, or a very light anchor for a naval ship. ;')

Date: Mon, 6 Jul 2009 02:59:15 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] Adler R-390A FS

The Adler radios were made by Capehart.
Not really rare, except the tag.

Date: Tue, 07 Jul 2009 21:41:53 -0600
From: "Dr. Gerald N. Johnson" <geraldj@weather.net>
Subject: Re: [Collins] Collins R-391

> I am trying to establish a realistic market value for a Collins R-391.....

A 2002 survey of prices put the range of R390A prices from 250 to 1000, and the R391 prices from 450 to 998. I expect the motorization adds considerably to the mechanical complexity and doesn't improve manual operation any, so any added price is more collecting than for using.

Tubes can contribute hum, from heater to cathode leakage. That will be 60 Hz, usually sinewave (no harmonics). Hum from filter capacitors is at 120 Hz usually and has a saw tooth shape with many harmonics. Filter capacitors that let the radio hum have on occasion exploded and released their contents into the insides of a radio. All their contents are conductive. Its a real pain to clean, so that's not a safe operating condition. New can

type electrolytics are getting hard to find.

Needing filter capacitors and a thorough cleaning and lubrication takes away from the user value, but may not hurt the collector value as much. It's not an interest of mine to have one.

Date: Fri, 24 Jul 2009 23:19:24 EDT
From: ToddRoberts2001@aol.com
Subject: [R-390] New 3D scanner - printer recreates obsolete parts

Hi all, saw this article on an interesting 3D scanner that recreates obsolete parts. Jay Leno is using one to make copies of impossible-to-find car parts. The machine scans the part, then will make an exact copy in plastic that can be cast in metal or the scans can be CNC machined. It can make an actual working copy of an adjustable crescent wrench in one piece, with the moving threaded wheel on the inside. A machine like this could possibly be used to make an exact copy of an R-389 PTO or the workings of one from a disassembled unit that could be reassembled into a working unit. Not sure how one could reproduce the ferrite or iron powder tuning core slug but one could conceivably reproduce any or all of the working mechanical parts of an R-389 PTO using this machine. http://tiny.cc/ehgZI Your imagination (and wallet) could be the limit in what kind of obsolete mechanical radio parts could be made with a machine like this. Knobs, brackets, tuning mechanisms?

Date: Fri, 24 Jul 2009 22:36:56 -0500
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] New 3D scanner - printer recreates obsolete parts

When I worked with CAD/CAM/CIM, we could take our 3-D designs, run them through a few post-processing steps, and feed the output to a machine that used lasers to solidify the special liquid that was held in a chamber. Anywhere the two lasers crossed created a hot-spot that caused the liquid to solidify. It was slow (that was nearly 20 years ago), but you could create prototype parts that were very difficult to machine. They weren't pracitcal for production, but very cool for prototyping.

Date: Sat, 25 Jul 2009 11:03:05 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] New 3D scanner - printer recreates obsolete parts

I think this was called 'rapid prototyping'. It is very sophisticated now. Dentists are using this technology to make crowns in the office while you wait.

Date: Sat, 8 Aug 2009 21:17:37 -0400

From: Al Tirevold <al@tirevold.net>
Subject: [R-390] Y2K-R3 - 2009 revisions

The latest revisions from Perry Sandeen are posted on http://www.r-390a.net.
http://r-390a.net/Y2K-R3/index.htm

Date: Sun, 9 Aug 2009 13:15:16 -0400
From: Al Tirevold <al@tirevold.net>
Subject: [R-390] Y2K-R3 - One Big File

All 27.3 MB of it is at http://r-390a.net/Y2K-R3/Y2K-R3a.zip

Date: Fri, 14 Aug 2009 10:28:33 -0700 (PDT)
From: Richard Green <k7yoo@yahoo.com>
Subject: Re: [R-390] R-390 Digest, Vol 64, Issue 21

I thought that version of the R390A was called the R 1247. I have one that was done by Manson Labs and it has the most linear PTO of ANY Collins radio I have ever owned. I would like a copy of the docs on this version and certainly would pay for copying and postage. I do not have the synthesizer but it might be interesting to hook one up. My main question is how did they activate the relays? It appears that one of my relays is flaky as sometimes the Rx works FB and then it suddenly loses interest in RF! Usually I can wiggle the coax cables and coax it back to life so it is either a relay or connector issue. Skip
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Date: Fri, 14 Aug 2009 13:08:02 -0700 (PDT)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] Frequency Synthesis on the R-390/A

I would also be interested in a copy of the docs you found and pay for the copying and postage. I have what is possibly an R-1981. It's an early Collins with the front panel that takes a long Collins tag instead of the Manson Labs tag, and it has the 17Mhz input/output mods installed. The previous owner picked it up at an estate sale in Florida of a ham that worked for NASA and claimed it was formerly used in Vietnam. It's either a NASA R-1247 with a changed out front panel (most likely - although it has no Manson labs markings on any of the modules), or an R-1981 - I'm just not sure which.

Per the R-390A FAQ page - The R-1981.
"The R-1981 was a R-390A modified to bring out the 17 MHz, HFO and VFO signals to the rear panel and to insert an error correction signal for high-stability operation. It was a part of the TSC-25 communications system. The modifications were done using a kit of parts from The Technical

Material Corporation (TMC) under contract number 14385-PC-58."

And from a past email I received off list a while ago from Tom, NU4G (thanks Tom!): "I also have the two synthesizer decks for your R-1247 - I was supposed to also get an R-1247, but it never materialized.* *

* *(Which is just as well.? Imagine dialing up a freq on the receiver, then cranking on TWO boxes - one for MC and one for KC, to tune to a freq. The GRC-129 system was an interesting contraption that used two of your receivers controlled by the synth - the pair was set up in diversity mode. The transmitter was a highly Manson-modified T-368 that was redesigned for SSB only. "Contraption" is a good system description, as is "haywire."

There were better things in production at the time, who knows how the contract for that system was ever approved. heehee Nonetheless, it's still interesting.)

Date: Fri, 14 Aug 2009 15:27:36 -0500
From: wf2u@ws19ops.com
Subject: Re: [R-390] Frequency Synthesis on the R-390/A

I have a dual-tagged Collins/Manson Labs R-390A (R-1247 on the Manson tag) with the requisite relay boxes/connectors on the rear panel. I had the Manson synthesizers which are now in Tom's (NU4G) possession. Tom wanted to swap a regular R-390A for mine, which I was amenable to since he bought the synthesizers from me and I didn't need the R-1247 features. For some reason Tom never got to arrange the swap (I think he didn't want to ship or didn't have time to drive and meet me somewhere - I don't remember), so I still have the
R-390A/R-1247... 73, Meir WF2U Landrum, SC

Date: Fri, 14 Aug 2009 16:11:40 -0700
From: "James Hall" <trains@fidalgo.net>
Subject: [R-390] R-1247

If someone is interested one, I have a Collins/ Manson one that I would be interested in selling.

Date: Fri, 14 Aug 2009 20:31:21 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: [R-390] SP-600 anthology available

Perry Sandeen has finalized a remarkable work on the Hammarlund SP-600 and its many variants. This has been a long process with input from many different people who all had something to share on this fine receiver. It is available for download (free) on the Hammarlund Historian website. It

is in .pdf format and in two parts, each being approximately 7 megs. Look here: http://www.hammarlund.info/

I personally would like to thank Perry and everybody involved for this great piece of history on the SP-600.

Date: Sat, 15 Aug 2009 11:37:59 EDT
From: RKofler@aol.com
Subject: Re: [R-390] SP-600 anthology available

This looks like an excellent collection of information. My thanks to Perry Sandeen and all who made this available.

Date: Sat, 15 Aug 2009 12:29:43 -0400
From: "John Vendely" <jvendely@cfl.rr.com>
Subject: Re: [R-390] Frequency Synthesis on the R-390/A

There were at least two external synthesizer arrangements developed for the R-390A over the years, including the one by done by TMC. The Manson Laboratories version was probably the most common. Manson developed numerous versions of their stock multiloop serial injection PLL synthesizer for a variety of retrofit applications, such as a synthesized SSB version of the
AN/FRT-24 transmitter. They also had a line of HF receivers and transmitters of their own, which are seldom seen today. Incidentally, Manson did a version of the 2.433-3.455 Mc R-390 synthesizer which tuned in 100 cycle steps.

In a way, connecting an R-390A to the Manson synthesizer set was a bit like pearls before swine. Few receivers, including modern ones, have L.O. chain phase noise as low as the R-390 series. THe Manson synthesizers had very low discrete spurious levels, but phase noise was poor, and in that respect considerably degraded the receiver's performance. They were also notoriously unreliable, though this is forgiveable to an extent, considering the early 60's synthesizer technology. The Manson synthesizer arrangement solved the problem of long-term stability, but degraded the receiver in other ways.

It's often stated that the R-1247 and its companion synthesizers were developed for NASA for the Apollo space program. This is a myth, often propagated by folks selling them. It was developed for the AN/GRC-129 RATT van, which was considered a synthesized SSB upgrade to the AN/GRC-26. NASA used the R-390 series for a variety of purposes, including general HF
reception and use as a tuneable IF for various down-converters. They did indeed have a few of the Manson-equipped R-390A's, but they experienced

continual problems with them, and all were removed from service after just a short time. By the mid 60's, several much better synthesized receivers were available and in widespread use.

On a side note, TMC supplied the HF transmitters and receivers for NASA's worldwide tracking and communications network, under contract to Western Electric, the prime contractor for the network, starting with Project Mercury. TMC supplied GPT-10K and GPT-40K transmitters, and DDR-6 and DDR-5 receivers, all done up in the bilious institutional green color favored by NASA. The transmitters were in use up to the early 1980s at the Malabar Transmitter Annex which was (and still is) the transmitter site for Cape Radio. NASA green TMC equipment is still occasionally seen floating around...

Date: Sun, 23 Aug 2009 13:49:11 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: [R-390] Bristol Spline Drivers

I have found a batch of old new stock and slightly used Bristol spline drivers.
These are nice tools with red handles. Here is what I have:

DS-072
DS-096

*R-390 / 51J knobs other
DS-111

* 51J large knob
DS-133

Attached below is a link to the Bristol web site
http://www.bristolwrench.com/spline.pdf

I am asking $8.00 each + $2.00 first class postage this is about half of the retail price. Send me an email if you are interested, tom, N3LLL

Date: Tue, 08 Sep 2009 01:03:05 -0500
From: Steve Kent <steve.kent@att.net>
Subject: [R-390] Parts Needed, new R-390A owner & questions...

I am new to the R-390A world and have recently acquired a SW R-390A s/n 1911. I have wanted one of these receivers since I was a young boy, as my dad had one in the garage and I would tune around for hours. I always wanted one, and now that I have the space, I am working towards making this one functional. Anyway, I am looking for a few things. Here goes:

L505 12MH choke
T201 slug
Z213 center slug
Z205 rear slug
"IF Out" coaxial jumper

I wanted to be very cautious before powering it on, knowing that there are some caps with bad reputations. So I set out to give it a good once over and take a close look around. It's a good thing I did. Upon removing the IF deck I discovered a blackened area with L505 fried and R508 blown up. C553 tests OK but I am replacing it; I expected it to be shorted.

Now I hope that the mechanical filters aren't toast. What is the best way to test them? Take them out of circuit and measure the coil resistance and measure each terminal to ground? Any ideas what typical values would be?

Apologies for so many questions, but I am eager to get this beast working!

Date: Tue, 8 Sep 2009 09:53:18 -0400
From: Paul Anderson <paul@pdq.com>
Subject: Re: [R-390] Parts Needed, new R-390A owner & questions...

Hi Steve, welcome to the group! C553 doesn't short any more often than the others, it is just that if it does, it can fry your filters real quick, so replacing it is a good idea. So you need to find out why the coil fried - there is probably a shorted cap nearby in the circuit - test everything with a VOM, resistors and caps both (resistors simply due to the heat and stress in the immediate vicinity). The other problem areas are the the big electrolytic audio caps, which will often hum or if they short, fry the audio transformers or they can leak, which makes a mess. The shorting problem seems like common than the other two. There is a small cap under the audio deck in the middle of the little circuit board that often goes bad and makes a mess - it is worth replacing that one too. As to the other caps, opinions vary, but one consensus is that wholesale replacement of the BBOD (black beauties of death) is worthwhile. It does depend on the age of the deck, past use, your time and how you value it, and so on. I replaced a bunch in I think two R-390A IF decks, and that was fine, but maybe in the future, I'd just replace C553, and leave it at that - test the deck and see how well it works before redoing it.

Other R-39X radios (R-389, R-390, R-391, R-392) seem to have slightly better quality caps, but they also tend to be older (early to mid 50's for the 389/390/391). Later R-390A decks have much newer caps, and perhaps better manufacturing, but they are still paper caps, nonetheless.
I can't think of any other serious problems to watch out for, other than the

usual common sense stuff - check resistors, they drift high often, due to heat (mind you also due to resoldering capacitors, so this is another incentive NOT to wholesale recap a deck). I've seen some crack just due to age or heat, too.

Date: Tue, 8 Sep 2009 17:45:12 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Parts Needed, new R-390A owner & questions...

Welcome to the group of owners. On the IF deck caps. Once you start you may as well do the whole deck. As long as you have to get some caps you mite as well get enough to do them all. Once you start getting the iron hot you may as well do them all. You do it once in the receiver and you are done with it for life. Do use a good 600 volt cap on the mechanical filters. It is just cheep insurance. Good 250 volt or better are OK else where in the receiver. Do change the 8 uf C609 cap in the audio deck. A larger value helps. it only needs to be 30 volts or so. You do not need the high voltage model the military used to have a common in stock part. A 30 volt 10 or 20 uf works nice. There are a couple of BBOD under the RF deck. Someday you may want to change them.

You should pull the RF deck at least once and do an inspection and overhaul. Do change the BBOD under the RF deck. Do perform a good visual inspection and alignment of the RF band switch.

The goal is to make sure you get as much metal to metal contact in each wafer section of the switch in each of the six band switch positions. It is a six variable equation and best done by eye. Look to see if in the past the switch has been poorly adjusted and has some metal corners burnt off. If the switch section contact area is not large enough for the current, the metal get burnt. Then there is less metal to adjust and make contact with. No need to burn out RF band switches from poor adjustment. Do the mechanical alignment a couple times to get it good.

Check the tubes and do the RF alignment a couple times back to back.
A second pass and third pass will yield improvements.

The BBOD are .1uf and .05 uf (5000 PF) once you start putting in new caps two things happen.

There is a lot more room under the deck. You find shorter closer points to ground the caps to. Along the way unbolt and rebolt the ground lug hardware. This just cleans up any crud under the ground points and gets you a good mechanical connection for the next 50 years.

Once you start the process, you quit wondering and just know you are going

down the right path of least resistance as a once in a life time experience. You should be able to recap the whole IF deck in a weekend. Think $15.00 in parts. 10 hours plus at 25.00 an hour and know you just about double the value of the receiver with just the labor dollars you have in the receiver. A good semi PM where you test the tubes and do an alignment can be done in 4 hours. Likely 6 to 8 for the real owners. And again at 25.00 an hour you have added a 100 or 200 in value to the receiver. You do this because you love these old receivers not because you can make money at it.

I hope you are getting some direct to you offers for the parts you need.

Many of the fellows have some odd parts and will make you an offer. But you have to ask for what you need. We do not just put up parts as it is a waste of effort. But ask and you shall receive offers. Just the way the reflector works.

The fellows you get offers from are good guys. If you get a bad offer, you will let everyone know about it with a post here. This process also culls out the bad offers.

Welcome aboard, Roger Ruszkowski AI4NI

Date: Tue, 8 Sep 2009 09:54:32 EDT
From: DJED1@aol.com
Subject: Re: [R-390] Parts Needed, new R-390A owner & questions...

Welcome to the group, Steve. I can't help with parts, but suggest you call Fair Radio and see if they have an IF module that's partially stripped. I've had pretty good luck getting odd parts from them. Otherwise, watch eBay for a junker IF module. Fair may also have the connectors needed to fabricate a replacement cable.

If I remember correctly, the mechanical filters should ohmmeter at about 40 ohms for each transducer coil. If C553 is intact, then probably the filters are OK.

If your damage was caused by a shorted cap, then you might consider recapping the whole radio. I did that a couple of years ago- probably the hardest part was removing the RF module. Just requires patience. Ed

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Date: Wed, 9 Sep 2009 15:17:40 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Restoring my '390

>.....a R390 must be burned in 24/7/365 for five years.....

I have both never heard that, and doubt that it's true. In addition, it's a rare R-390 in our possession that has not had quite a few years of use already, though perhaps we can't count on 5 years of 24/7 operation.

> ...Either way I think I'll be doing my own restoration.....

I recommend it heartily. The list folks will have lots of advice if you get stumped, and you'll have a LOT more satisfaction in the long run.
<snip>

Date: Thu, 10 Sep 2009 22:36:33 -0400
From: Gene Beckwith <W8KXR@neo.rr.com>
Subject: Re: [R-390] Restoring my '390

<snip> .....Re burn in...of course suggesting the extremes of any technique make good chat topics...but, in the real world...five year burn in is a bit odd...since all of the rigs have a high probability of not only five years..but many times that in the process of aging and 'settling in'....again..real world says unless you have unusually sophisticated lab equipment available...odds are few of the faithful could detect an performance difference...hard data for such comparisons would be interesting for the group to study...

Get started on the restoration...don't get caught up in the paranoia of the ultra/extreme, avoiding jumping in with fresh parts and soldering tools smoking. you'll miss all the fun if you delay...

Date: Fri, 11 Sep 2009 09:49:40 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Parts Needed, new R-390A owner & questions...

Nice to have you join the group. May I recommend downloading the Y2K manual off the Web along with the very nice compedium of notes collected by Perry Sandeen et al; listed as *Y2K-R3*. Together they make a great addition to the published JAN manuals.

By now, you have seen that we are a varied bunch; with some desiring a pristine near factory fresh unit restoration, and the others happy with a slightly beat up fully functional unit. No question, a restored panel and knobs look swell. It is the insides that are equally, if not more important.

Some of us have specialized in doing a ground-up restoration of all or part of a R390A for very reasonable charges. They are to be commended in a labor of love. I am much more lazy, and have chosen to spend all my time and effort on function: swapping tubes for minimum noise and reasonable gain, replacing deteriorated components, and mechanical-electrical

alignment.

Fair sells m-BNC connectors that have had the coax cut off short... for something like $3.50. I have bought some and made nifty BNC-to-mBNC 6 inch adapter cables to feed signals into the IF deck. They have been invaluable in alignments and assessing stage gains.

Chuck Rippel's mod of the precision ten-turn 100 ohm pot makes adjustment of the Line Level meter real easy.

As Gene says, jump in and get started, or you will miss all the fun.

Date: Fri, 11 Sep 2009 14:48:21 -0400
From: Gene Beckwith <W8KXR@neo.rr.com>
Subject: Re: [R-390] Parts Needed, new R-390A owner & questions...

One further thought re panels...I've done several..from bare metal to pristine . . . but....I have two St J. Blue Striper's from Fair ... several years ago...both had the blue stripe, a yellow and a black one, one over the other....They both cleaned up with some effort..the point is that I left a tell tale bit of blue under the Veeder Root...as a symbol of their history and reminder of what real veterans these
machines are...and then there are a couple of others that have an 'eye brow' over both dials...good grief....what they must have heard and the hours they were in service...and where were they? And then there is an authentic R-390A with orig manual from a boomer class sub tender...It was probably a rack mounted radio among many...and is in very good 9.5 cosmetic condx...no need to refinish...it's authentic as it gets...what a treasure! So, the point is what is ur interest .. and what fascinates each of us with these best of the best radios...? I'm fortunate to have several...in various flavors..all are treasured and representing various aspects of our hobby and interest in history, tinkering, and appreciation of this wonderful expression of our technology at its best...

Date: Fri, 11 Sep 2009 17:05:59 -0500
From: "William J. Neill" <wjneill@consolidated.net>
Subject: [R-390] Sept. 11, 2001, as recorded by NYFD

Go to "AUDIO DISPATCH TAPES", choose one, and listen.
http://graphics8.nytimes.com/packages/ht
ml/nyregion/20050812_WTC_GRAPHIC/met_WTC
_histories_full_01.html

Date: Fri, 11 Sep 2009 22:52:48 +0000 (UTC)
From: odyslim@comcast.net
Subject: Re: [R-390] Parts Needed, new R-390A owner & questions...

Well put Gene. I agree with every word you wrote.

I too have several.. More than I will ever need. I have one that must have sat on one frequency for 20-30 years. It is as new as can be. And then I have one that is so used and beat up. The sides are camouflaged, each knob with a half moon around it, a different module from each manufacturer bent corners, and works just like the day it rolled off the line. This one has never given me a problem and I have owned it for 10 years. I have never needed to align it or make any repairs. I just keep it fed with a steady diet of JAN tubes and it keeps pluggin on. When Im not using it to listen to Mil stuff, it is playing bluegrass music on Friday night on WBCQ.

Date: Fri, 11 Sep 2009 19:35:19 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Restoring my '390

I think 24 x 7 x 52 x 5 is a bit long. Tubes will last almost forever but 43,680 hours is mostly over the line. I think Rick Mish got miss quoted. Or lets not take that exact statement to literal.

Think about 10,000 operating hours on a good tube. For the first 720 - 1,000 hours you hope the thing will quite down and get stable. From 1,000 to 2,000 hours you hope it will quite down and get stable, because it did not do it in the first 1,000 hours. Then you get about 7,000 hours of good tube life. Then the tube starts to get noisy from what ever its mellow point was.

If you are going to do a PM and change some tubes. Go whole hog and get all the 6DC6, 6C4's, 5654's and 5759's in the IF string. Swap the in line 5749's off to the VFO and BFO. Move out any 6AK6's and 5814's that will help get some noise out of the signal to noise ratio.

Save the old tubes. If you have a couple that go noisy early, you swap and old less noisy tube back in and put off doing a full refresh. If you are mixing your best used stash into a receiver for best signal to noise with what you have on hand, then a one pass alignment will get it. The used tubes have been burned in. By the time you get to the alignment part, the receiver has warmed up and likely stable.

After installing new tubes, do an electrical alignment twice. Leave the receive on for a week and repeat the alignment if you can.

720 hours (24 x 30 days) after you do some tube changes, do another electrical alignment. The tubes will burn in and change. An alignment will bring improvements. At month 2 (another 720 hours) do it again. Then you should be

good for out to about 9,000 operating hours.

Once you start doing tubes one at a time you need to do that alignment with
the tube change, and again after it ages a month or so. So if you start swapping tubes one by one as they die, you are for every doing alignment or just listening to a less than optimum receiver.

In the past years, several of the Fellows who have been there done that, have compared tube life and power off on cycles until the filaments break. The ratio is to leave the receiver on for at least 2 hours when you turn it on. If you turn the receiver on for 2 hours and then turn it off, the filaments will break just about the time you reach the end of the tubes useful life.

Back when (68 - 75) we did a PM on a receiver each month. It got a minimum eyeball for blue tubes and we ask the operator if it was missing any thing (like a megahertz of signals). Twice a year (semi) the receiver went to the shop for about 4 hours of face wash, dusting, tube checking, mechanical inspection and electrical alignment. We used a signal generator, AC volt meter across 600 ohms (power meter) on the Local Audio output and a DC volt meter across the diode load. On a good day we may have counted the VFO and BFO with a counter.

Good 20:1 signal to noise from tubes was a solid year. 24 x 256 = 8760 hours. Tubes would go another year. If you were happy with 10:1 signal to noise you can have 20,000 hours and more. Tubes will go almost forever. If the goal is grid voltage varies plate current and things do not smoke.

But if you are trying to eak the weak one out of the noise, do try to keep tube life under 10,000 hours. Always your mileage will vary. Turn the receiver off when not in use. Let it warm up a 10-20 minutes before you get into a contest.

The R390/A's are mostly over 50 years old. Any thing that is going to age and burn in has done so. BBOD's are a problem. But again, rather than poke at them one at a time just do them all. Get it over with and start aging a whole new set of replacements.

One of the Fellows asked about doing this himself last week. Your time as a radio repairman is easily worth $25.00 an hour. On top of that you would like some return on the assets of the shop equipment and mark up on parts inventory. A good semi PM can easily go out 8 plus hours and never get to a wash and lube.

I am not into painting front panels. When I think about looking at paint, I prefer some other art than standard gray on metal with white trim and

black contrasting knobs.

But if you must repaint that panel, under stand the real hours of time, real skill and real value added. I am making some different choices, But I appreciate the cost of a refinished front panel. When some Fellows ask $1,200.00 plus for a specific receiver setting on a specific bench and want shipping extra, I do not even flinch. I under stand from where they are coming and I see the value in what they are offering.

Thinking of the value that is added, I see why so many on this reflector are doing their own maintenance.

Please do share your rework experience with us. Ask what ever questions you need. More than one of us will offer up some ideas of how to proceed. You should have no trouble getting your receiver fully operational and into excellent alignment. Happy to have you with us. Roger Ruszkowski AI4NI

Date: Fri, 11 Sep 2009 16:42:48 -0700
From: Rick Popovich <RickP@fndmail.csus.edu>
Subject: [R-390] R-390 Restoration

I think you have made a wise decision to do you own restoration. I joined this group earlier in the year to gain knowledge, experience and obtain information and links to various resources that might help me restore a R-390 and R-391 that I acquired over the years.

In short the group has far exceeded my expectations and is not only a wealth of vital information but also a great "support" group for us fans of this venerable receiver.

I too explored having others do the work for me and after some soul searching, feedback from the group .. <snip>..... I decided to do the work myself - it was one of the best decisions I have ever made.

The best part is that the more experience you gain in working on these radios the more your confidence level increases - a definite win-win.

With that long cold winter ahead of you what better way to spend it than with a good friend! Let us know how you do.

Date: Mon, 14 Sep 2009 11:56:05 -0500
From: <ka9egw@britewerkz.com>
Subject: [R-390] R-390A s/n4214 [8719-p-55] known issues

Not much, really. I verified it can find the calibrator signal every x900kc,

x500kc and x100 kc across the entire tuning range at all 6 IF bandwidth settings. My wrist is already tired just from that HI. On local BC stations narrowing the IF
bandwidth costs fidelity, but the volume doesn't change much through all 6 settings. I'd guess from that nothing's majorly dead in it.

Without looking at the schematic I'm guessing the two wires [white-red-blue-black and white-red-green-black; or is that red really an odd brown?] ending in midair in the vicinity of the two solder points on the antenna relay by the J10x label, drive the antenna relay coil. However, since everything goes to no-signal-perceptible when the random wire is disconnected from the "C" connector, I plausit the relay is making contact.

The set has no meters; I have replacements; this has been discussed already.

The audio quality is not evaluable since my specially-packed-where-I-couldn't-lose-it 600/8 xformer is MIA. Into a pair of Hi-Z Brandes cans at the phone jack, it doesn't sound TOO much worse than those cans do on any other radio, which isn't really saying much. But they're "brasspounder cans" anyhow. An 8-ohm Klipsch across "line" gives enough audio to listen to on local BC stations, WWV, etc...at mediocre fidelity.

All the tube shields got lost in my last move in '04. They were not IIRC corrugated-insert black ones, so I really don't care except to note the tubes will have to be packed separately to ship the radio. The 3TF7 is good with no visible glow. I note there was a sticker on the back [now on the bench next to the radio; the glue was shot] detailing some field mod TM11-820 or something dated [looks like] 1975, the ink is faded badly] , and it is an Army Security Agency sticker, so I don't know what that may imply as to anything nonstandard about the receiver. [Going by the fact the NASA R3930's for the Apollo program had a vernier on the BFO and other stuff.]

Much grit and stiffness in the geartrain. To be expected; the geartrain has never been rebuilt. SO...overall I would have to rate this receiver as a non-basket-case suitable candidate for restoration.

Date: Mon, 14 Sep 2009 12:17:34 -0500
From: <ka9egw@britewerkz.com>
Subject: [R-390] TM11-5820 294-35/2

Anyone know what "TM11-5820 294-35/2 Verified 21JAN1975" might refer to?
That's what's on the "Modification Data" sticker on my 390A.

Date: Mon, 14 Sep 2009 13:19:36 -0500

From: <ka9egw@britewerkz.com>
Subject: Re: [R-390] TM11-5820 294-35/2

Found it:
****
***
URGENT
Department of the Army Modification Work Order
MWO 11-5820-294-35/2 Modification of the Radio Receivers R-390/URR and
R-390A/URR to Eliminate Spurious Radiation
5 October 1959

Purpose of modification is to eliminate continious radiation at 340 mc as a result of parasitic ascillations, by connecting the suppressor grid to the cathode of the local audio output tube V603.

R-390/URR: Unsolder and remove the jumper lead connected between pin 2 and fround of tube socket XV603. Connect and solder a suitable length of No. 22 AWG solid wire between pins 2 and 7 of tube socket XV603.

R-390A/URR: Unsolder and remove the jumper lead connected between pins 2 and 4 of tube socket XV603. Connect and solder a suitable length of No. 22 AWG solid wire between pins 2 and 7 of tube socket XV603.

Date: Mon, 14 Sep 2009 14:52:18 -0500
From: <ka9egw@britewerkz.com>
Subject: [R-390] my [KA9EGW] 390A update

Well, after staying away from other radios and spending a day off out in the other shack with the 390A, I conclude there is nothing *broken* per se about
this radio, merely that it is filthy, the gears are all gummed up and scratchy, and that it requires a careful alignment, whatever mods are best to incorporate the 100-ohm meters, and whatever upgrades [caps in particular] are indicated to avoid known problem areas. I am much encouraged. I've spent a lot of time on the Web this weekend grabbing whatever I can find pursuant to the 390A restoration process.

Date: Mon, 14 Sep 2009 17:51:12 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] my [KA9EGW] 390A update

Take that dirty receiver out to the table on the lawn and give it a bath. Then just let it dry out over night.

The easy way to clean up the gear train is lots of compressed air with a swizzle stick.

There is a fiber bearing on the antenna trim shaft. Do not get it saturated with any thing as it will short out the antenna circuit and you lose the signals.

Best is to just hang the front end of the receiver off the edge of the table and run the solvent down through the gear train. Then turn the receiver up side down and repeat the process. Some solvent then lots of air.

Then you can wash up the rest of the receiver and get it cleaned up.

You can pull the decks and give each a bath separately.

If she understands, or travels off without you, you can put the decks into the dish washer. This works great.

You will need to realign every thing after you give it a bath, so you may as well just give it a bath. The season is not to far advanced and you can still put a nice warm afternoon into it out on the lawn.

Once you get the receiver gear train cleaned out and relubed, You will enjoy it much more. There is nothing like feeling your receiver gear train grinding away in crud. It just makes you want to leave the radio set rather than enjoy it. Even a clean well lubed receiver weak signals is more fun than a dirty receiver.

Date: Mon, 14 Sep 2009 18:11:58 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] R-390A s/n4214 [8719-p-55] known issues

Loose wire are not a good sign. You may or may not have problems in the antenna relay circuit, and it was just easier to clip the wires loose from the relay than to fix the real problem.

The relay is de-energized when receiving signals. No need to add the relay coil field to the weak signals. In CAL. the signals should be shorted to ground. Dial up WWV and set the receiver to CAL. WWV should be lost to a cal tone. AM broadcast does sound much better at 16KC than 2KC. Fidelity is not a R390/A strong selling point. There are things you can do to one receiver if you really are into short wave reception with the receiver. You have a bit of work but that's just part of the hobby.

Date: Mon, 14 Sep 2009 17:38:01 -0500
From: <ka9egw@britewerkz.com>

Subject: [R-390] [KA9EGW] progress

Well, I attacked what is [for me] the scariest thing first--PTO endpoint adjustment. Piece of cake. I don't know if my rx is typical, it's a Collins 8719-p-55 unit, but there's an original [anodized bore same as the rest of the chassis] hole in the exact right spot in the subchassis so if your screwdriver is the right length and diameter [it is now] nothing but the endpoint screw cover plug [missing on my radio anyway] need be removed. I could make another one, or several, if I had the dimensions. Well, it took about 20 minutes to get it within a couple-three hundred cps, such that backlash is now the bigger linearity issue...good enough for now and lots better than the 5 kc it was off. [it was 1000.5-kc-worth-of-turns for 1000 kc when I started].

Which creates a new problem. I have exactly 1000.3 kc from a reading of x.002 mc to +x.002 mc. The pto is doing close enough to 1000kc-in-10 turns for now, but it seems that the 'zero adjust slipper clutch' [dunno the right name, it's the wave washer thingy the 'zero adjust' mechanism compresses] well anyway it quits slipping before i can get any closer than reading 2kc high across the band. If I could get one end spot-on the other'd be within a couple hundred cps and I'd be happy for now. I can easily use the zero adjust to go to reading 20kc high across the band, then it runs out of range in that direction too.

It's almost like a gear slipped a couple teeth. Next I will check that the nominal 70kc of overrange is even split between the ends of the range. If it isn't, what do you guys recommend? Or should I not worry about it further at this preliminary pre-resto checkout? Gads, I hope I explained that right.

Date: Thu, 17 Sep 2009 10:06:11 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] Yard sale find

Equating price and value is sometimes a tricky business. In the past when I've had equipment that I no longer needed, I often found that if I told people "take it it's free" then nobody wanted it. The instant I put a price (any price) on it, folks are beating down the door to buy it. Perhaps this guy had tried to give it away for years then succeeded through the sales venue :-). The important thing, price or not, is it has a good home.

Date: Thu, 17 Sep 2009 12:43:26 -0400
From: "Gary" <xfrmrs@roadrunner.com>
Subject: Re: [R-390] Yard sale find

Reminds me of the time my xyl and I had stopped at a yard sale. Come to find out the gentleman had passed away and was retired military. Some

how the conversation turned to radio and I was escorted to the garage where there sat two, yes two, SX-88 Hallicrafters. I was told that they were going to the dump if I didn't take them. Well, you didn't have to twist my arm to much to load them up in the Yukon.

Date: Tue, 22 Sep 2009 12:16:19 -0400
From: Bill Kulze <wak9@cornell.edu>
Subject: Re: [R-390] Yard sale find

>> so I said twenty dollars and the rest is history.

Wow! And I thought I got my 390a at a good deal. Back around '90 I was working during a rough time as a cb tech for a car stereo place in So Cal. I got to know some local guys and did some side work. One guy worked as a forklift repairman and one of the places he worked was a big surplus place in San Fernando Valley, can't think of the name, but it was a big outfit. I guess they had the radios stacked pretty near to the ceiling. He traded some work for a couple and I did an alignment on his CB for one of them. I knew what it was because it was one of the radios they taught us repair on in the AF. It had one corner of the frame bent in the back as if it had been dropped. The only thing I found wrong with it was the BFO only gave a very high-pitched beat. I took the can apart and found the slug had come off the shaft. Glued it back on and it's been fine ever since.

Date: Tue, 22 Sep 2009 11:45:15 -0700
From: "Dennis Deaton" <wa6acc@verizon.net>
Subject: Re: [R-390] Yard sale find

I believe I've got you all beat. I got my R-390A for free. Mine is S/N: 433 from the first contract (14214-PH-51). I first saw this unit when I was in high school in the Spring of 1963. The school had acquired it through some defense department give-away to high school industrial arts programs. Our electronics teacher had set it up in the school's ham station in the electronics lab. It was paired up with a Heathkit DX-40 and VF-1 as a CW/AM station (talk about an odd couple!). I went on to college to major in engineering while my best friend in school went on to major in industrial arts. Later he ended up teaching electronics in our old high school. He progressed up through the ranks to become chairman of the IA department before he retired a couple of years ago. Back in the late 70's / early 80's he was told by the school's principal that they were moving and down-sizing the IA department to a different campus and that he needed to dispose of nearly all of the equipment. He called me and asked if I wanted the receiver. It took only about 2 microseconds for me to respond - YES! All I had to do was drive down and get it. So it's been a part of my station ever since. I'm in the process of rebuilding it now. Once complete, I'm pairing it with a (talk about another odd couple) Johnson Adventurer to

make a neat little CW station.

Date: Tue, 22 Sep 2009 19:19:15 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: Re: [R-390] Yard sale find

Hello All, I'm right up there with Dennis. I used to work in a shop repairing marine electronics. Across the hall in the engineering dept was this R-390A. It was tuned to the local 50,000 watt standard broadcast station all day long.(a shirt pocket transistor radio would have done the job!) Anyway, I used to go in there after lunch and "fondle" it. I only worked there for a year or so and moved on, but my boss and I are still friends. About 5 years after I left the company they were dissolved and everyone was let go. My ex- boss called me one day and said "get over here, I have something for you" . So I went to his house and there was the R390A with the Army TM on top. Here load this in your car! Didn't take long to move it! It' a Collins s/n 501, also contract#14214-PH-51. I have had it since 1988. 73's Ross W1EKG

Date: Tue, 22 Sep 2009 15:30:41 -0400
From: Adam Vaughn <AdamAnt316@comcast.net>
Subject: Re: [R-390] Yard sale find

emerges from hiding

My story is similar to yours, Dennis. I discovered an R-390A, an R-392, and an R-48 (early VHF receiver, I think) hiding in the back room in the electronics shop at Nashoba Valley Technical High School back in 2000, when I was a junior there. Apparently, they'd been brought there by a former instructor in the late '70s or early '80s. There apparently had been two or three other R-390As at one point, but those had 'disappeared' over time, leaving these three. None of them were said to work (probably why they'd stayed behind). I asked about them, but wasn't even allowed to so much as test them. All I could do was twiddle the knobs, and marvel at the 'digital' tuning mechanism.

A couple of years later, spurred on by a friend, I decided to go back and see whether or not they'd be willing to get rid of them. The shop was in the middle of being moved to a different section of the school, so I had a bad feeling that they might've ended up in the dumpster along with the other stuff in that back room. When I arrived at the shop, after greeting me, the first words out of the mouth of one of my old instructors was, "Hey, Adam, you want these old radios?" I proceeded to haul the trio out to my Dodge Spirit, and the rest, as they say, is history...

Date: Wed, 23 Sep 2009 02:33:39 +0000 (GMT)

From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] Yard sale find

Nah, you can't beat this one! The guy who called me to remind me to re-new my Amateur Radio license got into a conversation with me about radios. He said his station was all Solid State and he had no use for tubes. He said he had, not one, BUT TWO, R-390's sitting under his bench that he wanted to get rid of but they were too heavy for him to move and if I wanted them I'd have to carry them out. Yeah, like I need to finish this story, one sits on the bench, in my cabin, the other is in,..... the stash.

Date: Wed, 23 Sep 2009 02:51:56 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: Re: [R-390] Yard sale find

Well, at least so far, no one has been paid$$ to haul one away...

Date: Tue, 22 Sep 2009 23:39:41 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Yard sale find

Ok, this did not happen to ME, but to a friend of mine: He'd seen a Collins 32V2 or some such transmitter sitting on the loading area of one of those multiple vendor antique malls and located the owner. He made a reasonable offer for the thing and was feeling very good when the fellow said "Ok .... but.... you also have to take that other big black thing in my yard that's too heavy for me to move."In the fellow's back yard, pulling back the tarp revealed ... (are you sitting down?) ... a KW-1. "Well, this thing is really heavy, but I'll be glad to take it out of here...:

Date: Wed, 23 Sep 2009 06:58:58 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] Yard sale find

It happens. I got three R-390A that way, one from an SWL whose XYL told him either it went or he did, and two more from an ex-MARS guy who wanted some garage space. I actually _bought_ my R-390, from Rick Mish, so it doesn't count towards the free radio census, but I can survive that.

Date: Wed, 23 Sep 2009 09:14:21 -0400
From: "Alex" <alexmm@roadrunner.com>
Subject: [R-390] Another yard sale find tale

While we're playing "Top This," here's my story: a few years ago I got a call from a ham in Portsmouth, New Hampshire who said he had an R390A for me, but it was a real mess. I went down to look at it, but he wasn't home. He

had left it in front of his garage, with a note attached saying "please take this away." It was not an R390A, but an R390! It had been in a house fire, and was totally blackened. When I opened the cabinet there was a mouse skeleton inside. However, a thorough cleaning and disassembly/re-assembly (including pulling all those beautiful RF deck coils out of those miniature silver-plated banana plug sockets) brought it up to its original look and function. All the tubes checked good. I did an alignment and it worked FB. It's still in my shack, and performs beautifully.

Date: Wed, 23 Sep 2009 09:06:56 -0500
From: Robert Nickels <ranickel@comcast.net>
Subject: Re: [R-390] Yard sale find

I can't one-up a found R-390! (Although a neat RBB did show up in my driveway one day, so it was not only free but included free delivery!) But I am seeing an increasing trend for usable goodies to be left behind at hamfests recently. Maybe it's the hassle of having to pack and ship, or just the fact that there are fewer of us who know what some of the older gear even is, but it pays to keep an eye on what's sitting out by the dumpsters. For example, last weekend at Peoria I spotted a neat looking wooden box by the trash, which turned out to be a Supreme model 562 "Audolyzer", which is a tunable voltmeter/signal tracer that covers from 95 khz thru 14 mhz, including a built-in VTVM, AF amp, and good sounding speaker. Best of all, someone had previously recapped it with orange drops, so with a new line cord (and fuse), it was plug-and-play. A very neat piece of test gear!

A buddy also gave me a 2.5 amp Sola CVT, saying he was going to throw it in the trash rather than haul it home. I've seen good meters going for under a buck and lots of parts like variable capacitors and coils by the boxful, and lots of older test gear sold for less than the cost of the tubes inside, much less all the other usable components. One mans trash....

Date: Wed, 23 Sep 2009 10:01:24 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] Yard sale find

I worked with a guy and the conversation turned to radios one day. He said that I must know about that stuff and that I should have been at his house last week. He said that his mother had given him a 'new' HQ-180 that didn't work, and shocked him when he tinkered with it. He put it on the street for the trash collector. This is what he actually said next, "What's wrong, are you okay? You suddenly look very sick."

Date: Wed, 23 Sep 2009 11:17:43 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] Yard sale find

A lot of "TV radio repair shop" type equipment that is perfectly usable, but by no means modern lab-spec calibrated type equipment or even 60's era lab type equipment, has been readily available for the past 10, 15, 20 years. 20 years ago it was available because the shop was upgrading but in the past decade or so it's available because the shop went out of business. I think that as the very last TV repair places close down that this stream will dry up.

Date: Wed, 23 Sep 2009 15:32:41 +0000 (UTC)
From: stephenruggles@comcast.net
Subject: Re: [R-390] Future Values???

Your perspective should spark some interesting debate. I hope you are incorrect, but fear you might be right. I will say that Ham Stuff on Craigslist seems to disappear pretty quickly, even at prices higher than those paid at a ham fest. I sure haven't had the luck some of the others on this list have had...to have free R-390A's fall into their laps? I just paid $475 for a well-cared-for 1958 Motorola R-390A with after-market cabinet and speaker with an original TM. I'm happy as a clam! Just please don't tell my XYL this stuff might be worthless in twenty years!!! I guess I'm looking forward to the "being overwhelmed" part of your scenario.

Date: Thu, 01 Oct 2009 14:10:02 -0500
From: Steve Kent <steve.kent@att.net>
Subject: [R-390] S&W R-390A, Update...

After a long wait, I've finally gathered up all the parts that I need to at least get close to plugging this beast in. Earlier I replaced the missing 455kc crystal in the IF deck. Why was it was missing? Who knows. This week, I finished rebuilding the 30 and 45 uf multi-gang caps and testing the mechanical filters which thankfully seem to be OK. Last night I installed my new L505 choke, R508 2.2K, C511 5000pf, C553 0.01uf and replaced the notorious leaky corroded 8uf in the audio section with a 10uf @ 35v Sprague axial. Pulled the PS section to give it a look over and guess what? I found CR801 & CR802 underneath V801 & V802! So I pulled V801 & V802 out and set them aside. Diodes checked good. Seems like someone saw empty tube sockets and stabbed two tubes in. It looks like the socket bases were bent and then un-bent. I also replaced some missing tube shields throughout the receiver. Tonight, I will replace the three broken tuning slugs; hopefully I can get the two old ones out easily, one is missing. More importantly, I will check and double check all of my work done in the IF section. I am getting pretty close to bringing this thing up on the variac.... Maybe tonight?

Date: Thu, 1 Oct 2009 15:32:23 -0400

From: Paul Anderson <paul@pdq.com>
Subject: Re: [R-390] S&W R-390A, Update...

Congratulations!

> I am getting pretty close to bringing this thing up on the variac....
> Maybe tonight?

I thought the purpose of doing such a thing was to help reform the electrolytic capacitors, but you just rebuilt those with new, so there doesn't seem to be any need to use a variac unless you really, really like variacs for some reason. I do, by the way, but I probably won't coddle my R-390A's that way again... :)

Date: Thu, 01 Oct 2009 14:47:15 -0500
From: Steve Kent <steve.kent@att.net>
Subject: Re: [R-390] S&W R-390A, Update...

Well, yeah, sort of. The caps that I put in are new-ish surplus pulls, but they do bear late 1980's date codes, so I figure it wouldn't be a bad thing.

Date: Thu, 1 Oct 2009 18:04:24 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] S&W R-390A, Update...

Common practice was to bend the tube shield bases over to keep tubes from being plugged into the sockets after the diodes were installed. Some owners just never did get the word that it is common to solid state rectifier tubes. Thanks for the up dates. Is nice to read of the progress being made to bring another receiver back into operation and restoration.

Date: Thu, 1 Oct 2009 23:17:12 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] S&W R-390A, Update...

Reform the old-ish caps with a variable power supply and a 100 K resistor. I'll send you my notes on how.

Date: Fri, 02 Oct 2009 03:15:00 -0500
From: Steve Kent <steve.kent@att.net>
Subject: [R-390] S&W R-390A, It's ALIVE!

After checking everything twice and extracting a slug from a transformer and replacing three slugs and wiring up the variac, I caught my foot on the Ethernet cable that was wrapped around my right shoe and flung my laptop off my bench and on to the concrete floor cracking the LCD screen.

Wonderful! At least the LCD's last image displayed was the Y2k manual so it went out in style.

So after a few, well many, choice words, I calmly hooked up my audio transformer, speaker, an antenna and brought the voltage up slowly.

Believe it or not, it works! Mostly.... The dial calibration of off by about 9kc, I see no action out of the meters and the sensitivity, in this non-scientific test, is generally not very hot. So it needs an alignment at minimum and some troubleshooting on the meter ckts. There are some other strange things going on. It seems like certain 'ranges' on the KC dial are noisy, almost like the noise tracks the mechanical rotation of the knob. It also seems like when switching between AGC and MGC, the RX goes quiet for about 30 seconds, sometimes. Need to check this out another night.

Date: Fri, 2 Oct 2009 06:12:09 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] S&W R-390A, It's ALIVE!

> around my right shoe and flung my laptop off my bench .....

That would have to improve lots to just suck hard, but odds are that you can use an external monitor. LCDs are pretty cheap and not at all hard to replace. Google for your lapdog's model number and see what you can find. It's a PITA that the lapdog's gone

> So after a few, well many, choice words, I calmly hooked up my audio
> transformer, speaker, an antenna and brought the voltage up slowly.

Look up "tenterhooks". Or don't, if you know the word's meaning.

> Believe it or not, it works! Mostly....

There _are_ certain chunks of spectrum -- here, at least -- that are noisy all the time. The noise shows up on every rig I have, and is easily observable on a spectrum analyzer. Is this what you're seeing, or is it that the same KC area(s) for every position of the MC switch? I've got one R-390A that does the mute-for-30 when I move the AGC knob. I haven't dug into the thing yet, and the rest of it was working fine, so it's a minor annoyance. You done good, OM, and I hope you restore the the lapdog to full capability soon. Very 73, de

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Date: Fri, 2 Oct 2009 08:53:39 -0500
From: Dave Merrill <r390a.urr@gmail.com>
Subject: Re: [R-390] S&W R-390A, It's ALIVE!

Check the mechanical alignment between the PTO and the RF deck - the procedure is in the manual. If it is off, you'll have a severe performance hit.

Date: Sun, 4 Oct 2009 21:40:08 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] tip re dry transfers (OT)

We all have those press on labels that tend to dry with age. You set the sheet over the panel front, rub with a pencil and the number or label is supposed to transfer. When it falls off or moves... very frustrating to say the least

I have a suggestion: clean off the surface with a mild non-aqueous solvent. spray a light coat of thin clear laquer on the panel. When it is almost completely dry, then do the transfer. The slightly tacky panel will hold the transfer where you want it.

A final light clear laquer spray on the finished label seals it in place for use.

The finished product looks a *lot* better than Dymo labels.

Date: Thu, 8 Oct 2009 19:11:25 -0500
From: "Barry" <n4buq@knology.net>
Subject: Re: [R-390] tip re dry transfers (OT)

Laser-printed wet-transfer decals.
I made a dial scale for a Simpson meter and it looks great.

Date: Thu, 12 Nov 2009 19:30:53 -0600
From: Robert Nickels <ranickel@comcast.net>
Subject: Re: [R-390] Average Ham Shack

I recently discovered an eBay merchant named Mark Palmquist (eBay seller ID "jmpalm") who makes repro dial covers for antique radios, and am very pleased with the one he made for my Multi Elmac PMR6A receiver. You're in luck! He has the RBO dial cover listed as a standard product, at a very reasonable price: *http://tinyurl.com/yzxp9gf
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Date: Thu, 19 Nov 2009 12:18:33 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Things to know

I'm going thru my 52 Collins 390A...

Following an earlier post from Roger R, I took the time to pull each tube and swab out the tube socket contacts with deOxit using a tiny dental

brush ($4 for eight). Also swabbed out each m-BNC female cable end.

What a difference! My carrier level meter jumped from 10dB to 60dB on a test signal. Changed nothing before and after this simple cleaning. You just can not see see crud that might accumulate in a tube socket.

Date: Sun, 13 Dec 2009 12:43:09 EST
From: SHELLY199@aol.com
Subject: Re: [R-390] yellow crimp connector

Does anyone have a source for the yellow shield crimp connectors used for the R390A. These would be the yellow crimp connectors for the shields of the cables going to the audio and RF Gain pots. I've looked everywhere andcome up with nil.

Date: Sun, 13 Dec 2009 14:27:09 -0500
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] yellow crimp connector

Raychem makes a piece that will serve your needs. This is a piece of heat shrink tubing (clear) with a solder preform and a short pigtail installed. You prep the cable and slip this assembly over the shield. Then you shrink the tubing, the solder preform melts, soldering the pigtail to the shield. You can achieve the same results by soldering a pigtail to the shield then covering it with shrink tubing.

IIRC the crimp device is multiple parts. There would be a piece that slips under the shield and another that slips over the shield and you place the pigtail between the shield and the outter piece (ferrule). In the case of the R-390 cables, the ferrule has a yellow plastic cover as in an insulated crimp lug. The yellow color usually indicates the inner diameter of the ferrule.

If I were to do this, I would prep the shielded cable and slide a piece of Teflon tubing under the shield. The Teflon tubing is to insulate the conductors in the shield from the soldering temperature. Then I would solder a pigtail to the shield using extra flux if the shield is not real shiny. The extra flux is to clean the shield copper as quickly as possible to minimize the soldering time. I would then remove the excess flux with alcohol and place a piece of shrink tubing over the exposed shield and solder connection. I would then shrink the tubing and call it done.

Date: Mon, 21 Dec 2009 19:13:26 -0500 (EST)
From: JAMES BRANNIGAN <jbrannig@optonline.net>
Subject: Re: [Collins] 32S-3 advice needed

I duplicate the voltage and resistance charts in an Excel spreadsheet. For

each tube/pin I insert a cell for the measured value and another for the difference. The difference cell contains a formula to display the difference as an absolute value.

If the difference is greater or less than a stated percentage i.e. 20%, the cell presents in red. If all the difference cells are referenced to one "percentage" cell, various percentage differences may be tested. The red color makes it easy to spot potential problems.

Date: Fri, 25 Dec 2009 06:16:07 -0500
From: "Michael, W1RC" <subs@w1rc.net>
Subject: Re: [R-390] FS: NAVSHIPS 0967-063-2010 R-390A Manual Reprint

I had several people asking for this manual and, despite my earlier statement to the fact that I would not make any more reprints I have decided to accommodate all requests for a copy. Fortunately I have a bit of time over the holidays to do it. I am asking $40.00 including postage for the manual reprint, unbound. If you want it bound with wire coil (lays flat on the table) add $3.50. So if you want one now's the time to get one.

Date: Thu, 14 Jan 2010 10:14:40 -0600
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] R-390A Alignment Question -- Tisha Hayes

You mean PM Magazine with Connie Rodd? <snip> That's a long adress that ends in 'psm'...just to be sure you get it all. This is the complete index of articles by year. This is a collection of all the magazines from 1951-1971. They did a good job on them.
http://dig.library.vcu.edu/cdm4/index_psm.php?CISOROOT=%2Fpsm

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Date: Fri, 15 Jan 2010 10:30:40 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] VCU library

Quick tour thru the VCU Library Collection
Saw articles that may of interest to the group:

PS page
R390 knobs

124 49
R392 dial lock

123 44

audio caps

123 44
R108-R110

139 59
Tubes

140 22
R390 break-in

151 44
R390 knob screw

167 47
TV-7U tester

200 47

Makes for interesting reading

Date: Fri, 15 Jan 2010 12:19:18 -0800
From: Dennis Wade <sacramento.cyclist@gmail.com>
Subject: Re: [R-390] VCU library

Did you find a search tool? or did you browse the indices? I spent a few minutes in the VCU site but didn't discover a search tool right away.

Date: Fri, 15 Jan 2010 15:26:46 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] VCU library

I didn't find a good search tool either, but did browse to the following: http://dig.library.vcu.edu/cdm4/document.php?CISOROOT=/psm&CISOPTR=7685&REC=10 Click on page 47 for the article on the screws for the R390 knobs.

Date: Fri, 15 Jan 2010 17:53:11 -0500
From: "A Parker" <anchor@ec.rr.com>
Subject: Re: [R-390] VCU library

It's not a search, maybe you already have this, if so, forget all after hello -- I wasn't into it enuf to browse thru all the articles, but Wei Li helped a lot with specifics,

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Date: Sat, 16 Jan 2010 00:42:20 +0100

From: Heinz Breuer DH2FA <dh2fa@darc.de>
Subject: Re: [R-390] VCU library

Well here is the TinyURL: http://tinyurl.com/ybbgd8q

Date: Mon, 18 Jan 2010 10:03:35 -0600
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] VCU library

The magazine brings back memories. There was detailed info for some pieces of equipment from time to time. How's things going up there, Al?

Date: Mon, 18 Jan 2010 18:46:43 EST
From: flowertime01@wmconnect.com
Subject: Re: [R-390] VCU library PS

>Well here is the TinyURL: http://tinyurl.com/ybbgd8q

Thank you, I had no idea the PS magazines were all on line. Open up a copy or two and read through one. These things covered every thing in the Army and some Navy Air Force and Marine items shared within the services. Any time a maintenance problem came up, it was covered in an issue. It got the word out. Some of the articles were your only clue how to get a part or fix a problem that was never going to get corrected in the TM's. Nice reading every month.

Date: Mon, 18 Jan 2010 16:32:56 -0500
From: "Jerry Stern" <jsternmd@att.net>
Subject: [R-390] R390 from Newbie

Just got a R-390 that was working OK by history and restored by Don Heywood a few years ago. I am just getting around to begin to use it and have found some things not working right. Would appreciate a 'starting' point in helping me know where to start looking besides the usual tube tapping/replacing that I am familiar.

Here's what I am finding first the basic issues:

1) receiver sensitivity not anywhere as good as my (unrestored) EAC390A.

2) antenna trim seems to have very small effect in peaking any signal

3) only small movements in the carrier meter in response to tuning signal and/or antenna trim knob. Tthe carrier meter is not the original one but a Simpson, white face, model 182, 1 mA but was reported to be working FB previously.

4) all signals much louder when function switch moved from AGC to Calibrate

5) Calibrate tone Ok on all 100Kc spots but compared to my 390A very low output so when bandwidth switch down to 2, or 1 cannot hear it anymore

6) Line Level Vu meter appears to be working OK per basic testing in the manual.

I am using a balanced antenna adapter to a 20m tuned antenna and I am using 14mhz signal strength comparisons as I switch the antenna adapter between the 390A and 390 so I am comparing what should be same signal strengths between the R390 and 390A (and the adpater seats deeply and solidly). Any starting point or tips would be greatly appreciated.

Date: Mon, 18 Jan 2010 18:35:49 EST
From: flowertime01@wmconnect.com
Subject: Re: [R-390] R390 from Newbie

Welcome,

>1) I am just getting around to begin to.....

http://mailman.qth.net/pipermail/r-390/ R390 archives
http://r-390a.net/Y2K-R3/index.htm R390 frequently asked questions.
http://www.r-390a.net/ R390 home page.
Find a copy of the Y2K manual, much more readable than the original TM.
Find a copy of TM 11-5820-358-35P also a PDF file on line at R390
Read on the freq ask question to start on the alignment testing procedures.
Do read the pearls of wisdom.

>2) antenna trim seems to have very small effect in peaking any signal

This is mostly an antenna marching problem. But other statements you make
lead to a bad antenna relay.

>3) receiver sensitivity not anywhere as good as my (unrestored) EAC 390A.

Tubes and alignment. Likely as always with tube receivers, it needs some new tubes. Just because it test good on a tester does not make it a tube you want in a R390/A.

>4) only small movements in the carrier meter in response to tuning signal and/or antenna trim knob.....

More clues you need some tubes and alignment.

>5) all signals much louder when function switch moved from AGC to Calibrate

OOPS, there should be no signals when in cal. You expect only cal tones. These may or may not be loud, depending on many things. If you really have "signals" while in calibrate you have an antenna relay circuit problem.

>6) Calibrate tone OK on all 100Kc spots but compared to my 390A very low
output so when bandwidth switch down to 2, or 1 cannot hear it anymore.

This is an alignment problem BFO and VFO are collectively more than 2Khz apart.

Time to read the Y2K manual and get started on an alignment and tube swapping. You only need a signal generator and volt meter to get the receiver aligned. More stuff is good and can make the job easy. (freq counter comes to mind). If you do not have a tube tester then find a shop that still has one and sells tubes. This is not an easy thing to do. Any cheep tester you can find
will test the tubes in an R390 for shorts and conductivity. This is as good as needed. Real tube testing comes by swapping tubes into the same socket of the receiver and comparing them to each other. Read some Pearls of wisdom for procedures on getting this done. You can tune WWV at 9+000 and 10-000 and check the VLF band over run or under run. You expect it to be exact, but may find it off by 3 or more Khz. This is not your most important thing to try and fix first. Let the VFO go until you get the sensitive and alignment up to par. Look under the cover of Z501 and ensure there is a 455 crystal in there.

Hang a DC volt meter on the diode load.

Hang a 600 Ohm 1/2 watt resistor (2ea 1200 1/4 watt resistors in parallel) on the local output terminal board.

Then hang an AC volt meter with a DB scale on the same terminals. If the meter does not have a DB scale no problem, you just get to do some math. Go to radio shack and look at a meter with a DB scale you will see the meter just takes the math out of the process.

Start with 455 into the RF deck at E211, walk the generator into the crystal with the IF band width set to 0.1KC

You can then zero beat the BFO against the generator.

You need to set the IF gain mid scale and back the generator down until you get about -7 volts on the diode load.

You should have just under 1/2 watt out on the audio with the generator modulation turned on and set to about 30%.

Set the IF band width back to 2KHz.

Set the BFO off.

Turn the modulation off so you just have CW.

The diode load will not change.

The audio output needs to drop 30 DB.

If the receiver will not do this, its time to start swapping IF deck and audio deck tubes until you do get at least 26, 27 or more DB and the meter lays nice and still on the low end. If its bumping up, you still have a pop corn noise tube or tubes to find and get swapped out. Just do the best you can with what you have on hand today and go on. If you have good generator you need to put 150uv into the IF deck using the adapter and short cable. Then you are looking for exact numbers. W. Li put this all in the Pearls of Wisdom. It's in the TM , very messy to follow.

Once you get the IF deck and Audio deck working well 30 DB signal to noise and 1/2 watt out. the you can move back to the RF deck. The Y2K manual will walk you through all of this.

Date: Mon, 18 Jan 2010 20:44:00 -0500
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] R390 from Newbie

Re: I am using a balanced antenna adapter to a 20m tuned antenna.....

Someone MAY have done the antenna wires swap thing to use the UNbalanced input and your use of the balanced input is not getting the signal to the right place. Check the wee cables going to the antenna relay.

> 4) all signals much louder when function switch moved from AGC to Calibrate

They should disappear mostly.. in CAL the antenna relay is operated to unhook the antenna input (and ground it, I think).

> 2) antenna trim seems to have very small effect in peaking any signal

Connect an antenna to the first test point in the RF deck to see what happens. (It's a little pin jack near the 1st IF amp tube).

> 3) only small movements in the carrier meter .....

Check the IF Gain pot setting.. do the IF gain set cal procedure (then later do it again with Chuck Rippel's method).

> 5) Calibrate tone Ok on all 100Kc spots .....

The RF is not getting into the radio correctly.. the CAL signal goes in right at the antenna connection.

> 6) Line Level Vu meter appears to be working OK per basic testing in the manual.

Good, but worry about that later on.

Date: Mon, 18 Jan 2010 23:05:22 -0500
From: "Jerry Stern" <jsternmd@att.net>
Subject: Re: [R-390] R390 from Newbie

Dear Roy, Don and all who have responded,

Many thanks for getting me started. Don Heywood also contacted me by email (and telephone !!!) as he worked on this radio back in 2002 for the previous owner. Don gave me similar advice and the first problem is indeed with the Antenna relay. Although the relay visibly moves correctly when switching in and out of Calibrate, with antenna connected to balanced input the relay does not disconnect the antenna but with unbalanced input the relay works correctly. I will do some very gentle Deoxit contact cleaning and double check the coax cables are connected correctly. Don helped me zero the carrier meter and I will go through an alignment and as needed replace any tubes along the way. Starting with a problem is a sure fire way to jump into understanding a radio and I expect to ask you all a lot more questions along the way.

Date: Wed, 20 Jan 2010 21:56:15 +0200
From: "Paul Galpin" <galpinp@absamail.co.za>
Subject: [R-390] Out of the closet!

Some many years ago, I was given a 390A to repair - symptoms: dead. With help from this list, I got it going again, and, on the day of moving to my present retirement address, I was offered it at a good price. Unfortunately, finances were very doubtful at that stage so I had to pass on it. Since the I have been lurking on the list, drooling with envy! Lady Luck has been around, and today I took possession of 2x 390As, one working, the other not, that's what the seller says. OK, I know about the obvious things, like C553(?) to protect the filters, but what can I learn from the ID plates?

"Working" has

Ser No 2114
Imperial Electronic Corp
37856-PC-63

PTO ser No 1551
Dubrow Electronic Industries
Type 798 BM101 this label appears to be stuck over a different previous one.

"Non-Working" has

Ser No 3123
Teledyne Corporation
35064-PC-62

PTO Ser No 7867
Type 798
P???R??STRO???Corp

What does this tell us? The 390A I worked on long ago had the gears smothered in grease, put on by the handful. These two sets that I have just got have very clean gears, with a trace of oil only. Which is correct? Which is typically original?

Date: Wed, 20 Jan 2010 16:40:34 EST
From: flowertime01@wmconnect.com
Subject: Re: [R-390] Out of the closet!

R390/A's are house broken and very clean critters.The lube of choice these days is a synthetic motor oil. Time was when you hung around a Mobil gas station and garbed an empty quart bottle out of the trash can. The empty bottle had enough lube in it to do a gear train very well. This story should give you an idea of where you need to go. Your new gear trains should be nice and smooth. Watch the little rollers on the cam frames and make sure

they are all clean, lubed and rolling. You want a good cap in the IF deck to protect the mechanical filters from a shot of full B+. You need to inspect all the big black fat caps in the IF deck and a couple under the RF deck. These crack and go bad. Mostly as plastic that just has not lasted 50 plus years. There is a small electrolytic in the audio deck on the circuit board that like to leak. Go for an over size 10 - 20 UF replacement. The audio sounds better. It only need to be 25 volts as it is a cathode bypass. If you run the tubes until they fry then you can just replace the cap again. Diodes in the Power supply save a few watts of heat. If the ballast tube is open / missing and no sausage is on hand, the VFO and BFO filaments can be rewired to 6.3 volts AC in the IF deck to save some more heat. Do not over mesh the split gears. One tooth to put tension on the spring is good. More is just grinding gears.

>PTO ser No 1551
>Dubrow Electronic Industries Type 798 BM101
>this label appears to be stuck over a different previous one.

This is just a contract rebuilt refurbish part. No problem.

Date: Wed, 20 Jan 2010 16:01:52 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Out of the closet!

The last PTO is a Progressitron Corp. PTO. It is a conventional "corrector stack" type PTO similar to the Collins, Motorola and Dubrow. The only different design was the Cosmos PTO.

Date: Wed, 20 Jan 2010 16:09:03 -0600
From: Ben Loper <brloper@gmail.com>
Subject: Re: [R-390] Out of the closet!

How do you apply the oil to the gears, I'm lubing a completly dry R-388 and don't want to make a mess of it. How about the slides, no grease there either?

Date: Wed, 20 Jan 2010 17:33:39 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Out of the closet!

Syringe or toothpick, sparingly. I used oil on the slides on my R-388's and 390 series. A little bit of sunthetic oil goes a long way.

Date: Wed, 20 Jan 2010 17:57:35 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Out of the closet!

That you are the owner of two R-390A's...:-)
Standard run of the kennel variety I'm sure....
Have lots of fun with them in your retirement!
Now if one was a Rubinstein you'd be set!

Date: Wed, 20 Jan 2010 19:54:17 -0500
From: Jeff Adams <physicist@cox.net>
Subject: Re: [R-390] Out of the closet!

Dont forget to be careful with the AC input filter and any shorts it may have...

Date: Thu, 21 Jan 2010 11:29:10 -0800
From: "Rick Popovich" <RickP@uei.csus.edu>
Subject: [R-390] R-391 parts Needed - HELP !

This list and group has helped me in the past and the time has come again for me to seek the collective's assistance. I have a Collins R-391 receiver that I have been restoring and have gotten back to working condition. I read some time last year (not on this reflector) that there was a gentleman who was producing or had produced the thumb turn locking screws for the main tuning knobs on the R-391. I don't recall his name but I think I saw it here on this list during a
series of communications on a R-390 topic. If anyone knows who this person is or if he sees this post please contact me off list with his contact info.

This is the only part I am missing to complete my project and need them to be able to test/ run the auto-tune on this receiver. Also, if anyone happens to have (2) of these screws they would like to sell to a good home please contact me.

Date: Thu, 21 Jan 2010 13:33:24 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] R-391 parts Needed - HELP !

Contact Dan Arney here: hankarn@pacbell.net

Date: Mon, 25 Jan 2010 09:21:01 -0800 (PST)
From: Steve Toth <stoth47@yahoo.com>
Subject: [R-390] need Collins name tag for front panel

Does anyone have a spare R-390A Collins front panel name tag they are willing to part with??? Maybe one in the junk box?? If you have one, let me know what you want for it. Fair Radio just contacted me to let me know

they are out of stock on the repro I ordered.

Date: Mon, 25 Jan 2010 12:28:53 -0600
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] need Collins name tag for front panel

Steve, I have them. They are $30.00 each mailed.

Date: Sun, 31 Jan 2010 20:36:39 -0600
From: Ben Loper <brloper@gmail.com>
Subject: Re: [R-390] Off Topic HRO Rebuild

Great work, did you have any issues aligning it since so many parts were changed

On Jan 31, 2010, at 19:52, Tom Frobase <tfrobase@gmail.com> wrote:

> I was at the Belton Hamfest about a year ago and bought a couple of
> really rough HRO receivers. I donated one of the to the Battle ship
> Texas and kept the other. The one I kept was really bad, it made no
> sense to try and get it running it was just too ugly.
>
> Over the holidays I decided to take the time as a "labor of love" and
> gut the radio and rebuild it. I was surprised it took over 4 hours to
> disassemble the radio and clean the solder off of the sockets and
> terminal strips. I took approximately 50 digital pictures to aid in
> the rewiring of the radio. The main capacitor also had to be completely
> disassembled as well. The chassis was stripped, sandblasted and
> repainted. The IF and BFO cans were disassembled and cleaned. All
> existing mica caps were replaced. I used modern resistors and caps
> saving lots of space. I used a medium sized ultrasonic cleaner for
> most of the cleaning using a solution of sudsy ammonia, it did wonders
for
> the aluminum parts and made the ceramic come out pure white. It took
> about 12 hours to rewire the radio Other than a broken internal wire
> on an IF can, it essentially worked the first time. I have an output
> transformer ordered from Fair radio but else than that "IT IS ALIVE!!!"
>
> Here is a link to some pictures, they should be speak for themselves
> HTTP://www.kitparts.com/HRO 73, tom, N3LLL
>
> Yes I know I should using my time for more important things. Just one
> more radio off the trash heap ...

Date: Sun, 31 Jan 2010 20:33:20 -0600
From: Tom Frobase <tfrobase@gmail.com>

Subject: Re: [R-390] Off Topic HRO Rebuild

I was concerned since I used Teflon wire, but it tuned right up. I was looking at the voltage divider for the LO and was thinking I might drop a zener diode in the circuit to provide a little better voltage regulation, although is stable as it is. I was careful to mimic component placement from the original. I did not have the original power supply but I did find a Triad in the junk box. Most everything I put back in the radio I had on hand, sans the 500K linear control which I ordered for Digikey.

Date: Sun, 31 Jan 2010 20:47:56 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: [R-390] Hollow State Newsletter website

FYI, The website that was previously maintained by the late Barry Hauser has now disappeared along with all the .pdf files. I wonder if it was/is backed up anywhere?

Date: Sun, 31 Jan 2010 20:50:52 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Hollow State Newsletter website

I just found another link, includes all issues.

Date: Sun, 31 Jan 2010 20:54:54 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: [R-390] Hollow State Newsletter website new link

Sorry about that..... Here is the link to the HSN Archives:
http://web.webhost4life.com/barryhauser/index.asp?action=page&name=3

Date: Sun, 31 Jan 2010 21:38:18 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Off Topic HRO Rebuild

Cripes, that radio is going to be beautiful ! That is indeed a labor of love.

Date: Sun, 31 Jan 2010 19:49:27 -0800
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Off Topic HRO Rebuild

Thanks for sharing the outcome of your fine work. It is truly inspirational! What a beauty! Also thanks for describing the approach and methods you used to clean, repair, and restore parts. Do you by chance have pictures of the disassembly, cleaning and reassembly of the main tuning capacitor? That seems like a daunting task.

Date: Sun, 31 Jan 2010 20:19:36 -0600
From: Gary Pewitt <garypewitt@centurytel.net>
Subject: Re: [R-390] Off Topic HRO Rebuild

More important? Hah! That's beautiful. That's what should be done to -all- old boat anchors. Congratulations for a job -well done-. 8-)

Date: Mon, 1 Feb 2010 12:39:05 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Hollow State Newsletter website new link

I anyone wants them I have every HSN in PDF format from issue #1 up to issue
#53. Issues 1-12, 13-25 and 26-37 are in digest format (three PDF's). A few years ago I tracked down some of the names of editors from earlier editions and was gracefully given the much older back-issues.

Date: Tue, 2 Feb 2010 07:57:35 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] The "lost" Hollow State News editions

I have sent editions 1-37 of the Hollow State News to the folks who asked. It would be great if someone can put them up on the internet.

Date: Tue, 2 Feb 2010 08:24:13 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] The "lost" Hollow State News editions

They are already there on another website:
http://site298.mysite4now.com/barryhauser/mysqltest2.asp

This must be a mirror site, as the "original" website was taken due to non-payment or renewal on 1-22-10

Date: Tue, 2 Feb 2010 09:24:26 -0500
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: [R-390] The "lost" Hollow State News editions on the web

With Tisha's support, I've put these up on the web at
http://www.trailing-edge.com/~shoppa/hsn/

Enjoy! An

Date: Tue, 2 Feb 2010 09:05:56 -0600
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] The "lost" Hollow State News editions on the web

Also at <http://mikea.ath.cx/indexa.html>
Many thanks to Tisha; everybody enjoy!

Date: Tue, 02 Feb 2010 09:03:07 -0600
From: wf2u@ws19ops.com
Subject: Re: [R-390] The "lost" Hollow State News editions

There are additional HSN issues under Barry Houser's (he became a SK since about a couple of years ago) website, http://site298.mysite4now.com/barryhauser/ and click the Archives button, more issues are there up to #53.

Date: Tue, 2 Feb 2010 12:08:35 -0500
From: <b_hagen@sbcglobal.net>
Subject: Re: [R-390] The "lost" Hollow State News editions on the web

Thank you Tisha.

Date: Tue, 2 Feb 2010 18:30:17 EST
From: Flowertime01@wmconnect.com
Subject: [R-390] R390 Looking for more strange parts.

I could make the 9 pin item work. Thanks for the site link.
http://www.apexelectronic.com/connectors.htm

Date: Tue, 2 Feb 2010 21:34:23 -0500
From: "Jerry Stern" <jsternmd@att.net>
Subject: Re: [R-390] R390 Looking for more strange parts.

Take a look a this 7 pin item on ebay # 190363545248
It isn't pretty but may suit your needs.

Date: Tue, 2 Feb 2010 22:20:10 -0500 (EST)
From: "Richard W. Solomon" <w1ksz@earthlink.net>
Subject: Re: [R-390] R390 Looking for more strange parts.

$11.26 to ship it ?? That's a tad much, but lately over-priced shipping seems to be the "norm" on the "evil empire".

Date: Wed, 3 Feb 2010 00:36:36 -0600
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] R390 Looking for more strange parts.

I have a bunch od 7 pin ceramic bases which look to be the bottom of an enclosed relay. I use them to jumper the regulator tube in my 390

regulator kit. If they would work for you I can send a few along ... Tom, N3LLL

Date: Wed, 3 Feb 2010 00:11:29 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] HSN comment

The past issues of HSN make enjoyable leisure-time reading. I found them very folksy and full of *forgotten* hints and tips re our R390A's. Many were related to modifications, both good and not so good. However, the many authors were brutally honest in their assessments. This list, Electric Radio, and HSN, taken together, make this a great hobby! Thanks to all involved.....

Date: Wed, 03 Feb 2010 10:40:33 -0600
From: wf2u@ws19ops.com
Subject: Re: [R-390] The "lost" Hollow State News editions

There are additional HSN issues under Barry Houser's (he became a SK since about a couple of years ago) website, http://site298.mysite4now.com/barryhauser/ ; and click the Archives button, more issues are there up to #53.

Date: Wed, 3 Feb 2010 14:27:18 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Old HSN Mods

Going through the old HSN archives you find ideas for mods that we would not do today (transistorizing a R-390A, <gag>). It is interesting to look back and see some of the original rationale that went into some of the other mods we accept as good today. I took much interest into some of the intermediary circuit designs to fix the AGC action and the early discussions on the filters. It helps me to understand the thought process and how it evolved over time and multiple editorial contributions from all of the subscribers. Reading the HSN archives and you can smell the soldering iron cooking in the corner, next to the lava lamp.
Sadly so many early contributors have gone SK. Continuing to pass on their written legacy is a type of immortality for those of a bygone era.

Date: Thu, 4 Feb 2010 03:55:30 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: [R-390] Fwd: S/N 1501

Hello R-390 fans, An R-390 found it's way here today, S/N 1501. Aside from a few mice having taken up residence, it's in fair condition. I'll have to

do some cleaning, replace some wire that's been chewed, etc. It was a gift from a fellow radio ham who is thinning his herd. The front panel has a slight green tint to it, looks like original paint. I tried cleaning a few of the racks in my amoniated cleaning solution I use on clocks, and they shined up nicely.(rinsed in hot water, hit with compressed air and heat dried) They look like stainless steel. I'm sure I'll have some questions, but right now I guess I'm just sharing my excitement. The guy who gave it to me said it worked OK a few years ago but only below 8 mHz. I 'll investigate that when I'm done cleaning. Thanks for listening!! Ross ----------
---

Date: Thu, 4 Feb 2010 06:33:46 -0600
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] Fwd: S/N 1501

WayCool, Ross! S/N 1501 of what contract from which contractor? Collins, Stewart-Warner, Other?

Date: Thu, 4 Feb 2010 13:22:29 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: Re: [R-390] Fwd: S/N 1501

Hi Mike, Yes, it's a Collins, contract#14214-PH-51-93. Coincidentally, my R-390A is also a Collins and has S/N 501 (contract 14214-PH-51) Thanks for the reply,
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Date: Thu, 4 Feb 2010 16:26:38 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: [R-390] Fwd: Fwd: S/N 1501

Ooops, I forgot to send to the group, I'll try again!

----- Forwarded Message -----
From: bavarianradio@comcast.net
To: kirklandb@sympatico.ca
Sent: Thursday, February 4, 2010 11:12:06 AM GMT -05:00 US/Canada Eastern
Subject: Re: [R-390] Fwd: S/N 1501

I'm not sure how to post pictures here, but here's the photobucket url. Maybe the picture will show up?? Thanks,
Ross[URL=http://s2.photobucket.com/albums/y29/Bavradio/?action=view&current=DSCF2597.jpg][IMG]http://i2.photobucket.com/albums/y29/Bavradio/th_DSCF2597.jpg[/IMG][/URL]

Date: Fri, 12 Feb 2010 18:37:28 -0600
From: "Les Locklear" <leslocklear@cableone.net>

Subject: [R-390] Hammarlund Historian website about 75% restored

The site has been down, but is partially back up and running.
Thanks for your patience.
http://www.hammarlund.info/

Date: Fri, 12 Feb 2010 22:27:57 -0500
From: Tom Bridgers <tarheel6@msn.com>
Subject: [R-390] WA3KEY's Motorola R-390

In reading about how sensitive Norm's R-390 is, I was reminded of a conversation I had with Rich Mish several years ago. He told me that the Motorola manufactured R-390's were the ones to get because they incorporated the latest circuit changes in the R-390's (non-A's series), and were therefore the best of the best. Now the problem is Rick didn't tell me what those circuit changes were. Anybody know if Rick's comment is on target? If so, does anyone know what circuit changes (improvements) were made? I got the feeling that Rick considers his knowledge about the improved R-390 circuits to be trade secrets. Which I understand. But then, there is a lot of knowledge out among the R-390 group, so maybe one or more you know what these improvements are ... and can tell the rest of us?

Date: Sat, 13 Feb 2010 17:07:17 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] WA3KEY's Motorola R-390

TM come in different flavors with new publication dates. New TM's reflected the new changes in the receivers. My R390 TM is dated 9 March 1962. Any real change would have a modification. So maybe some resistor changed value or cap changed value to provide some more gain or better filtering. You would need to compare schematics from different editions and study for parts value changes. Another source of change would be a different number of turns on a transformer some where to change the impedance match or resulting filter band pass. These parts would still have the same part number but vary from production run to production run. The change could not be great as the parts still needed to interchange from production run to production run. A bunch of changed parts could not accumulate enough change to puts receivers out of minimum performance.

As a production manager you could not just specify a new transformer. You were required to specify parts to published standards. If a manufacture run in a few extra turn to ensure parts meet performance test, we would never know. But it would not be a published change. In time we would find some runs of receivers were better than others. We know that while gear trains are all the same gears, Some models are just a lot smoother than other models and no amount of cleaning and lube will bring to poor gears up to

par. We can imagine the same thing happens with other parts. Caps may be picked to get the better limit. Resistors may be picked to get the better results. Ground points changed from production run to production run. This makes changes in total circuit performance. I think most of it was Motorola tried to better select the big black plastic caps for better value from the beginning. The parts were specified the same. Motorola just tried to get better production parts. A little attention to detail in manufacturing can go a long ways.

As part of the R390 school most of us got to build a 5 tube receiver from a kit. The same kit for every one. Some never worked. Some of us built nice receivers that got many more stations at night. The only difference was in the parts placement and solder jobs. There was a point to this building exercise beyond basic solder skills. The same attention in production can make
some changes in receiver performance.

That MPF stuff slopped all over inside receivers to prevent mold growth was not supposed to effect receiver performance. I do not believe this to be exactly true. Just some ides. I know from years of maintaining receivers on the bench, that all receivers were not equal. No amount of PM could bring some of them up beyond a minimum level of performance. While any receiver would make 20 : 1 not all could get up to 30:1 no mater what you did. The fact that some
receivers could get to 30:1 while other would not does indicate that there were differences. I never though it was special parts in any one production run. I have always considered it parts placement, solder joints and the selection of the original parts. Just better resistors, capacitors and wire coating. More or less stray capacitance and many very small points that added up over
time.

The Motorola builders likely did get it more right in more places than other builders did. I think Motorola did more in line testing and could see where parts placement did effect performance of circuits. Motorola was more performance orientated. I think Motorola could see where a batch of caps or resistors made a difference in production lots. I think Motorola could and did cherry pick parts during fabrication.

No real magic or real parts changes. After you select 50 or so caps along the way just a little better than average and in the end you have a better total sum of parts. Lay out a tube stage with a few PF of less stray capacitance and stage works better than that stage in other production runs. little here and a little there and soon you have a reputation above the rest. Roger.

Date: Sat, 13 Feb 2010 17:11:46 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] WA3KEY's Motorola R-390

Lets start taking photo's of the IF deck and doing side by side of the layouts. IF decks do have sensitive parts but are easier to get into than the RF deck. The IF and RF changes are more likely to produce sensitive changes than the audio and power supply decks.

Date: Sat, 13 Feb 2010 19:23:23 -0600
From: <wb5uom@hughes.net>
Subject: Re: [R-390] WA3KEY's Motorola R-390

Said very well. David/WB5UOM

Date: Sun, 14 Feb 2010 15:51:25 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] WA3KEY's Motorola R-390

I could not agree more! There are a multitude of low-level interactions that most of us pay little attention to: lead placement for one. The list goes on and on. Not so important in the audio and pwr decks, but could be real important in the RF and IF decks, as Roger suggests. Small variances in leakage in critical circuits all add up to impact performance as a whole.

One fellow has even advocated runnning copper braid between all the ground points of an aluminum chassis, in an effort to eliminate ground loops.

I recall hearing of a Collins engineer who built his own R390A out of selected components out of the parts bin. It was said to perform marvelously. It was a retirement gift after years of service I heard.

Date: Mon, 15 Feb 2010 13:12:26 -0600
From: glwebb@gundluth.org
Subject: Re: [R-390] WA3KEY's Motorola R-390

Similar to blueprinting and engine I would think.

Date: Tue, 16 Feb 2010 08:39:21 -0800 (PST)
From: Steve Toth <stoth47@yahoo.com>
Subject: [R-390] OT: dial cord/string

Anybody know a source for dial cord/string? (maybe heavy upholstery thread)
I need to replace the dial loading cord on my R-388.

Date: Tue, 16 Feb 2010 13:58:41 -0500
From: "Al Parker" <anchor@ec.rr.com>
Subject: Re: [R-390] OT: dial cord/string

IIRC, that's not just string, it's wire. I believe it's under pretty good tension, and if it stretches it'll vary the position of the drum, if that's the one you meant.

Date: Tue, 16 Feb 2010 12:31:10 -0700
From: "Lloyd Godsey" <kk7iz@cox.net>
Subject: Re: [R-390] OT: dial cord/string

Just a note: I had to restring a radio a few years ago and didn't have any string handy. My XYL was making jewelery. I got into her stash of "tiger tail", a flexible wire used to string necklaces on. Worked great. Available at any rock shop or jewelery hobby supply. Or maybe I can pick some up and redistribute.

Date: Tue, 16 Feb 2010 13:47:27 -0600
From: Jerry K <w5kp@hughes.net>
Subject: Re: [R-390] OT: dial cord/string

For years I've used a spool of heavy Dacron thread meant for wrapping bow strings (purchased the spool at an archery shop). Dacron is easier to handle and knot than Kevlar-based fishing line, but almost as "non-stretchy". Very wear-resistant, too.

Date: Tue, 16 Feb 2010 15:58:45 -0600
From: "Bill Breeden" <breedenwb@cableone.net>
Subject: [R-390] Subject: OT: dial cord/string

Here are three sources:

http://www.radioantiques.com/supplies.html

http://www.radiodaze.com/dialbelts.htm

http://www.tubesandmore.com/

Put "dial cord" in the search box at the last link above. Hope this helps.

Date: Tue, 16 Feb 2010 20:16:35 -0600
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] Subject: OT: dial cord/string

Never looked but how about nylon covered steel leader at the fishing supply store ...

Date: Wed, 17 Feb 2010 19:51:13 EST
From: Flowertime01@wmconnect.com
Subject: [R-390] R390 Photo Shoot.

I have the camera back and working. My mail is dialup. The reflector does not support adding photo's to the mail. I choose not to have a web page. But I can mail the photo's one at a time to a whole list of you. I will save all of them and do a disk. When the receiver is done I will then make an offer. I will send a disk to any one that would like to post the whole thing for a while on their web site so those that want the photos can download them. What "shots" do you want to see. Let me have some ideas. I have Wallace's R390 laying all over the bench and just out of the bath. I can get photos of any part. As I get the receiver back together and start the alignment I will take photo's of the equipment set up and meter's. Hopefully we can get a power point slide show out of the exercise. I'll try and get us some R390 "photo documentation" to go with the R390/A knowledge we have accumulated. If you ask for a photo or just want on the review list I'll put you on the slow mail list. I'll send you a copy to ensure it's what you had in mind. I'll take this off the reflector and go direct to those with an interest. A couple three mail post a week and photo's and after a month, we should have a pretty good how to and photo gallery for the R390. Some feed back along the way and it should be readable and useable for the R390 owners

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Date: Wed, 17 Feb 2010 21:04:43 -0500
From: "Al Parker" <anchor@ec.rr.com>
Subject: Re: [R-390] R390 Photo Shoot.

I'd be glad to put it all up on my boatanchors website, can do it in the same sort of format I've put my work in, or different if you'd like. Email me pix as you do them, with some narrative, or however is easiest for you, and I can get it together fairly easily I'd think. Take a look at what I've done. Maybe it'll motivate me to work on the 390's I have.

Date: Wed, 17 Feb 2010 21:22:47 -0500
From: Jeff Adams <physicist@cox.net>
Subject: Re: [R-390] R390 Photo Shoot.

I can put them up on my R390A/SP600 website, and add them to the R390/R390A CD ROM if you would like.

Date: Thu, 18 Feb 2010 17:07:53 -0600
From: "Dr. Gerald N. Johnson" <geraldj@weather.net>
Subject: Re: [Collins] 30S-1 Relay hang (demagnetizing tools)

<snip> It is practical to demagnetize that relay. You could try a loop of wire replacing the tip of a Weller soldering gun. Loop the wire around the extended tip of the core of the coil. Power the soldering gun through a variable voltage transformer (a Variac) and after you hit the pole piece with the full field, back off the voltage in a few seconds. That will demagnetize the core. Else with the coil unhooked from any electrolytic capacitors, apply AC probably about 20 volts to get the same AC current as the normal DC current. Reduce that to zero in a few seconds, don't turn the current off with either scheme when its near the full power or you may magnetize the part worse. The Weller soldering gun also works great with magnetized tools that you don't want magnetized. Or if you turn the gun off with the tool in place and full power you can magnetize the tool sometimes. Otherwise without the variac for demagnetizing you just hold the gun power on and remove the tool from the loop to demagnetize it.

Date: Tue, 02 Mar 2010 04:44:52 -0500
From: "Michael, W1RC" <subs@w1rc.net>
Subject: [R-390] FS: USAF Manual Copies for R-390A

I made some high quality copies of the USAF version of the first two volumes of the R-390A manual set. It was a test run to see how they would turn out and I was not disappointed.

Vol I is the Operators Manual, T.O. 31R1-2URR-441 (essentially it's the same as the Army TM11-5820-358-20)

Vol II is the Organizational Maintenance Manual , T.O. 31R-2URR-442 (TM11-5820-358-20).

I will sell these for $10.00 plus shipping for Vol I and $15.00 for Vol II. If interested please reply by e-mail.

Date: Fri, 5 Mar 2010 16:06:12 -0800 (PST)
From: HAROLD D ALEXANDER <hdalexander3786@att.net>
Subject: [R-390] Screws & Washers for r-390/urr

I recently asked if anyone had the McMaster-Carr part numbers for the screws and washers used to attach an R-390 to its cabinet. I must have asked the wrong question because I got no replies. Let me rephrase my question to: Does anyone know the SIZES of the screws and washers used to attach and hold an R-390 in its cabinet (CY-79/URR)?

Date: Fri, 5 Mar 2010 19:26:48 EST
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Screws & Washers for r-390/urr

If your CY-979/URR cabinet has bolt holes with threads in the holes you need a 10 x32 bolt any length over a 1/2 inch will work. 3/4 and 1 inch were popular lengths. You could get the bolt started and then as you run one in you could boost the receiver up into alignment. You could put a long one in the bottom edge and us it to crank the receiver up level front to back into the cabinet.
If the cabinet has tinner nuts (flat sheet metal clips) use a 10 x 24 bolt. There are also clip on nuts in both 10 x32 and 10 x 24 flavors. Stop by your local hardware store and buy a couple of each bolt thread to see what fits. Pull a 10 x 32 (big one) out of the front panel of the receiver and see it fits thread wise into the cabinet bolt holes. Any style head will do. Flat slots were mostly used in the front of the racks. Philips were also popular. No washer was used but there are some nice decorative washers that you may want to consider. It would be a matter of your choice of style. My Yankee screw driver still has a flat bit I used to get receivers in and out. We did all 8 screws out and back in every receiver every time.

Date: Fri, 12 Mar 2010 14:25:31 +0000 (GMT)
From: Robin Filby <robin.filby@yahoo.co.uk>
Subject: [R-390] Fowler R-390a

Hi everyone. I am enquiring as to what happened to the 5 Fowler R-390a receivers when they were de-commed from the USN??. I know one appeared on ebay a few years ago and attracted a lot of attention. Any information would be very much appreciated, this is purely interest only.

Date: Fri, 12 Mar 2010 15:30:50 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Fowler R-390a

As far as I know, three exist. S/n 1, 2 and one with an unknown serial number. Serial numbers 1 and 2 have the Fowler mylar stickers on the chassis', the unknown serial number has all of the chassis' marked with a stencil. All modules match as far as the same type of components on all three of them. The one on E-Bay was serial number 2 that was in the Electric Radio Issue 72 April, 1995. The "unknown" one was in another Electric Radio article that I don't have handy, it was written by the owner Paolo Viappiani.

Date: Tue, 16 Mar 2010 23:09:46 -0500
From: Norm - WA3KEY <norm@wa3key.com>
Subject: [R-390] R-389 adventure

I have another exceptional radio to share in photos with the group. This time it's a 1954 Collins R-389... the VLF (15KHz - 1500KHz) version of the

R-390. Everything is original including the paint, with the exception of the knobs. The only parts replaced were two broken fuse holders and the almost always defective CR-801 bridge rectifier in the power supply.

Here is an index of the photos at: www.wa3key.com/r389

01 - Front panel parts
02 - Frame w/o front panel
03-07 - Frame
08-21 - RF deck
22-23 - RF amplifier sub-chassis
24-27 - IF deck
28-31 - Audio deck
32-33 - PTO
34-36 - Power Supply
37-38 - Motor rectifier module
39 - RF deck cover
40 - Main tuning knob parts
41-42 Radio w/front panel dropped
43-48 Radio w/o tube shields
49-52 Radio w/IERC tube shields
53-54 - Radio w/RF deck cover
55 - Nameplate

I just finished the radio last weekend and it performs like a champ. Special thanks to Don Reaves for his encouragement and sharing his knowledge of the beast. Enjoy the photos.

Date: Tue, 16 Mar 2010 22:03:35 -0700
From: "Leigh" <bipi@comcast.net>
Subject: Re: [R-390] R-389 adventure

That is truly a work of Art! oops! Seriously, a tremendous restoration...thank you for the photos.

Date: Tue, 16 Mar 2010 23:09:37 -0700
From: Dennis Wade <sacramento.cyclist@gmail.com>
Subject: Re: [R-390] R-389 adventure

That is one amazing radio...especially that RF deck....WOW. Beautiful, just beautiful.

Date: Wed, 17 Mar 2010 06:43:48 -0000
From: "Lester Veenstra" <m0ycm@veenstras.com>
Subject: Re: [R-390] R-389 adventure

So Art; If it is not a trade secret, how do you get the chassis to that "shining metal" state?

Date: Wed, 17 Mar 2010 13:12:34 +0000
From: <kirklandb@sympatico.ca>
Subject: Re: [R-390] R-389 adventure

Thanks for posting. Love the photos. Great work.

Date: Wed, 17 Mar 2010 09:51:20 -0500
From: "Francesco Ledda" <frledda@verizon.net>
Subject: Re: [R-390] R-389 adventure

It is a beauty! How did you clean the IF and RF decks? I would very helpful if you could share the techniques you used to achieve such great results.

Date: Wed, 17 Mar 2010 11:39:09 -0700
From: Robert Jefferis <jefferis@antelecom.net>
Subject: [Collins] S-Line: Systemic Socket Rot?

Here is an off-the-wall question for your entertainment. Still likely to be regarded as a newbie, I starting collecting, refurbishing, and using S-Line gear about 7 years ago. In that period, I have shuttled about a dozen units through my shack, each change intended to increase quality of the small collection. In my quest for better examples of 75S-x receivers and 32s-3 transmitters, I have become generally stumped on RE units. Almost all examples I see, whether in person or via photos suffer "selective socket rot".

OK, "socket rot" is how I refer to a tube socket that exhibits nearly 100% corrosion or plating failure of the metal mounting collar. I am not talking about units that have obviously been used or stored for extended periods in poor environments. These typically show corrosion symptoms everywhere. I am referring to selective socket rot, where in many otherwise excellent radios, everything is clean and generally free of corrosion symptoms, but anywhere from about 2 to 4 or 5 sockets are completely corroded around the collars, while other sockets in the same radio are bight and shiny, with maybe very minor pitting (or clean up so). Thanks to Internet photo sources and of course fleabay, dozens of interior photos began to reveal what I now think might be systematic trends in this regard. First, the problem seems to be more prevalent in later units, especially RE. Second, it seems more prevalent in the 7-pin sockets than it is in the 9-pin sockets. Interestingly, both of my 75S-3's have beautiful sockets throughout. The RE 75S-3Bs I have acquired have, you guessed it: selective socket rot.

I have physically seen 2 notable exceptions. Both were RC logo units with the coated chassis, belonging to a well known West Coast collector. All

sockets were like new. I wonder if this is symptomatic of lower and lower plating quality as time went on, or bad batches, or?

Attempts to clean these socket collars have clearly shown that in most cases the plating has failed and you wind up cleaning/polishing the underlying metal.

So, has anyone noticed this, am I hallucinating, or maybe this is something the experts already know? Cheers.

Date: Wed, 17 Mar 2010 18:44:37 -0600
From: "Dr. Gerald N. Johnson" <geraldj@weather.net>
Subject: Re: [Collins] S-Line: Systemic Socket Rot?

Probably a combination of changes in plating materials, and vendor. By the early 70s, tube sockets were not as available as they had been and cadmium was being recognized as less healthy, though it had been considered a good plate for mechanical items. Then since the tube socket rings also were used for grounds and included grounded lugs, there might have been a need for a stronger flux, that didn't get washed off and that contributed to socket corrosion.

Date: Wed, 17 Mar 2010 11:59:32 -0500
From: Frank Donnelly <goober@centurytel.net>
Subject: [R-390] R-389 Adventure

Fantastic job.
Something to be proud of.
How long did it take you? I am contemplating doing the same to a Collins R-390 (non A). would be interested in a description of how you proceeded and what you used to get everything so clean and looking like new. any advice would be appreciated.

Date: Thu, 18 Mar 2010 08:24:07 -0500
From: Paul Anderson <paul@pdq.com>
Subject: Re: [R-390] R-389 Adventure

I'm sure it started out very nice - it is otherwise extremely difficult to do. Recall that Norm's R-390 also started out in a very untouched pristine state, as well. From when I can tell, for example Rick Mish's restorations, the best ones start out from very good examples.

Date: Thu, 18 Mar 2010 10:07:09 -0400
From: "Bernie Doran" <qedconsultants@embarqmail.com>
Subject: Re: [R-390] R-389 Adventure

I spoke to Rick a week or two ago and he said that he gets in some that are only a parts source and too far gone to restore. condition is very important, apparently more than I expected. He is doing a SW for me now, says it is the best one he has seen for five or six years and may have been a lab rx. I expect it about the tenth of April.

Date: Thu, 18 Mar 2010 14:17:05 -0400
From: Norm Drechsel <norm@wa3key.com>
Subject: Re: [R-390] R-389 Adventure

Thanks to everyone who commented on my restored R-389.

Many have asked my "secret" for getting metal so clean. I'm sorry to disappoint, but I have no secret. Those who guessed a clean radio is needed to start are correct. Dirt is easily cleaned, but if a chassis or frame is corroded, nothing short of stripping down and starting over is going to bring back. I've done about a dozen R-390 and R-390A's over the years - and with each I learn a little more - but there's no substitute for starting with a healthy subject.

For chassis cleaning I use a Spic and Spam liquid product named Cinch. It used to be readily available in stores but now is getting hard to find. My most recent purchase was on-line from a distributor in New Jersey. I'm sure there are other cleaners out there just as effective, but I've always had good luck with Cinch don't want to rock the boat.

If there's a heavy accumulation of grease, I use a foaming spray de-greaser first and then switch to Cinch. Compressed air is always at the ready to blow away the cleaner and it often takes several cleaning cycles with brushing in-between to achieve the desired result. After blowing as much of the cleaner out as possible, I store the decks on top of the oil-fired heater in the basement to insure quick and thorough drying. Later I go back with Cinch on Q-tips to get all places missed with the brush. A final cleaning of all the electrical connections (tube sockets, wafer switches and connectors) is done with DeoxIt.

Hardware, transformer cans and anything metal that comes apart gets run through a small ultrasonic cleaner with a heated 25% solution of Simple Green. Lots of people report Simple Green is bad for aluminum, but I've never had any trouble and always flush liberally with hot water and then spread the parts out on paper towels atop the heater to dry. The ultrasonic does a fabulous job, often turning the grungiest hardware shiny as new.

I use a larger ultrasonic cleaner on the gears of the R-390, R-390A and R-392. I made Nylon feet that secure to existing fasteners to position RF decks face down in the tank. I use the same 25% heated Simple Green on

the gears for about 15 minutes. The volume of dirt that literally flies even the nicest looking RF deck is simply astounding. I then blow the cleaning solution out with compressed air and switch the ultrasonic over to room temperature WD-40 for another 5 minutes to displace the water trapped in the split gears and bearings. After a final blast of compressed air and it's back on top of the oil burner to dry.

Front panels are depopulated and cleaned thoroughly with Cinch (and lighter fluid when necessary). The same goes for the back panel, frame and cables. There are no shortcuts except for the ultrasonic, everything takes time. The only parts I don't do myself are knobs. Those I send to Howard Mills - W3HM for professional refinishing.

The R-389 RF deck wasn't a good candidate for the ultrasonic, so was cleaned manually with WD-40 from spray cans and lots and lots of paper towels and Q-tips. The R-389 restoration took about 80 hours, over half of which was spent on the RF deck.

I have great respect for those who can turn a junker into a respectable example. I'm just a seasoned cleaner who picks my projects carefully. And one thing goes without saying... there's no substitute for having a parts radio or two on-hand. Even the nicest example is going to need something replaced. (They also come in handy when you forget how something goes back together.) When I did my first few R-390A's, I invariably had to scrounge for parts. Now I have restored spare modules for trouble-shooting on-hand and lots of spare parts to fill every need.

I hope that answers everyone's questions and gives you some ideas for cleaning up your own treasures. While I rarely post to the list, I've been an avid reader in digest form for many years. Most of the techniques I employ were learned right here. Thanks to all who have given me ideas over the years and those who stepped up to offer parts and advice when needed.

Date: Thu, 18 Mar 2010 18:56:30 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] R-389 adventure

Very nice to see R389 photos on the network.

Date: Thu, 18 Mar 2010 19:02:19 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] R-389 Adventure

Thanks for all the R389 photos and sharing the process for getting these boat anchors clean. I have enough Q-tips from my last R390 deck cleaning to heat the house with all season. While we need not follow the process

exactly, son thats how you do it.

Date: Thu, 18 Mar 2010 19:21:17 -0600
From: <wb5uom@hughes.net>
Subject: Re: [R-390] R-390A Tuning issue

Well, I had guessed a couple of those after looking at the book a bit.. Thanks guys! I will have to get it out of the rack and opened up on a friday evening and take a peek. (The week ends are about the only time I have any energy to play radio tech at home)

Date: Thu, 18 Mar 2010 15:18:49 -0600
From: "Dr. Gerald N. Johnson" <geraldj@weather.net>
Subject: Re: [Collins] S-Line: Systemic Socket Rot?

Good point on the moisture, though the original post said some sockets corroded and some didn't IN the same radio. And only in receivers with round emblems without Rockwell-Collins emblems, so later production, possibly in places other than Anamosa, Iowa like Toronto.

Different metals against each other corrode at different rates and cadmium vs aluminum is one of the slower rates as I recall. The table in the ARRL Handbook on the electropotential series shows those with the most and least voltage differences.

I've had my receiver since 1964 and I haven't dug for corrosion. Its open on the bench for new capacitors and tube socket corrosion hasn't jumped out at me. I need to box it up for moving soon. I'll look before I put the case on.

One other thing that helps performance is to loosen and tighten ALL tube socket mounting screws since many tube circuit grounds are made through the tube socket rings.

Date: Sat, 27 Mar 2010 14:00:44 -0500
From: Ben Loper <brloper@gmail.com>
Subject: [R-390] Motorola vs EAC

Motorola vs EAC Any opinions on which is a better quality? I was looking to purchase one and it has come down to this twol. The EAC has an etched panel and the Motorola has a sik screen panel.

Date: Sat, 27 Mar 2010 19:16:55 +0000
From: Graham Baxter <graham@delphe.co.uk>
Subject: Re: [R-390] Motorola vs EAC

My vote goes to: EAC

Date: Sat, 27 Mar 2010 14:47:51 -0500
From: "William J. Neill" <wjneill@consolidated.net>
Subject: Re: [R-390] Motorola vs EAC

I'm running three R-390As, one each by Collins, Motorola, and EAC. I don't necessarily perceive any difference between them. Actually, if there is a preferred receiver that I use, it is my 51J4.

Date: Sat, 27 Mar 2010 14:50:07 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Motorola vs EAC

Do you know for a fact that each radio contains only modules made by the maker stamped on the tag? Most depots mixed the modules all up so you may have a mix of modules in each radio anyway.

Personally I favor the engraved front panels and then whichever was in the best shape physically and may have had the critical caps replaced.

Date: Sat, 27 Mar 2010 18:10:59 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Motorola vs EAC

I think the etching on the panel has little or no impact on receiver performance.
If you are thinking of the item as an investment, I suggest other items that have longer and proven better long term return on investment.

Consider the mechanical aspects of the gear train and how smooth or how much it grinds as being more important than the existing paint job if any. Having meters with the correct performance and dial scales is also useful. How bad or good or adjustable is the VFO spread? How good or bad is the output of each of the crystals? What if any of the original caps are suspect? If the caps have been replaced, how good or bad was the workmanship?

What does the wire harness look like? Is the shielded conductor jacks all corroded? Is the insulation getting very brittle because it has been exposed to poor choices of cleaning solutions? Are the tube sockets and connectors reasonable corrosion free on the contact surfaces?

How does the band switch wafers look? How much surface area makes contact on each wafer section at each switch position?

Do you buy an auto on paint job or engine performance?

Motorola as a manufacture is renowned for its quality. EAC won the last contact as the low bid.

The EAC are certainly the last production runs and thus newer than the Motorola's. The EAC's are though to be free of the nasty black beauties. The EAC's being younger are thus likely to have mechanical filters that being young will last more years. The EAC meters are likely to last longer like the filters just being younger have more years of life left.

I will give $50.00 credit to an original name plate tag.

The rest of the performance difference between receivers can be corrected by lots of hard work selecting the best parts and getting them installed with skill. Better quality caps and resistors make a difference. Selecting good tubes just takes time and after 4,000 hours or so of use you have to start that process all over again any ways. Just my thoughts, that may or may not have any validity in or out of this reality.

Date: Sat, 27 Mar 2010 17:20:03 -0500
From: Dave Mayfield W9WRL <wrl@gwltd.com>
Subject: Re: [R-390] Motorola vs EAC

I too have one each Moto, EAC, and Collins. I really can't tell much difference in them.

Date: Sat, 27 Mar 2010 16:00:50 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Hot Rod R-390A

>Wrote: I don't recall seeing any discussion of how a Chuck Felton modded >R-390A stacks up against a stock, properly tuned up, R-390A. Has anyone ever >used one, or is it just too painful to think about?

Probably it would be painful for the owner of the stock R-390A. I met Chuck about 6 years ago and then saw him at the same hamfest for several years in a row. A very pleasant fellow. He was kind enough to share with me the mods that he later published in the ER article. At the last hamfest I saw him, he gave me permission to use his article in the Y2K-R3 version. Chuck was and engineer at WWV in the Peoples Republic Of Boulder. He has authored at least one article when he was there but he never talked about being at WWV. Chuck does his mods for a living. If they were bogus I believe we'd have hear about it as he charges about $900 for his upgrades. I would love to see a side-by-side comparison of a stock A receiver with the Felton upgrades and one with the "Competition-Grade" R390a that Ray Osterwald published in ER magazine done with real lab grade equipment. My money would be on Ray's and Chuck's receivers. Now I know at least

Bernie in OZ disagrees. I'd like to hear from someone BTDTGTTS.

Date: Sat, 27 Mar 2010 22:52:43 -0400
From: "James Young" <YoungFamily@glwb.net>
Subject: [R-390] R-390 with Hoffman Laboratories mod

A pretty 1951 Motorola R-390 (non-A) followed me home from Fair Radio the other day. It's in VG condition, works but needs some help. I think I'm going to have to start at the antenna jack and work all the way through this radio. It has an added toggle switch on lower left front with a nomenclature plate. When turned on it seems to add about 20dB gain to the front end. The plate reads as follows: RECEIVER INCLUDES MODIFICATION KIT
M281( )/GR-390 HOFFMAN LABORATORIES, INC

The plate is black engraved plastic with white lettering. Does anyone have pertinent information or documentation on this added "feature" which comprises an additional small chassis behind the front panel in the vicinity of the former headphone jack location? Also, does anyone have the 7 and 9-pin tube pin straighteners that have been removed from the back apron? Thanks in advance.

Date: Sat, 27 Mar 2010 23:24:51 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Motorola vs EAC

My vote on the panel was just in case it had to be refurbished. Certainly no performance gains either way..

Date: Sun, 28 Mar 2010 05:07:09 -0700 (PDT)
From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] EAC Mechanical Differences

EAC has some mechanical differences from other makes. In speaking with the chairman of EAC, I was informed that they received approval from Signal Corps to allow splices in some of their wires. This allowed them to wire the modules "in the open" and then assemble the sides together. If you look closely and compare EAC IF decks for instance to other makes, you'll see that the sheet metal is shaped differently and there is at least one splice. There is also a splice behind the front panel. I borrowed these two photos from the internets. Note the second pic (EAC) has the metal as two L shaped halfs and you can see a wire splice on the pink wire running near the BFO. The SW metal in the second pic is shaped differently. How can this be if they all used the same drawings? These changes are reflected in the drawings used by EAC and they got approval.
http://home.earthlink.net/~chestnutl/R390A-2.html

http://r-390a.us/images/IF_Recap.jpg

As far as performance differences I've never noted any. All receivers met specs.

Date: Sun, 28 Mar 2010 09:01:19 -0500
From: Jeff Adams <physicist@cox.net>
Subject: Re: [R-390] EAC Mechanical Differences

One of my EAC decks has the Clevite filters, instead of the Collins mechanical filters: http://jeffreyladams.com/clevite.html

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Date: Sun, 28 Mar 2010 08:12:41 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: [R-390] HRO restoration video

It is off topic but I put a small video of my HRO-M restoration together. I did the work over the 2009 Christmas holiday
http://www.youtube.com/watch?v=l1M4GcJuEak

Date: Sun, 28 Mar 2010 14:05:23 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] R-390 with Hoffman Laboratories mod

Can you get some photo's of the mod parts?
Can you trace the mods and see where they wire into the circuits?
This could be an interesting mod some folks may want to explore and implement.

It's cool that you got a R390 out of Fair Radio at this late stage.

Date: Sun, 28 Mar 2010 14:47:56 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Motorola vs EAC

I think you are right about this front panel subject. My vote on the panel was just in case it had to be refurbished. Certainly no performance gains either way..

Date: Sun, 28 Mar 2010 13:46:32 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Motorola vs EAC

EAC used to be Hammarlund who made the SuperPro series of radios (a fine receiver in it's own right). Hammarlund/EAC only went astray when they started to make transistorized gear (Hamlet radios for Vietnam and CB

radios). They were not like Helena Rubenstein or some of the other fly-by-night radio manufacturers who all wanted to get into the R-390A business.

I have a '67 EAC with mostly EAC modules and it is a fine radio. I can find no fault in their manufacturing process or in the performance of the radio when compared to a Motorola derivative. It is nice to not have black-beauty caps (Hammarlund learned that lesson in the SuperPro where they had used black beauties) and in general, the workmanship (soldering, component placement, lead routing) is all excellent.

Since the R-390A did have a fairly large span of time it was in manufacturing you will find some component changes from the earliest manufactured units up until the final units were made. I would prefer to have a newer-made radio as the filters are probably newer and the foam has not reverted back into tar, the resistors, caps, coils and transformers are also newer.

Date: Thu, 1 Apr 2010 19:37:42 -0400
From: "Don Heywood" <wc4g@knology.net>
Subject: [R-390] One of Nolan Lee's posts (5/99) I miss him

I've had a couple of requests for the list of items I did when I went thru my EAC last year so I'm reposting my original message on it to the list. The EAC has been running 24/7 since October of last year and I have no complaints. I've been wanting to pull it out of the rack and do a "visual" of it and check the tubes and the alignment but haven't had the time. Maybe this Fall. Your mileage may vary... nolan

-----snip from Oct 1998-----
Well, after spending months slowly going thru my two R390A's, one is finished. Below is an outline of the steps that I took during my overhaul. This was probably one of the more evolved R390A "overhauls" done in the South. The other, will take longer, I'm probably going to replace all of the bushings in the RF deck among other things that I didn't do with this one. The victim: I started with a cherry 1967 EAC contract model that was the "lowest mileage" R390A I've ever seen. All of the original modules, meters, covers, etc. were still on it. In addition, all of the tubes in it had date codes within a two or three month period of each other in 1968. Even with clean gears, there wasn't even a hint of a wear pattern in any of the gears and all of the aluminum finish in the tracks on the RF deck was still intact. The green paint on all of the module hold down screws was even 100%. I'd be surprised if this thing saw more than a few hours operation after the burn in period. There's no diode load hole in the front panel or adjustment hole in the top dust cover for the meter adjustment.

Jerk all of the modules out of it and rip it's gizzard out and scatter and toss

the parts around! I tried, but I managed to not loose any of the parts and didn't even have any extra ones left over.

Chassis: Tested the dial lamps, checked the value of all of the resistors, the diode, the 2 capacitors, the meters, tested the selenium rectifier, and the antenna relay and inspected the contacts in the relay. Verified function of the main power micro switch, it's placement, and measured the resistance of it. Measured the resistance of all of the front panel switches and potentiometers, and very lightly lubed the shafts of each, checked the ovens switch, verified the values of the fuses, checked their resistance, replaced one of the fuse holders that I didn't like the look of with a NOS one, and replaced the rear panel IF connector, the center terminal was missing. Checked the line filter, and checked the tightness on all of the screws holding the whole damn mess together. I removed all of the knobs and inspected and lightly lubed the set screws. Also verified that the index washers were installed in the two big knobs that prevent the clamps from turning. The next step ate up a lot of time. I removed all of the hoods of the chassis connectors to inspect and then measured the resistance of EVERY damn wire in the chassis. Then I installed a NOS military 3 wire 8 foot rubber 16 gauge power cord with a molded plug. Nice and flexible SJ. The original strain clamp for the cord was still there. First one I've ever seen. :-)

Power supply module: visual inspection, resistance readings of the transformer windings, and wiring, inspected the solder connections, verified 115 volt setting, stuffed two new 26Z5W's in it. Checked all of the screws and nuts for tightness.

PTO: Why bother? Chunked it in the R390A parts pile and installed an Army rebuilt Cosmos that I've been sitting on for about ten years, sealed in the box, to replace the Cosmos that was in there. It turned out that the endpoint was out a little less than 2 KHz, and linear within a little less than 200 Hz across the spectrum. I don't know what the specs on it where when it left their hands in Feb. of 1984 but it sure aged well. :-) I guess that I'll let it run a few weeks and then adjust the endpoint. I did power up the oven and verified that the thermostat worked, measured the resistance of the transformer, and tested the tube. I like the Cosmos PTO's. That blue label sure is pretty, bubba! On a side note, I probably use a bit more complicated method than most people do when fitting a PTO to a receiver. If you're going to do it right, it might as well be done right the first time. Both halves of the Oldham coupler should be perfectly parallel to each other and the centerline of both shafts should be perfectly in line with each other on both planes. I only spent about an hour adjusting the position and height of the PTO in the chassis, but spent several hours measuring the components and setting up the fixtures to measure other aspects of the components. I first measured the run out of each half of the couplings while installed on their shafts. The one on the PTO was true within .001. The one

on the KHz shaft of the RF deck was machined improperly. he rib was .003 off to one side and wasn't square with the bore either. I tossed it and pulled a few others out of spares. It took several before I found one that was square with the bore and only had a little more than 0.001 run out. The next step was to check the center section. The width of the two groves seems pretty consistent, but I was curious if the two groves were machined at exactly 90 degree angles to each other. The groves were of a dimension that I didn't have any key stock for so I used two 12" long pieces of 1/4" ground steel rod. I centered the two pieces of rod, lengthwise, one in each of the two grooves, clamped the three pieces together. Then by measuring and comparing the distances between the four rod ends, I could determine the exact angle that the grooves were from each other. This part of the process was a wasted effort, the coupling center piece from the EAC was 90 degrees like it should be and so where the ones in spares that I checked. When I finally assembled the receiver and physically aligned the PTO to the chassis, mechanically and electrically, the dial indicator measured a total movement in the center section of the Oldham coupling of .003 when the KHz knob is turned. Close enough! Put that spring on! Oh, I used a little dab of Pennzoil wheel bearing grease to lube the coupling. It's red and contrasts, in a pleasing fashion, the blue label of the Cosmos PTO. :-)

Crystal Oscillator Module: Tested the tube, and tightened the screws holding the tube socket to the chassis, they were loose. Checked resistor values, transformer windings and crystals. Bad 10 MHz crystal, throw one in it from spares. Most are still on the money, the few that are "off" are well within 1 KHz or maybe a shade more. I decided against spending ~250 dollars on new ones. Measured the resistance of all of the wiring and switch contacts and tested all of the fixed capacitors and spun all of the trimmers a couple of turns. Powered up the oven and verified function of the thermostat. Also, "timed" the two switch bodies. They were "off" a bit. Then when thru and re tested everything on it's underside just to make sure. I figured that anything that was a pain to remove, I double check everything.

Audio module: One of the original plug in electrolytic caps showed signs of leaking, tossed it in the trash, installed another one from spares. Reformed both, leakage at 50 volts over the rated voltage was less than 1 ma. per section after reforming. I fused them and ran them for a couple of weeks at full rated voltage on one of the HV supplies, they didn't explode and leakage declined even further. Good enough, bubba! (yeah, I know, Doc, but the power factors were good, I even checked that. :-) Ripped all of the paper capacitors out of the module, and tossed them in the trash. Installed two new .022 400V orange drops in the location that Chuck likes, and NOS Vitamin Q's in the other locations. I have the orange drops on hand and could have used them thru out but didn't like the way they sit on the circuit board. I did use an Orange Drops to replace the one on the chassis under

the circuit board. All of the new caps were tested for leakage at their rated voltage and tested to verify their value before installing. Checked all of the resistors for value, replaced a couple. Tested the mica cap, no problem there. Tested all of the tubes, they all passed but tossed the 0A2 and stuffed a new 6626 in it's place. I don't trust used 0A2's, had some weird problems with them. Tested the relay and measured the resistance of the wiring, the chokes, and the transformers. I left the 800 cps filter alone. Probably not a whole hell of a lot of R390A's out there that still have their original 6AK6's. All of the tubes are original except the rectifiers and the regulator. :-)

IF Module: Tested the tubes and the 3TF7. Measured the resistance of the wiring, the transformers, the switch contacts, and the resistors. I replaced more than a half a dozen resistors that were out of spec. Checked the capacitors and resistors inside the IF transformer cans, that could be tested. Some could not be tested in circuit. I tested the big above chassis oil filled capacitor for leakage and value. Tested all of the mica capacitors for leakage and value and then ripped all 18 or so of the axial lead paper capacitors out of the module and tested them just for kicks. EVERY "brown beauty of death" tubular capacitor that was in it leaked like hell and a good percentage had microscopic cracks in the bodies within maybe .020 of the seams and paralleling them. Most of these caps leaked at voltages below 50 volts when tested. Only one of the metal can axial capacitors leaked when tested. I replaced all 18 of the capacitors with Orange Drops. For the .1 and the .033 values I used 400VDC rated ones and for the .01 values, I used 600VDC rated ones. The reason that I didn't use 600V rated ones thru out was their size. It was a pain in the ass to the fit the ones that I used in there properly. If I'd have used the 600V ones everywhere, I'd have had to move the locations of some of the capacitors and a bunch of them would have had excessively long leads. I didn't think that this was such a hot idea in the IF section and figured that the best placement of the parts was in the original locations. ;-) Let's see, other than checking all of the screws and nuts, I think that was it for the IF deck other than lightly lubricating the shaft extensions where they passed thru the front of the IF module chassis. I didn't test the mechanical filters. I tested the blocking cap before I tossed it and it had tested good even at 100 volts over it's 300V rating. Whew!

The last one, the RF deck: After removing it, the first step was to take it apart. I removed all of the tubes and tested them, the crystal oven and tested it, all of slug racks and springs, four of which (for the variable IF slug racks) were really weak, so I installed NOS ones in that location when I put everything back together. The geometry for those 4 springs suck, they're stretched a lot more than any other location. I removed all of the RF coil assemblies and measured the resistance of all of the windings and checked what capacitors I could. The bridge wouldn't work on some, so I

kept track of those in case I had some weird assed problem when I tried to align it later. I disassembled the gear train and tossed all of the parts, except for the counter, in a coffee can and sprayed a mess of gunk in there and let them brew. They weren't really dirty, but the original lube had mostly evaporated and what was left was stiff as hell and I don't really find the gear train much of a mechanical challenge so I ripped it apart. About the only thing I didn't take apart was the 6 camshafts and the antenna trimmer can. I worked a few drops of penetrant into the bearings of the cam shafts and kept lubing and wiping them until only clean oil would come out. Oh, I used 10W30 Mobil 1 synthetic oil for the RF deck except the detent where I used Pennzoil wheel bearing grease. Two of the cams appear to have been stamped, I guess, with cracked dies, leaving a couple of sharp burrs on the surface that the rollers ride on. I stoned these down while maintaining the original cam profile. :-) When you take the split gears apart, tie them together, with a bit of soft wire in the orientation that they were originally assembled with. I suspect that the halves were matched. While all of the stuff soaked, I replace the three paper capacitors, with Orange Drops, and replaced close to ten resistors that were out of spec, checked all of the other capacitors and found a cracked .005 1KV ceramic disc. And yes, I measured the resistance of all of the wiring and of the band-switch.;-) I found an odd thing. One of the tube sockets only had one screw holding it to the chassis. When I attempted to install a screw there, it turned out that the little "C" shaped piece of metal that curves all of the way around one side of the socket had an unthreaded hole in it for the screw. I'm surprised that an inspector didn't catch this at the factory. I tapped the hole and moved on. Most of the gear clamps were either viably cracked or showed cracks when dye checked. I guess that they must have been over tightened when it was built. I replaced all of them with NOS clamps to be safe. I found that several of the roller retainers had been over staked on on a couple of the slug racks. This prevented the rollers from turning. In addition, a few of then ends were not square and had to be straightened. Burrs and gouges on the end surfaces had to be stoned down and polished. The fit and finish of mechanical portion of this EAC RF deck didn't impress me at all. The old Collins decks were much more finely finished mechanically. I wiped each of the RF cores out with a pair of damp Q-tips, wiped the slugs off, and eye balled them. The Collins part numbers on all of the RF slugs are all the same EXCEPT the six variable IF slugs. They are different from the RF slugs. So, they aren't interchangeable. I assembled the RF deck and mechanically aligned it and put the receiver back together. For what it's worth, the repeatability of the RF slug racks averages about .001, the repeatability of the variable IF slug racks averages .004 on one and .005 on the other. I suspect that this could be improved upon by relocating the location of the attachment point on the chassis of those four springs. This would require either shorter springs or possible just creating spring "wells" that extent slightly below the chassis so that standard RF deck rack springs could be used.

I fired it up and let it cook a while in Standby mode, at 7+000. None of the magic smoke escaped so I switched over and set the PTO to 2455 KHz and tightened the clamp. I stuck a VTVM lead into the unbalanced antenna connector and cranked it down to WWL on 870 and let it run more than a day before I did the first alignment. I always like to align a receiver twice. I go thru it and then when I'm finished, I start all over again. I've been playing with it for about a day and a half since the alignment. This is the most sensitive receiver I've ever owned. It kicks ass. I did a few sensitivity tests using my URM-25F. I questioned the results so I dug out the URM-25D and tried them again. REAL close. I started with a receiver that hadn't been abused and tried to do the best job that I could going thru it. I wanted something that I didn't have to screw around with every few weeks. Something that wouldn't wake me up at night with a burst of light like a Romulan disrupter (I've had R390A's do that before). Something that would sit there and run for month after month and need nothing but tube and dial lamps like my R-1051B's. Hopefully, this will do that. Many of the of the steps that I took, were "over kill", but I had fun doing it and learned a few more things. The numbers you ask? Lets just say that they're as good as the best sensitivity levels that I've ever seen posted or in print on the R390A. Numbers, that up until now, I always had my doubts about. Guess I better feed the critters and make me a mess of grits for breakfast,

nolan

-----snip----- If an infinite number of rednecks riding in an infinite number of pickup trucks fire an infinite number of shotgun rounds at an infinite number of highway signs, eventually they will produce all of the world's great literary works in Braille.

Date: Fri, 02 Apr 2010 17:34:52 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] NOS EAC Collins R-390A New Military Radio

I have often wondered about the practical value of a brand new surplus radio. I fixed a lot of r-390x radios in the 70's. I ran a small business in Lima Ohio and when business was slow I would do repairs for Phil and his dad Joe at Fair radio. We saw a lot of near perfect 390's, most were not new like the one that is currently on eBay. The perfect one always had a coupler broken in an absolutely miserable place. So what do you do with a brand new radio? If you operate it, it will not be new any more, so I guess the best answer is you just keep it that way or sell it. I enjoy the radio's that I have restored, there is a certain amount of pride making the like new again, that is the challenge for me and I run the ones I rebuild! anyway my point of view ...

Date: Fri, 2 Apr 2010 19:45:29 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] NOS EAC Collins R-390A New Military Radio

I think many fellows have the nice near museum quality shacks with room to display and some times use these nice radios. There is a place for each of these receivers in its own particular condition. I do hope this one gets displayed and its new owner is able to preserve its value. Like any new item there is the possibility of early parts failure. This is just part of the mix and still does not detract from the unit. If it needs a repair so be it, we would do that to any receiver. Between parts and new old stock in the box we now know the current price range of some of our receivers. Nice to get a good firm top end calibration point. Again just my thought and not even worth the proverbial two cents.

Date: Sat, 3 Apr 2010 14:07:51 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] ebay NOS r-390A 160417472738

Nomenclature tag s/n 3728, chassis s/n 7663. They rarely match after a trip through a depot or at field level. New wouldn't have that sort of disparity, look at the other modules, different s/n's too. I've never seen one shipped from the manufacturer with IERC or IERC-type tube shields.

Date: Sat, 03 Apr 2010 18:31:29 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] ebay NOS r-390A

Good point. My PH-56 has an Army Security Agency sticker on the back and a peace sign scratched into the MC change knob. It makes me think of all the things it has received over the years.

Date: Sat, 3 Apr 2010 20:46:35 -0400
From: "Judi Doran" <cooner@embarqmail.com>
Subject: [R-390] NOS 390

How many times do you suppose one of our guys was listening and just sort of slid down the chair and said OH SH-T . Thats just one of the many reasons I will have one in a few weeks.

Date: Tue, 6 Apr 2010 12:03:33 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] ebay NOS r-390A

Picking up one of these radios I am filled with a sense of history. These were on the front lines of the cold war, listening for the Russians, Chinese

and Vietnamese. I do not think that there would be the same sense of history in a NOS radio that was stored in a warehouse since it rolled off the factory line.

There is a real point I had not though on long enough. I have a Blue striper we know came out of an ASA sight some where and one that was used in the Long Beach California ship yard prior to about 1980. The Long Beach one looks better but it sure does not have the history of my blue striper. Thanks for fixing my point of view.

Date: Tue, 6 Apr 2010 16:26:51 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: Re: [R-390] ebay NOS r-390A

I think removing the blue stripe when doing the restoration is a travesty!

Date: Thu, 15 Apr 2010 14:50:03 -0700
From: "Rick Popovich" <RickP@uei.csus.edu>
Subject: [R-390] A Group Question

I have had in my stable of gear a KEYER that I don't even remember getting. It appears to be some ancillary piece of gear for a R-390 or R-390A as it has the same knobs, handles and paint finish. The ID plates says: KEYER KY-82/FRR. Can anyone tell me what it does, what it is used with and what if any purpose does it serve these days.

Date: Thu, 15 Apr 2010 19:14:31 -0400
From: jrfke5ri@aol.com
Subject: Re: [R-390] A Group Question

The AN/FRR-34 HF receiving system utilizes three R-390(*)/URR receivers in a
triple diversity configuration. It uses a C-1012 Control Monitor for receiver control and selection. It uses a KY-82/FRR RTTY keying unit for diversity signal selection and generation of a signal for remote operation of RTTY apparatus.

Manual: TO 31R2-2FRR34-1, "Radio Receiving Set AN/FRR-34", 1955-May-04
TO 31R2-2FRR34-24, "Repair parts and Special Tools Lists, Receiving Set
AN/FRR-34", 1962-Feb-14
John
KE5RI

Date: Thu, 15 Apr 2010 18:33:02 -0500

From: "Ron.K3PID" <ron.k3pid@sbcglobal.net>
Subject: Re: [R-390] A Group Question

I seem to recall that one went for a good price on ebay a few years ago. Not sure how you would find out how much it went for. I think it was a pretty impressive piece of gear, much more than a plain old keyer...

Date: Fri, 16 Apr 2010 16:05:11 -0400
From: "James A. \(Andy\) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] Compressor stall (nee Cosmos Dis-assembly)

It happened to me and my son a few years ago. It sure got our attention. It is a sight you really don't ever want to see. Since it was during the full-power ascent shortly after takeoff, the pilot just turned around and took it back in. Does anybody know if the engine can be restarted after a stall? It seems like it would be pretty messed up at that point. If the pilot was an engine short for the landing, I sure didn't notice it. Modern airplanes must be pretty remarkable machines.

Date: Fri, 16 Apr 2010 16:22:16 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Compressor stall (nee Cosmos Dis-assembly)

They "can" be restarted in flight. The difficulty is that you CANNOT tell if it was a "simple" compressor stall OR did you just ingest as bird. After the "Miracle on the Hudson", mental priorities and possibilities have changed. The awareness is different. It is up to the Pilot in Command, PIC, what flows and what goes.

He can tell ATC, a ground controller, and approach control to "stick it" IF he feels safety isn't being adequately addressed, or other issues.

I ran into this my self twice when I flew as PIC. Once I simply told the Tower to wait - My hands were full due to clear air turbulence that drifted over MY runway from a flight that took off over 5 mins earlier. The "heavy" had left its wake, and the crosswinds had blown it over to my runway. The Tower had NO way of knowing what I was fighting. Then again, they weren't paying attention to the position of the ailerons and rudder. The second one was when they told me to turn downwind into traffic they had cleared another aircraft inbound. It just happens!

Date: Fri, 16 Apr 2010 15:35:11 -0500
From: mikea <mikea@mikea.ath.cx>
Subject: Re: [R-390] Compressor stall (nee Cosmos Dis-assembly)

They are extremely remarkable. We've come a long way since Oville and

Wilbur and Otto. A restart is always worth a try after a compressor stall. One tends to be very wary, though, feeling for vibrations that might indicate an OOB condition caused by a busted bucket, watching the engine temp and turns gauges, and in general flying with whiskers bristling out in all directions. I don't know a pilot who would take an aircraft anywhere he didn't absolutely have to take it after a compressor stall.

Date: Fri, 16 Apr 2010 14:23:14 -0700
From: "Ed Zeranski" <ezeran@ezeran.cnc.net>
Subject: Re: [R-390] Compressor stall (nee Cosmos Dis-assembly)

I got my experience with jet engines and compressor stalls during 17 years of working guidance, counter measures, and avionics with test aircraft. Even on the ground a comp stall is impressive if you are in the 'near field'. On a test stand if we had a stall we would roll the engine for total inspection. In the air there could be a 're-light' but the test pilots brought the birds home on the other engine to a bunch of flashing lights and yellow gear on the ground. My job wasn't an engine guy, though I held the license, but I did get to do chain-down high power run ups looking for power anomolies affecting the avionics.

Date: Sat, 17 Apr 2010 09:36:19 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Compressor stall (nee Cosmos Dis-assembly)

Beat me to it... A simple stall is one thing a FOD'd engine is another story. But a restart might get you enough power to get you back to the field...it you don't have an engine fire in the process....

Date: Sat, 17 Apr 2010 10:14:23 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] Compressor stall (nee Cosmos Dis-assembly)

I've not heard of a turbine that doesn't have an engine restart procedure. Even the lowly helicopters I flew had them. It may take several thousand feet to get it restarted, but they are meant to restart. Having some sort of failure or damage changes things somewhat. We practiced those over and over in the simulators.
I had small compressor stalls only once. I was flying nights with goggles with students in Alabama. We were flying around 400' over the trees. I was a brand new night instructor and still a little nervous. I went for the first field I saw when I realized it was stalling over and over. As soon as I got close to the ground and saw the big transmission lines, I did exactly what you aren't supposed to do. I pulled in full power to get out of there before hitting the wires. That turbine ran like a champ until I set down about a mile away. The plane over the Hudson didn't have near the altitude needed

for a restart attempt. <snip>

Date: Sat, 17 Apr 2010 10:19:49 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] Cosmos Dis-assembly

A good friend's dad flew the first production Huey to Alabama from the Corpus Cristi plant. I think it was a YH-1 at the time. It had no governor and you used manual throttle all the time. He laughed at me when he told the story because he knew that meant "land as soon as possible". He said he would get several compressor stalls hovering out to takeoff until he learned the max throttle setting for that day. He said it was normal to have a dozen each flight.

Date: Sat, 17 Apr 2010 18:57:17 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Compressor stall (nee Cosmos Dis-assembly)

It really depends on the severity of the stall as to a restart. a three engine approach with a four engine jet is considered a normal approach. A jet two engine out is a new ball game, which is basically a training function.

Date: Sat, 17 Apr 2010 20:46:55 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] searching the archives

Searching the archives can be done. I have nearly all the posts (more or less) going back to 1998 in Word format. After I strip out the off-topic and irrelevant stuff, I split them up more or less by subject, convert them into .pdf files for *Pearls*, and Al Tirevold kindly posts them up for the group. For those of you that are interested, I can send the unsorted collection 1998-2010 in more or less chronological order as a Word document on a single DVD. Then you can use the Word search function to locate your targets..... Please reply OFF-LIST and include your mailing address and maybe a few bucks to cover postage. Alternatively I am told that one can actually do a search on .pdf files. If that pans out for you, look under Restoration in Pearls, because that is where I put most of the AR-x files.
Thanks
W. Li
7505 Mercer Terrace Drive
Mercer Island, WA 98040-5531

Date: Sun, 18 Apr 2010 04:59:33 -0500
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Spline screws for the R-390A

I have all sizes of set screws and some of the screws plus lots of R390A parts complete receivers. PLUS I also have the R&S EK-07/D2 recivers and parts.

Date: Sun, 18 Apr 2010 07:26:35 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] OT threads

I saw the subject line saying something about threads, and I open the mail to see that it has nothing to do with Bristol spline setscrews :-).

They're mostly 8-36, BTW. I should measure the tiny little screws used in Cosmos PTO's on the linearity plate. And I think there's one other place in the PTO where a Bristol spline screw is used and it's not 8-36...

Date: Tue, 25 May 2010 13:13:53 -0400
From: wa4aos@aol.com
Subject: [R-390] Possible Fowler Manual

I have what I believe to be a 1985 Fowler Technical manual for the R 390A but I could be wrong. It is in a blue plastic binder copyright 1985. The manual has the following Manual number on the top outside: EE125-AB-OMI-010/P610 R390A/URR.

Near the bottom is the statement:
This manual superseded's Navelex 0967-LP-063-2010 of 15 April 1970 including Interim Changes T-1 through T-7.

At the very bottom of the outside front is printed: PUBLISHED BY DIRECTION OF, COMMANDER, SPACE & NAVEL WARFARE SYSTEMS COMMAND,

My conclusion that this manual was written for the 10) Fowler units ordered by the Navy is based on the above info. I don't see the name Fowler listed anywhere in the manual. I have a number of R 390A manuals and don't find anything particularly exciting or different from those manuals in this edition.

No pictures of beautiful girls in tight bikinis setting in front of a 390A intensely, listening to very high speed CW or old F@rts complaining about their gall bladder surgeries, although that would have been nice; the girls in bikinis not the old f@rt's surgeries.

Am I mistaken? Is it possible the Navy had another R 390A manual published as late as 1985?

If there is sufficient interest, I may have some copies printed at one of the copy shops and sell them for my cost plus a few dollars for the running around.
If you would like a copy let me know at my DSM Labs email address of www.glenn@dsmlabs.com Please, if you resell manuals on ebay or elsewhere don't ask for a copy at this time. I am making this offer to those who enjoy these receivers as much as I do. Oh, if you do have a 390(A) manual with the girls in bikinis let me know. 73, Glenn WA4AOS

Date: Tue, 25 May 2010 14:15:06 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Possible Fowler Manual

That is the manual that was furnished with the Fowler R-390A's. It does have the latest changes/updates, most of which were incorporated into the Y2K manual which is available online here: http://www.r-390a.net/faq-refs.htm

Scroll down and you will see it.

Date: Tue, 25 May 2010 19:01:44 -0600
From: w9ya <w9ya@qrparci.net>
Subject: Re: [R-390] Possible Fowler Manual

Is this manual a good candidate for making copies of ?

Date: Wed, 26 May 2010 18:08:21 -0400
From: wa4aos@aol.com
Subject: [R-390] FOWLER MANUAL Update

Many of you have requested copies of my Fowler manual that Les Locklear, one of the worlds leading R 390 series receiver historians, has confirmed is the real McCoy. That being a 1985 R 390A, Fowler manual which happens to be in excellent condition.

So, I have shopped around and found a copying company that can make excellent copies. This manual contains 125 physical pages which is around 250 pages of information. There are 13 HUGE fan foldouts that are 11 x 54 inches and this copy firm has the equipment to scan and print them. This manual has updates that older manuals are not privileged to unless you have the Y2K manual. All 8 x 11 inch pages are being printed on high quality 28 pound paper and the foldouts on high quality 24 pound paper. Not the typical junk most manuals are duplicated on. BTW, this happens to be heavier paper than the 20 pound paper used in the original Fowler manual.

The large foldouts are very good for all of us who don't see as well as we did 20 or 30 years and are excellent to spread out over your workbench as you study, troubleshoot or align your R 390A receiver. On a personal note, one of the things that I appreciated was the large print out of the gear assembly. You can follow each part down to the washers without getting crossed eyed as with all of the other drawings I have seen. Oh, and the schematics are ever so easy to follow as well, remember 54 inches 4.5 feet long; did I say HUGE? You don't get prints this large in the Y2K manual or anywhere else that I am aware of.

I am having the manual faithfully duplicated in high resolution format from front cover to the rear cover and installed in 2 inch comb binders that will allow you to lay the manual on a table and stay put without trying to turn pages as do some binders. The original Fowler binder is not very good lying flat and does tend to flip around. These are very high quality copies and will be a real asset for any R 390A collector. Each manual will have chapter taps/separators installed to allow you to flip to the appropriate sections quickly. I am not sparing any cost to have all of these manuals done the way my personal copies will be. Again, this is not going to be dirt cheap but it WILL be exceptionally nice. I am allowing the R 390A reflector users have a copy at about my cost for about 10 days then I'll sell them on ebay and elsewhere for a small profit meaning a higher cost.

Please, if you have NOT notified me, do so now. My offer to sell them at about cost will only be for 10 days once I get them back.

I don't have a final cost yet since there were a few variables to work out but I should know tomorrow and will post the cost then. I'll use media mail to ship them out within the US and first class overseas postage elsewhere.

I am investing a lot of money and a fair amount of time to get this done for those who enjoy the 390A as much as I do. I only ask the copies sold here to users of this reflector be used for your own personal use and not duplicated and sold in competition to my sales efforts elsewhere.

Also bear with me if I don't post tomorrow, I am miserable with a really bad back problem and my wife is having to do all of the leg work. Hopefully, I'll have surgery soon to get moving again. We plan to ship the manuals within 24 hours of received payment.

***** PLEASE READ*******One last thing, I have asked all who are interested to please reply to my other email address, www.glenn@dsmlabs.com My AOL account is my junk email front door and gets flushed very often. Email directed to my DSM Labs account will get the first manuals, those to the AOL account may be at risk of not getting a copy

as quickly. I am set up for PayPal, checks, MO's or R 390A parts and I'm serious about the parts but, Please, no junk. Personal checks from only US states. I'll post the PayPal email address once I get the manuals in hand.

Date: Wed, 26 May 2010 18:53:27 -0400
From: wa4aos@aol.com
Subject: [R-390] FOWLER Manual CORRECTION

MY APOLOGIES TO THE GROUP ! ! ! I asked email request go to my DSM Labs account and in haste typed the address incorrectly. PLEASE ACCEPT MY APOLOGY ! ! ! The email address is simply, glenn@dsmlabs.com Plug this into your email program without the WWW. Again, sorry for the error..

Date: Wed, 26 May 2010 19:27:41 -0400 (EDT)
From: Paul Dulaff <pdulaff@embarqmail.com>
Subject: [R-390] Rebuilding Service for R390A Mechanical Filters

I will add a clarification to my note. I am looking to get tooling purchased for this project. As such, this polling is to see if there is enough interest (i.e. enough bad filters needing repair out there) that the cost of the tooling can be compensated. The coils and the foam will be high quality and using tooling, fabrication and materials which exceed what the filter was originally built with.

If I can get 25 filters for rebuilding, I expect I can pay for the tooling and setup charges.

Date: Wed, 26 May 2010 20:32:06 -0400
From: wa4aos@aol.com
Subject: [R-390] FOWLER MANUAL follow up update

WOW, I have already received commitments for the first 30 Fowler manuals that should be ready on Monday. Again, I should have the final cost in the morning and will post it.

If I get a few more request, I'll ask the copier to make 50 copies instead of the 30 I have ordered. I don't want to make too large of a commitment since I am doing this on my dime and don't want to end up with a lot of extra copies. Just let me know ASAP if you wish a copy so I can upgrade the order in the morning.

Remember, all I am trying to do is cover my cost for printing and the paypal fees for the next 10 days. (It's OK if you feel like a little tip. Hi) This is my gift to all who contribute and post to this reflector that we all enjoy so much. I have personally enjoyed and learned a lot from others postings

and look forward to more post.

Please let me know at my alternate email address ASAP
glenn@dsmlabs.com

Hope you folks enjoy the manual, it's really nice..

Date: Thu, 27 May 2010 10:40:22 -0400
From: wa4aos@aol.com
Subject: [R-390] FOWLER MANUAL One more update.

The response to my offer to provide copies of the Fowler manual has been overwhelming. Presently I have commitments for about 65 manuals and only ordered 30 yesterday. I will talk to the printer in a few hours and see where we are on the price. I asked them to sharpen their pencil because I had another large order for them. Hopefully the price will be well under the $50 mark but lets see what they say. I only need to be reimbursed for expenses. Since I am not making profit, I need to ask for reimbursement of the 3% paypal fees, if used, and postage as well. Otherwise it will cost me money to do this. I need to find some padded envelopes or small boxes as well.

Date: Fri, 28 May 2010 17:36:40 -0400
From: wa4aos@aol.com
Subject: [R-390] FOWLER MANUAL UPDATE

OK, it took the printer a little longer to get the first copy ready but they have and my wife is leaving in a few minutes to go fetch it back for the proof look over of it tonight. I made the mistake of telling them I really needed the unit cost to be under $50 each. It is but by only 22 cents.. Hi... Next time I'll just ask for very best price.. Presently I have request for 97 manuals and have spent all kinds of time responding to everyone. It reminded me of contesting almost,, ur 599 in SC.... Hi hi

Here is the deal. If the first copy is up to the quality I have asked for, I am going to have them start the first batch of 50 over the weekend. They said they could have them ready by Tuesday or Wednesday. I am putting almost $2500 on my Debit card and sure hope you folks come through for me! As I start receiving the funds, I'll order another 50 copies.

DON'T SEND ANY MONEY YET. I am still working out the shipping cost. If I ship medial mail, I have to buy boxes and if I ship Priority mail the boxes are free. I really would like to choose one or the other and not have to go back and forth with 97 manuals. USPS charges $10.70 for a Flat Rate box this size. I will check with UPS and also check on box prices over the weekend. Please, if you use PayPal in the US add the 3% to the final cost or

4% outside the US otherwise I am losing ground here and I really am trying to do something at cost as a gift to the users of this reflector.

One soapbox item. I asked up front for the recipients of these manuals at my cost to not copy and compete with my ebay sales which will be more expensive. I trust that request will be honored. My ebay target price will probably be around $65 for the manual or CD's around $15. My ebay name is Radiochamp or DSMLABS. Again, I hope we are all folks of integrity here! My ebay sales of this manual are for my daughter Sarah to earn some College money this summer for her next year. Please DON'T let us down.

Date: Tue, 01 Jun 2010 11:33:34 -0400
From: wa4aos@aol.com
Subject: [R-390] FOWLER MANUAL COST

OK, I have a cost for the Fowler Manuals I am having printed. I have orders for over 100 of these manuals and have committed and PAID for 70 copies so far and that came to $3241.00 plus sales tax out of my pocket. So, I really need those who committed to PLEASE come through. By ordering 70 copies instead of the initial order of 30 copies, I was able to get the price down to $46.30 each. The next part was getting shipping info from the post office. It would be best to use the new Flat Rate boxes from the Post Office. They are not cheap but you and I get a tracking number and it's cheaper than sending First Class by almost $2.00. The Flat rate price for Priority mail is $10.70 and the PO pays for the boxes. These manuals are heavy at almost 2.5 pounds/copy without the shipping box.

In The US, If you are going to use PayPal please add $1.68 to cover PayPal fees. 46.30 + 10.70 + 1.71 = $58.71 My email address for paypal is wa4aos@aol.com In the US,If you are sending a Money Order or Check and want the flat rate Priority Service the price is $57.00 to my address at QRZ or below. In the US, If you are sending a MO or Check and want Media Mail service with no tracking number and longer shipping time, plus I have to buy boxes send $52.00

Outside the US with PayPal PLEASE send me a note at my other email glenn@dsmlabs.com and I will find the best price to your country. Outside the US not using PayPal Please send an International Money Order and a note to glenn@dsmlabs.com and let me give you a price.

If you have any questions about any of this email me at glenn@dsmlabs.com It would be best to chose the paypal option with the Flat rate price so I don't have to buy boxes and hand write address labels. I have ordered the first 70 Flat Rate boxes and they should be here within 7 days and the manuals will be ready about the same time.

Thanks and 73,
Glenn Scott WA4AOS
341 Colonial Acres Road
DSM Labs

Date: Fri, 04 Jun 2010 10:39:50 -0400
From: wa4aos@aol.com
Subject: [R-390] Quick Fowler Update

Just a quick update. I had planned to be shipping manuals by now but the printer called yesterday and said it was taking more time to fold all of the foldouts and it will be next week before they have the first batch complete. I told them fine, but to please do a neat job; they will ! Also, I have not received the USPS Boxes yet but they should be here shortly. Sarah will be very busy next week packing and labeling many boxes. Hi

Once more, THANKS to all of you who paid, I was really hoping you folks were going to come through after I paid over $3K for the printing, You did and to me this is a testament to the caliber of people who subscribe to this reflector. Many of you sent some extra and as mentioned those proceeds as well as 100% of the profit from the ebay sales will go to my daughter Sarah's college fund. Sarah will be including a note to all of you with your manual. So, MANY THANKS to one SUPER FINE group of folks!! I'll try to post a picture of Sarah and provide a link over the weekend. I guess you know, I am a very proud dad.. Hi

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Date: Tue, 15 Jun 2010 13:40:52 -0400
From: wa4aos@aol.com
Subject: [R-390] Fowler manual response

Again I am being overwhelmed with email and the reflector with kind comments about the Fowler manual and our efforts. THANKs SO MUCH for the KIND comments; it makes the effort worth every second spent. Sarah and I are just thrilled that everyone likes the manual so far.

I have been told the next batch of manuals are almost complete so we will do a second shipping at the end of the week. I know I have probably over bragged about my daughter Sarah and hope that didn't get too old. But I am a proud father and am so fortunate to have great daughters. I know many of you are also proud parents.

Date: Tue, 15 Jun 2010 18:47:11 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] R390-URR BFO Problem

I have not read of the Chinese reverse engineering the whole receiver and

getting it back into production yet. But someone over there thinks there is at least a market for parts and is trying to get some items back into production and generate a cash flow on the parts to move the business along. I am watching for the mechanical filters to come into production. They may or may not. The units mite be form and fit of the can and modern ceramic filters inside. I have no real knowledge of what's driving the market. Happy to read that you were able to repair your unit and get your receiver going again nice to read good news.

Date: Wed, 16 Jun 2010 18:36:16 +0200
From: "Paul Galpin" <galpinp@absamail.co.za>
Subject: [R-390] Chinese parts

Does anyone know the web address of these Chinese parts?

Date: Wed, 16 Jun 2010 18:36:16 +0200
From: "Paul Galpin" <galpinp@absamail.co.za>
Subject: [R-390] Chinese parts

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Date: Wed, 16 Jun 2010 18:45:15 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] BFO

I found the BFO at Surplus Sales of Nebraska
http://www.surplussales.com/

Oscillator 452 - 458 kc (RF) AT-7620
R-390A / URR variable intermediate frequency oscillator. Brand new from Artisan. Use for replacement in R390 or for any project requiring a 455 kc IF.
NSN: 5820-00-697-9687. $45 each

Date: Wed, 16 Jun 2010 19:05:13 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Chinese parts

This leads me to some interesting questions. Who is the "Artisan" company whose name is on my '51 contract Collins IF deck? Fair Radio also sells Artisan BFOs for the R-390A. Is there something that I am missing?

Besides - The NSN provided, "NSN: 5820-00-697-9687", has the "00" for the fifth and sixth figures in the number. That indicates CLEARLY that it is made in the USA!

Date: Wed, 16 Jun 2010 18:06:53 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Chinese parts

Well I've heard many express their disdain for ballast tube mods, product detector mods, rectifier mods...you name it... One think I refuse to do is put a part made in China in my True Blue Made In USA R-390/URR or A. I have to draw the line somewhere... You can't hardly buy anything now days that does not at least contain components made in China but not in my Collins designed R-390A...and not in my Colt 1911-A1 45ACP either....

Date: Thu, 17 Jun 2010 01:35:14 +0100
From: "Andy Jackson G8JAC" <g8jac@btinternet.com>
Subject: Re: [R-390] Chinese parts

.....that indicates CLEARLY that t is made in the USA!..>

Not entirely true, the fifth & sixth figures are the code of the National Codification Bureau (NCB) that allocated the seven-digit part number that follows it (digits 7 - 13 of the NSN). While 00 certainly indicates that the NCB of the USA coded it, such a part could have actually been made anywhere, and provided that the part meets the specification, it can carry the NSN to identify it.
For those who have difficulty sleeping, extensive reading can be found at:
http://www.nato.int/structur/AC/135/ncs_guide/english/e_index.htm
---
Date: Thu, 17 Jun 2010 10:05:45 +0300
From: Sheldon Daitch <sdaitch@kuw.ibb.gov>
Subject: Re: [R-390] Chinese parts

You may remember the black beret issue some years back, when some of them made for the Army were manufactured in China. Even the MADE IN CHINA berets had a 01 country code. In my quick and dirty search, I found one photo at the place 220621931354 Many years back, my Army Reserve unit had several Canon 35mm camera kits, and I am certain the kit NSN was either 00 or 01 and if I ever located the dash 35 or 35P to verify it, I suspect all the parts are 00 or 01 country coded NSNs.

Date: Thu, 17 Jun 2010 08:18:53 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] Chinese parts

Isn't this like the codes on old JAN tube boxes? i.e. if Ken-Rad made the tube but RCA or some reseller boxed it and sold it to the military, it got a RCA or reseller NSN, not Ken-Rad? I'm sure for the made in China berets, there was some US contractor that was where the NSN was based on.

Date: Thu, 17 Jun 2010 15:28:23 +0300
From: Sheldon Daitch <sdaitch@kuw.ibb.gov>
Subject: Re: [R-390] Chinese parts

As for the berets, the NSN came from the supply system, assigned for that particular size and the NSN came as a US sourced item, even though it was made off-shore. As for the tubes and a particular NSN being assigned to a specific manufacturer, I really don't know, as when we were still ordering smaller tubes, we'd order by NSN and get whatever the supply system had. On the other hand, when I was ordering film for my Reserve unit, I could come up with an NSN for a particular type of Kodak film and we always got the Kodak brand. Never got any other brand of film which would have been essentially the same. I don't recall if we could specify a brand of say, transistors, ICs or coaxial cable connectors via the NSN. The biggest problem is making sure the supply system didn't substitute more expensive hardened IC chips for the more consumer grade and bill us for the more expensive parts. That cost a lot of money.

Date: Thu, 17 Jun 2010 08:30:05 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] Chinese parts

Maybe I'm understanding the numbers on JAN tube boxes wrong. I thought that somewhere in that code, probably between some hyphens, was the code for the supplier. Maybe the numbers on JAN tube boxes is different, or a superset of, the NSN?

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Date: Thu, 17 Jun 2010 11:49:14 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] NSA True or False

Just from ham band experience: from 160M to 20M there are few to no applications for a "low noise high gain" receiver. Even the simplest receivers have more than enough gain to turn band noise into intolerable loudness. Band noise is not in the 1/10 microvolt range but in the tens of microvolt range. Intermodulation from strong signals is the problem... and on many solid state receivers the way you deal with that is to put an attenuator in front of the front end in fact. The R-390A's tracking preselectors can eliminate a lot of intermod that many modern radios (even those fancy pants ones with servo-controlled slug-tracked preselectors) have trouble with.

On 15M, or 10M: there I can appreciate, especially with a really kick-ass directional antenna, the weak signal sensitivity and low noise. 15M had some really good openings this past winter.

Date: Thu, 17 Jun 2010 11:40:27 -0400
From: wa4aos@aol.com
Subject: [R-390] NSA True or False

It was with great interest that I read all of the comments regarding the R 390A and if it was ever listed as classified. For years I worked as a Systems Engineer with DEC, Digital Equipment Corp. One of my cohorts, Howard, in my department had spent a number of years in the Navy after graduating from Clemson University; He had one of those Top Secret Clearances. He was the one on our team who was allowed to go into restricted areas of the Savannah River Plant and had to have an FBI clearance checkout before he was allowed to have those privileges; seems like he had a Q clearance but I may be wrong about that.

I mention all of this because, one day I bought an R 390A from a local Ham in the Augusta, GA area and I had it in the back of my company car for a few days. My cohort, Howard, came in one morning and saw this receiver that he knew well resting in my Taurus Wagon rear compartment. Howard rushed into my office area and asked impatiently, "where did you get that R 390A receiver." I was shocked that he knew what it was, since he was not a Ham or had never talked to me about HF communications. I told him I had bought it from a local ham for $85; this was 1986, OK, they were often very cheap and plentiful back then..

Howard told me that he didn't understand how I got the 390A but it was classified equipment. I started to laugh uncontrollably and explained I had

seen these for years at Ham Fest since the 70's and I was quiet certain they were NOT CLASSIFIED. He stormed off and didn't talk to me for a day or two. Later, I sat down with Howard and told him I wanted to know more about his concern of these receivers being classified. Howard, took many secret's to his grave after his untimely death in his early 50's later on. He told me that without going into any specificity, that he was Navy trained on a Top Secret Crypto project that had to deal with National Security. He went on to explain this had to do with decoding enemy signals, Russian, as I recall and that they used the R 390A's on that project. I guess Howard believed the 390A's were classified because the project was classified. He was very sure the 390A's were still classified even after I showed him advertisements in QST where they were being sold. Anyway, Howard ended up buying the receiver from me for $100. I made enough profit to fill up my Taurus back then. Hi

Now for my question. I have heard for years that the NSA still uses R 390A's for weak signal work because of it's very quiet front end and sensitivity. I can attest to the fact that many of the receivers I have tested in my Electronics lab do not define very weal signals, under 1/10th of a microvolt. well. I have done test with calibrated attenuators hooked to the output of our Calibrated HP 8640B signal generators. I have tested the following receivers Ten Tec Orion II, Ten Tec Omni 7, Icom Pro III, and several top end Yeasu transceivers. When I adjust for a signal at the very hairy edge of the receiver not being able to define it all, of the ones listed above, have enough system grunge or microprocessor artifacts, that they do not define tones being turned on and off well.

I can take a R 390A that I have overhauled and at the same signal level can see definable tones in the audio using one of our Tektronix 465B scopes. It is not night and day better but it is obvious that the switched, on and off tones are cleaner. These test were all done in the clear with no adjacent signals at 2Khz or even 20Khz. I plan to retry the same test and would expect all of the solid state receivers to test better than the 390A with close in signals with their improved IF's and cascaded filters, However in the clear, I am amazed how well a 390A, working properly, hears very weak signals. I would not be surprised if the NSA would choose an R 390A for weak signal surveillance but I guess the real question is if there are signals of interest on the HF band in these days of Sat phones, Internet and Cell phones.

Date: Thu, 17 Jun 2010 11:28:32 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] Chinese parts

I was issued one of those kits. They had a top of the line Canon F-1 camera. I forget what lens came with it. Also had a nice, aluminum carrying case. I

have the TM somewhere. I'll try and find it to look up stock numbers.

Date: Thu, 17 Jun 2010 11:48:34 -0500
From: Jim Green <jagreen3@sbcglobal.net>
Subject: Re: [R-390] R-390 Digest, Vol 74, Issue 18

Interesting question, I have heard there is a quiet zone around the NSA and Langly. That those that live there must sign a covenant that prevents them from using any EMI emitting devices of any sort. I don't know if it's true or not, but it makes sense. Also, I have google earthed several elephant cage antanna farms that are located well away from noise centers. Therefore, perhaps the low noise floor of a R-390 is still of value. <snip>

Date: Thu, 17 Jun 2010 13:16:13 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Chinese parts

I guess everyone has "focused" in on the NSNs vs. the FSNs, and the two specified digits. I would like to point out - AND - REMIND folks, in addition to asking again. The ORIGINAL BFO in my '51 Contract Collins Blue Striper - has the tag still on it. It is MADE BY *ARTISAN*. (All the modules are COLLINS.

The IF module has stamped on the side adjacent to the "frame side": FINAL I. F. UNIT (2nd Line) - 540 7577 006 (3rd Line) COL. SER. NO. (Then a separate stamp in larger "font") 35. It also is stamped on top with a MOD 1. all of these markings are covered with either a varnish or shellac. I'm not sure which. I will NOT polish the aluminum as some do, as this would

- 1) Serve no purpose. The aluminum is MFP'd, and is NOT corroded.

2) It would remove all the original "ink" stamps that identify them. The Fair Radio BFOs are MADE BY *ARTISAN*. The BFOs being sold by Surplus Sales of Nebraska are MADE BY ARTISAN. Where in the *bloody* world did ANYONE derive that these are CHINESE PARTS!

Date: Thu, 17 Jun 2010 18:42:20 +0100
From: "Andy Jackson G8JAC" <g8jac@btinternet.com>
Subject: Re: [R-390] Chinese parts
To: <R-390@mailman.qth.net>
Message-ID:
<IGEBLHCOCAIMLADICEPDKEEAGCAA.g8jac@btinternet.com>
Content-Type: text/plain; charset="us-ascii"

Probably made by these guys:
<http://companydatabase.org/c/aircraft/helicopter-

manufacturers/electronic-design/new-york/edo-artisan-inc.html>

I think that FSNs were expanded into NSNs starting in 1956 and the changeover took quite a long time.

Date: Thu, 17 Jun 2010 18:17:30 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] R-390A NSA, noise

Quote: Even the simplest receivers have more than enough gain to turn band noise into intolerable loudness. Band noise is not in the 1/10 microvolt range but in the tens of microvolt range. Intermodulation from strong signals is the problem... and on many solid state receivers the way you deal with that is to put an attenuator in front of the front end in fact. EndQuote:

To really appreciate an R-390A you need to live in the middle of nowhere to get away from the worst noise sources. The way it is going, most hams are living in such a high noise environment I doubt can even benefit from an R-390A. A good way to think about it, imagine trying to be an amateur astronomer while living in the middle of a major city. Most folks there can barely see the brightest stars and have no idea of what the Milky Way looks like.

Date: Thu, 17 Jun 2010 20:35:46 -0400
From: "pwittenbergsr" <k2lrc@k2lrc.com>
Subject: [R-390] Artisan Company is in the USA and is still around.

Look here. a special producer of Electronics..so not China..
http://www.artisancontrols.com/company.htm

Date: Thu, 17 Jun 2010 20:48:41 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Artisan Company is in the USA and is still around.

I've never seen a R-390 or R-390A BFO PTO that wasn't manufactured by Artisan. I would bet between Fair Radio and Surplus Sales of Nebraska there are thousands of NIB replacements available.

Date: Fri, 18 Jun 2010 10:09:05 +0200
From: "Paul Galpin" <galpinp@absamail.co.za>
Subject: Re: [R-390] Chinese parts

Well, we seem to have drifted well OT with the Canon cameras and berets! To get back to the original question, is there a source of 390A "pirate parts" (SA

terminology) from anywhere in the world?

Date: Fri, 18 Jun 2010 06:27:11 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] Chinese parts

Folks on this list sell their own manufactured versions of:

Knobs
Utah Plates
Top and Bottom louvred covers
Bristol spline setscrews
Custom-inscribed nameplates
Newly manufactured and silk-screened front panels

A guy off this list has in the past sold "CIA covers" that he fabricated himself. I think someone has in the past machined and sold green gears for the 390. Some of the above have been sold through Fair Radio. I think that all the sellers of newly manufactured parts clearly call out that they are not "original", in many cases they are superior. But honestly I'm not sure I could tell a newly manufactured Utah plate from an original.

Date: Fri, 18 Jun 2010 06:29:02 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] Chinese parts

Oh, yeah, there are folks who take meter movements the same size as the 390A's but with the wrong scales, add pretty decent reproductions of the original equipment's scales and appropriate resistors, and sell for use in the 390A.

Date: Fri, 18 Jun 2010 10:32:29 -0400
From: jcoward5452@aol.com
Subject: Re: [R-390] Chinese parts

What's a Utah plate?I must have missed that one.

Date: Fri, 18 Jun 2010 10:02:52 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Chinese parts

A piece of aluminum, flat, die cut in roughly the shape of the state of Utah. Goes over the mechanical workings of the RF deck. Most important part are the markings on the top that help to identify the coils during alignment. Many radios are missing these covers.

Date: Fri, 18 Jun 2010 19:06:21 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Utah plates

I purchased a set of those Fair Radio Utah plates, they are excellent. The anodization is a bit rough (too much current I guess) but they fit perfectly.

If I was a total purist I could create a set of wet transfer letters and make the replacement plate look somewhat like the factory original. If you are missing those covers the Fair Radio set is a good deal.

Date: Fri, 18 Jun 2010 20:14:28 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] Chinese parts

Actually, I disagree. Any bit of info about stock numbers or acquisition is valuable. The procurement process is convoluted. You are always learning something new when dealing with it. Keeping up with current FSN action may help in pointing to counterfeit parts.

Date: Tue, 22 Jun 2010 17:19:52 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] NSA True or False

If you are a member of an organization that has fantasies that your command and control will still work the day after the US Marines arrive, you are not building your command and control communication links with cell phones and
sand state toys.

Date: Tue, 22 Jun 2010 17:25:13 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Chinese parts

The BFOs being sold by Surplus Sales of Nebraska are MADE BY ARTISAN. Where in the *bloody* world did ANYONE derive that these are CHINESE PARTS!

Bob, I cut and copied the print from the Surplus Sales of Nebraska web page. I cannot help it if they cannot get their own advertising copy correct.

Date: Tue, 22 Jun 2010 18:17:51 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Chinese parts

Roger, It doesn't surprise me that sites have erroneous data on them. They

most likely pay someone to do it for them. Then they REALLY don't check it over carefully. I simply started checking around, found the real deal was made by Artisan, the ones by Fair Radio, and the ones by surplus sales were ALL made by Artisan. I then looked up Artisan Electronics. EVERYTHING on them is in the USA. They either operate in NY or NJ. Therefore I came to the conclusion that those particular items are NOT Chinese. I will say, however, that this does not preclude someone from making "bogus" components! The last 10 to 15 years has revealed a LOT of parts that do NOT meet the requirements are INTENTIONALLY being produced and placed into the ENTIRE U.S. system. There are bogus bolts, [The military has had a BIG issue with this!], bogus aircraft parts, drives the FAA and the Airline Industry absolutely bonkers! I just checked every way I can do by computer.

Date: Wed, 30 Jun 2010 09:50:23 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Revision differences, Fowler vs. different generations of the R-390A

Has anyone done a comparison of the component value or design differences between the Fowler version of the R-390A compared to some of the other generations of the receiver? I assume that not all changes were for the sake of price savings and that some may be for performance improvements as the design was slightly refined. I know that the most significant changes have come out of later, unofficial, well thought out and tested amateur modifications. Is there anything particular to the Fowler version that would be worthy of incorporating into a mod?

Date: Mon, 19 Jul 2010 08:34:30 -0700
From: Dan Arney <hankarn@pacbell.net>
Subject: Re: [R-390] Chinese parts

I have made and furnished a lot of the R-39xxx parts for several years to Fair Radio , Miltronics and others. top/bottom covers R-39XX, meter gaskets, tags, original knobs stripped powder coated the 2 large KC/MC knobs CNC milled out OF 6061 powder coated with clamps screw nut washer. R390-A parts AC power cover, Cord Clamp, Utah cover plate, engraved front panels powder coated filled. R390/391 RF deck covers,Osc, deck covers, spare fuse covers. Plus other tags covers and items for other non R-39xx related units

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Date: Thu, 5 Aug 2010 13:34:48 +1000
From: "Pete Williams" <jupete@internode.on.net>
Subject: [R-390] Manual Correction

Greetings.. RE Manual. NAVSHIPS 0967-063-2010... Radio Receiver

R390A/URR. 15 April 1970. I don't use it often but recently had reason to look up parts list and check bandswitch alinement. Chapter 6 . para 6.2 .5 .4 has incorrect information at point 4. ' Connect multimeter AN/PSM -4 between pin 6 of XV 205 and pin D of J208----"

This should be pin 6 of XV 207 and pin D of J208. Checking the schematic will show 'why is it so' . The Army manuals and Y2K don't have the error. Not being aware makes a real chore out of unloading the RF module to find no problems.

Date: Sat, 7 Aug 2010 20:28:24 -0400
From: Tom Bridgers <tarheel6@msn.com>
Subject: Re: [R-390] Manual Correction

The Fowler R-390A Manual that Glenn Scott sells has the correction already in the book. And is marked in the right margin at Chapter 6 . para 6.2 .5 .4 by a thin vertical black column.

Date: Sat, 7 Aug 2010 19:35:42 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Manual Correction

The Y2k latest version has the update also.

Date: Sun, 8 Aug 2010 11:28:25 +1000
From: "Pete Williams" <jupete@internode.on.net>
Subject: Re: [R-390] Manual Correction

Greetings . thanks guys for the confirmation The NAVSHIPS manual I have came from Michael W1RC when he had some reprinted back in 1996.

Date: Mon, 30 Aug 2010 21:04:51 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] R390A Schematic Straw Poll

Today I received a copy of TM 11-4000 which is titled TROUBLESHOOTING AND REPAIR OF RADIO EQUIPMENT.

Although not stated as such, it has the entire R390A schematic using two 151/2 inch by 28 inch pages. They were printed on acid-free paper and are pristine. There is about an 8 inch overlap on the second page. It also has a 11 by 18 inch block diagram on another page. Here is the thought.

I am willing to go to FedEx office in Murfreesboro, TN which is 30 miles from where I live and get copies made and mail them out in a tube mailer. I don?t know the cost but would guess about $20 a set post paid. If you want

two or more sets I?ll be able to cut some off. (This could be a good deal for our friends in Oz.)

If at least 20 people are interested I?ll do it.

Getting the copies, mailing tubes and processing will take a couple of days worth of running around. I don?t want to make money but I do want to break even. In the last couple of deals I?ve done for the list I trusted people to pay and lost about $100. (Hank Arney warned me but?.) So I?m a bit testy.

So the deal will be: At least 20 people commit. If it comes together I will have to be paid in advance by everyone. I don?t plan on making extra copies so if you snooze, you lose. For extra postage I will send overseas. Bare in mind that postage might be USD $20 or more.

Please reply off line if interested. I?ll wait for about 10 days and then announce if the deal will take place.

Date: Mon, 30 Aug 2010 23:54:10 -0500
From: "Bill Hawkins" <bill@iaxs.net>
Subject: Re: [R-390] R390A Schematic Straw Poll

As far as I know, KA9EGW is the only one seeking info from this list anymore.

If you get near 20 people, I'll kick in, though I've got enough original manuals to be satisfied. Too old to have such heavy equipment around anymore, and nothing to listen to, but they were the finest vacuum tube sets ever built.

You are talking about the entire TM 11-4000, no?

Date: Sun, 5 Sep 2010 11:38:48 -0500
From: <ka9egw@britewerkz.com>
Subject: [R-390] leftover hardware

Please don't laugh. I've got the rx back together and have a few 6-32 screws and washers left over.

This after R&R the PTO, IF and RF decks.

Here's a list of what I know IS installed:

The two that are reached through holes in the front panel of the RF deck, one above the other, in the middle.

The three that go in the right side of the RF deck, through the chassis sideplates.

Two on the bottom left side of the RF deck, accessible through the big hole in the side of the audio deck.

Two on the front of the RF deck that hold the crystal deck in.

None of these are captive 8-32's. They're all accounted for.

One is absent from the cable clamp on the pto, but that's a known.

Which still leaves me a couople left over and NO visible holes to stick them in.

Is there a listing somewhere of where all the green screws go in this radio?

PS the radio is working fine and the 30dB drop on audio is there when tested
modulation-on/off.

Date: Sun, 5 Sep 2010 10:04:34 -0700
From: "Craig C Heaton" <wd8kdg@att.net>
Subject: Re: [R-390] leftover hardware

If it's an "A", I believe three screws are used to hold the crystal deck in place, front.

As someone who had to disassemble and reassemble lots of stuff, work with aircraft mechanics, and others; we all developed a method of organization. As each piece is removed, set the fasteners with that piece or place them back into the holes from which they came. That way there aren't too many parts n' pieces left over.

Putting everything into one big brown paper bag, shaking well until mixed is not a good option for most of us. I had to work with an ex Continental (aircraft I/E) who would remove ten screws and only replace five. His thinking was it would take less time to fix the next time.

The two R-390A's in my shack were missing fasteners, must have been the same I/E.

Many years ago, I was in Atlanta, GA for some training on a new model (un-named). We worked in teams of two and it was sure fun to put some extra part n' pieces on someone else's table!

Date: Sun, 5 Sep 2010 15:37:11 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] leftover hardware

I can't say where your hardware belongs, but whenever I disassemble a radio (particularly an R390A), I use small see-through plastic bags for each small piece of hardware I remove and place a paper label in the bag that states what/where the hardware is used. It works very well during the reassembly process and rarely have any hardware left over this way.

Date: Sun, 5 Sep 2010 18:26:33 -0500
From: <ka9egw@britewerkz.com>
Subject: [R-390] the saga cont. part 3

Sooo...[deep breath]...I found where the one leftover green screw went and it didn't even require major surgery; just had to get to the right setting on the MC CHANGE knob to reach through the holes in two different overlapping gears...it was the third screw for the crystal deck. I can't for the life of me find any more holes to plug screws into, period, that aren't filled by through-panel flatheads, so...I can only assume the remaining half-dozen-odd 6-32x3/8 are for holding down the utah cover...even if I don't remember taking it off HI HI. Two of them may nor even be 390A screws because they're rusty and IIRC 390A hdwe is all s/s? <snip>

Date: Mon, 1 Nov 2010 00:43:01 +0000 (UTC)
From: jonklinkhamer@comcast.net
Subject: [R-390] R390A Video and Addendum for sale

I'm selling my 4 part R390A and 2 part Addendum series on the R390A. I finally transferred them to CDs and don't need the VHS tapes. If anyone is interested I will take $100 dollars plus shipping. Please email me offline.

Date: Sat, 6 Nov 2010 11:48:09 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] R390A video tapes for sale

The Chuck Rippel videos were a great resource especially in the 1990's (I think that's when I first got wind of them). But... this is 2010. The original Rippel videos are now (according to the one place I know used to sell them, Universal Radio) discontinued so essentially unavailable. There's an addendum available on VHS evidently (which I have not seen, maybe it includes the original, or maybe the original is a prerequisite.) And they're VHS. Not the most durable media. I mean, I like listening to old 78's on my Caliphone player (6L6's in push pull, mind you!) but VHS tapes that are just 15 years old have not held up nearly as well as those shellac 78's from the

1930's What's ironic, is that by letter of the law, if anyone decides to make their originals into a more modern durable medium (digital or DVD or whatever) that nobody else is allowed to share in the originals anymore, even though I don't know if they can be bought anywhere. And even if the law weren't so clear on this I still think we'd be morally responsible to respect Chuck's wishes. Somehow I think we ought to have similar resources that will be available forever (not just on decaying videotapes), and which are continuously available. Some of this spirit produced the Y2K book. And no, I don't know how to do all this by myself. I'm just pontificating.

Date: Sat, 6 Nov 2010 11:54:27 -0400
From: "Richard Baldwin" <rbaldwin14@nc.rr.com>
Subject: [R-390] R-390A Tapes

Chuck Ripple was simply the presenter in these tapes. They were produced and the copyright is owned by Hi-Res Communications. The information is still available but likely just on DVD these days. I believe that they tried to sell off all of their VHS inventory some time back. Google Hi-Res Communications to view their offerings. So, the information is still available and the copyright is still valid.

Date: Sat, 6 Nov 2010 10:59:46 -0500
From: <ka9egw@britewerkz.com>
Subject: Re: [R-390] R390A video tapes for sale

they're available dirrect from hi-res on dvd for $109.95. I think the vhs version has been discontinued.

Date: Sat, 6 Nov 2010 12:17:06 -0400
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] R390A video tapes for sale

I don't know the web address for Hi-Res but I see the DVD's are available through Universal Radio, http://www.universal-radio.com/catalog/videos/5202.html Stock numbers 5206 and 5207. I'm happy to find out that there is life after VHS :-)

Date: Sat, 6 Nov 2010 11:46:06 -0500
From: Clay Nicolsen <clay5477@gmail.com>
Subject: Re: [R-390] R-390 Digest, Vol 79, Issue 3

Regarding: The sale of the Chuck Rippel R-390A tapes: Having had some previous experience with attorneys on the issue of IP (Intellectual Property) Rights, I'll toss in my 2c: If you buy copyrighted material, such as music, or, in this case, videotapes, you are allowed to use them in

accordance with applicable laws.
1. You may, if you choose, sell the original item at any time, for any price.
2. You may also, while you own the original, make a copy for regular use, and keep the original copy in a safe place.
3. * If you choose to sell the original, any copies must be destroyed*. Otherwise, two different copies would exist in the possession of two different owners, and the copyright holder would only have been paid for one. And that's pretty much it.

Date: Sat, 6 Nov 2010 10:10:25 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] the Rippel tapes

>How is this sale any different from selling your used books to a used book >store so that someone else might enjoy the books at a reduced price?

This is precisely the point. One is allowed to resell a copyrighted work on any media as long as it is the original. What you can not do is either sell or give away a pirated copy of the work. If you can not afford to buy, the guys on this list are most generous and could loan you their tapes for a brief spell. I got into a real hole, and having a *loaner* for a week was invaluable in solving my problems. VHS is a poor media for reference. Purchasing the DVD's from HiRes is a much better (and legal) option. Chuck has given all of us a tremendous gift by sharing his own proven techniques for restoring the 390A.

Date: Sat, 13 Nov 2010 16:53:03 -0600
From: Richard <theprof@texoma.net>
Subject: [R-390] R-390A hard to find clamps

At one point I found the clamps to be more and more difficult to find. One of the mechanical engineers at work suggested Small Parts Inc. (http://www.smallparts.com/). They have over 300 types of clamp-on collars alone. I even found some small plastic bearings I used to repair the card reader in my HP-65 calculator. Well recommended.

Date: Sun, 28 Nov 2010 12:22:29 -0600
From: Richard <theprof@texoma.net>
Subject: [R-390] Another source for new gear clamps

Stock Drive Products at https://sdp-si.com/eStore/ has a large section of gear clamps that look almost identical to the ones in the R-390A. They are made with hex screws of course. They are "Inch > Gears >Clamps > Rect. 1 End Radius (type C)". They also have an assortment of oldham couplers "Inch > Couplings > Oldham > Commercial Series" Minimum order is $50 or a $10 service charge is added but considering they want about $10 a clamp

you can make that up pretty quick. I haven't used them yet so YMMV but did add them to the "maybe list" for a prototyping project at work.

Date: Sat, 04 Dec 2010 14:02:32 -0500
From: "Michael, W1RC" <subs@w1rc.net>
Subject: [R-390] FS: NAVSHIPS 0967-063-2010 R-390A Manual Reprint

I found two copies of the NAVSHIPS 0967-063-2010 R-390A Manual reprints I did last year. It's the last copy so if you missed them back then here's your chance to get one. I will not be reprinting them again as it was too much work. This is THE R-390A manual like none other.

I am asking $40.00 including postage for it. It is unbound. If you want it bound with wire coil (lays flat on the table) add $3.50.

Date: Sat, 4 Dec 2010 15:08:24 -0500 (EST)
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] chuck rippels page

You can still access an archived version of Chuck Rippel's Website here :
http://web.archive.org/web/20080212161221/http://www.r390a.com/

Date: Sun, 05 Dec 2010 19:36:56 -0500
From: "Michael, W1RC" <subs@w1rc.net>
Subject: [R-390] FS:TM11-648 Manual for Radio Receiving Set AN/FRR-39

Another treasure..... this is the TM for the FRR-39 which is two R-390 receivers and the C-975 Receiver Control which provides for dual diversity reception of radio signals. This was used primarily for radioteletype reception. The manual is an original and is dated Nov 1954 and is 60 pages. Asking $25.00 plus shipping. If interested please reply by e-mail.

Date: Mon, 06 Dec 2010 07:38:22 -0500
From: "Michael, W1RC" <subs@w1rc.net>
Subject: [R-390] NAVSHIPS 91678 Collins R-388 Navy Manual Reprints Available

I have had several e-mails lately asking me about this manual.

NAVSHIPS 91678 (dated 6 June 1952) is the manual for the Radio Receiving Set AN/URR-23A. You may recognize this radio under its Army/Air Force nomenclature, the R-388 or the civilian model number 51J-3. This is a very rare manual. I didn't know it even existed. It is a very thorough manual unlike the Army or Collins Radio manual that are commonly available. The older manuals have much better quality photos than the later versions and the equipment I use for reprinting them

reproduce the photos very well from the originals. I am willing to produce a limited run of high quality copies of this manual. Quality will be the same as the NAVSHIPS 0967-063-2010 (R-390A) reprints I produce. Price will be $43.50 with coil binding and including shipping within the USA. I am happy to ship to international buyers but the cost of shipping will be higher and coil binding will not be available because it brings the weight of the package over the First Class mail limit and shipping becomes prohibitively costly. If interested please reply by e-mail so I will know approximately how many I will need to produce. I have a few available from the last production available for immediate delivery and the first responses will receive these.

Date: Sun, 2 Jan 2011 14:24:13 -0500
From: Barry <n4buq@knology.net>
Subject: [R-390] OT: Need advice regarding Blaupunkt tube radio

Sorry for OT, but I know there are folks on this list that will know this and I don't know who else to ask.

I have a 1962 Blaupunkt Verona (3-band - AM,FM,SW) with a classic 4-tube lineup for AM (5 for FM, and the 6th tube is the magic eye). It works (sort of) on FM, but it is it deaf on AM and SW. I've checked a lot of things and, so far, have not found anything obvious. It will hear a very, very strong signal from the generator (on the order of 3mV) but nothing on the order of the sensitivity it should have.

I'm suspecting the first tube (the osciillator/mixer) as a possible problem. It is oscillating nicely, but the grid bias for the oscillator is very low (on the order of about -1V instead of the -5V to -8V or so that it's supposed to have).

Referring to the following site for the tube (ECH81 / 6AJ8):

http://www.r-type.org/exhib/aaa0036.htm

It states the oscillator should be feeding the heptode mixer with "13 volts amplitude sine wave". My question is: should that be 13V RMS? I realize it isn't absolute or critical (values somewhat lower than 13V will still work), but I'm curious what it *should* be seeing.

I don't have it up and running with the scope at the present, but I *think* I'm seeing around 1 or 2 volts PtP and I think that's entirely too low.

I've inserted the 460kc IF signal and can peak the output transformer so I'm pretty sure the problem is at the oscillator/mixer stage or upstream from that.

Date: Sun, 2 Jan 2011 21:26:25 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

Hi Barry, I have restored many Blaupunkt tube sets. The most common failure in these is the 460 kHz transformers. I have rebuilt many of them. Try tapping one while feeding your 460 kHz generator into the ECH81 grid and see if they act intermittently. Even though you seem to be getting a peak, there could still be a problem. Rebuilding the transformers requires removal from the chassis or circuit board, removing the aluminium can, removing the "sandwich" type mica capacitors and installing new silver micas on the bottom, 150pf for the input and 250pf for the output. Otherwise, have you recapped the entire radio yet?? also check for proper B+ voltage as well. Good Luck, Ross
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Date: Sun, 2 Jan 2011 17:26:10 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

I did remove the cover from the first IF transformer, mainly because the lower ferrite core was difficult to turn. Thinking it was made more like some of the transformers I've worked on (e.g. R39i0A), I thought I might be just twisting the insides; however, once I removed the can, it was apparent that wasn't the case. These are made quire well and I wasn't twisting the windings after all.

If I'm not mistaken, the caps are not the "sandwich" type like I've seen before, but they are very small diameter, quite long tubular caps that run vertically inside two of the corners. I don't know if these are as prone to the silver disease as the sandwich styles.

The B+ is indeed off and I assume I do need to replace the main filter caps. There's slight hum on the output, but I don't hear it at low levels so the AC on the B+ isn't very bad.

Hmmm, still not sure where to go from here. There are some other electrolytics that I figure should be replaced; however, other than that, shotgunning the caps doesn't seem to be a need here. This model used very high quality components, at least for the day.

Date: Sun, 2 Jan 2011 18:31:55 -0600
From: "Bill Hawkins" <bill@iaxs.net>
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

Not much mail today, so here's a thought or two -

"The B+ is indeed off ..." This implies that you at least have a VOM.How far off is it?

"There's slight hum on the output ..."
This implies that you haven't used an AC-coupled VOM to read the AC on the B+. If the main filter caps need replacing, you will have many volts of AC on the B+. This will not necessarily translate to audible hum. The B+ can be drawn down by a leaky coupling cap to the final audio tube. Is that tube's cathode at the correct voltage? If the set has a line fuse, is it the correct value or a copper bar? Are there signs of overheating around the last audio tube and its output transformer? You said the IF stages appear to be working. Can you hear a modulated IF signal at the speaker? Is it as loud as you would expect as you turn the volume control? If you can read the oscillator grid bias, this implies that you have a high impedance meter. Do you see normal voltages at the screen and plate? If you can measure the AGC voltage with the signal generator driving the first IF, does it behave normally? Have you tried another tube for the osc/mixer? May your new year be filled with puzzles you can solve, as opposed to those that neither you nor any of us can't.

Date: Sun, 02 Jan 2011 17:45:09 -0700
From: george stringe <egnirts@comcast.net>
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

Barry, this has the sound of a broken wire in the antenna input circuit. I don't have schematic avail but the symptoms are that the antenna signal is feeding in via a small capacitance (not capacitor) hence the lower frequency am and sw are weak and the higher frequency fm signal will feed in better via random capacitance in the antenna input circuit.

Date: Mon, 3 Jan 2011 02:24:46 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

Hi Barry, The reason the B+ is low is not because of the filter caps, although you should replace them, You need to replace the selenium bridge rectifier with a silicon bridge and a 100 ohm 10 watt resistor(in series with the+ lead) Be sure that you disassembled one of the 460 cans and not one of the 10.7 mHz cans. You really should replace ALL of the paper caps as well. Although Blaupunkt used better papers than Grundig and Telefunken, they do still fail unexpectedly. Also, replace the small electrolytics as well, pay particular attention to polarity as one of the electrolytics has + connected to ground. (agc stabilizer) Keep us posted!!

Date: Sun, 2 Jan 2011 22:45:26 -0500

From: Barry <n4buq@knology.net>
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

I'll give that a try. I disconnected the filter caps and jumpered in some good ones and I think the voltage did rise just a tad, but not much. I don't remember exactly what I was getting before, but I'm now running about 25V low (214 instead of 240). I checked the transformer output and it's good so it must be the selenium rectifier. I know they're bad about burning out in a smelly way, but I did not realize they get "resistive" over time.

Apparently the small rise in voltage really helped the FM. It is a lotclearer than it was last night. It really sounds good now. I need to align it, but in the meantime, at least it is working nicely.

Yes, it is the 460kc transformer I disassembled. See it at:
http://n4buq.shutterfly.com/pictures

As a side note, there are two small spring clips that hold the internal assembly together. Last night, I was reassembling the first clip and it went "p-ting!" as it flew across the table, ricocheted off the face of the signal generator, and then flew across the shop. I looked for it for about 1/2 hour last night and gave up. Today, I pulled almost everything off the floor on the side of the shop where I last heard a "tink" and finally found it. At least the shop got a good cleaning...

Date: Mon, 3 Jan 2011 13:10:42 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

Hi Barry, Very good, If you need parts for it I have some Blaupunkt chassis up in the barn. Keep me posted. Ross

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Date: Mon, 3 Jan 2011 17:50:27 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

> "The B+ is indeed off ..." This implies that you at least have a VOM.
> How far off is it?

I have now incorporated a solid-state rectifier, good filter caps, and a dropping resistor. B+ is right on now.

> "There's slight hum on the output ..." This implies that you haven't
> used an AC-coupled VOM to read the AC on the B+.

I've checked it with the 'scope and, as I recall, it was a fairly small ripple.

With the filter caps replaced now, though, I can assume it is in spec. I need to measure it again to see.

> If the main filter caps need replacing, you will have many volts of
> AC on the B+. This will not necessarily translate to audible hum.

Oddly, there is still significant hum on the audio. Bad tubes (filament problems?)?

> The B+ can be drawn down by a leaky coupling cap to the final audio
> tube. Is that tube's cathode at the correct voltage?

It's supposed to be at 6.2V and it's at 7.8V. Not sure what would cause it to be higher than spec.

> If the set has a line fuse, is it the correct value or a copper bar? Are there signs
> of overheating around the last audio tube and its output transformer?

It's supposed to have a 600mA fuse and it had an 800mA fuse in it. I knew it had a fuse but hadn't checked it for correct value. I put a 600mA in and it works fine. No noticeable headint around the tube or audio xfmr. They both look great.

> You said the IF stages appear to be working. Can you hear a modulated
> IF signal at the speaker? Is it as loud as you would expect as you turn the volume control?

Yes, I can hear a modulated tone when coupled into the IF; however, I'm not sure what signal level would be appropriated. If I crank the generator up enough (don't remember exactly the value but I think it was on the order of 1mV), then I get full audio.

> If you can read the oscillator grid bias, this implies that you have
> a high impedance meter. Do you see normal voltages at the screen and
> plate? If you can measure the AGC voltage with the signal generator
> driving the first IF, does it behave normally?

I checked the mixer's voltages (need to check the oscillator again). It's voltages are very close to spec. Plate voltage is a bit high (190 vs. 175), but everything else is good.

> Have you tried another tube for the osc/mixer?

That's what I'd planned. I don't have another one but may order one as a

last resort. It works well on FM and it uses the mixer side of that tube in FM mode. I'm still wondering if the oscillator is just weak. <snip>

Date: Wed, 05 Jan 2011 13:57:46 +0100
From: Heinz Breuer DH2FA <dh2fa@darc.de>
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

These tubular ceramics are high quality capacitors. The silver "plates" of the capacitor are on the inside and outside of the ceramic tube. There is no migration path possible.

Date: Wed, 5 Jan 2011 12:08:22 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] OT: Need advice regarding Blaupunkt tube radio

> These tubular ceramics are high quality capacitors. <snip>

That's what I suspected. Good to know. I get a sharp peak on the primary of the first IF, but the secondary seems pretty flat - at least as far as I've tried to adjust it. Not sure if it's supposed to peak that much on the secondary but I think it should.

Date: Tue, 11 Jan 2011 13:00:49 -0500
From: "Jerry O. Stern" <jsternmd@att.net>
Subject: [R-390] Advice on Replacjng Components

When you have a suspected leaky mica or ceramic cap or an out of spec resistor - do you always remove it or do you clip one end and test it? To remove all suspected components seems like a major time consuming task. I have heard many clip one end to test especially in tight places. My question focuses on the techniques used to resolder If the component turns out OK. Do you juxtaposition the cut ends and just put a glob of solder? Most passive components don't have sufficient extra leads so I am very interested in learning from the wisdom of the group.

Date: Tue, 11 Jan 2011 18:14:39 +0000
From: <kirklandb@sympatico.ca>
Subject: Re: [R-390] Advice on Replacjng Components

With a Hako desoldering pistol, I've had good success in desoldering the actual lead. It takes patience, practice and usually needle nose pliers, and dental picks. I've also had good success grasping the end of a wire on a desoldered connection "gently" but firmly with small side cutters and unwrapping it from a terminal.

Before going to all this trouble, one should check tube socket resistances

(when available) and tube socket voltages (after checking key capacitors).

I like to pull the rectifier tube and by-pass the power supply caps and feed in my own DC plate voltage (with current limiting).

Date: Tue, 11 Jan 2011
From: "Dan Merz" <mdmerz@frontier.com>
Subject: Re: [R-390] Advice on Replacjng Components

Jerry, if you want to rejoin two butted wires, wrap a small coil of wire around a small cylinder, and then slip the coil over one of the ends to be soldered and then back halfway over the other end and solder the coil to the two wires to be joined. You can use bare copper wire or tinned copper wire to make the small coil, maybe slightly smaller wire than the wires to be joined and wrapped over a cylinder that is about the same diameter as the wire to be joined. The result is a little "lumpier" than the original but provides a better mechanical grip than just soldering the butted ends of the two wires together. Unsoldering is always an option over simply cutting the wires to check but takes more time and practice to not damage other components when unwrapping soldered leads. If the leads are really short, the coil technique may not work. At one time, I had some manufactured coils that were made for this purpose but I'm not sure whether these are still available or not. It's simple to make your own in any case. Dan.

Date: Tue, 11 Jan 2011 13:50:25 -0500
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] Advice on Replacjng Components

Of course, I agree with all the good advice about understanding the problem first, knowing what you are doing, and being careful about rework in general. I would like to add one thing:

Every 60-year-old part you leave in the receiver is a time bomb waiting to fail. They weren't designed to last that long. If there is a choice between replacing the component or spending 15 more minutes testing it, just replace it. It will save you countless minutes re-finding it when it goes bad 10 years from now.

Just my humble opinion, of course.

Date: Tue, 11 Jan 2011 18:59:08 +0000
From: <kirklandb@sympatico.ca>
Subject: Re: [R-390] Advice on Replacjng Components

I tend to adjust my methodology according to whether I think the part in question will lead to catastrophic failure or not, e.g. power supply caps,

high voltage decoupling caps where a cap short to ground will take out an inductor that I can't easily replace.

Then there are those parts that you know that if you place them, you will have endless grief, like in VFOs/PTO's, temp compensating etc.

Date: Tue, 11 Jan 2011 13:10:17 -0600
From: Robert Nickels <ranickel@comcast.net>
Subject: Re: [R-390] Advice on Replacjng Components

One more tip that I suspect many of us have learned the hard way: Ask yourself "How often do I want to be working on this thing?" Few things are more frustrating than to have to haul the same piece of gear back to the bench a few weeks/months later to replace yet another two-bit part.

Date: Tue, 11 Jan 2011 16:09:52 -0600
From: Randy and Sherry Guttery <comcents@bellsouth.net>
Subject: Re: [R-390] Advice on Replacjng Components

IIRC Sprague used to supply such things - called them "Quigs"... They indeed make "splicing" both easy and secure.

Date: Tue, 11 Jan 2011 18:27:50 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Advice on Replacing Components

Unless the component leads are as tight as a banjo string you usually can get a little bit of leeway while desoldering a connection. Then, while it is still hot you can use a dental pick, hemostats or needle nose pliers and unwrap the component from the attachment point.

It is important that you do not overheat the 60 year old terminal strip or tube socket as the bakelite seems to turn into magic dust when heated. Practice on a junque piece of equipment (ok, ok, a "classic" piece of gear that you or your friends do not have an undying love affair with for it's collectors value). It is a good point that you need to understand where a component is in a circuit and what function it performs. In many cases you can get the job done by pulling the tubes from the sockets. To me, it gets a little tweaky when the capacitor is tied into an inductor and maybe a Q spoiler resistor. Trying to get a measurement on those capacitors is tough, even with a Sencore LC-53.

Work through the stages and fix things that are broken first before you get mod happy or decide to replace every grid resistor with a 1% metal film. The technique I like the least is when the component lead is cut in half and two loopies are made with the ends and a big blob of solder glues the mess

together. (looks icky, makes me want to wash my hands repetitively or count the dimples on a golf ball (yea, a little bit of OCD here)).

Date: Tue, 11 Jan 2011 20:48:55 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] More Advice on Replacing Components

<snip. I?m making an educated guess that you are a new owner of one of our beloved Boat Anchors. If I?m wrong, I apologize.

All the proceeding comments that have been made are accurate but I want to add a bit more.

There are three ways to do this hobby.

1. Use the radio until it fails then seek help. Not recommended

2. Buy a top-notch refurbished BA radio from Rick Mash, Chuck Felton, Charles Ripple or other well known restorers. Then fire up and listen. Expensive but very doable.

3. Buy your BA, some test equipment and spare parts and learn to maintain it yourself. This is what most of us do. There is no Radio-TV repair shop service. You will probably end up spending as much or more for test equipment than you paid for your radio.

Some, like me, get into it fairly deeply. I have 16 BA?s of various types awaiting restoration. My test equipment investment over the years totals over $2k. Many others have much more invested many less. (FYI Uncle Sam trained me on the R-390/A in 1962.)

As these radios are over 50 years old my personal belief is to replace all the resistors with metal film types and at least all the paper capacitors, postage stamp micas, bypass ceramics and some silver mica capacitors. (You will get various opinions about this.) A complete rehab takes a lot of time and patience. The benefit is that once you do this your radio probably not need any more components during all the time you?ll you use it. With the new components it will be able to be aligned to perform better that when it came from the factory and stay that way.

Knowledge is your most valuable tool. Download the Y2K-R3 manual from the R-390 faq site. Roger Ruszkowski has gracious donated enough material that when learned will make you a master of repairing the R-390/A.

Also download W. Li?s ?Pearls? as well as the previous reflector notes.

Last but not least the list members are always willing to share their knowledge. However, under any circumstances do not to use the word Kielbasa. The list reaction will be worse than saying squirrels to a pack of dogs.<G>

So you pays your money and takes your choice.

Date: Tue, 25 Jan 2011 14:59:13 -0500
From: Tom Bridgers <tarheel6@msn.com>
Subject: [R-390] Update on visit to SkyCraft Surplus and Parts - Orlando

SkyCraft Surplus is a must-visit destination if you're going to be in Orlando. Over 3 separate visits, totaling about 4 hours, early this month I had a great time ... and still didn't see everything they had in inventory.

Most of their prices are terrific. I purchased a lot of screws, nuts, solder lugs, solder posts in quantities of a hundred to get the 30% discount. I found some aluminum L-brackets for 15 cents each that are going to be perfect for bread-board construction projects. Transformers of all flavors are on the shelves and the isolation xfmrs and 6.3 vac, 3 amp xfmrs were priced right and so I purchased several of each.

Switch hardware, which is either expensive or not available locally in Greensboro, is available at SkyCraft at attractive prices and so I purchased the associated washers, nuts, and internal lock washers -- all at very attractive prices.

I found some thin 6" by 3/8" brass strips that I'll use in some projects in the works.

Not surprisingly, the box of R-390 mini connectors that I'd seen in previous visits was empty of those flavors this year, but had beaucoup of other types in the box.

Their website has photo's of the inside of their store -- go to the about us tab, and down toward the bottom of that page there is a store photo's tab. See:

http://www.skycraftsurplus.com/about-us.aspx

Date: Tue, 25 Jan 2011 17:03:22 -0500
From: "Dan Martin" <pitfit@comcast.net>
Subject: Re: [R-390] Update on visit to SkyCraft Surplus and Parts - Orlando

I'm happy to hear it is still there. It has been around for what, 40 years or so? As a Tampa native until 1987 I drove from Tampa to Daytona

countless times and often stopped at Skycraft. Even as a "young married thing" in the mid-70's my wife completely supported my wandering up and down the aisles. To this day she describes my interest in copper, whether wire, terminals, fittings, antennas, or in general, as "liking bright shiny things to bring back to the nest". After looking at the innards of my R-390A some years ago she started referring to all of my boatanchor radios as "radio machines". Ha! A better description was never coined!

Though I now live a long way off I still visit FL very occasionally and hope to return to Skycraft one day. It is a marvelous stop for any solid copper boatanchor.

Date: Wed, 26 Jan 2011 09:24:02 -0500
From: Tom Bridgers <tarheel6@msn.com>
Subject: Re: [R-390] [Glowbugs] Update on visit to SkyCraft Surplus and Parts - Orlando

I had the same question about how does SkyCraft survive. But here's what I observed.

Large numbers of buyers are in this store all the time during the week and they mob it on Saturdays. Everytime I was in the store, there were at least 10 to 15 people exploring the store looking for parts. During the week days that I was there, I noticed home owners and electrical contractors buying all manner of electrical items ... some priced at $25 to $100 each. Which apparently was a lot cheaper than they could buy a Lowe's or Home Depot. How do I know they were electrical contractors? When I arrived and left, their panel trucks were in the parking lot!

On Saturday I arrived about 2pm and the place was like an ant hill. There must have been 50 people scrounging around looking for parts. About a third of those were clearly students looking for semiconductor and robotic type parts. Another third were probably hams. And another third we DIY home fixer uppers... Now bear in mind that was 2 PM. I'm guessing the crowds starting showing up when they opened up at 9 AM... And on and on it goes all day long on Saturday.

Regarding SkyCraft's nut. I imagine their rent is not too high. They are not located in the high rent district. Cutting the other way, though, is on Saturday, there must have been at least 5 or 6 (or more) sales people roaming the floor helping people find what they were looking for. And the sales people were busy, busy, busy. None of them were standing around chewing the fat.... It was very nice to have someone to turn to ask about things, but then I wondered how in the heck can they afford to pay these people? Dunno. One thing is for sure they didn't make much off of me or probably other hams. So they must be making it off of the home owners

and electrical contractors.... It's a puzzle for sure.

One other thing I noticed. Behind the counter, just to the left, there was a guy on the computer the entire time I was there. I'm guessing he was probably buying surplus from some source .... and maybe selling stuff to other buyers....

Anyway, judging from the volume of people coming in ... and buying, SkyCraft is not going out of business anytime soon.

Date: Thu, 27 Jan 2011 12:03:46 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Capacitors

"It can be expensive to go with OEM spec parts. It will not be too many years before people will be laughing at those who would replace a dead tube with a tube instead of a FET substitute circuit. (Quieter, cooler / less power use, more linear, longer MTBF, etc.)"

They already laugh at us. I do not think that many of us are into tube based gear so we can win a popularity contest. If you told someone that you owned an R-390A you are likely to be met with a blank stare of incomprehension. Many amateur radio operators do not know of anything more than 12 VDC. If you follow some of the sites like eHam in the amplifiers forum you will find
people with a shocking (no pun intended) misunderstanding of what 2000-3000 volts will do to a person. You can get knocked dead by the B+ in most tube gear and I suspect that most of the people who follow this mailing list have gotten a kick from HV before.

(actually, I think that some folks do it repeatedly as a form of electro-convulsive therapy <j/k>)

There have been a few write-ups done on folks who have taken the RF deck from a R-390/A and used it with a radio that is solid-state from that point onwards. (blasphemy! <g>). One thing you can say about a multiple band, multi-stage, permeability tuned RF deck is that it is not small nor is it light. Certainly there are quieter IF designs out there where you do not rely upon a string of offset tuned IF stages and mechanical filters that are a bunch of metallic disks tack welded together with coils on each end. If you have never tried it, take the diode output on the back panel of the radio, couple it through a capacitor and feed it into a high quality audio amplifier. It is truly a treat to listen to. If you want to dip further back, take the 455 KHz IF and go into a Sherwood Engineering SE-3.

Yea, if you were really into it you could solid state the entire radio. I too

have been tempted while looking at the schematics at the idea of sticking a HEMT in as the first RF and adding a balanced mixer with a high stability, spectrally pure frequency source. It would be one freakish receiver with cams, gears and sliders that like to bathe in Mobil 1, mixed with circuitry built on teflon substrate, cooled with liquid nitrogen and a rubidium referenced oscillator. One thing you can say is that it would not be a R-390A any more. Back in the 80's I spent a great deal of my working day in a Faraday cage. If it was not for it being so drafty it would have been a great place to relocate my office into. The big latching door handle and gasketed door frame was impressive enough to keep people away. I ran across a pile of Faraday cage panels at a local electronics surplus place a few years ago. By the time I went back they had stripped them down for the value of the copper screening. What a shame.

Date: Tue, 1 Feb 2011 12:06:59 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Posted R390A Problems

Over the last six months or so I?ve become concerned about some of the questions posted. Not to beat a dead horse again any more than necessary HOWEVER:

1. Reality Check. These radios are not modern rice-boxes. They take a certain amount of maintenance depending on many variables. There is no free lunch. We either cut bait or fish as we are on our own. There is no nearby Radio-TV repair shop.

2. Knowledge. Not everybody of the list is an Eddie Einstein nor needs to be. If one downloads and READS the Y2KR3 manual, the many tutorials of Roger in chapter 9 will answer many, many of the questions posted here. The same is to be said for the ?Pearls? and copies of the ?TM? series of manuals. If one Reads The Fine Manual(s) - enlightenment will follow. Remember the net is not a guaranteed library. It can disappear or be shut off without warning.

3. Spare Parts. One should have at least a complete set of known good tubes. I buy them on epay when there are four or more NOS of one type as the postage is almost the same as for one. Alternatively buy a set of tubes from one of the better dealers on the net and then test them in you receiver while it?s still working OK. Check the age of the plug in electrolytic filters anything older than 10 years should be replaces. Get Deoxit and read previous posts.

4. Test equipment. Get a DVM. One can buy a 3.5 digit new all day for way less than $50. A used working VTVM found all day on epay for way less than $50 shipped. Make a tube adapter as shown in The Fine Manual and

make some general readings BEFORE one needs to. This takes time but is not rocket science. Also have several one or two foot lengths of 2 X 4s for support on side or bottom positions while testing. Acquire or make simple crystal calibrator, such as found in the ARRL handbook or old copies of Ham Radio or QST. This will tell you what bands are good, give an approximation of quality and can be used for some calibration.

5. Due diligence and preventive maintenance. Look, listen, sniff and move. While operating look listen and sniff on both top and bottom for anything unusual. Gently move tubes and plug connectors looking for a change of operating characteristics.

We all start at zero and work our way up. We?re all willing to help. However there is a personal responsibility here of each owner to do their fair share of the ?heavy lifting?.

Date: Tue, 1 Feb 2011 14:34:46 -0600
From: Ben Loper <brloper@gmail.com>
Subject: Re: [R-390] Posted R390A Problems

I can't speak for everyone, but I've had my radios in bits and pieces and I knew every little detail, but I forget and sometimes I need a nudge. I'm rebuilding a
75A2 and as I slowly pull it apart things come back to me. I'm sure as I make progress I'll quit asking and start telling.

Date: Wed, 2 Feb 2011 08:44:46 -0600
From: glwebb@gundluth.org
Subject: Re: [R-390] Posted R390A Problems

I kind of thought one of the reasons for this list is to share our knowlege, enjoyment, and history of these receivers. If we are concerned about bandwidth use, we all should learn how to "reply" without including all of the text in previous postings.

So what should the postings to this list be? Myself, I usually learn something
from all the postings. Granted some are re-learns. And I don't mind the ones that don't have anything to to with the R390/R390A. There always something to learn which migh be useful to solve a problem with a completely different instrument. Gary

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Date: Wed, 2 Feb 2011 07:22:48 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Posted R390A Problems (OT)

>.....I've been concerned about some of the questions.....

Well, I, for one, am not concerned at all. This is a forum for all R-390A users. Some of us have been in this game for decades and others are new to this hobby. It behooves the experienced to bring the inexperienced along, gently and diplomatically.

Date: Wed, 02 Feb 2011 10:23:06 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Posted R390A Problems

I couldn't agree with you more!
When Don Reaves steps in, THEN we really need to pay attention.

Otherwise, posts like the one yesterday are just NOISE that is unjustified and not needed. I believe the individual with the problem could look at the RF Deck, but perhaps ought to go with the AF Deck swap-out/test.

Date: Wed, 2 Feb 2011 11:49:00 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Posted R390A Problems (OT)

I agree. I recently acquired my first R-390 (not an R390A) and intend on asking a few basic questions about it when I get some of the other projects off the bench (buzzing sound in STDBY and CAL). I am pretty familiar with the R390A but this is like a new beast and I'm sure I'll ask a bunch of "newby" questions.

I also lean on this list for electronic and other radio-related topics and I really appreciate the friendly help I've gotten for those as well (still looking for a "cup core" for this IF transformer in a Blaupunkt table-top set: http://n4buq.shutterfly.com/pictures/9)

Date: Wed, 2 Feb 2011 08:59:23 -0800 (PST)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] R-390-A problem

FWIW: Encountered? a couple of similar problems recently restoring an HQ-129X:

1.) Warbling on the BFO. Went away when I pushed sideways on the converter tube (6K8). Turned out the converter filament ground wire looped through the ground lug and touched the ground lug?on the tube socket but was never soldered (apparently at the factory as it was completely clean)?resulting in constant fluctuating filament connection.? Soldered it and resolved the issue.

2.) Loud static/popping/crashing when adjusting one RF coil during alignment. Duplicated by pushing on the coil form. Two solder connections on the coil form had gone bad after 60 years - resoldered the connections and problem resolved.

The four best troubleshooting tools available to you: your brain,your nose, your eyes, your ears. My two cents.

Date: Wed, 2 Feb 2011 13:02:57 -0500
From: Robert Young <youngbob53@msn.com>
Subject: Re: [R-390] Posted R390A Problems

I wanted to thank everyone for their time and kind and resourceful responses. I have been on this reflector for probably 4 or 5 years now and don't often post but always appreciate reading it. I am not an R-390A expert and probably never will be but have done some radio work including recapping an SP-600. I always feel it's nice to get pointed in the right direction before I start on a new project however small it is and also like to check and see if my hunches were good which in this case they seemed to be,

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Date: Wed, 2 Feb 2011 12:15:42 -0600
From: "William J. Neill" <wjneill@consolidated.net>
Subject: Re: [R-390] Posted R390A Problems

Having been on this list for perhaps five years, I've noticed, with time, that resolutions to problems have been revised or, moreso, greater insight into the problems have been provided, facilitating a greater understanding of what corrective actions are needed.

All things considered, I save each e-mail on the premise that sooner or later, each tidbit of knowledge will benefit my lack of sophistication in matters pertaining to these receivers.

Date: Wed, 02 Feb 2011 15:18:02 -0600
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] Posted R390A Problems (OT)

> Well, I, for one, am not concerned at all.....

Bingo.

Date: Wed, 2 Feb 2011 20:34:21 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Posted R390A Problems

Well the R-390 series receivers are complex beasts and not the place to start your learning. Do a couple of S-38's and work up to an SP-600 maybe before diving off into a 390.

I think we have a lot of new folks who have heard about the greatness of the
R-390 and have gotten themselves one only to face the daunting task of trying to fix and/or maintain the thing with no real previous experience with the technology and little in the way of test equipment. It is definitely a technicians radio. It's kind of like buying a high maintenance Jaguar because you love the beauty of the beast but not really possessing any serious mechanics skills.

First thing you know the rear diff is making noise or the Lucas electricals has gone haywire and you hope someone else has already had this problem and can tell you exactly which screw to turn to make it better....and in some
cases that can be done but not a lot is learned in the process. Old Jags are mechanics cars....

There are lots of books that can impart the theory of vacuum tubes to someone who already has a good foundation of basic electronic theory...but that's where you really need to start...if for no other reason to stay alive working on these things. Not trying to discourage anyone just trying to be practical about it...

And by the way Jaguars are great cars...I love them. Have owned one and hope to grab another at some point.

Just my 2 cents worth....

Date: Wed, 02 Feb 2011 15:45:18 -0700
From: Robert Moses <rhmoses@earthlink.net>
Subject: Re: [R-390] Posted R390A Problems

Everyone has to start somewhere. There are a lot of newbies out there. Vacuum tube troubleshooting is not currently taught since it is considered obsolete. Keep the good questions coming! Otherwise this list will end up with such an aging population that obit notices will be 10% of the postings! It is fun for people to struggle with help from the answers on the list -- and learn how to troubleshoot and repair radios. Mentoring the newbies is essential to the survival of our hobby. (And without newbies the market for radios will quickly dry up.)

Date: Wed, 2 Feb 2011 23:03:56 -0800 (PST)

From: "Drew P." <drewrailleur807@yahoo.com>
Subject: Re: [R-390] Posted R390A Problems

"All things considered, I save each e-mail on the premise that sooner or later, each tidbit of knowledge will benefit my lack of sophistication in matters pertaining to these receivers." Not a bad idea, but someone else has had that idea and has been doing it for over a decade, has distilled that wealth of knowledge, categorized it all, and has posted it on a website for all of us to enjoy. You are thusly spared the effort. You will find Wei-i Li's brilliantly conceived "Pearls of Wisdom" at r-390a.net. Click on "Tutorials".

Date: Thu, 3 Feb 2011 07:44:59 -0500
From: William A Kulze <wak9@cornell.edu>
Subject: Re: [R-390] Posted R390A Problems

<snip> I personally get a lot out of this list as well as some others. I try to search when I have a question and that can sometimes be frustrating and fruitless. If everyone found all their answers that way, this would probably be a sparse list. Thanks to everyone for providing the informative discussions.

Date: Thu, 3 Feb 2011 11:31:50 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] R-390A Information Resources

As Drew pointed out, Wei-Li does an excellent job of culling through all of the static in this digest to create the "Pearls of Wisdom". Perry and contributors did an excellent job of pulling together the Y2K (Y3K) PDF manuals. Originally as a conversion of the 1985 Navy manual but now nearly triple in size with supplemental repair information, detailed photos on gearbox rebuilding and the most common (and proven) upgrades and modification. Recently I have been working with Perrier to step into the role as editor of the Y3K collection. So much work has been done before and I only hope to do justice to the labor they put into "cutting trail" and putting up fenceposts and wire to keep the cows all together. If you do not have a copy of the Y2K (release 3) documentation you can download it a chapter at a time or as one big download (PDF files) at; http://www.r-390a.net/Y2K-R3/index.htm There is still much being learned every day, different tips, techniques or technologies that can be applied to the R-390A. The Pearls of Wisdom are a dynamic way to look at how this digest has continued to contribute to our understanding. As it continues to progress we will slowly add new material to the Y3K (Y2K) documents. If you find something that is incorrect, can be done in a different way or is completely new approach, please contact me by email so we can work out a way to include it. I have been following this list for a few years and an in a near constant state of amazement at the quality of folks we have here who

regularly contribute.

Date: Sun, 20 Feb 2011 14:04:39 -0500 (EST)
From: N4TUA <n4tua@aol.com>
Subject: [R-390] OT help

This is off topic I know but please forgive me. Have you heard of Mackay Radio? How about type 3007A? I need a schematic if you might know where to get one. I have tried all of the common sources and even Google...No luck, this seems to be a fairly uncommon LF, MF HF Receiver
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Date: Sun, 20 Feb 2011 15:11:21 -0500
From: Al Parker <anchor@ec.rr.com>
Subject: Re: [R-390] OT help

Maybe off topic, but certainly acceptable. I don't know of a Mackay email group, but this is a good group of knowledgeable boatanchorists and maybe someone can help more than I can. I have a Mackay Marine 3021A which was flakey, not always locking on freq., when I got it. It did come with a manual, but I don't know of a source for them. Great eqpt.

Date: Sun, 20 Feb 2011 15:27:28 -0500
From: Tom Chirhart <k4ncgva@gmail.com>
Subject: Re: [R-390] OT help

I have the 3001A and have not been able to find anything on it either, perhaps we should form up a Mackay group. Contact each other off line.

Date: Sun, 20 Feb 2011 15:22:52 -0600
From: Don Reaves <donreaves@gmail.com>
Subject: Re: [R-390] OT help

There is Yahoo group for Mackay, and I think Collin has already found it. He's just casting his net wide and far! ? Collin, you might try searching for MRU-19A.? The 3007A was a part of that system.

A year or two ago a fellow was seeking manuals for a museum restoration project - he might have a lead.? Here's a snippet he posted on the AWA forum back in Oct. 2009:

Want manuals for units of Mackay Ship Radio Station MRU-19A, as follows: H/F transmitter, Type 2013DIF; Main Transmitter, Type 2009A; Emergency Transmitter, Type 2010A; Auto Alarm Signal Keyer, Type 5100C; Auto Alarm, Type 5002A; Receiver LF/MF/HF, Type 3007A; Receiver
MF/LF, Type 3001A; Power Control Panel, Type 515-4B; Selector Unit

HF/MF, no type number; Transfer Switch, Type MR-761-17. William C. Ryder, 196 Joshua Tethro Rd., Chatham, MA 02633 Tel. (508) 945-9312 E-mail: wryderw1kl@comcast.net

Close as I can get you is a pdf of the Emergency Transmitter Type 2010A.

Tom, I have a pdf of the 3001 schematic if you can use it.? You can view it right on your iPad! Speaking of iPads, anyone putting their manuals on one and taking it to the workbench instead of paper for a repair or restoration?? If so, how's that working out?

Date: Sun, 20 Feb 2011 18:37:51 -0500 (EST)
From: N4TUA <n4tua@aol.com>
Subject: [R-390] Mackay 3007A

THANK YOU Al; W8UT, Tom; K4NCG and Don for the help. I am beginning to think this is a rare receiver or at least the manuals are rare. This receiver is running now but will need some more work. I replaced all (4) plug in capacitors (note R-390A similarity), one cooked and vented/blew the fuse.

This receiver is a transformer-less receiver and makes B+ from the 120 volt line. I am working from hand drawn schematics parts and pieces which I have started developing as I troubleshoot. I am not sure but it looks like the 120 volt input needs to float from ground. In other words it may need an isolation transformer or run it with out a ground wire connected.

It looks like the B+ is centered at chassis ground like +45 volts to ground and -45 volts to ground = 90 volts B+. As you can tell I have much more to do, sure wish I had a schematic...

Date: Sun, 20 Feb 2011 16:16:05 -0800
From: Renee K6FSB <k6fsb.1@gmail.com>
Subject: Re: [R-390] OT help

I do have a 3020A and the manuals in pdf. Also have the pdf schematics of the 3001, 3021A if anyone needs...

Date: Sun, 20 Feb 2011 18:25:48 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] R390A design improvement

Wrote: [snipped] "Why is it that some folks simply cannot leave this wonderful working design alone? I certainly have YET to see or hear a single individual whom has the mental and design wherewithal that equals, much less*exceeds* the collective knowledge and wisdom of the

entire Collins team."

Great question. OK, below is at least a partial answer. Using tubes that did not exist at the time of the original design: The R390A Receiver: A Milestone in HF Communications: Part Three The "Competition-Grade" R390a by Ray W. Osterwald NODMS Originally Published in E.R Magazine. Also see Cheaper and Simpler Upgrades for the R-390A HF Receiver E.R. 8/04 by Chuck Felton. Also in the Y2KR3 anthology are several audio improvement circuits including one by Dallas Lankford. I?m emailing you an updated copy of both articles. If any others would like a copy please reply off list. As previously noted, some play golf with Ping Clubs and others get theirs at Sears. It comes down to a personal choice.

Date: Sun, 20 Feb 2011 23:50:23 -0500
From: Tom Chirhart <k4ncgva@gmail.com>
Subject: Re: [R-390] Mackay 3007A

The only safe way to use these receivers is with an isolation transformer. I have a Triad N-68X that I plan on using but have way too many other projects ahead of this one. I guess we should take this off the 390 reflector now and keep it between us. <snip>

Date: Tue, 1 Mar 2011 14:44:48 -0600
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Hollow State Newsletter Site

Unfortunately, that is indeed the last issue. Barry Hauser has passed away and is somewhere listening to all of those Hammarlund SP-600's he had purchased.....

Date: Tue, 1 Mar 2011 15:39:15 -0600
From: Ben Loper <brloper@gmail.com>
Subject: Re: [R-390] Hollow State Newsletter Site

I just downloaded them, nice I had a few of the back issues. I counted 53 of them and one rewritten one

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Date: Tue, 1 Mar 2011 16:31:41 -0600
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Hollow State Newsletter Site

The ultimate would be if someone picked that up and carried it on. It was a great resource...

Date: Tue, 1 Mar 2011 16:40:05 -0600 (CST)
From: Jim Haynes <jhhaynes@earthlink.net>

Subject: Re: [R-390] Hollow State Newsletter Site

Well I think toward the end it was running out things to publish. Seems like some issues were delayed just waiting for enough material to come in to be worth publishing.

Date: Sat, 5 Mar 2011 11:40:24 -0800 (PST)
From: Rasputin Novgorod <priapulus@yahoo.com>
Subject: [R-390] Holy terror

I have to put several holes, round and rectangular in an old chassis about inch size. I do have two chassis punches, but the wrong sizes. In the past I've tried drawing the hole onto the metal, then drilling, filing and power jigsawing to the lines. I also have a Dremol tool. Any suggestions about doing this? It's a populated chassis and I don't really want to spray steel filings and chips all over it; nor do I want to have to dissassemble too much. Perhaps some kind of compact, powerful nibbler?

Date: Sat, 05 Mar 2011 14:55:18 -0500
From: Curt Nixon <cptcurt@flash.net>
Subject: Re: [R-390] Holy terror

If you can, get a starter hole as large as possible. Then fashion a handle from duct tape onto a fine hacksaw blade in the cut-on-pull direction and use that to saw into the corners. Slow but only a few custs. Also, if you are working in steel, place a couple of strong magnets near the chip fallout area to minimize the intrusion of chips. Or..find someone with a Bridgeport mill and do it that way. THere are some pretty nice small, air-powered saws and filers around but expensive for just a couple of holes. Look at airframe maintenance tools to get an idea of what is available.

Date: Sat, 5 Mar 2011 15:09:15 -0500
From: "Shoppa, Tim" <tshoppa@wmata.com>
Subject: Re: [R-390] Holy terror

Unibit style step drills (possibly with an extension shaft) will work great for the round holes. Yeah there's still chips that fly off but in aluminum, a good sharp Unibit will often make stringy chips that are fairly easy to get out.

For really large diameter holes in sheet metal, a hole saw works quite nicely, but I think you're probably working too small to think about that. There is one exception I know, there's a tool called a "spot weld hole saw" which is a tiny little hole saw designed especially for clean cuts in sheet metal. Great way to make corners for square holes (hint, hint).

As to square holes... if a hand nibbler won't reach (try both the Radio-Shack and Adel styles, heads are shaped differently and sometimes if one won't work, then the other will), there are very narrow head electric pneumatic nibblers (not cheap but a joy to use, if you can somehow angle them into an already populated chassis!). Don't forget, there's always the cold chisel. With skill and a proper backing, a cold chisel can produce edges superior to any of the other methods.

Date: Sat, 5 Mar 2011 15:24:58 -0600
From: "Bill Hawkins" <bill@iaxs.net>
Subject: Re: [R-390] Holy terror

Better yet, see if you can find an airframe machinist. Aircraft have holes of every imaginable shape. Hang around aircraft hangers and ask about your problem.
There's not much steel in an airframe, though. Tools that can cut aluminum like butter may not be able to cut steel.

Date: Fri, 11 Mar 2011 12:38:40 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Y2K, a labor of love, I am overwhelmed

Running through the source materials that Perrier sent me for the Y2K-R3 I found a procedure that had some radical tube changes, socket rewiring and the clipping of the Q spoiler resistors in the IF deck (now I know where THAT idea came from).

For those who have only ever seen just the Y2K PDF's you would be overwhelmed by the amount of backing information that Perrier had arranged and collected. All of the manual was done in MS Word with review and markups turned on. The source materials come in at 1.7 GB with 1,584 files.

Perrier, my hat is off to you. You did an incredible job of organizing things. The quality of your work is way up there with what I have seen coming out of high dollar consulting companies. I do not know if the folks really understand the effort that was put in by all of the contributors to bring Y2K to it's current form.

I know that Wei has offered to condense some of the "Pearls" for addition into the next release of Y2K (R4). Sandy and Randy have offered to help and several folks have volunteered to add more materials and to proofread.

I have a few "Pepsi Challenges" and maybe some folks can help;

1. Does anyone have the access to AutoCad, the time and the inclination to

convert the electrical schematics for the R-390A into DXF format? This would be more than just a format conversion from PDF and involve actually recreating the schematics with AutoCad symbols. (resistors, capacitors, transformers, tubes, etc...)

2. Would anyone like to tackle the importing and conversion of all of the parts lists for each section into Excel spreadsheets and do parts lookups to contemporary supplier part numbers (Mouser, DigiKey, Newark).

3. There are still some older graphics in Y2K-R3 that are poorly rendered grey-scale. Would someone be willing to take some high resolution TIFF format pictures? I can come up with a list of images that we still need and will cull through the reflector list to find other instances where a picture would speak a thousand words. (for example, a pictorial guide on how to restore the front panel step by step.)

I do not plan on adding the images in TIFF format. Perry had a good reason for the level of rendering that he used so the sections would be of reasonable download size.Please send me an email off-list if you are willing to help with any of these areas or have other ideas on where we can go with "R4".

Date: Fri, 11 Mar 2011 21:29:27 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] DeOxit source

Any opinions on where to buy DiOxit products at the best price?

Date: Fri, 11 Mar 2011 22:31:07 -0800
From: Renee K6FSB <k6fsb.1@gmail.com>
Subject: Re: [R-390] DeOxit source

for a local source look for a Guitar Center (at least here in the San Francisco Area) or a simular place that carries "pro" audio gear.

Date: Sat, 12 Mar 2011 08:43:41 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] DeOxit source

I think it depends on which product you want. Caig sells it themselves. Radio Shack sells it. You can get a small tube through Amazon. I think it depends, though, on which product you want in what format and quantity.

Date: Sat, 12 Mar 2011 09:13:48 -0500
From: "W8BVH" <w8bvh@sbcglobal.net>

Subject: Re: [R-390] DeOxit source

I spoke to Ray, N4LEM, from Fla. He was telling me that he is a distributor of DeOxit and has a booth at the Dayton Hamvention inside the Ball arena. He
may be of help.

Date: Sat, 12 Mar 2011 09:38:00 -0600
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] DeOxit source

Caig has sent me the 2 oz sample tubes several times. A tube can last years. Just call them and ask. They had stopped advertising free samples the last time I asked for one, and got it.

Date: Sat, 12 Mar 2011 11:19:29 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] DeOxit source

I just purchase it from Caig; (http://www.caig.com/) Going through their web site I ran across more applications than I thought I had. I would have never thought that I needed fader lube but it helped on a mixer board and a equalizer that had sticky/ noisy controls.

Some of the products are very mild, others can be very aggressive. There are some products that specialize on gold contacts while a different one is perfect for flushing out the pins on tube sockets.

BTW, after cleaning a roller inductor with one of the more aggressive Caig products I found that fader lube helped the antenna tuner move much easier.

You can go the inexpensive route and spend $10-$15 or if you see a bunch of different uses you can easily spend $100.

Date: Sat, 12 Mar 2011 20:39:48 -0600
From: Ben Loper <brloper@gmail.com>
Subject: Re: [R-390] DeOxit source

Do they say what tests prove Caig products are inferior

Date: Sat, 12 Mar 2011 19:08:32 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Fw: Best manual for R-390A? (YK2 ... YK3?)

OK, I shall start out going thru *Pearls* and distill what I personally

consider the *good stuff*. The resulting set will form a snapshot of the larger set, and shoud be 80%-90%? shorter in length. This will take me a month or two. Then I will send this condensed version to you for inclusion in the rev 4.0 of the Y2K manual rewrite.

However, I will continue to send quarterly updates of the entire set of pdf files (13.4mB and growing) for posting on Al Tirevold's R390A site.

Date: Sat, 12 Mar 2011 21:17:39 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Access to my electronics technology data collection

I get frequent requests for manuals on surge protection, electronic theory and specific components. I have put around 1 gig of this information up on my Google documents site. Anyone who has the link below has permissions to download anything you want in there.

https://docs.google.com/viewer?a=v&pid=explorer&chrome=true&srcid=0B2gKw0hr-oLKOTlmZDIxNzEtZDMwNS000DhiLTkxZWQtYzkwYjQzOTBhNzEx&hl=en&authkey=CJmq_uAC

There are some classics in there, the oldest electronics theory books I have go back to 1919 but many are from the glory days in the 50's and 60's (tube theory, circuit design, etc..)

Date: Sat, 12 Mar 2011 21:19:21 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Fw: Best manual for R-390A? (YK2 ... YK3?)

That sounds great. This is not time critical things right now and a few months would fit good into my unofficial schedule/goal to get R4 out this summer.

Date: Sat, 12 Mar 2011 21:41:07 -0600
From: Robert Nickels <ranickel@comcast.net>
Subject: Re: [R-390] Access to my electronics technology data collection

> Anyone who has the link below has permissions to
> download anything you want in there.
>
Thank you TIsha - but I wonder if you'd mind re-checking that link. All I find there is a 38 page manual for a Dovetron unit and no way to navigate up to a list of other documents. But my idea of user-friendliness is quite different than the folks who set up Google Docs, as I always seem to fight it.

Date: Sat, 12 Mar 2011 21:46:46 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Document Collection

OK, learned a valuable lesson on file sharing through Google Files. I had to create a collection and drop everything in it. The previous URL I posted would have given you access to only one document (A Dovetron manual). Now with one URL you will get a list of many pages (around 400 docs). Anyone can download from it with this URL. No special logins, no dropbox;

https://docs.google.com/leaf?id=0B2gKw0hr-oLKYTk1YjY1NjEtZTc3NS00MjYwLWE3ZTEtMTE5YzE2Njc0Yjlj&hl=en
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Date: Sat, 12 Mar 2011 19:52:12 -0800
From: Ryan Scott <n7qj.rs@gmail.com>
Subject: Re: [R-390] Access to my electronics technology data collection

Many thanks for sharing your knowledge base, that's the best part of this group of people. I too have the same experience listed below, only viewing one manual, however, I picked one of those exact items up today at the Puyallup WA hamfest, so the manual is very timely as I did not have one!

Date: Sat, 12 Mar 2011 22:26:54 -0600
From: Jerry K <w5kp@hughes.net>
Subject: Re: [R-390] Document Collection

Tisha, that's one of the most useful collections of "stuff" I've ever seen in one place. Thanks for making it available. Now back to work on my EMP-hardened Motorola R-390A. It's looking more and more like it might come in handy one of these days.

Date: Sat, 12 Mar 2011 22:46:11 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Document Collection

Yes, I spent the better part of the afternoon and evening putting stuff up there to only find out that I needed to create a "collection" and link those uploaded files to the collection. When I first posted the URL it gave you access to the singular file that I had selected. The next thing I tried was to select "all" files and have it generate the URL details. Well, it created a super long URL with access to 400+ files.

Finally I figured out the collection thing and spent another hour or so linking the files to the collection. BTW, you cannot do mass moves of files into a collection, only 15-20 at a time. Once I worked that out I was able to locally test the URL and it came up with a nice directory listing.

I have been getting the routine requests for the Sencore LC53 manual for months, ever since I made a posting on eHam that I had it available. Today I received a different request for a PDF of a 1959 book by Bill Orr. Finally biting the bullet, I came up with the Google docs idea so there is none of the funny dealings with Dropbox and downloading an app and getting permissions.

I have posted the URL to the collection in several places (Elmers in eHam, etc...) if a few dozen folks find things interesting then it has served it's purpose.

Really I have a great deal on surge protection, EMP hardening, lightning and electronic theory. What is in the collection has been my resource when someone asks me a question and I need to check my sources.

I would have to say, if anyone had the time and inclination to read and study everything in that collection you would know more about electrical engineering than 95% of the EE's out there. All the way from basic math and ohms law up to some of the most complicated details on how Bistatic radar functions.

Date: Sun, 13 Mar 2011 00:04:21 -0500
From: "James Young" <YoungFamily@glwb.net>
Subject: Re: [R-390] Document Collection

Thank you Tisha, I'm already finding excerpts from the Radiotron Designer's Handbook; I've just about worn out my hardbound copy that I've had since the 1960's. Thanks again!

Date: Sun, 13 Mar 2011 09:33:20 -0500
From: Barry Williams <ba.williams@charter.net>
Subject: Re: [R-390] DeOxit source

I don't think there is such a thing as a zero residue liquid.

Date: Sun, 13 Mar 2011 10:49:19 -0400
From: William A Kulze <wak9@cornell.edu>
Subject: Re: [R-390] Document Collection

As I mentioned, I have some professional PCB design software I used to use about 10 years ago. It does export to DXF and I've been playing around with it, remembering how to use it. 8-) It will be a fairly big investment of time, but I would love to work on this project. I spent a couple hours creating T201 through T206, and I think it looks pretty good. I have a huge library of parts, some I can use but there are some I need to create. I

didn;t have a xfmr symbol that worked for these, I need to create the tubes, rotoray switches will be a bit of job if I make them look like the old style symbols in the original schematics, but I think it will be worth the effort to do this. I can attach a multitude of attributes, so I can put in the component info you don't show on the schematic and be able to create a BOM pretty much automatically. I'll send a DXF of my test drawing to see if it meets what you're looking for.

It's definitely a Labor of Love!

Date: Sun, 13 Mar 2011 10:51:26 -0500
From: "KA9EGW" <ka9egw@britewerkz.com>
Subject: Re: [R-390] Document Collection

Bill, sounds like you have the tools for the job!

Date: Sun, 13 Mar 2011 13:09:09 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] DeOxit source

I can think of a few "zero residue" fluids that vaporize off completely like "1,1,2-Trichloroethene". We used that in electronics manufacturing as a flux remover in a boiling bath solution, then a rinse tank and finally as a condensate (precipitate) as the parts tray was slowly lifted up and through the temperature inversion layer where the last of the solvent would evaporate off and settle back down into the tank.

The downside is that 1,1,2-Trichloroethene is a gigantic ozone depleting chemical, very bad contaminant if dumped onto the ground (hits the water table and stays there for decades) and is reactive with certain metals. Also it tends to unwind polyester capacitors or the yellow tape wrapping on small transformers.

With our "greener days" you need something that has a strong solvent action with the ability to flush contaminants off and then for it to evaporates, leaving little or no residues.

One of nature’s most perfect solvents is water. You can spike it with surfactants, detergents and buffers (a.k.a. Simple Green like compounds). You still need to agitate it a bit with a brush, scrubby or ultrasonic tank and you need to repeatedly rinse, almost to the point where you are using distilled, deionized water. Then you need to let the water solvent evaporate (a.k.a. dry). Through natural means or in a low temperature convection oven or under an infrared light.

With any cleaning method, if you do not use enough cleaning solution you

will leave residues. Some that will make the situation worse than what you started with. I am always willing to look at other cleaning systems but I steer clear of unsubstantiated claims that amount to F.U.D. (fear, uncertainty, doubt). Now if there was an unbiased study done by a third party that shows "cleaning solution x" is better than DeOxIt I would like to see it. Until then, competing claims are just F.U.D.

Date: Sun, 13 Mar 2011 14:59:46 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] DeOxit source

The issue of DeOxit vs something else is meaningless. PROPER use of DeOxit is key to its use and results. Simply applying a large amount of ANYTHING isn't good for things like wafer switch contacts. Use of such *aids* in cleaning contacts is like using a burnishing tool. Just a *little* will do it. I've done R-390As, SP-600s, and some number of Hallicrafters. Additionally - brought back an Tektronix 5440 and ALL its plug-ins with *Judicious* application of DeOxit. Absolutely ZERO issues, and ALL are perfectly functional!

Date: Sun, 20 Mar 2011 12:00:18 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] New Member, Robert Sisco

Welcome,
Happy to read that you own one of these fine receivers.
Get yours working put a good speaker on it and listen to your radio.
Did someone tell you to get a good ground on the receiver?
Did someone tell you that with a good ground it will trip GFI breakers.
Did someone tell you they were built that way?

Things that are just not in the TM.

What is this list like? Before opening some mail, I warn my wife, set my butt on the floor, move all open containers out of range then open the mail to read. You will learn about these Fellows from experience. There are many more readers than posters. We posters all know this and thus it guides what we post. We know this stuff ends up in archives and is reread daily by new people. Worry not that you ask a question. There is nothing obvious, intuitive or well indexed. Some will remember where it is and post you a good answer. These receivers are 50 plus years old. The textbook sequence and cause just does not always apply any more. Read Tish and others writing about needing to massage every bolt on every ground lug to clean them up and fix problems. Not something needed in 68 on just 20 year old receivers. The TM's do not cover stuck slugs. The TM's do not cover where to find parts.

If you need parts ask here. Many Fellows have bits. A few have good stock for sale at reasonable prices. A catalog just does not work cost and time exceeds return on investment. Copies would make the archives and never get removed. People would be asking forever for parts long gone. Ask for what you need here. The Fellows who can help will respond back to you directly. You can
then get back to them one on one and arrange shipping. That way you home
address is showing up in the archives.

Back when, military trained service people could do every thing an R390 or R390/A needed doing to it in about a real 4 hour hustle. This included free pickup and delivery back to the rack, a bath, full body oil rub, test, inspection, and massage. About 16 hours of reading and doing will restore a receiver to excellent working order. Know that at least half of that time is just cleaning, cleaning, cleaning. Time tracking down parts is extra.

Worry not. R390's and R390A's are very easy to work on. The only critical tool is a spline key that fits the knobs and clamp bolts. Obtain one of these before you start work. A simple key will do. Most like to cut a length of key stock off an L key and mount it in a long 6 - 8 inch handle.

Someone tell Robert what that key size is. Been doing it since 68 and still do not remember.

Some bolts may have been replaced with a head that is a size larger than the originals. OK as is. You just need to find a key to fit them if you have them. Some times plain cross head or Philips head bolts have been used as replacement parts. You just have to work with what's in the receiver.

Any good RF signal generator that will get down to 455Khz will work. You can get the receiver working on just the built in calibration tones. A DC meter and an AC volt meter is all the other test equipment you need. None of this test equipment needs to be calibrated or have exact levels. More is good but the receiver performance will not change with the quality of the meters hanging on the test points. A frequency counter does help. But these receivers were built, operated and maintained for at least 15 years before the frequency counter was available.

Because it is very long, I am going to post in 27 or so parts an inspection sequence. When you get to a step and go, say what? Just put up a post to the list here and ask a question. That will start a new thread and get you lots of experience from a whole group of Fellows. Know well they have been there done that and are commenting because they are trying to share some practical knowledge.

Consider the thread on the stuck slugs and cam racks. You can read the original TM's cover to cover for 35 plus years and still never find the bits of wisdom you need from reading the TM. That's why you need W Li pearls of wisdom. And every thing else on the r390/a.net pages.

I do have dial up. It is very slow. That's why I like the Y2K manual is its PDF sections. I can get a section down loaded complete while not exceeding my allocated beverage quota for the day. I hate waking up in the late morning and still finding a download going from the previous day.

Date: Sun, 20 Mar 2011 12:04:46 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] Inspection Process Start

This paper is still not complete.

Nothing in this work is original to Roger Ruszkowski. I acknowledge that I copied and pasted every bit of it from others. Contributors include at least the following Fellows. The contributions are not limited to the following Fellows. Additional names may be added at any time. Acknowledgements appear in no special order. :R-390@mailman.qth.net

David Melody became a SK May 2 2010. in Tucson Arizona

David Melody, Tisha Hayes, Barry Hauser, Tom Marcotte, Walter Wilson, W. Li, Nolan Lee, Pete Wokoun KH6GRT, David Wise, Al Tirevold, John Harvie, John Patterson KB4SLV, Joe Foley, Dan "Hank" Arney KN6DI, Walter Wilson, John Bunting, W4NET, Jim Miller, N4BE, , Al Solway, Dan Malone KA?CWD, Dr. Gerald Johnson, Chuck Rippel, Glenn Little, Bruce Maclellan, Norman Ryan, Dallas Lankford, Scott Seickel, Perry Sandeen, DW Holtman, Gary Gitzen, Tom Norris, James A. (Andy) Moorer, Scott Seickel, Matt Parkinson, Don Heywood, Cecil Acuff, Pete Williams, Russ WA3FRP, Barry - N4BUQ, Roger L. Ruszkowski AI4NI

We want something that will sit there and run for month after month and need nothing but tubes and dial lamps. Nolan. 5/99.

DB	Watts	Volts	Ohms	Amps
00	00.0010	00.7746	600	00.0013
01	00.0013	00.8691	600	00.0014
02	00.0016	00.9752	600	00.0016
03	00.0020	01.0941	600	00.0018
04	00.0025	01.2277	600	00.0020
05	00.0032	01.3774	600	00.0023
06	00.0040	01.5455	600	00.0026

07 00.0050 01.7341 600 00.0029
08 00.0063 01.9457 600 00.0032
09 00.0079 02.1831 600 00.0036
10 00.0100 02.4495 600 00.0041
11 00.0126 02.7484 600 00.0046
12 00.0158 03.0837 600 00.0051
13 00.0200 03.4600 600 00.0058
14 00.0251 03.8822 600 00.0065
15 00.0316 04.3559 600 00.0073
16 00.0398 04.8874 600 00.0081
17 00.0501 05.4837 600 00.0091
18 00.0631 06.1528 600 00.0103
19 00.0794 06.9036 600 00.0115
20 00.1000 07.7460 600 00.0129
21 00.1259 08.6911 600 00.0145
22 00.1585 09.7516 600 00.0163
23 00.1995 10.9415 600 00.0182
24 00.2512 12.2765 600 00.0205
25 00.3162 13.7745 600 00.0230
26 00.3981 15.4552 600 00.0258
27 00.5012 17.3411 600 00.0289
28 00.6310 19.4570 600 00.0324
29 00.7943 21.8311 600 00.0364
30 01.0000 24.4949 600 00.0408
31 01.2589 27.4837 600 00.0458

A. Current State
B. Modifications Installed
C. Cosmetic Clean Up
D. Hard Core RF Module Cleaning
E. Cosmetic RF Module Cleaning
F. Rebuild Inspection / Visual Inspection
G. Reassemble The Receiver
H. Mechanical Alignment
I. Knobology Dynamic Testing Monthly Test
J Adjust the IF gain R519
K. Alternate Procedure To Set The IF Gain Control
L IF Module Alignment
M. To Stager Or Not To Stager
N. To Stager Tune IF
O. To Straight Tune IF
P. Adjust Z503 AGC
Q IF And Audio Module Tube Optimizing
R. Adjust T208, C520, L503, and Zero BFO
S 2nd Crystal Oscillator Alignment
T 1st Crystal Oscillator Alignment

U VFO Band Spread Test
V VFO Band Spread Adjustment
W. RF Alignment
X RF Deck Tube Optimization
Y. Receiver Sensitivity Test
Z. Signal To Noise Test

Date: Sun, 20 Mar 2011 12:05:38 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] A. Current State

A. Current State
___ 01 Top cover should not be installed if rack mounted
___ 02 Bottom cover should not be installed if rack mounted
___ 03 RF deck cover should be installed
___ 04 Factory holes in left side to allow adjustment of mechanical filters
___ 05 A Check the VFO position you may not want to loosen some screws
___ 05 B Collins / Motorola VFO
___ 05 C Cosmos VFO
___ 06 IF output connector on back panel is present
___ 07 IF output cable is present
___ 08 All the knobs are present
___ 09 Any obvious broken parts
___ 10 Any missing parts
___ 11 Any leaking parts
___ 12 Any wire harness damage

Date: Sun, 20 Mar 2011 12:06:30 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] B. Modifications Installed

B. Modifications Installed
___ 01 Diode load hole in the front panel (not desired)
___ 02 Adjustment hole in the top dust cover for the meter adjustment.
___ 03 Micro dial on BFO
___ 04 Jumper from break-in on terminal board to ground
___ 05 A IF deck has no adjustments for mechanical filters
___ 05 B IF deck has trimmers only on top for mechanical filters
___ 05 C Chassis has no holes for under deck trimmer caps
___ 05 D Chassis has four added holes for under deck trimmer caps
___ 05 E Chassis has four manufactured holes for under deck trimmer caps
___ 06 A Ballast tube is original 3TF7
___ 06 B Ballast tube is 12 volt filament tube (12BY7 12.6 V .3 A)
___ 06 C Ballast tube is diode
___ 06 D Ballast tube is resistor
___ 06 E Ballast tube is removed with 12BA6 in BFO and VFO

___ 06 F Ballast tube is removed with 6.3 volt filaments for BFO and VFO
___ 07 A Solid state 26Z5's sockets unwired
___ 07 B Solid state 26Z5's sockets crimped over
___ 07 C Solid state 26Z5's diodes on top of sockets
___ 07 D Solid state 26Z5's no clue provided
___ 08 Spook cover on dial bezel
___ 09 Colored dial lights (red or blue)
___ 10 LED dial lamps
___ 11 EIA tube shields
___ 12 The selenium rectifier is replaced with bridge rectifier
___ 13 Replaced power filter caps
___ 14 Replaced AGC time constant caps
___ 15 Langford AGC diode modifications
___ 16 Other SSB modifications
___ 17 A Line filter is still original
___ 17 B Line filter is GFI friendly
___ 17 C Line filter is missing
___ 18 R390A has a quality capacitor for C553
___ 19 R390A black or brown beauties have been replaced in IF and RF
___ 20 A R390A power supply filter caps original style
___ 20 B R390A power supply filter caps re-stuffed cans
___ 20 C R390A power supply filter caps re-stuffed other package
___ 20 D R390A power supply filter caps under deck
___ 21 A R390 power supply filter caps original style
___ 21 B R390 power supply filter caps re-stuffed cans
___ 21 C R390 power supply filter caps re-stuffed other package
___ 21 D R390 power supply filter caps replaced other
___ 22 A R390 Audio 1UF B+ filter caps original style
___ 22 B R390 Audio 1UF B+ filter caps re-stuffed
___ 22 C R390 Audio 1UF B+ filter caps replaced under deck
___ 23 Paper caps removed from Audio module.
___ 24 R390A C604 0.01 300 WVDC 20% paper replaced with .022 400 V
___ 25 R390A C605 0.01 300 WVDC 20% paper replaced with .022 400 V
___ 26 R390A C609 8uf 30 WVDC Tantalum Electrolytic replaced
___ 27 R390A 6626 MIL spec replacing the 0A2 commercial tube
___ 28 R390A R504 should have a value of 500 ohms.
___ 29 A Line meter is original type
___ 29 B Line meter is correct resistance but re faced
___ 29 C Line meter is modified circuit and meter
___ 29 D Line meter does not have correct face
___ 30 A Carrier meter is original type
___ 30 B Carrier meter is correct resistance but re faced
___ 30 C Carrier meter is modified circuit and meter
___ 30 D Carrier meter does not have correct face

Date: Sun, 20 Mar 2011 12:07:26 EDT

From: Flowertime01@wmconnect.com
Subject: [R-390] C. Cosmetic Clean Up

C. Cosmetic Clean Up
___ 01 Remove all of the knobs and lightly lube the set screws
___ 02 Pull all of the modules out of receiver
___ 03 Drop the front panel
___ 04 Rip it's gizzard out and scatter and toss the parts around
___ 05 Try but manage to not loose any of the parts
___ 06 Do not have any extra parts left over when finished
___ 07 Pull all the tube shields
___ 08 Pull all the tubes
___ 09 Remove the RF slug racks and springs
___ 10 Wipe each of the RF cores out with a damp Q-tips
___ 11 Wipe the slugs off, and eye ball them
___ 12 R390A All of the RF slugs are all the same
___ 13 R390A All of the Variable six IF slugs are the same
___ 14 R390 RF slugs type a
___ 15 R390 RF slugs type b
___ 16 R390 First IF slugs
___ 17 R390 Second IF slugs
___ 18 Remove the RF coil can assemblies
___ 19 Straighten the IF and RF can assemblies as needed
___ 20 Verify that the index washers were installed in the two big knobs
___ 21 Give the chassis a bath with soap and water let dry
___ 22 Wash the front panel with soap and water let dry
___ 23 Wash the modules with soap and water let dry
___ 24 Do not take apart the 6 camshafts and the antenna trimmer can.
___ 25 Do not oil the antenna trimmer insulating fiber washers
___ 26 Do not saturate / soak / submerge the slugs
___ 27 Clean the slug rack rollers by working penetrating oil into rollers
___ 28 Keep lubing and wiping them until only clean oil comes out
___ 29 Deoxit the tube sockets and coil sockets
___ 30 Deoxit the RF band switch
___ 31 Give rest of RF deck a bath (hard core or cosmetic)

Date: Sun, 20 Mar 2011 12:08:59 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] D. Hard Core RF Module Cleaning

D. Hard Core RF Module Cleaning
___ 01 Disassemble the gear train
___ 02 When you take the split gears apart, tie them together
___ 03 Maintain the orientation that they were originally assembled with
___ 04 Except for the counter toss all of the parts in a coffee can
___ 05 Add favorite degreaser and let brew

___ 06 Work penetrating oil into the bearings of the camshafts
___ 07 Keep lubing and wiping them until only clean oil comes out
___ 08 Now bath the RF deck in soap and water (dish washer)
___ 09 Now bath the Gear parts in soap and water (dish washer)
___ 10 Dry the RF deck and gears (all day in the sun light)
___ 11 Use 10W30 Mobil 1 synthetic oil for the RF deck
___ 12 Use Pennzoil wheel bearing grease on the detent
___ 13 Use compressed air to work oil into the bearings of the camshafts
___ 14 Lubricate each part of gear train prior to assembly
___ 15 Reassemble the Gear Train
___ 16 Use compressed air to work oil into the gears
___ 17 Wipe out excess oil
___ 18 Conduct mechanical alignment of the Gear Train
___ 19 Deoxit all the tube socket pins
___ 20 Deoxit all the connector sockets
___ 21 Deoxit all the plug pins

Date: Sun, 20 Mar 2011 12:10:04 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] E. Cosmetic RF Module Cleaning

E. Cosmetic RF Module Cleaning
___ 01 Hang Gear Train over edge of bench
___ 02 Rotate the deck any way needed to work out dirt
___ 03 Use liberal amounts of cleaner to wash gears
___ 04 Use compressed air to push cleaner into parts and dirt out
___ 05 Use penetrating oil on first pass
___ 06 Use Alcohol on second pass
___ 07 Use degreaser on third pass
___ 08 Use simple soap on fourth pass
___ 09 Dry the RF deck and gears (all day in the sun light)
___ 10 Use 10W30 Mobil 1 synthetic oil for the RF deck
___ 11 Use Pennzoil wheel bearing grease on the detent
___ 12 Use compressed air to work oil into the bearings of the camshafts
___ 13 Use compressed air to work oil into the gears
___ 14 Wipe out excess oil
___ 15 Conduct mechanical alignment of the Gear Train
___ 16 Deoxit all the tube socket pins
___ 17 Deoxit all the connector sockets
___ 18 Deoxit all the plug pins

Date: Sun, 20 Mar 2011 12:11:02 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] F. Rebuild Inspection / Visual Inspection

F. Rebuild Inspection / Visual Inspection

___ 01 Spin all of the trimmers caps a couple of turns
___ 02 Tighten the screws holding the tube sockets to the chassis
___ 03 Check the value of all the resistors
___ 04 Check the value of all diodes
___ 05 Check the value of all capacitors
___ 06 Measure the resistance of all the front panel potentiometers
___ 07 Measure the resistance of the IF gain potentiometer
___ 08 Measure the resistance of the carrier meter zero potentiometer
___ 09 Remove all of the hoods of the chassis connectors to inspect
___ 10 Measure the resistance of EVERY damn wire in the chassis
___ 11 Inspect the power cord connections under the cover plate.
___ 12 Check the capacitors and resistors inside the IF transformer cans
___ 13 Test the dial lamps
___ 14 Check the selenium rectifier
___ 15 Check the antenna relay and inspected the contacts in the relay
___ 16 Check the main power micro switch
___ 17 Check capacitor C-553, which blocks B+ from the mechanical filters
___ 18 Check the 2UF AGC capacitor for leaking fluid
___ 19 Check C531 cause of audio and limiter function problems
___ 20 Check C547 cause of audio and limiter function problems
___ 21 Check C549 cause of audio and limiter function problems
___ 22 Check C603 capacitor mounted on the AF deck
___ 23 Check C606 capacitor mounted on the AF deck
___ 24 Check C609 8 ufd electrolytic capacitor mounted in the AF deck
___ 25 Check C-327, a 100 pf mica capacitor mounted in the RF deck
___ 26 Verify the values of the fuses
___ 27 Inspect the fuse holder operation
___ 28 Inspect the rear panel Antenna and IF output connectors
___ 29 Inspect the terminal board screws and jumpers
___ 30 Check all the tubes with a tube tester for minimum values
___ 31 Check the IF deck BFO bellows coupler.
___ 32 Check the IF deck band width switch operation

Date: Sun, 20 Mar 2011 12:11:53 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] G. Reassemble The Receiver

G. Reassemble The Receiver
___ 01 Inspect the cams for burrs where the rollers ride on, hone if needed
___ 02 Inspect the gear clamps for cracks replace as needed
___ 03 Inspect the spline bolts in the gear clamps replace as needed
___ 04 Inspect the roller retainers on the slug racks these must roll freely
___ 05 Inspect slug racks for square true operation fix as needed

___ 06 Inspect slug racks for burrs and gouges on the end surfaces and fix
___ 07 Replace the RF deck transformer cans
___ 08 Replace the slug racks inspect for proper installation of racks
___ 09 Install the slug rack springs
___ 10 Install the calibration crystal oven
___ 11 Inspect the slug rack springs for poor tension replace as needed
___ 12 "Time" the RF deck band switch
___ 13 "Time" the OSC deck band switch
___ 14 Install OSC deck subassembly
___ 16 Check the alignment and operation of the OSC deck switch
___ 17 In R390 check the Oldham coupler between OSC and RF decks
___ 18 In R390 check the OSC deck switch "timing"
___ 19 Install RF subassembly deck
___ 20 In R390 install the calibration sub assembly deck
___ 21 Install VFO subassembly
___ 22 Check the VFO shaft alignment to the KHz shaft adjust as needed
___ 23 Check the VFO Oldham coupler spacing
___ 24 Install the VFO Oldham coupler spring
___ 25 Reinstall the front panel
___ 25 Conduct power supply module: visual inspection
___ 26 Verify power supply 115 volt switch setting
___ 27 Inspect the solder connections in power supply (diodes added)
___ 28 Install the power supply module
___ 29 Install the IF module
___ 20 Install the Audio module
___ 31 Lightly lube the set screws in the knobs and install the knobs
___ 32 Lightly lube the shafts of each front panel switches
___ 33 Lightly lube the shafts of each front panel potentiometers
___ 34 Lightly lube the shafts IF gain potentiometer
___ 35 Lightly lube the shafts carrier meter adjust potentiometer
___ 36 IF deck lightly lube the shaft extensions bushings
___ 37 Reinstall the knobs
___ 38 Check the tightness on all of the screws and clamps
___ 39 Install the tubes
___ 40 Install selected tube shields
___ 41 All the knobs must operate freely
___ 42 Knobs must not be loose on shafts
___ 43 Verify all connectors are properly seated
___ 44 Ensure the wire harness is tucked in on the bottom side

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Date: Sun, 20 Mar 2011 12:12:35 EDT
From: Flowertime01@wmconnect.com
Subject: [R-390] H. Mechanical Alignment
H. Mechanical Alignment
___ 01 Set Oven switch to OFF
___ 02 Loosen the dial lock, check the knob and lock operation

___ 03 Check the zero adjust knob adjustment operation
___ 03 Set the zero adjust to center
___ 04 Check the over run and under run on the KHz knob (10 turn stop)
___ 05 Adjust the KHz counter as needed (greater than 25 -963 , -972)
___ 06 Check the over run and under run on the MHz knob (10 turn stop)
___ 07 Adjust the MHz counter as needed
___ 08 Set the R390A to 7+000 Set the R390 to 2.000
___ 09 Check the cam alignment starting with the 8-16 MHz Cam
___ 10 A If the 8-16 MHz Cam need adjusting then loosen the following
___ 10 B Release the clamp for 2-4 the slug rack should fall
___ 10 C Release the clamp for 4-8 the slug rack should fall
___ 10 D Release the clamp for 16-32 the slug rack should fall
___ 10 E The 8-16 slug rack should also fall
___ 11 Hold the 8-16 and 16-32 cam in place
___ 12 Tighten the 16-32 MHz Cam clamp
___ 13 Hold the 4-8 cam in place
___ 14 Tighten the 4-8 MHz Cam clamp
___ 15 Hold the 2-4 cam in place
___ 16 Tighten the 2-4 MHz Cam clamp
___ 17 Adjust the 1-2 MHz Cam if needed
___ 18 Adjust the .5-1 MHz Cam if needed
___ 19 Adjust the 1st Variable IF Cam if needed
___ 20 Adjust the 2nd Variable IF Cam if needed
___ 21 Adjust the VFO if needed

I. Knobology Dynamic Testing Monthly Test
___ 01 Set the Function Switch to MGC
___ 02 Eye ball the receiver in the dark for blue tube glow
___ 03 Eye ball the dial lights
___ 04 Get the head phones adjusted over the ears
___ 05 Set the Line Meter to 0
___ 06 Set the Line gain to 10
___ 07 Set the ANT Trim to 0
___ 08 Set the AGC to MED
___ 09 Set the LIMITER to OFF
___ 10 Set the Band Width to 2KHz
___ 11 Set the BFO Pitch to 0
___ 12 Set the BFO OFF
___ 13 Set the Breakin OFF
___ 14 Set the Audio Response to wide
___ 15 Set the Zero Adjust to center and confirm knob is not loose
___ 16 Release the Dial Lock and confirm knob is not loose
___ 17 Set the Local Audio to max and confirm knob is not loose
___ 18 Set the RF to max and confirm knob is not loose
___ 19 Run the Local Audio from end to end and confirm knob is not loose
___ 20 Listen for pot pop in the head phones

___ 21 Confirm Local Audio pot V603, V602A are good
___ 22 Switch the band pass filter from wide to sharp to wide
___ 23 Confirm band pass filter knob is not loose
___ 24 Listen for switch pop in the head phones
___ 25 Listen for narrow audio responce in the head phones
___ 26 Confirm Filter, switch, V601A are good
___ 27 Set the LIMITER to ON
___ 28 Listen for switch pop in the head phones
___ 29 Run the LIMITER pot from end to end
___ 30 Listen for a change in Audio spectrum
___ 31 Set the LIMITER to OFF and confirm knob is not loose
___ 32 Confirm Limiter switch, V507 are good
___ 33 Set the Function to CAL
___ 34 Listen for the Antenna Relay to click between MGC and CAL
___ 35 Set the BFO ON and confirm knob is not loose
___ 36 Set the Khz to 500Khz
___ 37 Vary the BFO Pitch and confirm knob is not loose
___ 38 Confirm the BFO pitch goes through zero and the knob stops work
___ 39 Set the Band Width to .1Khz, 1Khz, 2KHz, 4Khz, 8Khz, 16Khz
___ 40 Listen for a change in Audio spectrum and confirm knob is not loose
___ 41 Set the Band Width to .1Khz
___ 42 Set the BFO Pitch to zero, confirm knob adjustment for zero is good
___ 43 Vary the Khz Knob to get a zero BFO through the .1KHz
___ 44 Confirm V505, V701, V506B, V504, V503, V502, V501 are good
___ 45 Set the Band Width to 4Khz
___ 46 Set the MHz to 00
___ 47 Verify Mhz stop at 00
___ 48 Set the Khz to 500Khz and listen for a cal tone
___ 49 Move the Mhz knob up one detent
___ 50 Verify detent seats, verify band switch changes as needed
___ 51 Verify 2nd Crystal Oscillator crystal is within 1KHz on each Mhz
___ 52 Move the Mhz knob up one detent
___ 53 Verify Mhz stop at 31
___ 54 Dial Khz to 000
___ 55 Check counter under run
___ 56 Dial Khz to 000 and null cal tone to zero with BFO
___ 57 Dial Khz to each 100 KHz and note VFO spread
___ 58 Dial Khz to 900 and note that total VFO spread is less than 300 Hz
___ 59 Check counter over run
___ 60 Ground break in and set break in ON
___ 61 Confirm audio mutes
___ 62 Set break in OFF
___ 63 Confirm antenna relay operation in STANDBY and CAL
___ 64 Set the Function to AGC
___ 65 Set the AGC to SLOW, MED, FAST
___ 66 Observe that the carrier meter moves upscale and drops back to zero

___ 67 Set the Function to CAL
___ 68 Set the BFO ON
___ 69 Dial KHz to a cal tone and adjust BFO for a tone
___ 70 Set the line gain to max
___ 71 Set the line meter switch to 0
___ 72 Set the line gain for a meter indication of 0
___ 73 Set the line meter switch to +10
___ 74 Observe the line meter reads -10
___ 75 CARRIER LEVEL meter deflection of at least 40 dB on Cal tone
___ 76 Set the Function to AGC
___ 77 Tune KILOCYCLE CHANGE control across any band
___ 78 Tune KILOCYCLE CHANGE control through several signals
___ 79 Output volume should be nearly constant
___ 80 Tune KILOCYCLE CHANGE control to one signal
___ 81 CARRIER LEVEL meter indicates strength of received signals
___ 82 Rotate ANT TRIM control to peak CARRIER LEVEL meter
___ 83 Set FUNCTION switch to MGC
___ 84 Tune the receiver away from any signal
___ 85 CARRIER LEVEL should not indicate (read zero)

J Adjust the IF gain R519
___ 01 Set the Line Meter OFF
___ 02 Set the Line gain to 0
___ 03 Set the ANT Trim to 0
___ 04 Set the AGC to MED
___ 05 Set the LIMITER to OFF
___ 06 Set the Band Width to 2KHz
___ 07 Set the BFO Pitch to 0
___ 08 Set the Audio Response to WIDE
___ 09 Set the Breakin OFF
___ 10 Set the Function to MGC
___ 11 Set the BFO to OFF
___ 12 Release the Zero Adjust
___ 13 Release the Dial Lock
___ 14 Set the Local Audio to max
___ 15 Set the RF to max
___ 16 Remove P114 from J514
___ 17 Remove P213 from J513
___ 18 Remove P218 from J518
___ 19 Remove J116 adapter from the back panel if necessary
___ 20 Couple P114 to J513
___ 21 Couple P116 to J116
___ 22 Couple J116 to the signal generator RF output
___ 22 Adjust signal generator for 455 KHz output frequency
___ 24 Adjust signal generator for 150 micro volt RF output
___ 25 Adjust signal generator for 30 % audio tone modulation (400 Hz)

___ 26 Meter diode load output for -7 volts DC
___ 27 Place a 600 ohm load across the local audio output
___ 28 Place a 600 ohm load across the line audio output
___ 29 Meter local audio output for 450 milliwatts, 27 db, or 17.3 Volts AC
___ 30 Adjust the IF gain R519 for -7 V DC on the diode load
___ 31 Observe the local audio output level is greater than 400 milliwatts
___ 32 Local Audio should be 17.3 Volts AC across 600 Ohms 450 mw
___ 33 Line Audio should be 2.45 Volts AC across 600 Ohms 10 mw
___ 34 Phone Audio should be .78 Volts AC across 600 Ohms 1 mw
___ 35 Line Audio at .78 Volts across 600 should be Line Meter Zero VU
___ 36 Set the Line Meter to +10
___ 37 Set the signal generator modulation on
___ 38 The Line Meter should read above 0 VU (10 mw)
___ 39 Set the Line Gain off max until the Line Meter reads 0 VU (10 mw)
___ 40 Set the signal generator modulation off
___ 41 Set the Meter Switch to -10
___ 42 Observe 30 db change (20 db on switch plus 10 db on meter scale)
___ 43 The Line Meter should read less than -10 VU (SN + N > 30 DB)
___ 44 Set the Line Meter to OFF
___ 45 Set the Line Gain to 0

K. Alternate Procedure To Set The IF Gain Control

Once the receiver has been fully mechanically and electrically aligned, the final procedure to perform before "buttoning it up" is to set the IF gain control. The manual specification to set the IF Gain control for a level of -7 volts on the diode load for 150uv @455kc into J-513 is far too hot. Many otherwise very sensitive R390A's are thought not be hearing weak signals, because these signals are covered by excess noise generated in the IF module.
The most common single item responsible for holding an R390A back is not lack
of sensitivity. Rather it is internally generated IF deck noise.

___ 01 Allow the receiver to warm up for at least 1 hour then:
___ 02 Terminate the antenna input (just ground the balanced inputs)
___ 03 Set receiver for 15.2 MHz (Selected point of mechanical alignment)
___ 04 Set the "FUNCTION" switch to MGC
___ 05 Select the 4kc filter with the "BANDWIDTH"
___ 06 Set "RF GAIN" control to 10 or maximum
___ 07 Peak the "ANTENNA TRIM" for maximum noise
___ 08 Use the "LINE LEVEL" meter for peaking noise
___ 09 Set "Line Meter" switch to -10db scale
___ 10 Set "Line Gain" control to full CW or "10."
___ 11 Adjust IF gain control, R-519 to between -4 to -7 VU on Line Meter
___ 12 Set the "FUNCTION" switch to AGC

___ 13 Re-zero the carrier meter control, R-523
___ 14 Set controls above for normal operation
___ 15 Remove antenna short and reinstall antenna
___ 16 Power up the oven and verify function of the thermostat
___ 17 Turn the oven off
___ 18 Leave receiver on for at least 14 days to reform caps

L IF Module Alignment
___ 01 Continue with the prior setup
___ 02 Adjust signal generator for 455 KHz output frequency
___ 03 Adjust signal generator for 150 micro volt RF output
___ 04 Adjust signal generator for 30 % audio tone modulation (400 Hz)
___ 05 Meter diode load output for -7 volts DC
___ 06 Place a 600 ohm load across the local audio output
___ 07 Meter local audio output for 450 milliwatts, 27 db, or 17.3 Volts AC
___ 08 Set the Band Width to 2 KHz
___ 09 Adjust C571 (Top Trimmer) for max diode load output
___ 10 Adjust C513 (Bottom Trimmer) for max diode load output
___ 11 Set the Band Width to 4 KHz
___ 12 Adjust C570 (Top Trimmer) for max diode load output
___ 13 Adjust C514 (Bottom Trimmer) for max diode load output
___ 14 Set the Band Width to 8 KHz
___ 15 Adjust C568 (Top Trimmer) for max diode load output
___ 16 Adjust C515 (Bottom Trimmer) for max diode load output
___ 17 Set the Band Width to 16 KHz
___ 18 Adjust C569 (Top Trimmer) for max diode load output
___ 19 Adjust C516 (Bottom Trimmer) for max diode load output

N. To Stagger Tune IF
___ 01 Adjust signal generator for 467 KHz output frequency
___ 02 Adjust the top slug of T501 for maximum output
___ 03 Adjust the bottom slug of T502 for maximum output
___ 04 Adjust signal generator for 443 KHz output frequency
___ 05 Adjust the bottom slug of T501 for maximum output
___ 06 Adjust the top slug of T502 for maximum output
___ 07 Adjust signal generator for 455 KHz output frequency
___ 08 Adjust the bottom slug of T503 for maximum output

O. To Straight Tune IF
___ 01 Adjust signal generator for 455 KHz output frequency
___ 02 Adjust the top slug of T501 for maximum output
___ 03 Adjust the bottom slug of T501 for maximum output
___ 04 Adjust the top slug of T502 for maximum output
___ 05 Adjust the bottom slug of T502 for maximum output
___ 06 Adjust the bottom slug of T503 for maximum output
___ 07 Adjust the top slug of T503 for maximum output

P. Adjust Z503 AGC
___ 01 Contiune from part J above
___ 02 Set the function switch to AGC
___ 03 Meter the AGC voltage for -1 to -2 volts on the AGC jumper
___ 04 Adjust the signal generator for an AGC voltage in the meter range
___ 05 Adjust Z503 for maximum AGC voltage on the AGC jumper
___ 06 Set the function switch to MGC

Q IF And Audio Module Tube Optimizing

Optimizing the vacuum tube lineup in the signal path is another technique to maximize performance. Start with the tubes in the IF strip. These are the 5749W's IF amps, V-501, V-502 and V-503. The 6AK6 4th IF amp V-504 and the
detector, V-506, a 5814A. Continue with the Audio module tubes. Then do the
RF module tubes last. The tubes can be optimized before any alignment is conducted. But the usual procedure is to do a signal alignment, conduct the tube
optimization and then do another complete signal alignment. Normal procedure is to conduct the signal alignment and tube optimization together in
module by module stages IF and Audio modules, then RF and oscillator modules.

Watch the noise level of each tube with the modulation off. The meter should
lie quietly. If the meter needle is bouncing then consider this as additional noise from the tube. It may take several passes in a poor receiver to grade other noisy tubes out of the receiver and reach acceptable levels of performance. Use the best tubes on hand and place them in the optimum performance order. New tubes may not be better than existing tubes. When new tubes are received, grade them against all like tubes on hand. Keep track of the spares and their values. If the signal to noise ratios are good some meter bounce
is expected. If you reach the point where you believe you have good tubes through the receiver and the meter just will not lie quietly, then you have to
start looking for, leaky caps, poor resistors, bad solder joints, dirty tube sockets, dirty connector pins, loose or corroded tie lugs.

___ 01 Set the Line Meter OFF
___ 02 Set the Line gain to 0
___ 03 Set the ANT Trim to 0
___ 04 Set the AGC to MED

___ 05 Set the LIMITER to OFF
___ 06 Set the Band Width to 2KHz
___ 07 Set the BFO Pitch to 0
___ 08 Set the Audio Response to WIDE
___ 09 Set the Breakin OFF
___ 10 Set the Function Switch to MGC
___ 11 Set the BFO to OFF
___ 12 Release the Zero Adjust
___ 13 Release the Dial Lock
___ 14 Set the Local Audio to max
___ 15 Set the RF to max
___ 16 Remove P114 from J514
___ 17 Remove P213 from J513
___ 18 Remove P218 from J518
___ 19 Remove J116 adapter from the back panel if necessary
___ 20 Couple P114 to J513
___ 21 Couple P116 to J116
___ 22 Couple J116 to the signal generator RF output
___ 22 Adjust signal generator for 455 KHz output frequency
___ 24 Adjust signal generator for 150 micro volt RF output
___ 25 Adjust signal generator for 30 % audio tone modulation (400 Hz)
___ 26 Meter diode load output for -7 volts DC
___ 27 Place a 600 ohm load across the local audio output
___ 28 Meter local audio output for 450 milliwatts, 27 db, or 17.3 Volts AC
___ 29 In pass one gather all the spare 5749's
___ 30 Pull the BFO and VFO 5759 tubes (V505, V701)
___ 31 Pull the AGC IF AMP (V508)
___ 32 Remember the goal is best signal to noise ratio or each tube
___ 33 Set the signal generator modulation on and record the audio output
___ 34 Set the signal generator modulation off and record the audio output
___ 35 The difference in these two values is the merit of the tube in V501
___ 36 Place each spare 5759 into V501 to find a merit value for the tube
___ 37 Grade the spare 5749's from worse to best
___ 38 Place the worse tube in V503
___ 39 Place the second poorest tube in V502
___ 40 Start over and re-grade the 5749's in V501 (32, 33, 34)
___ 41 Select the very best signal to noise 5749 for the V701 (VFO)
___ 42 Place the second best 5749 in V501
___ 43 Place the third best 5749 in V502
___ 44 Place the fourth best 5749 in V503
___ 45 Place the fifth best 5749 in V505 (BFO)
___ 46 Place the sixth best 5749 in V508 (AGC IF AMP)
___ 47 In pass two gather all the spare 6AK6's
___ 48 Remove V604 Line Audio
___ 49 Set the signal generator modulation on and record the audio output
___ 50 Set the signal generator modulation off and record the audio output

___ 51 The difference in these two values is the merit of the tube in V504
___ 52 Place each spare 6AK6 into V504 to find a merit value for the tube
___ 53 Place the worse tube in V603 Local Audio
___ 54 Start over and re-grade the 6AK6's in V504 (49, 50, 51)
___ 55 Place the best 6AK6 in V504 (4th IF Stage)
___ 56 Place the second best 6AK6 in V603 Local Audio
___ 57 Place the third best 6AK6 in V604 Line Audio
___ 58 In pass three gather all the spare 5814's
___ 59 Remove V507, V509, V205, V206
___ 60 Set the signal generator modulation on and record the audio output
___ 61 Set the signal generator modulation off and record the audio output
___ 62 The difference in these two values is the merit of the tube in V601
___ 63 Place each spare 5814 into V601 to find a merit value for the tube
___ 64 Place the worse tube in V602
___ 65 Place the second worse tube in V506
___ 66 Start over and re-grade the 5814's in V601 (60, 61, 62)
___ 67 Place the best 5814 in V506 Detector
___ 68 Place the 2nd best 5814 in V601 1st AF AMP and Follower
___ 69 Place the 3rd best 5814 in V602 Local AF AMP
___ 70 Place the 4th best 5814 in V507 Limiter
___ 71 Place the 5th best 5814 in V205 Calibration Oscillator
___ 72 Place the 6th best 5814 in V206 100 KC Multivibrator
___ 73 Place the 7th best 5814 in V509 AGC Rectifier
___ 74 Adjust signal generator for 455 KHz output frequency
___ 75 Adjust signal generator for 150 micro volt RF output
___ 76 Adjust signal generator for 30 % audio tone modulation (400 Hz)
___ 77 Meter diode load output for -7 volts DC
___ 78 Set the Band Width to 2 KHz
___ 79 Adjust the IF gain R519 for -7 V DC on the diode load
___ 80 Meter local audio output for 450 milliwatts, 27 db, or 17.3 Volts AC
___ 81 Set the signal generator modulation on and record the audio output
___ 82 Set the signal generator modulation off and record the audio output
___ 83 Meter local audio output for 1 milliwatt, 0 db, or .775 Volts AC
___ 84 If the difference must be greater than 27 db. (30 likely)
___ 85 Remove all test equipment
___ 86 Return the receiver connections to their original configurations

R. Adjust T208, C520, L503, and Zero BFO
___ 01 Set the Line Meter OFF
___ 02 Set the Line gain to 0
___ 03 Set the ANT Trim to 0
___ 04 Set the AGC to MED
___ 05 Set the LIMITER to OFF
___ 06 Set the Band Width to 2KHz
___ 07 Set the BFO Pitch to 0
___ 08 Set the Audio Response to wide

___ 09 Set the Breakin OFF
___ 10 Set the Function to MGC
___ 11 Set the BFO OFF
___ 12 Release the Zero Adjust
___ 13 Release the Dial Lock
___ 14 Set the Local Audio to max
___ 15 Set the RF to max
___ 16 Adjust signal generator for 455 KHz output frequency
___ 17 Adjust signal generator for 75 micro volt RF output
___ 18 Adjust signal generator for 30 % audio tone modulation (400 Hz)
___ 19 Meter diode load output for -7 volts DC
___ 20 Place a 600 ohm load across the local audio output
___ 21 Meter local audio output for 450 milliwatts, 27 db, or 17.3 Volts AC
___ 22 Connect the signal generator to E211 through a capacitor.
___ 23 Adjust signal generator for diode load output of -7 volts DC
___ 24 Adjust T208 for peak (This adjustment is broad)
___ 25 Adjust signal generator for diode load output of -7 volts DC
___ 26 The signal level should be less than 75 micro volt RF output (50)
___ 27 The signal with 30% modulation should output 450 milliwatts audio
___ 28 Set the signal generator modulation on and record the audio output
___ 29 Meter local audio output for 450 milliwatts 27 db,or more
___ 30 Set the signal generator modulation off and record the audio output
___ 31 Meter local audio output for 1 milliwatt, 0 db, or less
___ 32 Set the Band Width to .1 KHz
___ 33 Rock the signal generator for maximum diode load output
___ 34 Adjust signal generator for diode load output of -7 volts DC
___ 35 Record the signal generator output level
___ 36 The following steps should produce six marks around C520
___ 37 Switch the generator output up 60 db (two switch steps on URM 25)
___ 38 Increase the generator frequency until output drops to -7 volts DC
___ 39 Adjust C520 for a dip in the diode load voltage
___ 40 Mark the can and label this H (5 o'clock)
___ 41 Adjust C520 for the other side dip in the diode load voltage
___ 42 Mark the can and label this H (7 o'clock)
___ 43 Decrease the generator frequency until output drops to -7 volts DC
___ 44 Adjust C520 for a dip in the diode load voltage
___ 45 Mark the can and label this L (4 o'clock)
___ 46 Adjust C520 for the other side dip in the diode load voltage
___ 47 Mark the can and label this L (8 o'clock)
___ 48 Divide each pair of dips and mark the can C
___ 49 Set C520 to the C mark (either 4:30 or 7:30)
___ 50 Rock the signal generator (to 455) for maximum diode load output
___ 51 Adjust signal generator for diode load output of -7 volts DC
___ 52 Set the Band Width to 1 KHz
___ 53 Adjust L503 for peak output
___ 54 Set the BFO switch ON

___ 55 Loosen the clamp on the BFO shaft extension
___ 56 Zero the BFO knob
___ 57 Zero the BFO against the signal
___ 55 Tighen the clamp on the BFO shaft extension
___ 56 Set the BFO switch OFF
___ 57 Disconnect the generator

S 2nd Crystal Oscillator Alignment

When adjusting the 2nd Crystal Oscillator you can hear the noise peak better than you can measure it with the meter. Peak the caps up with both the
meter and head phones.

___ 01 Meter the local audio output across a 600 Ohm load
___ 02 Meter the diode load for - 7 volts DC
___ 03 Use a good set of head phones to monitor the audio output
___ 04 Set the function switch to CAL
___ 05 Set the BFO OFF
___ 06 Set the KHz to 500
___ 07 Set the KHz to 31
___ 08 Set the Bandwidth to 2 KHz
___ 09 Rock the KHz to produce maximum indication on the diode load
___ 10 Set the Local Output meter range to provide a mid scale reading
___ 11 Use the head phones to hear the noise peak as you make adjustments
___ 12 Screw the slug of T401 out until only one peak can be obtained while t
urning trimmer capacitor 31 through its entire range.
___ 13 Set trimmer capacitor slightly away from peak
___ 14 Adjust the slug in T401 for peak output
___ 15 Readjust capacitor 31 and ensure it has two peaks.
___ 16 Adjust capacitor 31 to peak (watch the meters for best indication)
___ 17 Move the MHz down one detent (you can hear the noise peak)
___ 18 Adjust the corresponding capacitor to peak
___ 19 Stop at 8MHz

T 1st Crystal Oscillator Alignment
___ 01 Meter the local audio output across a 600 Ohm load
___ 02 Meter the diode load for - 7 volts DC
___ 03 Use a good set of head phones to monitor the audio output
___ 04 Set the function switch to CAL
___ 05 Set the BFO OFF
___ 06 Set the KHz to 500
___ 07 Set the MHz to 7
___ 08 Set the Bandwidth to 2 KHz

___ 09 Rock the KHz to produce maximum indication on the diode load
___ 10 Adjust the slug in T207 for peak output

U VFO Band Spread Test
___ 01 Set the Line Meter OFF
___ 02 Set the Line gain to 0
___ 03 Set the ANT Trim to 0
___ 04 Set the AGC to MED
___ 05 Set the LIMITER to OFF
___ 06 Set the Band Width to 2KHz
___ 07 Set the BFO Pitch to 0
___ 08 Set the Audio Response to wide
___ 09 Set the Breakin to OFF
___ 10 Set the Function to CAL
___ 11 Set the BFO to ON
___ 12 Set the Zero Adjust to center
___ 13 Release the Dial Lock
___ 14 Set the Local Audio to max
___ 15 Set the RF to max
___ 16 Set the KHz knob to -000
___ 17 Adjust the BFO Pitch to zero beat
___ 18 Set the KHz knob to +000
___ 19 Rock the KHz knob to zero beat
___ 20 The VFO band spread should be less than 300 Hertz

V VFO Band Spread Adjustment
___ 01 If needed continue from the preceding section
___ 02 Set the FUNCTION switch to CAL
___ 03 Set the MHz to 9 MHz
___ 04 Set the Zero Adjust to center
___ 05 Set the KHz knob to 000
___ 06 Remove the Oldham coupler spring
___ 07 Remove the VFO from the receive
___ 08 Remove the end point adjustment cap screw
___ 09 Attach the output cable and harness cable
___ 10 Adjust the VFO shaft for a zero beat
___ 11 Mark the coupler and VFO face (9,000 3,455)
___ 12 Set the KHz knob for 9,+000 (9,+000 2,455)
___ 13 Dial 10 turns on the VFO shaft and align the marks
___ 14 If the span is not exact make a small adjustment to the end point
___ 15 Do not over adjust the end point to a complete zero beat
___ 16 Observe the pitch is closer to zero beat
___ 17 Back off the 10 turns on the VFO shaft (only work one way)
___ 18 Set the KHz knob to 000
___ 19 Adjust the VFO shaft for a zero beat
___ 20 Mark the coupler and VFO face (9,000 3,455)

___ 21 Set the KHz knob for 9,+000 (9,+000 2,455)
___ 22 Dial 10 turns on the VFO shaft and align the marks
___ 23 If the span is not exact make a small adjustment to the end point
___ 24 Do not over adjust the end point to a complete zero beat
___ 25 Observe the pitch is closer to zero beat
___ 26 Repeat steps 17, 18, 19, 20, 21,22, 23, 24 and 25 until span is exact
___ 27 Make a small adjustment to the end point (CW longer CCW shorter
___ 28 Do not over adjust the end point to a complete zero beat
___ 29 replace the end point cover screw
___ 30 Return the VFO shaft to its original location
___ 31 Reinstall the VFO into the receiver
___ 32 Carefully verify the 10 turn operation of the VFO
___ 33 Adjust the mechanical position of module for best shaft alignment
___ 34 Adjust the Oldham coupler for a free spacing of shafts
___ 35 Replace the Oldham coupler spring
___ 36 Attach an antenna to the balanced input
___ 37 Tune WWV at 20MHz, 15Mhz, 10MHz or 5Mhz
___ 38 Set the BFO to OFF
___ 39 Set the bandwidth to .1Khz
___ 40 Set the KHz to 000
___ 41 Loosen the front KHz shaft clamp on the Oldham coupler
___ 42 Rock the VFO to peak WWV through the crystal filter
___ 43 Tighten the front KHz shaft clamp on the Oldham coupler
___ 44 Set the BFO to ON
___ 45 Set the BFO Pitch to 0
___ 46 Loosen the extension shaft clamp on the BFO
___ 47 Adjust the BFO shaft to zero the BFO Pitch
___ 48 Tighten the extension shaft clamp on the BFO
___ 49 Set the FUNCTION Switch to CAL
___ 50 Adjust the CAL Adjust Trim to zero the Calibration Oscillator

W. RF Alignment
___ 01 Install a 600 ohm resistor on the line level output.
___ 02 Place a meter and 600 ohm load on the Local Audio output TS 585
___ 03 Connect the generator to the receiver's balanced antenna input
___ 04 Place a DC meter on the diode load
___ 05 Turn the receiver on and allow it to warm up for 1 hour
___ 06 Turn the signal generator on and allow it to warm up for 1 hour
___ 07 Set the R390 or R390A Function switch to "MGC
___ 08 Set the R390 or R390A Bandwidth to 2kc
___ 09 Set the R390 or R390A RF gain full CW (Clock Wise)
___ 10 Set the R390 or R390A AF line gain full CW
___ 11 Set the Line Meter range switch to + 10
___ 12 Set the R390 or R390A AF local gain full CW
___ 13 Set the R390 or R390A BFO off

___ 14 Set the Audio response to wide
___ 15 Set the Limiter to off
___ 16 Set the receiver and generator to the same frequency of choice
___ 17 Rock the generator for a peak in to the band pass
___ 18 Set the initial generator output to 10uv
___ 19 Set the generator modulation level to at 30% 400 Hz or 1 KHz
___ 20 Use the Ant Trim to peak the receiver
___ 21 Reduce the signal generator RF output for -7 volts DC
___ 22 Use 550 for L213, L224-1,, L224-2 Slugs 1st Octave
___ 23 Use 950 for C201-B, C230-1, C230-2 Caps 1st Octave
___ 24 Use 1,100 for L215-1, L215-2, L215-3 Slugs 2nd Octave
___ 25 Use 1,100 for C291-1, C291-2, C291-3 Caps 2nd Variable IF
___ 26 Use 1,250 for L232-1, L232-2, L232-3 Slugs 1st Variable IF
___ 27 Use 1,900 for L233-1, L233-2, L233-3 Slugs 2nd Variable IF
___ 28 Use 1,900 for C205-B, C233-1, C233-2 Caps 2nd Octave
___ 29 Use 2,250 for L217, L226-1, L226-3 Slugs 3rd Octave
___ 30 Use 3,800 for C209B, C236-1, C26-2 Caps 3rd Octave
___ 31 Use 4,400 for L219, L227-1, L227-2 Slugs 4th Octave
___ 32 Use 7,250 for C283-1, C283-2, C283-3 Caps 1st Variable IF
___ 33 Use 7,600 for C213B, C239-1, C239-2 Caps 4th Octave
___ 34 Use 8,800 for L221, L227-1, L227-2 Slugs 5th Octave
___ 35 Use 15,200 for C217B, C242-1, C242-2 Caps 5th Octave
___ 36 Use 17,600 for L223, L229-1, L229-2 Slugs 6th Octave
___ 37 Use 30,400 for C221B, C241-1, C241-2 Caps 6th Octave
___ 38 Observe 27 DB (17 Volts AC) on the Local Audio
___ 39 This should also be 450 milliwatts on the Local Audio
___ 40 Observe + 10 on the Line Meter (0 VU + 10 switch)
___ 41 Set the signal generator to CW
___ 42 The Meter on the Local Level should drop 20 DB
___ 43 The Line Meter should drop 20 DB
___ 44 The signal generator RF level should be less than 3 micro volts
___ 45 Record the frequency and the output of the generator in micro volts
___ 46 This value is the 20 DB S/N + N receiver level at this frequency
___ 47 This is the relative receiver noise floor level at this frequency
___ 48 Use the following check the mechanical filters at one frequency
___ 49 Set BANDWIDTH KC switch S501 to position 1.
___ 50 Adjust the signal generator output for -5 volts on the diode load
___ 51 Tune the KILOCYCLE CHANGE to one side of the center
___ frequency until the multi-meter reads 2.5 volts.
___ 52 Note the frequency indicated on the receiver frequency counter.
___ 53 Tune the receiver KILOCYCLE CHANGE control to the other side
___ of the center frequency until the meter reads 2.5 volts.
___ 54 Note the frequency indicated on the receiver frequency counter
___ 55 Subtract the lower from the higher of the two values
___ 56 This is the receiver bandwidth for 1 Kilohertz Band Width 0.8 to 1.3
___ 57 Set BANDWIDTH KC switch S501 to 2 KHz position

___ 58 Repeat steps 50 through 55 for the 2 KHz band width 1.9 to 2.3
___ 59 Set BANDWIDTH KC switch S501 to 4 KHz position
___ 60 Repeat steps 50 through 55 for the 4 KHz band width 3.6 to 4.4
___ 61 Set BANDWIDTH KC switch S501 to 8 KHz position
___ 62 Repeat steps 50 through 55 for the 8 KHz band width 7.5 or more
___ 63 Set BANDWIDTH KC switch S501 to 16 KHz position
___ 64 Repeat steps 50 through 55 for the 16 KHz band width 12 or more
___ 65 No bandwidth test is required for 0.1 KC setting.

Y. Receiver Sensitivity Test

There may be an occasion when its appropriate to measure and record receiver sensitivity in real terms using an accepted standard. For radio receivers, real term sensitivity is expressed as the value of a modulated RF voltage applied to the antenna input necessary to provide a 10db S/N + N figure. This means, what input voltage is required to raise audio output 10 db over the receiver noise floor. Some prefer to do the test with a band width of 2 Khz. Others prefer to do the test at 4 or 8 Khz. If you are comparing the R390 to another receiver you would like to use the same band width. At 2 Khz you expect the receiver to have a 20db S/N + N figure. This test is preferred as a minimum signal test. How small of a signal on the antenna can still be copied? An alternative test is, for a fixed signal level, how far is it above the noise floor. We see this in the If deck where we expect 150 micro volts to provide 30 DB of signal above the noise floor. In the RF deck or end to end test we expect 3 micro volts to provide 20 DB of signal above the noise floor. Measuring the receiver sensitivity in the R390A is an easy, straight forward procedure. The receiver Line Level meter can even be used to help with the measurement.

Here is the procedure for sensitivity:

___ 01 Turn the receiver and allow it to warm up for 1 hour
___ 02 Turn the signal generator and allow it to warm up for 1 hour
___ 03 Set the receiver and generator to the same frequency of choice
___ 04 Adjust the Kilocycle Change to peak the generator in the band pass
___ 05 Set the initial generator output to 1uv
___ 06 Set the initial generator modulation level to 400 Hz or 1kc at 30%
___ 07 Set the R390 or R390A Function switch to "MGC
___ 08 Set the R390 or R390A Bandwidth to 4kc
___ 09 Set the R390 or R390A RF gain full CW (Clock Wise)
___ 10 Set the R390 or R390A AF line gain full CW
___ 11 Set the R390 or R390A AF local gain full CW
___ 12 Set the R390 or R390A BFO off
___ 13 Disconnect the signal generator from the receiver
___ 14 Set the Line Meter range switch to -10
___ 15 Adjust the Line Gain for a -10db indication on the Line Level meter

___ 16 Use the Ant Trim to peak the receiver noise alone
___ 16 Readjust the Line Gain for a -10db on the Line Level meter
___ 17 This is the relative receiver noise floor level
___ 18 Connect the generator to the receiver's balanced antenna input
___ 19 Reduce the RF output level of the generator.
___ 20 For a R390 Line Level meter value of 0
___ 21 Record the frequency and the output of the generator in micro volts
___ 22 This value is the 10db S/N + N receiver sensitivity at this frequency
___ 23 It should be less than .5uv
___ 24 The official specifications of the receiver call for 3 micro volts
___ 25 Work alone the range of the VFO and conduct this test at each MHz
___ 26 .900, 1,900, 2,800, 3,700, 4,600, 5,500, 6,400, 7,300
___ 27 8,200, 9,100, 10,000
___ 28 To get a value for each Mhz crystal and the range of the VFO.
___ 29 Check the SN + N at the alignment points
___ 30 550, 950, 1,100, 1,250, 1,900, 2,200, 3,800, 4,400,
___ 31 7,250, 7,600, 8,800, 15,200, 17,600 30,400

Z. Receiver Signal to Noise Test

___ 01 Install a 600 ohm resistor on the line level output.
___ 02 Turn the receiver on and allow it to warm up for 1 hour
___ 03 Turn the signal generator on and allow it to warm up for 1 hour
___ 04 Set the R390 or R390A Function switch to "MGC
___ 05 Set the R390 or R390A Bandwidth to 2kc
___ 06 Set the R390 or R390A RF gain full CW (Clock Wise)
___ 07 Set the R390 or R390A AF line gain full CW
___ 08 Set the R390 or R390A AF local gain full CW
___ 09 Set the R390 or R390A BFO off
___ 10 Connect the generator to the receiver's balanced antenna input
___ 11 Place a meter and 600 ohm load on the Local Audio output.
___ 12 Set the receiver and generator to the same frequency of choice
___ 13 Use the RF deck alignment point frequencies
___ 14 Conduct the test while performing RF deck alignments
___ 15 Use 550, 950, 1,100, 1,200, 1,900, 2,250, 3,800, 4,400,
___ 16 Use 7,250, 7,600, 8,800, 15,200, 17,600 30,400
___ 17 Rock the generator for a peak in to the band pass
___ 18 Set the initial generator output to 10uv
___ 19 Set the generator modulation level to at 30% 400 Hz or 1 KHz
___ 20 Use the Ant Trim to peak the receiver
___ 21 Set the Line Meter range switch to + 10
___ 22 Reduce the RF output level of the generator to 0 VU
___ 23 This should also be 450 milliwatts on the Local Audio
___ 24 This value is the 20 DB S/N + N receiver level at this frequency
___ 25 Set the signal generator to CW
___ 26 The Meter on the Local Level should drop 20 DB

___ 27 The Line Meter should drop to -20 DB
___ 28 This is the relative receiver noise floor level at this frequency
___ 29 It signal generator RF level should be less than 3 micro volts
___ 30 The official specifications of the receiver call for 3 micro volts
___ 31 Record the frequency and the output of the generator in micro volts
---
(revised sections from Roger)

M. To Stager Or Not To Stager
___ 01 Continue with the prior setup
___ 02 Set the Band Width to 16 KHz
___ 03 Set the Function to MGC
___ 04 Adjust signal generator for 455 KHz output frequency
___ 05 Adjust signal generator for 150 micro volt RF output
___ 06 Adjust signal generator for 30 % audio tone modulation (400 Hz)
___ 07 Meter diode load output for -7 volts DC
___ 08 Note the position of the top slug in T501
___ 09 Adjust the top slug of T501 for maximum output
___ 10 Return the top slug in T501 to its original position
___ 11 Adjust signal generator for 467 KHz output frequency
___ 12 Adjust the top slug of T501 for maximum output
___ 13 Note the position of the top slug in T501
___ 14 If the slug was tuned closer to 467 than 455 the module is staggered
___ 15 If the module is to be stagger tuned then use the stagger tune steps

X RF Deck Tube Optimization
In the RF deck we want to check the 6DC6 1st RF, 6C4's Mixers, and 5654's Crystal oscillators. Use a frequency above 8 MHz to take the third conversion
out of the process.
___ 01 Install a 600 ohm resistor on the line level output.
___ 02 Place a meter and 600 ohm load on the Local Audio output TS 585
___ 03 Connect the generator to the receiver's balanced antenna input
___ 04 Place a DC meter on the diode load
___ 05 Turn the receiver on and allow it to warm up for 1 hour
___ 06 Turn the signal generator on and allow it to warm up for 1 hour
___ 07 Set the R390 or R390A Function switch to "MGC
___ 08 Set the R390 or R390A Bandwidth to 2kc
___ 09 Set the R390 or R390A RF gain full CW (Clock Wise)
___ 10 Set the R390 or R390A AF line gain full CW
___ 11 Set the Line Meter range switch to + 10
___ 12 Set the R390 or R390A AF local gain full CW
___ 13 Set the R390 or R390A BFO off
___ 14 Set the Audio response to wide
___ 15 Set the Limiter to off
___ 16 Set the receiver and generator to the same frequency of choice

___ 17 Rock the generator for a peak in to the band pass
___ 18 Set the initial generator output to 10uv
___ 19 Set the generator modulation level to at 30% 400 Hz or 1 KHz
___ 20 Use the Ant Trim to peak the receiver
___ 21 Reduce the signal generator RF output for -7 volts DC
___ 22 Observe the power level on the Local Audio meter.
___ 23 Set the generator to CW
___ 24 Observe the power level on the Local Audio meter
___ 25 You expect a 20 DB drop in output on the Local Audio meter
___ 26 Swap all your 6DC6 tubes into the 1st RF.
___ 27 Measure the relative difference of each tube (step 20 - 25)
___ 28 Select the 6DC6 with the largest difference of signal to noise
___ 29 This tube may not be the one with the largest gain
___ 30 Swap all your 6C4 tubes into V203 2nd Mixer
___ 31 Measure the relative difference of each tube (step 20 - 25)
___ 32 Select the 6C4 with the largest difference of signal to noise
___ 33 Place the best 6C4 in the 1st Mixer
___ 34 Place the best 6C4 in the 2nd Mixer
___ 35 Place the best 6C4 in the 3rd Mixer
___ 36 Swap all your 5654 6AK5 tubes into V401 2nd Crystal Oscillator
___ 37 Measure the relative difference of each tube (step 20 - 25)
___ 38 Place the best 5654 in the 1st Crystal Oscillator
___ 39 Place the best 5654 in the 2nd Crystal Oscillator
___ 40 Grade all the spare tubes for future use

Older used tubes will often have a better signal to noise span than new tubes. So some day you have to put the new tubes into the receiver and start
aging them so they can get quiet. A new 6CD6 is what it is, Your stuck with it
as the best you have. You can put new 5654's 2nd Crystal Oscillator and 6C4's into the 3rd mixer. It gets them futher down the amplifier chain and thus
their higher noise level is masked by other stages. You may know a tube is not as good as another tube, but when used in the later stages you may not be able to measure the difference of the tubes when swapping them into the later stages.

Date: Sun, 20 Mar 2011 14:02:16 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] X RF Deck Tube Optimization

I suggested that Tisha collect all of this and add to the Y2KR4 document. This is ALL information condensed into meaningful and *VERY* useful information for ALL. I note Roger's MOS: 33C4H. The significance is that the "H" stands for
INSTRUCTOR!

Date: Sun, 20 Mar 2011 15:23:18 -0500 (CDT)
From: nryan@mchsi.com
Subject: Re: [R-390] Inspection Process Start

>David Melody became a SK May 2 2010. in Tucson Arizona

Thanks for all your good work. Please note that it was David Medley, not David Melody. Really fine gentleman, and sorely missed.

Date: Sun, 20 Mar 2011 16:33:31 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Inspection Process Start

We "mostly" remember David Medley! However, as *WE* collectively age, *WE* sometimes make "little" errors. I don't think David would mind Roger's postings, in spite of a spelling error. I can only hope to achieve the level of knowledge and ability that has been put forth.

Date: Sun, 20 Mar 2011 17:07:07 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] X RF Deck Tube Optimization

Yes, I knew Roger was an instructor. I've received LOTS of good info from him in the past.

Date: Sun, 20 Mar 2011 17:20:32 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] X RF Deck Tube Optimization

It was a "statement" in a more *general* nature. Not *EVERYONE* understands the significance of the "H" at the end of an MOS. Since I'm passing out general information regarding *MOS*, I am remiss in not specifying what MOS stands for. It is an acronym for: Military Occupational Specialty. The gist being a description of one's Military "job". We all had them, and they vary by service and branch within the service. Just my $0.02! Take it for what it is worth.

Date: Sun, 20 Mar 2011 14:28:22 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] recent posts

I, fo one, really appreciate the time and effort you put in outlining each step for each task in getting optimal performance out of our 390A's. As I get older and older, I need this kind of outline to work from. Some may demean it as a *cookbook*, but the logic behind each step is readily apparent to

anyone with any insight into radio theory.

Date: Mon, 21 Mar 2011 09:39:53 -0400 (EDT)
From: ToddRoberts2001@aol.com
Subject: [R-390] Intermittent Dial Lamps R-390A

I ran into a problem recently with the dial lamps in an R-390A and thought I would pass along a fix that seems to work. I was looking at an R-390A for a friend that had a problem I haven't seen before with intermittent dial lamps that sometimes work, sometimes don't. There was nothing intermittent in the connections from the dial lamp escutcheon to the terminal board resistor R-124 and nothing wrong with resistor R-124. There is a wht-blk colored wire that feeds 6.3V to the resistor and gets lost inside a nearby wiring harness. This line reads 0 volts when the lamps are off. I have been looking at the chassis wiring diagram and it looks like the line from the dial lamps resistor R-124 goes directly to the power supply plug P111 terminal 10. The mainframe wiring diagram lists that lead from the resistor as 27 wht-blk and it looks like there is a matching lead wht-blk 27 that goes to terminal 10 on power supply plug P111.

All the other 6.3V filaments in the radio continue to work normally when the dial lamps go off and on so it made me think the dial lamps must have their own separate line directly to the power supply plug P111. Terminal 10 has two wht-blk colored wires soldered to it. I did find that if I wiggled the main plug P111 that plugs into the power supply module, the dial lamps would go off and on but all the other 6.3V tube filaments remained lit so that seemed to pinpoint the trouble around plug P111. I slid the cover back from the plug and reheated the solder joints on terminal 10 as best I could with a small iron. That seemed to cure the intermittent and the dial lamps stay on normally now. Perhaps there was a cold solder joint in the plug?

Date: Mon, 21 Mar 2011 11:35:42 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Intermittent Dial Lamps R-390A

Interesting problem. Would have thought that the filaments would be taken down too. Thanks for the info. Aren't we lucky that some crazed engineer did not use the light bulbs as a substitute for the ballast tube? I had a radio that used the dial lamps for a voltage reduction scheme elsewhere in the receiver. When I changed the dial lamps to brighter (higher current) bulbs it ended up affecting receiver performance. That took a long time to figure out.

Date: Mon, 21 Mar 2011 19:19:34 EDT

From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Intermittent Dial Lamps R-390A

Thank you for this post. Good title we will be able to find it in the archives. You did a great job detailing the wire harness circuit. That information is not in any TM. Today we need it because these old connections are breaking down and need repair. One wire at a time we will get it all traced out.

Date: Fri, 8 Apr 2011 01:09:12 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: [R-390] Soldering Litz wire

I have not tried this but: I've heard that heating litz wire with the solder iron tip against an UNCOATED aspirin tablet will remove the enamel on the strands as slick as you please. (push back or remove the insulation first, perhaps.) Cleaning with a bit of baking soda then isopropyl alcohol would seem in order, then solder as you like. Often we find litz wire of 7 strands. If one strand is open, the effectiveness is reduced a bit, if two, it's reduced more, if three, it's reduced a LOT. (I can't find the measured numbers I remember seeing.)

Date: Fri, 8 Apr 2011 01:25:13 -0400 (EDT)
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Soldering Litz wire

Over the years I have found that using a small amount of paint remover is the safest way to remove the enamel on fine strands of Litz Wire before soldering. I use a small paint brush and apply a small drop of Kleen Strip to the end of the wire to be soldered, let it set about 10-15 minutes, then wipe the end clean with a piece of Kleenex wetted with rubbing alcohol. This leaves the fine strands of Litz Wire shiny and clean and ready to solder. I find using lower heat and a small amount of solder is the least damaging to the fine strands. Apply the heat and solder quickly. For that reason I would not recommend trying to burn off the enamel before soldering. Too much heat oxidises and damages the fine strands of copper wire.

Date: Sun, 10 Apr 2011 16:33:55 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Pearls v 2.0

I have gone thru *Pearls*, and reformatted it for easier on-line reading. Also added are some new chapters. Merged the URM stuff into *test_gear*. Found and re-filed mis-filed posts. Most, but not all entries are in chronological order. Sometime ago it was suggested that Pearls needs to be

condensed... however, as this collection gets updated every 3-4 months, any condensation will be soon become out-of-date. In any case, its factual knowledge will re-appear in Rev 4 of the Y2K manual. My feeling is that by preserving the headers and the actual language employed in the various posts adds colour to this collection of documents. This is quite a varied group, and it would be shame to lose that aspect.

This revised version *Pearls* is now up thanks to Al Tirevold.

Current versions of Acrobat Reader do contain a search function, which allows finding specific phrases or topics within any pdf chapter. It is simply too time-consuming to search for subjects manually. My suggestion is that only this index be incorporated into Rev 4.... it adds just a single page of what is already a large document.

One new addition: an index list of topics within each *Pearls* chapter to give you an idea of how I categorized things. Any faults or errors in judgement, inclusion, or exclusion are mine, and mine alone.

W. Li
Mercer Island, WA

AC and LINE TOPICS
safety issues
AC grounds
house wiring
power line noise
GFI outlets and the R390A
ground loops

ANTENNAS
UNBAL vs BAL input connections to the 390A
modifications to UNBAL jack
specific book and article references
optimal SWL antenna opinions
types such as T2FD, beverage, whip, long-wire, etc
the active antenna
Fort Deven's Training Manual tips
wire and feedline options
computer RFI
role of antenna tuners
antenna relay and its repair
break-in issues
multicouplers and diversity reception
gorunding the tower and safety issues
physics of ground rods

lightning strikes and sequelae
CAD welding

AUDIO DECK
diode load usage and connections
squelch circuitry
limiter circuitry and problems
refurbishing the audio deck module
tantalum C609 electrolytic replacement
the 6AQ5 output
the Kleronomos 6922/6360 circuit
600 to 8 ohm transformers
use of a 70.7 volt line transformer
LS-166 and other speaker options

BALLAST TUBE
rationale for its use
physics behind 3TF7 and its cousins
substitues for the 3FTF7
replacement SS circuits

CAPACITORS
important caps to replace first
problem capacitors in the R390A
Vitamin Q caps
Orange drop caps: pros and cons
minimal vs wholesale replacement practices
how to test a paper capacitor for leakage
polyester vs polypropylene
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Date: Fri, 22 Apr 2011 21:11:20 -0500
From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Question

To answer the Chuck question. I swapped emails with him recently and he indicated he had become tired of the R-390A's and closed up shop. That's all I know at this point.

Date: Fri, 22 Apr 2011 19:28:18 -0700 (PDT)
From: Joe Connor <joeconnor53@yahoo.com>
Subject: Re: [R-390] Question

Now that Chuck is on hiatus, is there anyone else (other than Rick Mish) who does for-hire restorations?

Date: Fri, 22 Apr 2011 22:35:47 -0400 (EDT)
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] Question

As far as I know Glenn Scott WA4AOS does very nice restorations on both R-390A's and plain R-390's plus R-388's and 51J-4's.

Date: Wed, 18 May 2011 07:53:40 -0700
From: <w7apm@mtaonline.net>
Subject: [R-390] Need Tag (Retry)

I bought a used engraved front panel for my 390A and the tag is missing. The tag from my junk panel is larger than the replacement panel. I am looking for a usable tag to use and not picky about brand. The one I have is a Motorola and I would gladly exchange for the smaller needed tag. I think the panel is a Collins panel. If somebody might have one available I will provide dimensions.

Date: Wed, 18 May 2011 08:23:36 -0700 (PDT)
From: Raymond Massey <dougmassey@masseyradiolabs.com>
Subject: Re: [R-390] Need Tag (Retry)

if the junk panel is original to the unit. Dont use another tag, use the original tag. The original tag will cover the existing holes if placed properly. You can carefully mark, drill, and tap for the original tag and place on your new panel

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Date: Tue, 24 May 2011 20:39:45 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] alternate R390A cases

Here are a few thoughts about one's R390A station. We all have at least one and often many more operable units, that are in contemporaneous use. The usual scheme is to install everything in six foot racks.

Here is another way to do it.

My goal was to set things up so that I could easily switch usage between my two R390A's and a R388 receiver. I have no room for a proper six foot rack, nor do I relish trying to wrestle a 390 chassis in and out of the top position, even if I had one. So I have been buying surplus 19 inch steel racks that are range from 16 to 24 inches in overall height, and at least 16 inches deep. These are cleaned up and repainted to match the receivers. They are just set on my workbench. All of them are open in the back. They are often found at hamfests for a few bucks, as they are not popular. Having a removable top is an additional plus for servicing. All the power and antenna cabling are run out the back out of sight. These short racks can hold one, or at most two, R390 sized chassis. This scheme is much cheaper than a Hammond cabinet.

The space above will hold a short height 19 inch rack such as a RTTY unit, or an antenna switch or whatever. In my case, one such case houses a Capehart R390A, and above it is a Williamson 20 watt mono audio amp fed from its diode load jack. Another rack houses a R388; above it is a homebrew antenna tuner-switch built in a surplus rack chassis that is only 3.5 inches high. A third short height rack holds an older Collins R390A, with a shelf above to hold misc small stuff. All receivers are run with the top and bottom covers off, to allow air circulation out the back.

The various 3 lead power cords are run to a switchable Tripplite power plate, fed by a fused and metered Variac. Each antenna coax is run thru the single antenna tuner-switch rack.

The only front cords are the 600 ohm audio lines.

By having multiple easily handled racks, I can pull any chassis for servicing with a minimum of hassle, without worrying tipping a larger rack over, or trying to move a loaded rack just to get at the back.

Just a suggestion.... thanks

Date: Mon, 20 Jun 2011 18:50:08 EDT
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Question

>I was hoping you would get some real information on the stamp mark.

Once upon a time your R390/A went to depot 240 for maintenance. BS6 was the inspector / list / list keeper to track the receiver through the depot process. AMC is a clue as to why the receiver was in the depot. I was

hoping someone had once upon a time known where depot 240 was because they had sent or receiver items from that location. Try posting the question on the boat anchors list and the Collins list to see if you get any real help. Try not to wash the stamp mark off while doing regular semi annual
maintenance.

Date: Wed, 22 Jun 2011 07:14:37 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Question

AMC = Air Materials Command, Air Force.

Date: Wed, 22 Jun 2011 19:53:16 -0400
From: "rkofler@aol.com" <rkofler@aol.com>
Subject: Re: [R-390] Question

There is an Army Materiels Command and an Air Materiels Command, both
abreviated AMC. How do I tell which agency the stamp on my R-390A refers to? This really isn't that important. Maybe I don't have enough to do.

Date: Wed, 22 Jun 2011 18:58:47 -0500
From: "Les Locklear" <leslocklear@cableone.net>
Subject: Re: [R-390] Question

Well, the Air Materiels Commmand Depot was (I think) at McClelland AFB Sacramento, Ca.) The Army had several, the most prominent one being Tobyhanna in Pennsylvania.

Date: Tue, 16 Aug 2011 07:26:20 -0400
From: "Michael, W1RC" <subs@w1rc.net>
Subject: [R-390] A Most Interesting Web Site

This may be a bit off topic but I don't think anyone will object. There is a nice collection of WW-II AAC manuals including some radio stuff that I hope you will find interesting enough to download.
http://www.aafcollection.info/

Date: Tue, 16 Aug 2011 13:28:31 -0700 (PDT)
From: John Saxon <johnbsaxon@yahoo.com>
Subject: [R-390] Question from a newbie...

I just recently obtained 3 R-390A and 1 R-390 and am now starting to work on one of them. Don't have any prior experience with these beauties.

It just occurs to me that I haven't seen any reference to extender cables. Are there such things out there? I assume they would not be difficult to build if plugs were available. Are plugs available?

Date: Tue, 16 Aug 2011 16:51:50 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Question from a newbie...

Extender cables can be made from cannibalized harnesses. There used to be a company that had these and a list member bought the stock when the company stopped selling R390A parts but he has since passed away so I don't know if that source is still out there. Fair Radio might be able to help. I have a few of them from a junk harness I bought but it's by no means complete anymore.

Date: Tue, 16 Aug 2011 17:31:37 -0400 (EDT)
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] Question from a newbie...

Two part response.

Part 1 the R390 and R390/A are such fine works of art no extender cables are needed.

Part 2 using extender cables lets so much trash into the wire harness that you need a real shielded shop with no other equipment operating in the cage. Once you get the decks on a cable all kinds of spurious oscillations pop up. Aggregation exceeds return on investment. Cables have been used on the VFO's for doing lots of rebuilding and alignments. But you need to be doing a lot more than one to make that worth the effort.

You tip the receiver up on one end or the other as needed and swing the subassembly / deck out and work on it. This works for the IF, audio deck. You may want to prop the VFO up on a cardboard box of proper size. You trouble shoot the power supply with a meter and no power applied. The RF deck is most troublesome. You do not work it live. You do use tube extenders to do signal injection into the stages to isolate problems. Mostly you trouble shoot the RF deck down to a tube stage and then do ohm checks on the deck out of the receiver. The military never even had extender cables. Fellows in school were taught to fix them all without extenders.

These things pretty much just do not exist for the R390 and R390/A.

Date: Tue, 16 Aug 2011 17:37:51 -0400
From: k2cby <k2cby@optonline.net>
Subject: [R-390] Question from a newbie

You can certainly make extension cables for an R-390A, but for my money it
is not worth the effort. It is definitely NOT worth cannibalizing a salvageable R-390A mainframe or subchassis to get the plugs and sockets to make one. That?s a mortal sin. I have had an original Motorola 1954 contract unit (S/N 1200) since the early 1980s. I lovingly tore down, cleaned, lubed and reassembled the
mechanicals.

I recapped all the ?brown beauties? -- which, in retrospect, is something of a waste except for ?the infamous C-552 (0.01 ?F 300 dcwv) that couples the plate of V501 to the mechanical filters. Because its failure will fry the filters, it should ALWAYS be replaced with a top quality new part with a voltage rating of at least 350. It's also easy to reach, and there is plenty of room to fit a replacement.?

I had to replace one of the IF filters which developed a short to ground, killing the AVC bus. I also added an in-rush protector, solid-stated the rectifiers, and substituted a resistor for the ballast tube. Beyond this, all I?ve done is to replace tubes whenever the performance started to fall off and do an alignment every 4 or 5 years.

These are remarkably durable and reliable radios. They were built to take a beating and to last forever. You shouldn't have to pull out any of the subchassis. By the way, with a little effort, you can turn the IF deck and the audio deck upside down for servicing without disconnecting the power cables.

The most useful service tool for this and most other hollow state radios is a set of tube socket adapters. These will let you measure tube pin voltages from the top of the chassis. They were common as dirt back when every town had a TV repair shop, but now they command premium prices on e-bay. The best commercial ones were made by a company called Vector. General Cement also made good ones. The R-390 Army service manual shows how to make poor substitutes from tube sockets, but keep your eye open at hamfests for the originals. If you have to choose, the most useful is a 7-pin, next a 9-pin, finally an octal. The esoteric ones are a waste. Best of luck. Enjoy the radio.

Date: Tue, 16 Aug 2011 16:51:58 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Question from a Newbie

John, Welcome to our rather dysfunctional family who still thinks tubes are

"cool". You may see us at hamfests, we usually are really twitchy from doing the "tongue test" to see how much AC ripple is on the B+ supply.

There are some folks who may use a tube extender socket but I many of us will test the radio "in situ". You have an advantage with the R-390A in that once you get one radio working in great shape you can swap modules across to isolate problems.

Of all of the things that may have ever been wrong with the R-390(A) radios or the possible ways of upgrading/ updating/ painting/ sanding or bleeding has been done by someone on this list. Many folks also carry rather "substantial" collections and usually if you are hard up for a part there is someone who will take pity upon you to help out.

Date: Tue, 16 Aug 2011 21:06:26 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Question from a newbie

Just to be clear, I wasn't suggesting cannibalizing a salvageable mainframe, etc. I used a cable that had already been clipped. Yeah, it might have been repairable, but I wanted to run the PTO out-sutu.

Date: Sat, 03 Sep 2011 16:49:55 -0400
From: rbethman <rbethman@comcast.net>
Subject: [R-390] Capacitors to give thought to change

<snip> Regarding the component "turrets", (stand-offs), I have obtained these in the past, but have since found the original source I had, no longer has any. I've replaced a number of these as they definitely have gotten very brittle. Since the one that is still on the bench is indeed a St. J's blue striper, there has been plenty of corrosion issues. That is precisely why I obtained an empty complete chassis. I've replaced a bunch of ground connections in each module. All wafer switches are/have been meticulously cleaned, along with tube sockets.

Every individual has their own methodology for what they do and how they go about it. How anyone can say someone's is wrong, I have no idea. Especially since they can only go by the written word, and are not sitting there with that person. Bob - NODGN

Date: Thu, 15 Sep 2011 11:12:58 -0400
From: Barry <n4buq@knology.net>
Subject: [R-390] Solder Posts

Not sure, but these look like the originals in the R390[A]. I know I broke a few of them due to heat when replacing caps in the IF decks.

eBay item #: 310168216648

Date: Thu, 15 Sep 2011 11:29:26 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Solder Posts

They indeed DO look like the "original" used in the R-390A's. I would have a "mental" reservation with them. These are "NOS '60s" items. The material they are made from has most likely aged just as well as what is in our radios. I got fortunate and bought a bag of about 100 of some that are actually new, and are a blue color. They also mount with the original 4-40 screws.

Date: Thu, 15 Sep 2011 11:34:12 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Solder Posts

I bought a bag of 100 blue solder posts a couple of years ago from a eBay seller and redistributed most of them among the list members. Now I need some more and can't find them for a reasonable price. Is your source still available?

Date: Thu, 15 Sep 2011 11:14:49 -0700
From: Pete Lancashire <pete@petelancashire.com>
Subject: Re: [R-390] Solder Posts

I've use either the mineral/glass filled or Teflon version. Not 'original' but much better
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Date: Thu, 15 Sep 2011 14:07:11 -0500 (CDT)
From: nryan@mchsi.com
Subject: Re: [R-390] Solder Posts

Good you mentioned those. Recappers, be careful around those solder posts, especially C528 and C529 alongside the bandswitch toward the chassis front end.

Date: Thu, 15 Sep 2011 20:44:13 -0500
From: Dennis pharr <wd5jwy@gmail.com>
Subject: Re: [R-390] Solder Posts

Surplus Sales of Nebraska has some available - not very cheap, but they are available.

http://www.surplussales.com/Hardware/Standoffs/threaded-base.html
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Date: Fri, 16 Sep 2011 10:40:55 -0700
From: "Lloyd Godsey" <kk7iz@cox.net>
Subject: Re: [R-390] Solder Posts

You mean something that looks like this?
Please note security measures.

http://img.photobucket.com/albums/v618/skyrider28/IMG_7473.jpg
http://img.photobucket.com/albums/v618/skyrider28/IMG_7472.jpg
http://img.photobucket.com/albums/v618/skyrider28/IMG_7475.jpg

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Date: Fri, 16 Sep 2011 22:23:36 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Component Replacement Ideas

>In my opinion, folks are overly ambitious about component replacement in the >R-390 series receivers. I respectfully disagree.

Most of one's time is in the dis-assembly, cleaning, and re-assembling of the receiver.

>Routine mass component replacement is extremely time consuming, is >generally unproductive, <parse>

Actually it is faster to remove and replace all the resisters and capacitors at one time (which are generally 40 to 50 years old) than to have to go back time and again.<parse> and risks collateral damage to the equipment. All of life carries risk. Knowledge, care, planning and knowing one's personal limitations minimize disaster.

>Frankly, it borders on the obsessive, particularly in the case of resistors. In >most cases, I would suggest replacing any 1/2 watt 10% resistor reading 20% >or more off center--otherwise, leave well enough alone.

Three points.

1. Carbon composition resistors have three major problems. One they drift far off of value. Second they have a doughnut shaped warm-up and cool down curve. Third their resistance varies according to their operating temperature.

2. Metal film replacements are quieter, smaller, and cost far less than carbon comps (AND they have NO inductance at the frequencies of our receivers). In fact you can hardly buy them anymore as they are far inferior to the alternatives. The same holds true for modern ceramic disc and silver dipped mica capacitors

3. Frankly too is my reaction to your judgment on what is obsessive. There is a vast difference from a receiver ?working? and ?the best performance that can be achieved?. Mundane care gets the former and dedication gets the latter. If you read ER magazine, the Y2KR2 manual as well as looking in the past reflector posts you will find numerous documented R390A improvements involving component and tube replacements. Science contradicts your technical opinions. Personally, I'd appreciate not having anyone using the judgment phrase "it borders on the obsessive" describing anyone of our radio activities. To me it was at the least, very poor taste.

Date: Fri, 16 Sep 2011 22:35:15 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] MFP Problem

This winter when I can get some quality time with my radios, I have several for upgrading that were treated with MFP. In the far distant past when I had to un-solder a joint coated with MFP it left a residue of uckempucky. Does anyone have a method(s) of removing the stuff from at least the solder joints? I?d rather not, but will if I have too, use carbon tet or MEK for a solvent even though I have a well ventilate outdoor area which it could be done.

Date: Sat, 17 Sep 2011 08:48:19 -0400 (EDT)
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] MFP Problem

I would recommend using a small modeler's paint brush and put a small dab
of paint remover over each MFP'd solder joint. Wait 10-20 minutes then clean each joint with a Q-Tip moistened in rubbing alcohol. The rubbing alcohol works best cleaning up the paint remover residue. This will leave you nice clean joints to solder. I also recommend using a small dab of paint remover to strip enamel from wires before soldering like when winding toroids or stripping older litz wire before soldering.

Date: Sat, 17 Sep 2011 09:24:56 -0400
From: Al Parker <anchor@ec.rr.com>
Subject: Re: [R-390] MFP Problem

I've been successful just picking it off the joints with a sharp pointed knife. It flakes off quite easily. It's necessary to do it when using my Hakko desolderer, to keep from quickly plugging the tip.

Date: Sun, 18 Sep 2011 01:30:56 -0500
From: "Ray" <bluegrassdakine@hotmail.com>

Subject: Re: [R-390] MFP Problem

MFP? someone explain the Letters pls

Date: Sun, 18 Sep 2011 01:17:54 -0600
From: w9ya <w9ya@qrparci.net>
Subject: Re: [R-390] MFP Problem

Here ya go... covers BOTH what is it AND how to replace it when your done playing around inside your radio....

< http://www.antiqueradios.com/forums/viewtopic.php?f=5&t=105507 >
http://www.antiqueradios.com/forums/viewtopic.php?f=5&t=105507

Date: Sun, 18 Sep 2011 09:04:52 -0400
From: Curt Nixon <cptcurt@flash.net>
Subject: Re: [R-390] MFP Problem

I see one of the responders mentioned transformer varnish..I think I might try that as oppsed to shellac, just because you know it isn't going to attack anything and it has good dielectric properties. Shellac thinner is wood alcohol..not the isOpropyl kind, the other, fuel stuff.

Date: Sun, 18 Sep 2011 09:25:08 -0400
From: Al Parker <anchor@ec.rr.com>
Subject: Re: [R-390] MFP Problem

I've always heard, "Mold and Fungus Protection" or maybe "Prevention".

Date: Sun, 18 Sep 2011 13:01:22 -0400
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] MFP Problem

IAW MIL-HDBK-454B (General Guidelines for Electronic Equipment) page 4-3 MFP is **Moisture Fungus Proofing.** It took a little work with my buddy Google to find this. This handbook is guidelines only, but, does contain a lot of common sense information. Kinda a rule book for our new engineers. Just a reminder for us old timers.

Date: Thu, 22 Sep 2011 16:46:28 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Solder Posts

In case anyone else is interested in them (there was at least on other fellow that expressed interest), I found these on eBay. I finally searched for the correct keyword to find them (neither "solder" nor "post" found them).

Item #220768420977 Seller's ID: barbersurplus

Date: Thu, 22 Sep 2011 13:49:04 -0700
From: David Wise <David_Wise@Phoenix.com>
Subject: Re: [R-390] Solder Posts

Holy cow, $8 each? Check Keystone's offerings at Mouser - I'm sure you can find something for 1/4 that or less.

Date: Thu, 22 Sep 2011 16:51:56 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Solder Posts

No - that's $7.75 for ten with free shipping.

Date: Thu, 22 Sep 2011 13:55:11 -0700
From: David Wise <David_Wise@Phoenix.com>
Subject: Re: [R-390] Solder Posts

Oops, I didn't notice the lot size. Then that's a good price, if you want ten.

Date: Mon, 26 Sep 2011 16:57:18 -0400 (EDT)
From: Flowertime01@wmconnect.com
Subject: Re: [R-390] MFP Problem

Back when we just applied far to much heat with an over size 40 watt iron.
That would sort of melt down / burn the MFP. Do not sniff that smoke
And brushed off the solder and burnt MFP with the wire solder brush.
A big tip solder sucker would pick most of it out. A knife would chip some more off. By the time you had the old wire lead out of the joint you had cleaned off
enough of the terminal to get a solder joint back on the terminal.

Try not to fry the wire harness wire.

We had small 2 OZ bottles of the MFP stuff like finger nail polish bottles to reapply. Heaven or Connie only knows what the NSN was for the little bottles. Opt for zero replacement unless needed in your QTH.

Date: Sun, 27 Nov 2011 12:23:31 -0600
From: Don Reaves <donreaves@gmail.com>
Subject: [R-390] Penultimate recapping an R-390A

We've had endless but useful discussions about recapping, from the minimalist approach to the shotgun treatment. Take a look at this fellow's

Stewart Warner project.
http://www.schmitzhouse.com/Johns_Electronics_20.htm
Now this is passion - stripping down a R-390A module by module to bare metal and putting it back together. Including the RF deck!

Date: Mon, 28 Nov 2011 06:40:58 -0600
From: Jerry K <w5kp@hughes.net>
Subject: Re: [R-390] Penultimate recapping an R-390A

Whatever trips his trigger... but if I was going to all that trouble I think I'd have at least started with a St. J refugee or similar needy derelict instead of this nice looking SW--which probably didn't really need tearing down. I do agree that a product detector mod or accessory product detector is just a frill for these receivers. The 390A is so stable that just tuning the BFO for clean SSB audio always worked perfectly for me.

Date: Mon, 28 Nov 2011 16:24:32 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Penultimate recapping an R-390A

I think the he put into it looks beautiful. Hopefully he used Scotchbrite pads and not "steel" wool. As has been stated the little rusting specks would detract from the finish.

He could have used an anodizing kit on the raw aluminum, even leaving it shiny. There are sealers for anodization that would make that finish last forever. He would need to use a small finishing tool to remove the anodization from where screws need to make an electrical contact as in theory, anodized finishes are electrically insulated.

His wiring work looks neat, under the RF deck was pretty clean. I did not see much of what he did inside of the RF/IF cans.

The previous owner of one of my receivers was very much into making the radio spotless and shiny. Fortunately he did not get crazy with parts changeouts and after fixing a slight cam misalignment/ dead band and a top to bottom alignment I ended up with a great radio.

Date: Wed, 8 Feb 2012 10:44:50 -0600
From: Ben Loper <brloper@gmail.com>
Subject: [R-390] MWO 94-35/2

I'm working on a Collins R-390A and right above the data plate is printed MWO xxxxx94-35/2, the center portion is rubbed out. Does anyone have any
info on that modification. Thanks

Date: Wed, 08 Feb 2012 11:58:12 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] MWO 94-35/2

Markings regarding MWOs took several different directions.

Some may be marked such as you have noted, and then some are like my '51 contract Collins R-390A, and are stamped on each module as "Mod 2" byCollins, and covered with shellac or something similar. Mine indicates that the radio had "Mod 2" applied at the factory. Yours may indicate that it was applied at Depot, after the radio left the plant. One would have to go into the Y2K-R3 manual to track what mods were
applied and when.

Date: Mon, 27 Feb 2012 11:31:55 -0600
From: Mike Andrews <mikea@mikea.ath.cx>
Subject: [R-390] Blog site open for discussions and (especially) for images.

One of the problems with mailing lists is that it's hard to get the listowner to permit attachments, for many reasons. Those of us who run our own servers and websites tend to put the images up there and post links; others use Flickr or some other image upload site. This promotes a bunch of images spread all over the 'Net, instead of a one-stop shop sort of thing.

I've put up a blog site, not to leech discussion away from any list, but to provide a place to upload images with enough commentary to make sense of the images. It's at <http://hamstuff.ath.cx>. Please at least have a look. If you want to comment on a post, or to add a new blog entry or photo, you'll have to register. It's pretty much a rubber stamp process. I'm trying to pay forward a lot of good that people did for me since I first got my ticket, way back in <mumble>. If you like it, please spread the word.

Date: Mon, 27 Feb 2012 14:11:36 -0500
From: Barry <n4buq@knology.net>
Subject: [R-390] Ping Tests and Solder

My gratitude to all those who have served. You have my respect.

To change the subject slightly, what kind of solder do most of you guys use? I've run out of my 1lb spool and looking to get another. Is 63/37 eutectic better than good old Kester 44 (60/40)? What rosin(s) have been better. I think I understand that some rosins are water soluble and wondering if those work as well as the old standby.

I assume most folks use diameters in the 1/32" to 1/16" range, correct? I

know much larger might be inconvenient for old radio repair use but are there any real advantages to smaller (like 0.020 or 0.015) except for SMT, etc.?

Anyone try silver solder? I know it's used a lot in Tek scopes, etc., and haven't seen it much in old radios but was wondering. Yeah, I know "it's just solder" and pretty much any good non-acid-core will do but thought I'd spark some new conversations.

Date: Mon, 27 Feb 2012 14:23:01 -0500
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] Ping Tests and Solder

I use 2% silver solder routinely - I can't tell any difference. I'm told that it sticks better to some surfaces, but the effect, if any, is subtle. I did try the 4% silver solder but I didn't like it a bit - it doesn't form a mirror surface - it hardens into a matte finish, so it is quite hard to tell a cold solder joint from a proper one just by looking at it.

Date: Mon, 27 Feb 2012 13:32:13 -0600
From: "chacuff" <chacuff@cableone.net>
Subject: Re: [R-390] Ping Tests and Solder

I don't like the "unleaded" solder. Until I can no longer buy the leaded type I will use it. The unleaded type doesn't seem to flow out as nicely as the leaded. Just a personal thing I guess. I do like the Silver bearing solder it works really well and seems to be harder. I use it in situations where physical characteristics benefit a stronger solder connection.

Date: Mon, 27 Feb 2012 14:26:51 -0500
From: Curt <cptcurt@flash.net>
Subject: Re: [R-390] Ping Tests and Solder

I still prefer the old 60/40 standby...especially for all older terminal-styles and general use. The lower temperature, and smaller diameter stuff I sometimes use for touchups on SMD but general SMD work is done without wire-form solder. Not sure what kind of silver solder you mean. real silver solder is really a brazing alloy that requires a torch to melt. There is some silver bearing solder but I have no experience with it for electronics. I was a field engineer for Tek and never heard anything about it. We were all solid state by then however. I would hesitate to use a water soluble flux on anything I wasn't going to wash after soldering. If left in place, one may end up with a mess in high humidity environments. Remember, most boards are now washed completely after auto soldering to remove flux residue.

Date: Mon, 27 Feb 2012 14:28:12 -0500
From: "Ed Tanton" <n4xy@comcast.net>
Subject: [R-390] FW: Ping Tests and Solder

Be careful Barry. A lot of the crap solder today is lead-free and isn't ? as good as what you are replacing. As for silver, the only reason Tek used it was because they had a bunch of ceramic terminal strips that were silver-bearing. NOT using solder with a little silver in it tended to leach what silver there was in the terminal-strip-terminal/solder joint.

Date: Mon, 27 Feb 2012 14:31:34 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Ping Tests and Solder

Yes, I should have said "silver-bearing solder". I used to use silver solder in brazing applications in the machine shop and am familiar with that.

Date: Mon, 27 Feb 2012 12:35:11 -0700
From: "Lloyd Godsey" <kk7iz@cox.net>
Subject: Re: [R-390] Ping Tests and Solder

Lead-free solder ain't solder

Date: Mon, 27 Feb 2012 14:55:26 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Ping Tests and Solder

I still use Kester #44. I've got a couple 1lb rolls. I'll keep using and buying until II have NO choice!

Date: Mon, 27 Feb 2012 15:47:46 -0500
From: "Charles P. Steinmetz" <charles_steinmetz@lavabit.com>
Subject: Re: [R-390] Solder

I, on the other hand, use 96/4 (Sn/Ag) exclusively, and have for over 30 years. It is substantially stronger, is free from electromigration, and adheres more tenaciously to a wider variety of substrates. The silver is not there just to prevent silver leaching (although it does) -- it also prevents "tin whiskers," improves wetting, and increases conductivity.

You are correct about the appearance of joints -- perfect joints have a uniform frosty appearance -- but this is actually a symptom of an advantage. 96/4 has a much narrower solidus/liquidus range (i.e., it is more perfectly eutectic) than any other common solder alloy, so cold solder joints are much harder to make with it. On the rare occasion that I make one, I find there is no difficulty identifying it by inspection. Really, it is just

a received Sn/Pb prejudice that all solder joints should be shiny. Get over that, and one can enjoy the substantial benefits of 96/6. [The above applies ONLY to 96/4 Sn/Ag and 96/3.5/.5 Sn/Ag/Cu -- other "lead free" solders do not have these advantages and have some real disadvantages.]

Proper activated rosin flux (RA) is the best electronic flux for cutting through crud and wettability and for leaving a residue that does not need to be removed (although I usually do). However, although you can still get RA flux, you cannot still get "proper" RA flux. I have bottles of the real stuff I saved when flux went to hell (early '80s) and use it as necessary to augment the wimpy RA in currently-available cored solders. You may be able to find an old bottle at a hamfest.

Date: Mon, 27 Feb 2012 16:03:16 -0500
From: Tom Bridgers <tarheel6@msn.com>
Subject: Re: [R-390] Ping test

Here, too, and busy trying to use a tumbler to remove rustand crud from a unch of screws, nuts, and fitted washersfor a like number of 100 watt power resistors. Some of the crud seems impervious to all attempts to remove it... Have spent a good 45 minutes, posttumblering for a day and a half, with a SOS pad scrubbingthe fitted washers. Some of the crud came off, butnot all. Oh well... Where do I use the 100 watt resistors? In my ARC-5 power supplies.I know ... wrong list ... my bad.Best,-Tom KE4RHH

Date: Mon, 27 Feb 2012 15:35:09 -0600 (CST)
From: nryan@mchsi.com
Subject: Re: [R-390] Ping Tests and Solder

Kester 44 60/40 @ 1/16" (.0625") works best for me. Additionally, I've got a nearly full spool (15.8 ounces) of Redring RX90RMA solder, 63%sn/37%pb, .8 mm (.0315"), manufacture date 7 Jul 92. It's surplus to my needs. If anyone wants it, please contact me off list.

Date: Mon, 27 Feb 2012 16:43:36 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Ping Tests and Solder

Anyone have any experience with Gardiner brand solder (63/27)?

Date: Mon, 27 Feb 2012 16:49:28 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Ping Tests and Solder

... make that 63/37...

Date: Mon, 27 Feb 2012 14:16:24 -0800
From: "Scott Overstreet" <scott@becklawfirm.com>
Subject: Re: [R-390] Ping Tests and Solder

And--- 63/37 solder is entectic and hence most fluid right up to the point of solidifing where as 60/40, belive it or not, goes through a viscosity thickening as it cools into solidification. 50/50 which isn't used much in electrical work has an even wider temperature range in which it thickens as it cools---They all have their place in application. Kester "44" flux is the old standby and is my choice for most electrical work ----its very "active" and washes off nicely with alcohol.

Date: Mon, 27 Feb 2012 18:11:19 -0500
From: Tom Chirhart <k4ncgva@gmail.com>
Subject: [R-390] Anyone interested in buying an R-390A?

*I was recently approached seeking my interest in buying a considerable number of R-390A's . He knew me from the past and my appreciation of the 390's from my time served in the Navy as a Radioman. I am an enthusiast but
I can't possibly store the 30 plus units available for any length of time without a storage unit. I am reaching out to the R-390 community to see what interest there may be to buy the lot. No talk of asking price for the lot, that will follow and it may be a case of someone asking serious funds for this lot and it may not be worthwhile. It's going to involve a rental vehicle and trip but if there is sufficient interest I'll do it. If this goes through I will tranport them to my residence in Northern VA so they would be within reach of PA/MD/DE/DC /VA/NC/WV, or if anyone is going to Dayton via this region it may involve a quick stop. I live within minutes of Interstate 95. I don't see much opportunity to ship unless the buyer has a shipping crate or is willing to pay for the building of one, and arranges shipment. Please contact me direct if you are interested in one or more and a reasonable price for units. Again, details are slim, asking price not known, nor costs associated with the trip to get them, or condition of the units. I doubt there are any blue stripers, I don't know the status of meters, top and bottom covers, etc, or if there are any parts only units or what. *

Date: Mon, 27 Feb 2012 18:26:51 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Anyone interested in buying an R-390A?

I would like to get at least one. If the fellows need to have some one do repairs I would pick up a receiver for them and do the repairs at price in addition to the cost of the receivers. I am in South Carolina, Just barely (Alanta is close) I could drive up on a week end and do a pick up.

Date: Mon, 27 Feb 2012 17:38:10 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Solder

Solder is interesting. When I was doing the QC/QA thing a bunch of years ago we were using a eutectic blend with silver in a wave soldering machine. After a while the solder would get "crapped up" and wetting and wicking would become "odd". The joints were no longer shiny with the concave little cusp you would see on a PCB solder joint where the component lead would make a 90 degree angle with the pad.

It took drawing samples out of the wave soldering machine (including samples of some unidentified solids in the base of the machine) and sending them to our research center for analysis. What we found was that the solder mixture deteriorated from copper contamination. Even a fraction of a percentage too much copper would make what was left in the tank nearly useless unless we balanced that out with a little bit more silver.

The elemental analysis was a really good read. Small percentages of gold, copper and a bunch of other metals.

Date: Mon, 27 Feb 2012 18:48:50 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Solder

Several years ago, there was an older electronics store in town. I was running low on solder and my wife was nice enough to drop by there and pick up some for me. I told her to use her own judgement as to how much to get (based on cost). She got a pound and the salesguy told her that since I was a hobbyist, this would be enough to last me a lifetime. I now have one layer left on the spool and kind of scared to use it. :-)

Date: Mon, 27 Feb 2012 18:58:48 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Solder

I would drop that spool in a glass jar. Drop that jar in an ammo can and slide the can under the bench. No reason to risk a short life over a couple solder joints.

Date: Wed, 07 Mar 2012 13:05:39 -0500
From: rbethman <rbethman@comcast.net>
Subject: [R-390] color component chart

The subject chart has been uploaded to my site. This covers tubular, postage stamp caps, resistors, transformer leads and more. I received this

from another list. It is now available:

<http://home.comcast.net/~rbethman/COLORCOMPONCHART001.pdf>

Date: Wed, 07 Mar 2012 15:05:32 -0800
From: Chuck <ka6uup@comcast.net>
Subject: [R-390] FYI: Dallas Lankford Files

He has started a Yahoo Group:
http://groups.yahoo.com/group/thedallasfiles/
I joined in about 30 seconds.

Date: Thu, 08 Mar 2012 12:58:26 -0500
From: rbethman <rbethman@comcast.net>
Subject: [R-390] The docs - V2.2

I've renamed the docs on my site. (For the nth time.....)
This is another attempt to make them available.

<http://home.comcast.net/~rbethman/hsn/accessories.pdf>
<http://home.comcast.net/~rbethman/hsn/accessoriesindex.pdf>
<http://home.comcast.net/~rbethman/hsn/hammarlund.pdf>
<http://home.comcast.net/~rbethman/hsn/hammarlundindex.pdf>
<http://home.comcast.net/~rbethman/hsn/r390.pdf>
<http://home.comcast.net/~rbethman/hsn/r390index.pdf>
<http://home.comcast.net/~rbethman/hsn/testeq.pdf>
<http://home.comcast.net/~rbethman/hsn/testeqindex.pdf>
<http://home.comcast.net/~rbethman/hsn/bestofhollowstatebyreidwheeler.doc>

Date: Thu, 8 Mar 2012 12:20:15 -0600
From: Mike Andrews <mikea@mikea.ath.cx>
Subject: [R-390] The Hollow State News files from Bob, NODGN: on my site

They can be found at <http://mikea.ath.cx/HSN>
and are linked from my main page at <http://mikea.ath.cx/indexa.html>
which in its turn is linked from my home page at
<http://mikea.ath.cx>.

Date: Thu, 8 Mar 2012 13:39:11 -0600
From: Mike Andrews <mikea@mikea.ath.cx>
Subject: Re: [R-390] The Hollow State News files from Bob, NODGN: on my site

I've added the files (issues 1 through 53) generously provided by Anthony

Casorso. I think that's everything. If anyone else has HSN issues to be added, I'd like to be told about them.

Date: Thu, 14 Jun 2012 09:19:11 +0100
From: "Lester Veenstra" <Lester@veenstras.com>
Subject: [R-390] Navy manual for CTMs All the gear we love

Some of the equipment at NSG that we are all probably familiar with. Some PDF files here are available for download. A great trip down memory lane.
LINK: http://www.navy-radio.com/manuals/crypto-equip.htm]

Date: Thu, 14 Jun 2012 06:42:59 -0500
From: Nick England <navy.radio@gmail.com>
Subject: Re: [R-390] Navy manual for CTMs All the gear we love

I have also scanned a few more CTM manuals
http://www.navy-radio.com/manuals/10232b.htm
http://www.navy-radio.com/manuals/ctts4.htm

Date: Sat, 16 Jun 2012 15:51:42 -0700 (PDT)
From: John Saxon <johnbsaxon@yahoo.com>
Subject: [R-390] Newbie question...

I thought I saw somewhere a parts list for a 390A in one of the military manuals. I have everything here that I could find on the internet and elsewhere, but can't locate a parts list. You know....C602 .0033 uf 300v, etc. Is there such a thing, or am I having a senior moment ? :-)

Date: Sat, 16 Jun 2012 16:55:50 -0700
From: Dan Merz <mdmerz@frontier.com>
Subject: Re: [R-390] Newbie question...

Hi, try 21st Century R390a Ref Y2K-R3. Chapter 7, page 7-4, available online, ----------

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Date: Mon, 18 Jun 2012 20:02:34 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: [R-390] Pinned Down - advice needed

Various refurb and repair projects are underway in preparation (practice) for a newbie to tackle the BIG ONE...a R-390A. Here's the latest. I'm working on a device that has a Cosmos PTO, a close relative to that which in our R-390's, that is driven by a rather interesting geared system.

To get to the point of my inquiry, a number of the gears and levers are pinned through their hub to the PTO shaft or idler shafts with mighty

small
diameter pins. Based on recent advice given to another refurb newbie, pins found in the R-390A gear train, can be a pain in the gear, I mean rear, even a show stopper. I need to remove the tiny diameter pins holding the gears and lever on the PTO shaft.

Where does one buy the extremely small diameter super strong punches? Has
anyone devised a "best" way to remove the pins? Heating the hub?, soaking with penetrant?, drilling 'em out, etc. Yes, I've considered cutting them off with a Dremel with cutting wheel but it would be rather difficult to do so without collateral damage. If you'd like to see the gears, please Google "ME-398/U", go to the photos on Flickr, check out the PTO and close up pics of the gears and levers that
are pinned. Thanks for any and all ideas.

Date: Mon, 18 Jun 2012 23:47:25 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Pinned Down - advice needed

I'm going to guess those are roll pins and they're not too difficult to drive out. You can get pin punches to do that (not sure where you'd get one but try McMaster if you really want one). You could probably get them out with a small brad or finishing nail of the correct size. You might want to blunt the end of a nail first, though, as the point might tend to expand the roll pin.

Date: Tue, 19 Jun 2012 11:58:32 -0400
From: Steve Byan <stevebyan@verizon.net>
Subject: Re: [R-390] Pinned Down - advice needed

Are they dowel pins or roll pins?
Here's some sources for pin punches for dowel pins:

<http://www.amazon.com/General-Tools-SPC75-Drive-8-Piece/dp/B00004T7RT>

<http://www.amazon.com/Starrett-S565WB-Drive-Punch-Pieces/dp/B00008IHTJ/ref=pd_sbs_indust_2>

<http://www.micromark.com/pin-pusher,10283.html>

<http://www.micromark.com/press-it-precision-arborandpunch-press,9309.html>

<http://www.mcmaster.com/#pin-punches/=i1o76u>

Date: Tue, 19 Jun 2012 14:49:05 -0400
From: "Jim M. N4BE" <n4be_jim@yahoo.com>
Subject: Re: [R-390] pinned down

If you're trying to service the pto then it may be possible to remove the whole assembly. .gears and cosmos from the device. Then the gear assy might be removed from the pto. If the pto shaft is held with a screw or clamp it can be loosened. If you need to remove the pto cover it should be possible while leaving the gears in place. You can google my article called "journey through the cosmos" for more info.

Date: Mon, 18 Jun 2012 23:47:25 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Pinned Down - advice needed

I'm going to guess those are roll pins and they're not too difficult to drive out. You can get pin punches to do that (not sure where you'd get one but try McMaster if you really want one). You could probably get them out with a small brad or finishing nail of the correct size. You might want to blunt the end of a nail first, though, as the point might tend to expand the roll pin.

Date: Tue, 19 Jun 2012 17:06:46 -0400
From: "Charles P. Steinmetz" <charles_steinmetz@lavabit.com>
Subject: Re: [R-390] Pinned Down - advice needed

Look harder. I have pin punches down to 0.5 mm (~0.02", or 1/50"). You are looking for watch or camera tools, not standard machinist's tools.

Date: Tue, 19 Jun 2012 17:31:55 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Pinned Down - advice needed

eBay item 250922457769

Date: Tue, 19 Jun 2012 17:32:36 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Pinned Down - advice needed

Roll pins are hollow. They are called roll pins since they are made by a machine that rolls them to form them. Straight solid pins have rounded ends. Tapered pins will have a different diameter on each end, and will "normally" have rounded ends also. To determine if they are tapered, do you or one of your friends have a dial or digital caliper? It would tell, if accurate down to 0.0005".

Date: Tue, 19 Jun 2012 17:44:44 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Pinned Down - advice needed

At 1.0mm that should do it!

From: k2cby [mailto:k2cby@optonline.net]
Sent: Tuesday, June 19, 2012 1:57 PM
To: 'Chris Kepus'
Subject: Pinned down

My own strong recommendation is to leave well enough alone. You ought to be able to clean the gears adequately without disassembly. Moreover, the shock of removing the pins is likely to fracture the coil slug, coil form (or something else) even if you use a jeweler's (toolmaker's) bench block to work against. That being said, if you must unpin the gears, try a small diameter (they go up to size #80) twist drill. Cut it off with a Dremel tool if you need to. They are much tougher than a brad or wire nail. Next step up: a carbide printed circuit board drill - they are hard as a rock but brittle. Last resort - cozy up to your local dentist and ask him for a worn out (or broken) burr. They are really tough. Miles
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Date: Tue, 19 Jun 2012 15:49:42 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Pinned down

Hi Miles, I'd prefer to leave it alone. Unfortunately, the two PTO units need work. The designers came up with way to use a 1000 unit turns counter by limiting the travel from 000 to 450 (plus or minus a dozen units or two) by utilizing two " lever arms".one on the main PTO shaft and one on the idler shaft. They are oriented so they come into contact at approximately 985 (-15 units from 000) preventing further CCW rotation of the PTO shaft and come into contact again after some 4 5/8 rotations of the PTO shaft in the CW direction at approximately 485 on the turns counter dial. When these two arms come together, the PTO shaft rotation is stopped preventing over-rotation of the PTO slug and possible damage to the PTO. In service, this clever gearing scheme to provide a 1 Khz readout with lower and upper limits has been compromised by heavy handed users. In one case, a lever arm on the PTO shaft was over-torqued to the point where the attaching pin sheared. In another case, the alignment of the turns counter, PTO shaft, idler shaft and lever arms was somehow screwed up likely by an over-zealous knob twister. In both cases, I want to remove the arms from the shafts and start over by setting up the PTO as intended to fully rotate through its 450 KHz tuning range.

Protecting the PTO is a priority so caution will be the watchword as work proceeds. Should drilling be necessary, your suggestions are very helpful.

Date: Tue, 19 Jun 2012 19:43:17 -0400
From: Steve Byan <stevebyan@verizon.net>
Subject: Re: [R-390] Pinned Down - advice needed

McMaster-Carr has drill rod down to 0.0135 inch (#80 wire gauge size).
<http://www.mcmaster.com/#drill-rods/=ilugsh>

Assuming that you lack access to a lathe to turn down larger stock to make a punch, I guess you'll have to make do with a short length of the correct diameter drill rod. You can try chucking it in a drill press and using the drill press as an arbor press, or else just carefully hold the rod in place with pliers while you tap out the pin.

Date: Tue, 19 Jun 2012 20:06:55 -0400
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Pinned Down - advice needed

Well, hopefully it's quality enough to do the job. There are a few diameters under 1.0mm (0.7, 0.6). It sounded like a 1.0mm would be about right. It's certainly cheap enough. Good luck with it.

Date: Tue, 19 Jun 2012 21:35:25 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Pinned Down - advice needed

>....if you have taper pins or roll pins.

A variant on the taper pins is rivet. The very small diameter taper pin is in fact inserted into the gear and shaft and then swaged over on the end to keep it from falling out. The taper holds it one way and the swag holds it from backing out. And both ends will look to be about the same diameter. You will need to file the small round rivet looking head off the end of the pin and punch it out. Mostly some formal education on the device helps you to know for sure if this is the design you may have. Try a Demerol or other hobby grinder on a pin end and see what you get. Once you get it apart you can then replace the pin. Looking for small diameter pin punch material, try the piano wire at the hobby shop. In addition to the stock drill bits are a whole range of drill bits of small size. Visit a good local hardware and ask. Or visit an industrial tool store that sells bits for lathes and grinding wheels. they will stock these odd diameter bits.

Date: Tue, 19 Jun 2012 21:54:31 -0700
From: "Chris Kepus" <ckepus@comcast.net>

Subject: Re: [R-390] Pinned Down - advice needed

Thanks for adding the info on the rivet style taper pin. After receiving your info, I went back to the shop to examine the pins more closely using a 10X loupe. It now appears that all the pins are hollow, even the ones whose diameter makes a 1/16 drill shaft look huge! In comparing what I saw on the McMaster-Carr roll pin / spring pin page, "my" pins look more like spring pins.

So the good news is that I don't have to worry about a taper pin. So I am emailing McMaster-Carr requesting some assistance in the best way to use their M2/M7 drill rod to drive out a spring pin (the closed gap version of a roll pin). I am also stopping by a hobby shop later this week to see what they have (thanks for the suggestion). Don't know why I didn't think of them earlier. I'm in there at least once a month.

Date: Wed, 20 Jun 2012 02:35:23 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Pinned Down - advice needed

... the best way to use their M2/M7 drill rod to drive out a spring pin

Note that most drill rod is NOT hardened: the intent is that the user harden then temper the rod after forming into the desired tool or whatever. Spring pins are usually hardened, and trying to drive it out with a soft steel rod may bring a bent tool. You may want to just find a drill the right size and use the non-drilling end of it. Start short to get the pin moving. If I were trying this, I would be careful to not bang on any bearings the shaft may have: I'd arrange a metal standoff with hole in the center to support the pinned collar, or some other such thing.

Date: Wed, 20 Jun 2012 00:20:24 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Pinned Down - advice needed

Thanks for heading me back on track. I was looking at McM-Carr's Shock-Resistant Air-Hardened S7 Tool Steel but the smallest dia they list is 1/16. Ratz!! I ordered a set of 0.6mm, 0.7mm, 0.8mm and 1.0mm watchmakers pin punches from a Chinese outfit on eBay but they will take some time to get here and I'm not too confident about the quality of the steel so I thought I'd hedge my bet and see what I could come up with at McM-Carr. I'll see where I can find # 78 and 67 wire size bits. QSL the cautions to support the shaft that I will be beating on. ;-)

Date: Wed, 20 Jun 2012 07:54:42 -0700
From: "Chris Kepus" <ckepus@comcast.net>

Subject: Re: [R-390] Pinned Down - advice needed

Since I'm a lurker and not a regular contributor (yet), it was really hard for me to pass up giving Roger the razzmatazz for his Demerol flub. So considering he always shares his amazing R-390A knowledge and has always been spot on, I said to myself, "What the heck? This dang contraption is giving me pain!" So I went an took some Demerol...and the pain went away! Heading back to the pill cabinet....

Date: Wed, 20 Jun 2012 09:15:45 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Pinned Down - advice needed

You said, " How the heck did you see that these pins were hollow?"
The secret is to use a 10X loupe BEFORE taking Demerol.

I rotated the shaft so the pin orientation was vertical. The loupe allowed me to clearly see the end of the pins. When looking at the pin end through the loupe, I saw this tiny dot of white in the middle of the pin end. I was seeing the white paper I had under the PTO gear box. It was a surprise to me that I could see through a hole whose diameter was barely large enough for a piece of #26 wire to feed through with a tad bit of friction. Close up pictures of the pinned gears and levers will be posted within the set of pictures of the ME-398/U on Flickr. I managed to get a few shots of the pin ends by holding the loupe in front of the lens on my camera.

Date: Wed, 20 Jun 2012 09:39:38 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Pinned Down - advice needed

Thanks to everyone; those who responded to my request for help, and those who used their Delete key, for allowing this off topic subject to go as long as it has. The advice has been very helpful. The actual "surgical procedures" will have to wait until some special items ordered come in. If anyone wishes to get updates or add further comment, please contact me direct. Check my Flickr pages on the "ME-398/U" for continued picture updates and comments. I also want to acknowledge and thank Don Reaves who has partnered with me as we make a joint effort to get our ME-398/U's back to an operational status. Again, thanks...you're a great group!

Date: Thu, 21 Jun 2012 18:50:37 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Pinned Down - advice needed

You may want to get your self a pair of vise grip pliers. Set the up in the drill press and drill a very small hole in one jaw. Into the small hole you

would like to insert a short length of the drill bit you used to drill that hole. You now have a pin in a pair of pliers you could use to work the roll pin out of the collar and shaft. You could pull a small bench vise apart and drill a hole in it. Something to make up a small press.

Date: Thu, 21 Jun 2012 20:43:06 -1000
From: Raymond Cote <bluegrassdakine@hotmail.com>
Subject: Re: [R-390] Pinned Down - advice needed

GREAT info Roger. I will use your idea and keep it handy.

Date: Fri, 22 Jun 2012 08:27:24 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Pinned Down - advice needed

Very interesting suggestion. I have about three different jaw styles on my various vice grips. Given the very limited operating room to get at these little pins, I'm not sure even my smallest vice grips could be maneuvered in there.
After I get a new Gorilla off my back (a few days), I'll get back direct to you to explore your idea in more detail. Since there are a few of us pursuing a solution to this, I will be posting close ups of the entire PTO gear box mechanism which will provide better views of this contraption and hopefully fertilize additional ideas.

Date: Tue, 9 Oct 2012 12:33:12 -0400
From: Robert Newberry <N1XBM@amsat.org>
Subject: [R-390] A vs non A

I may be picking up up what I believe to be a R390. When I was talking to a friend about this he kinda scoffed saying they were less desirable and harder to work on than the 390A. Anything I should be looking out for on a 390? Things that should be replaced right off? Are parts harder to find on a 390 than they are on a 390A? Should a 390 be avoided and continue looking for a 390A?

Date: Tue, 09 Oct 2012 11:04:56 -0600 (MDT)
From: Richard Loken <richardlo@admin.athabascau.ca>
Subject: Re: [R-390] A vs non A

I hardly think so. There are fewer examples of the R-390/URR so there is less documentation, fewer parts, and less community knowledge to be had but it is just as understandable and repairable as the A version.

You will have fewer problems with bad capacitors and no aging mechanical filters to worry about but you will have a series regulator with its

associated heat problems to occupy your spare moments.

There are a many similarities of design and contstruction but few parts are interchageable. All of the similarities, differances, problems, and solutions are well documented inspite of the above comment about the reduced availability of documentation.

Date: Tue, 9 Oct 2012 11:08:30 -0700 (PDT)
From: Joe Connor <joeconnor53@yahoo.com>
Subject: Re: [R-390] A vs non A

Here's a good webpage by the late Dave Medley describing the R-390, noting the differences between it and the R-390a, and giving some restoration tips: http://r-390.com/

Date: Tue, 09 Oct 2012 13:26:54 -0500
From: Randy and Sherry Guttery <comcents@bellsouth.net>
Subject: Re: [R-390] A vs non A

Kinda Scoffed? I believe I'd be looking a some other motive than "helping" you... several come to mind - none of which are very complimentary of your f

> harder to work on than the 390A.

From a purist standpoint that is perhaps "fact", but barely. One of the design goals of the "A" was to simplify maintenance and mechanical issues - and there are certain
things (such is maintaining sync in the tuning gears) that are "easier" in the "A" than non A. That said - they are - in most people's opinion relatively minor - and are often
out-weighed by the non-A's advantages.

> Anything I should be looking out for on a 390?

It's "nice" if the "green gear" is present. It's usually attached to the front of the geartrain by a screw. It's used to maintain gear sync during maintenance that requires getting into the RF deck, etc. It's a convenience, not a "disaster" if not available. Watch the heat in from the 6082s (26.5V version of the 6080 - which itself is an industrial version of the 6AS7) - they run blistering hot. Otherwise - the things you'd look for in an "A" are the same in a non-A (condition of geartrain, cams, slug racks; missing parts, etc.).

>Things that should be replaced right off?

If the receiver has been in regular (recent) service, no. If not - I'd check the filter caps carefully. There isn't a "ticking time bomb" in a Non-A like there is in an "A"
(specifically an original C553 in the "A").

> Are parts harder to find on a 390 than they are on a 390A?

There were a lot more "A"s built than non-As - so yes some part are harder to find. However - considering even the meters on an "A" are entering the realm of "unobtanium" -
I'd hardly call that in and of itself an issue.

>Should a 390 be avoided and continue looking for a 390A?

Absolutely! You should also pass the contact info for it's current owner to me so I can "warn" them as well... ;-)

Go for it!

Date: Tue, 09 Oct 2012 16:37:45 -0400
From: "Charles P. Steinmetz" <charles_steinmetz@lavabit.com>
Subject: Re: [R-390] A vs non A

As others have said, everything about the 390 is a bit higher-grade than the 390A. (The 390A was designed as a cost-reduced version of the 390.)

Note that the 390 has LC IF filters instead of the mechanical filters in the 390A, and for that reason sounds much, much better due to the more linear phase characteristics of the LC filters. For this reason (better phase characteristics/less group delay), some special 390As were made with the LC filters for specific applications (these are designated R-725/URR).

A possible down side of the 390 is that the LC filters are stagger-tuned in a way that is not easy to duplicate at home – you really need to sweep align them, and to know what you are doing, which is best done with the IF out of the radio and installed in a test jig. Chances are they have not been adjusted, so if you just leave them alone they should be fine. If someone has been there before, however, all bets are off. Note that the IF alignment procedures given in the TM-11-5820-357-35 (1966) and TM-11-856 (1955) manuals do NOT stagger-tune the IFs -- if you read carefully, they both state "Perform the procedure outlined . . . below only when the transformer cores have been displaced greatly from their normal positions within the cores." In other words, "This procedure will get you back on the air, but will not return the radio to its proper IF alignment."

Other than retuning the IF if it has been messed with (which, hopefully, it

hasn't), and the heat generated by the voltage regulators, which can be controlled with fans, there is absolutely no reason to avoid a 390.

Date: Tue, 9 Oct 2012 19:07:48 -0400
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] A vs non A

I seem to remember an alignment procedure that uses slightly offset frequencies to stagger tune the non-A IF system. I cannot find it however. Does anyone know where that is, what manual? (MAYbe the preliminary manual for the R-391.)

> and the heat generated by the voltage
> regulators, which can be controlled with fans,

I have a picture and notes about a fan plate I cobbled up to hole a 4-inch computer supply fan against the side of the radio. It does a wonderful job of cooling. Glad to send it to anyone interested.

Date: Tue, 09 Oct 2012 23:25:12 -0400
From: "Charles P. Steinmetz" <charles_steinmetz@lavabit.com>
Subject: Re: [R-390] A vs non A

I have seen several procedures that purport to achieve stagger tuning in 390 IFs by peaking different adjustments at different frequencies. However, in a properly stagger-tuned IF all of the stages will be symmetrical about the nominal IF frequency (in practice, this will be the center frequency of the crystal filter). Some stages will exhibit peaked responses, while others will exhibit two peaks with a valley between them. No procedure that requires only peaking will get those right. I've done it using sweep tuning, but it is not something I'd recommend to anyone who doesn't have a sufficient understanding of cascaded filter responses to design the IF from the ground up (and also has a fair bit of time on their hands).

Date: Wed, 10 Oct 2012 11:34:16 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] A vs non A

I think the non A is generally a radio that is much easier on the ears to listen to. I kick myself in the butt for not taking an offer of one that was being sold by a restorer. The only downside I would see are the tubes that run in near meltdown condition all the time, then again with winter coming you need to have something to warm up the room. There are some folks (Perry) who enjoy retrofitting the non-A (LC tuned) IF deck into the R-390A radio.

Date: Wed, 10 Oct 2012 13:02:56 -0400
From: "David C. Hallam" <dhallam@knology.net>
Subject: Re: [R-390] A vs non A

I retrofitted a R-390A IF into a R-390. Unhappy with the results and took it out. Operating a R-390 without the bottom cover and having a small fan of some sort blowing air on the 6082's is really necessary.

Date: Wed, 10 Oct 2012 14:33:34 -0400
From: Robert Newberry <N1XBM@amsat.org>
Subject: Re: [R-390] A vs non A

What is the going rate for a working r-390? Let's say radio is in good condition, does turn on and receive a signal and for the most part appears to function. May need some work/alignments

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Date: Wed, 10 Oct 2012 14:51:33 -0400
From: "David C. Hallam" <dhallam@knology.net>
Subject: Re: [R-390] A vs non A

If it's in working condition, clean inside and out, has the original meters, and in decent cosmetic condition, I wouldn't sell one for less than $500-$600.

Date: Wed, 10 Oct 2012 17:34:21 -0400
From: "David C. Hallam" <dhallam@knology.net>
Subject: Re: [R-390] A vs non A

PS If anyone has one that meets this criteria for less than $500, I will buy it.

Date: Wed, 10 Oct 2012 16:49:52 -0500
From: Jim Green <jagreen3@sbcglobal.net>
Subject: [R-390] A vs non A

I don't post very often, but this topic intrigued me. I have a good example of a Motorola R-390 and a EAC R-390A. I have gone through the R-390A using the Y2K manual and replaced all the old caps and out of spec resistors. I have solidified the rectifiers in the PS, but it is reversible should I come across a couple of good original tubes. That was last winters project. It was time consuming, but quite enjoyable. I'm planning to do the same with the Motorola R-390, but the build of the circuits in some of the modules look much more difficult to work on. However, I believe the effort will be worth it.

As it stands, I think the R-390 is a better performer than the R-390A.

However, your milage may differ. A good question to ask yourself is do I plan to listen to SSB and CW most of the time? Or am I going to listen to AM signals?

I listen to AM signal more often. I prefer the Xtal filters in the R-390 for this reason. I find the Mechanical filters in the R-390A are a bit harsh, and ringy compared the the xtal filters. That being said, The S/N ratio is the big thing, and they both kick A in that department.

I also have a very nice R-392. Not a real competitor in the R-390 race, but it has the advantage of being dust-proof & it works well in my woodworking shop.

Date: Wed, 10 Oct 2012 18:56:21 -0400
From: "Ed Tanton" <n4xy@comcast.net>
Subject: Re: [R-390] A vs non A

I once (8-10 years ago) purchased an R390 that was purportedly rebuilt and in "near-mint" condition from someone I will not name now-just no sense in it, and I have not seen a post by the person in years. It was as worn-out a receiver as I have ever seen (many of the gears were so worn they reminded me of a swaybacked horse!) and it barely received anything at all it was so poorly reconditioned/tuned. I figured I'd just eat the loss since I felt it would be a real mess to try and get a refund.

So there it sat for several years in a back corner of my basement. Enter this guy in China offering new Chinese Army receivers (tube or solid-state, your choice) complete with a full complement of spares, tools, etc. (I figure he had found-or made-a hole in some warehouse somewhere.) He wanted R390s & R390-As in any condition: and an even trade.

We discussed it briefly and I was BRUTALLY up-front about the condition. Next thing you know, I crated up my R390 and about $100 USPS postage, off it went. Wondered if I would hear back.

I did! Several months later, in it came. Exactly as described. I chose the solid-state unit (the Type 77) because I figured I stood a chance of replacing a bad transistor/whatever, but had never been able to adequately communicate with him about whether the tube model tubes all had US/EURO equivalents.
Pictures at: http://n4xy.com/rcvr_Chinese_Army.html

P.S. If the story on the web page differs from the above, use the web page version. I haven't even thought about this in a good while.

Date: Wed, 10 Oct 2012 21:47:37 -0500 (CDT)

From: nryan@mchsi.com
Subject: Re: [R-390] A vs non A

The two 6082s in the power supply do run very hot. It's important to check the 47 ohm resistors there (I think there are four of them) and make sure they are within spec. Better yet, replace them with 5 watt ceramics and dress the leads so air circulates freely around them.

Another nice thing to do is to run the receiver at a voltage other than 125 VAC, which is pretty much the de facto voltage from the power company. Set a variac at 115 VAC -- lower, if you like, but no lower than 110 VAC. If a variac isn't handy, wire up a 12.6 VAC filament transformer to buck the line voltage by that amount. There is a schematic for this on the R-390 FAQ pages.

Finally, consider Roy Morgan's suggestion of hanging a 4" muffin fan off the side of the receiver to gently draw off heat. Some 220 VC muffin fans work on 125 VAC at a slow (and silent) speed.

The non-A is a terrific receiver, very much worth the candle. Enjoy!

Date: Wed, 10 Oct 2012 21:13:32 -0700 (PDT)
From: "Drew P." <drewrailleur807@yahoo.com>
Subject: Re: [R-390] A vs non A

I has also been said that the distributed L-C selectivity of the Non-A vs the lumped (mechanical filter) selectivity of the A provides a quieter IF, and so the Non-A kicks the A in that regard.

Date: Thu, 11 Oct 2012 12:14:57 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] A vs non A

<snip> I have learned a few things about both of these models of receivers. In my humble opinion a R390 is the better choice.

In maintenance they are even up.
But the R390 sounds so much better in your ear.
If you are just going to run a TTY setup then aR390/A will work.
But if you plan to listen to it like CW or AM or SSB, then the R390 is a clear choice.
If the better voltage regulators of the R390 worry you, solid state them.
So you want to own a tube radio and not have to do maintenance.
Go get a transistor radio and some light bulbs.
Doing the maintenace is just part of the product.
R390 IF's are no more complex than the R390/A

Either can be done very well with a simple signal generator and volt meter. The sweep generator myth is in with Monster gold plated audio cable. Can I sell you some old bridge stock? I have original paper certificates.

If you are doing your maintenace on time before you let it go up in smoke, you will only need tubes. A broken slug spring can be fixed eithe rin a R390 or R390/A.

Date: Fri, 12 Oct 2012 15:15:56 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Is this unusual?

In 25 words or less, nope. For a while in 74 - 75 we could not get the spline bolts through military stock. common replacement part was the Allen head bolts. Over 60 plus years a lot of non stock things have been installed to effect a repair. Common practice is to swap the odd parts into a gear clamp where it can be seen for what it is, and then use the spline bolt from the gear clamp on the blind knob clamp so you do not get blind sided when trying to get the knobs off.

Date: Sat, 13 Oct 2012 12:46:36 -0400 (EDT)
From: bonddaleena@aol.com
Subject: Re: [R-390] R-390 Digest, Vol 102, Issue 14

When I was with IBM, all of our mechanical parts were secured with spline screws. Much better than Allen, IMHO!

Date: Sat, 13 Oct 2012 20:01:38 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Is this unusual?

Spline screws have some distinct advantages over allen head screws. They can take much greater torque without "camming out" like an allen head screw. It has to do with the flat faces in the spline. You would need to look at it with a really good magnifying glass or some diagrams on the internet. Those clamps require a significant amount of tightening to lock the gear or dial knob to the shaft.

Date: Sat, 13 Oct 2012 21:55:54 -0500 (CDT)
From: nryan@mchsi.com
Subject: Re: [R-390] Is this unusual?

I've broken a spline (Bristol) screw or two trying to tighten clamps sufficiently, and have found that putting a teensy amount of oil on the screw's threads and shoulder helps transfer more of the torque to tightening the clamp.

Clamp and shaft should be free of any lubricant.

Date: Sat, 20 Oct 2012 16:04:30 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Bust R390A, RF Deck

Usually I see a parted-out R-390A every few weeks on ePay. I have not had a problem in getting replacement modules for any part of the receiver as long as I can wait for a few weeks. It is definitely not an instance where they are always available, you just need to keep your eye out. Taking that approach I have accumulated 2-3 of each major element in the R-390A receiver and other than the chassis I can maintain the two units I own. I am sure that a large number of folks on this list have spare modules and decks. They probably would not be willing to sell you their ++A spare but someone might be willing to let go of a spare. Some folks picked up bunches of blue stripers and I have seen pictures of folks who have 20 (or more) radios sitting in stacks in a storage unit. Depending upon condition, someone might be willing to let one go for $50-$150. BTW, it will be much easier to replace the entire RF deck that it would be to swap out that rotary switch. Just do not throw away the old RF deck, it is chock full of other parts you would need for maintaining the radio in the long run.

From: Mike A <mikea@mikea.ath.cx>
Subject: Re: [R-390] Wire harness

The Field and Depot Maintenance Technical Manual for the R-390 and for the R-390A can be found at <http://mikea.ath.cx/indexa.html>. Search for R-390 or R-390A, click the link to get to the page for the receiver you want to work on, and then click the link for the manual. All the figures are there, and all the schematics, too. As the other poster said, have fun. The manual PDF files are about 4.6 MBytes, so they may take a minute to transfer.

Date: Mon, 22 Oct 2012 19:57:16 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Wire harness

The plug is P114 it goes to jack J114.

>From the photo, it looks like there should be enough wire in the plug to allow you to >identify each wire by color and stripe. You can find its mate in the cable section.

Work the cable back and write down the wire colors and stripe set. Do a wire splice and shrink wrap tube on each wire. Leave the splice set nice and

long. Get a nice length of coax shield braid and squish it back big enough to make a sleeve over the harness splice and extensions. Work if back on the harness far enough so you still see the wire cover color and strip. Trim all the wires to the same length and strip them to 1/8 inch. Open up the plug back shell and slip it onto the spliced cable. Take lots of pictures of the stub wires in the plug. Unsolder one wire from the connector find its mate in the harness by color and strip. Solder that wire back in. Repeat for each wire in the plug.
Dress the coax shield down to look nice and trim.

No TM NO Schematic NO problem. Reinstall the plug back shell.
There are 4 plug and jacks in the R390 that are the same part pair set.
J214 P114

A 180 Volt B+ also on 180 volt test jack for test check switched B+
B Filament string 25.2 Volts also on P113C for test check
C RF gain to RF gain pot TB102 pin 2
D
E AGC also on back panel
F
G
H
At least one pin is ground. I did not see the other pins on the schematic.
I did not find a wire list for the plug and jack in the TM

Date: Mon, 22 Oct 2012 21:02:00 -0400
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] Wire harness

What I would do is disassemble the connector. Document what color wire goes to what pin. Determine the length of wire needed to splice into the harness and go to the plug, when properly mated to the module.Splice the new wire, of the appropriate color into the harness. Color the splice with clear heatshrink (so that you know what was done at a later date). Solder the new wires to the connector. Relace the harness. Plug in the connector and proceed with the power up and testing. If you need wire of specific colors, ask, someone here will have what you need.

The wire is probably white with two tracers.
One tracer is wider than the other.
This is the primary tracer.

If the primary tracer is red and the secondary tracer is green, the wire would be identified as 925. Then all you need is the size of the wire. Mic one strand and look up the wire. The diameter of the strand will give you the gauge of one strand. There are probably 7 strands. Look it up and you will

know the gauge of the wire. This is just my approach. Much easier than replacing the entire harness, and just as functional.

> On Oct 22, 2012 11:15 AM, <nryan@mchsi.com> wrote:
>
> > Hi, Robert,
> >
> > You really need a copy of the manual before undertaking that repair. It
> > will answer just about all your questions. The US Army TM 11-856 with schematics > > is a good place to start. They show up on eBay once in a while.

> J214 receives power for filaments, B+, etc., by way of P114.
>
> If you look carefully, you may find each wire to be uniquely color-coded.
> (I don't know if this is in fact the case.) If they are unique, it should
> be a matter of extending them and soldering them to P114's terminals.
>
> Take time to do a careful job. If there's doubt along the way, try and
> find the schematic at the very least, but the full manual will be a
> necessity if you do further work.
>
> The effort on your part is worthwhile as the R-390 (non-A) is the better
> receiver of the two versions.

Date: Mon, 29 Oct 2012 21:59:26 -0400
From: Robert Newberry <N1XBM@amsat.org>
Subject: Re: [R-390] Wire harness

I should clarify more.

A= red stripe

B= black stripe

C= Orange stripe

D= shield/braid

E= Green stripe

F= Orange stripe

H = White
Possibly someone could look inside theirs and check j214. There should be an orange stripe wire inside the shield. Could someone confirm what I have

with theirs? I need to confirm pin C and F.

Date: Tue, 30 Oct 2012 17:09:57 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Wire harness

P114 is the plug on the harness (chassis) J214 is the jack on the RF deck (RF deck) There is no J114 or P214

Give the lock ring on the plug a 1/4 turn to unlock it and unplug it from the RF deck. The wire stripes under the deck may not match the wire stripes in the harness. The two separate assemblies (RF deck, wire harness) may have been assembled both miles apart and years apart in space and time.

More schematic reading Sergeant, I need to learn all. You should not have to pull the RF deck to ring every thing out. You can likely do OHM meter readings to tube socket pins for the RF deck. And read back to other wire harness plug pins or points through the wire harness. There are no color codes in the TM. Stripes will vary from production run to production run. and likely day to day in production. That level of detail is not exact. It was just to make production process reasonable.

So when you get the plug back shell off the connector, you will hopefully find a wire with orange strip and a bit of shield on it plus a wire with orange strip and no shield on it. If two of the wires have the same color and stripe, they likely both go to the same pin in the plug. But they will both be the same with shields or with out shields. One with shield and one with out shield are two different wires and circuits.

I should clarify more.

A= red stripe

180volts B+

B= black stripe 25VAC filaments

C= Orange stripe RF gain

D= shield/braid ground

E= Green stripe AGC F= Orange stripe H = White

I though you would be able to match the bits of wire left in the back shell with the wire strands in the harness wires.

Date: Wed, 31 Oct 2012 22:14:51 -0400
From: "Robert N. Newberry" <N1XBM@amsat.org>
Subject: Re: [R-390] Wire harness <Update>

Just an update I was able to ring out the two wires in question, it was a simple task and only took me 5 minutes. I probably spent an hour staring at the schematics to find the necessary points to identify my wires.

Anyways it was getting late so I jacked some headphones in and "J-S'ed" a wire over to the work bench and I was able to hear the local Northeast gang on 3.875. I was pleased to see that the dial was indicated 3.8765. Being a very unscientific test I would say the receiver is working OK and isn't a complete lost cause. <snip>

Date: Sun, 4 Nov 2012 00:56:37 -0400 (EDT)
From: DLe9480907@aol.com
Subject: [R-390] ID TAGS

Hello to the list. Looking for a source for Reproduction Metal ID tags for R-389 ,390,and 390a anyone found one??? Thanks Darryl WA5TOO

Date: Sun, 4 Nov 2012 04:49:34 -0500
From: Roger Gibboni <rgibboni@dulye.com>
Subject: Re: [R-390] ID TAGS

I use a guy to make nameplates for our business. He does mil spec plates for a number of contractors. The name is Island Nameplate in Florida,NY. Give him a try. I am sure with a sample he can make an exact replica. Roger. WA3YTM

Date: Wed, 7 Nov 2012 16:19:56 -0500 (EST)
From: Glenn <wa4aos@aol.com>
Subject: [R-390] Torque and Clamps

For years I have used a Utica Adjustable Torque screwdriver @ ~6 in/lbs to tighten the Bristol screws on the clamps in the R 390 series receivers that I restore. I never found any official torque specification but ~6 in/lbs is very snug without being too tight. I have never broken a clamp in this range, since using a torque screwdriver, and never had a receiver come back for a broken or lose clamp. Using a torque screwdriver certainly takes the guess work out of not having some clamps too tight or too loose.

I carefully inspect all clamps after they come out of my ultrasonic cleaner under a bright lamp and magnifier lens. I have tried the, " dry penetrate test," but that turned out to time consuming and costly, although I did find flaws from time to time that were not visible under my bright lamp. Most of

the time I will find at least 1 clamp per gear train that is questionable or bad.

So, three questions:

1) Does anyone know if there was ever an official specification of tightness of these screws?

2) Anyone have experience with methods of identifying small cracks and fatigue points in metal parts that is less costly and time consuming than the aforementioned, "dry penetrant test," I have used in the past?

3) In the past, I once found a company that sells an almost identical clamp as used in the R 390 series receivers, of course with an Allen bolt. The unit price was around $9ea and I am near the end of that inventory. Does anyone recall the company that sells/sold those clamps. My purchase was logged on a system that had a hard drive failure before I did my backup and this vendor has slipped through the cracks. FYI: In case anyone is interested, I use Xcellite 9966 Bristol blades with the 99PA adapter to mate the bristol blade to my Utica Torque Screwdriver; this works out VERY WELL.

Date: Wed, 7 Nov 2012 22:33:26 -0500
From: Tom Bridgers <tarheel6@msn.com>
Subject: Re: [R-390] Torque and Clamps

After over-tightening clamps on my R-390A's for several months/years ago, I gradually learned to get it right by feel. After that, I had no other clamps break. But the first few made me pull my hairout, which is why, today, I am slightly bald. Tighter is not always better, and tightening clamps on an R-390Ais one of those situations. I have used the Xcelite bristol blade for over 10 years. I'd be interested in learning more about the more logical and engineering approach of the Utica Adjustable Torque screwdriver.

Date: Wed, 7 Nov 2012 23:19:17 -0500
From: Roy Morgan <k1lky@earthlink.net>
Subject: Re: [R-390] Torque and Clamps

This is a great idea, except for the cost of the screwdriver: about $200.00
From: <http://www.all-spec.com/products/Utica/Tools|Torque_Drivers|TOL-45/?gclid=CI6rhLrBvrMCFSOnPAod1yoAtg
> "Utica #TS30 - "Click" Type Torque Limiting Screwdriver, Adjustable, 6-30 in/lb Range, 1/4" Female Hex Drive "

Date: Thu, 8 Nov 2012 12:12:03 -0500 (EST)
From: Glenn <wa4aos@aol.com>
Subject: Re: [R-390] Torque and Clamps

It's true, I spent $160 for my Utica TS 30 Torque Screwdriver 15 or so years ago but it has probably paid for itself time and time again by not cracking clamps. I have NEVER had a failure of a clamp since and I have been restoring R 390A receivers, using a Torque Screwdriver, for many years now. There are some torque screwdrivers on ebay, made in China, that look fine for $25. If I was only going to use it occasionally, I would buy that one. Who knows it may be as good as my over-precised Utica TS 30. Hi

http://www.ebay.com/itm/Adjustable-Torque-Screw-driver-Set-Blue-New-Version-/160714689650?pt=US_Character_Radio_Control_Toys&hash=item256b578c72

If you look at Step 3 on the ad, there is a link to a youtube video demonstrating the unit. I may buy one for giggles. However, for me, the cost of NOT having to pul; one or two RF decks and replacing a broken clamp is worth the money I spent on the Utica. Also note the interface of my Utica TS 30 to the Xccellite #6 Fluted Bristol wrench VIA the Xcellite 99PA adapter. This may work with the offshore version as well.

Here is my Utica TS 30, now $190 http://www.all-spec.com/products/TS30.html?gclid=CMLOobDuv7MCFQiqnQodknAAKA

NOTE One other tolol I use daily, I mentioned this on the reflector one a few years ago, is the Ryobi TEX4, small cordless screwdriver with adjustable torque. I DO NOT USE IT FOR CLAMPS but rather for front panels, side covers, tops/bottom covers and Utah covers to mention a few. The adjustable torque head is PERFECT for installing screws and not over-driving and possible marring the front panel by jumping out of the screw hear. This tool is small and lightweight. The battery runs for weeks without a charge. I try to plug the battery into the charger every second or third week.
http://www.homedepot.com/h_d1/N-5yc1v/R-202351930/h_d2/ProductDisplay?catalogId=10053&langId=-1&keyword=cordless+screw+driver&storeId=10051#.UMNyS2_utHo

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Date: Thu, 08 Nov 2012 14:02:02 -0500
From: Ron Hunsicker <ronhunsi@ptd.net>
Subject: [R-390] Torque and Clamps

Consider the gun folks. Wheeler Engineering markets a line of tools that includes a torque screwdriver. MidwayUSA has it on sale for $42, plus

shipping. This is the description from the MidwayUSA website:

> The Wheeler Engineering FAT Wrench is a hand driven, click/clutch style torque wrench that is very useful for applying the necessary torque to most firearm and firearm accessory fasteners. The FAT Wrench features a thick ergonomic handle, a standard 1/4" drive tip, and can be used to apply torque from 10 to 65 in-lbs at 5 in-lb increments. Common uses include, but are not limited to: installation of scope ring and base screws, action screws and trigger guard screws. With proper care and use, the FAT Wrench will provide a lifetime of reliable service. Includes 9 bits, a square drive adapter and plastic hard case.

Date: Thu, 08 Nov 2012 15:33:54 -0600
From: Randy and Sherry Guttery <comcents@bellsouth.net>
Subject: [R-390] clamps, screws and torque screwdrivers...

First ran into (quality) torque screwdrivers in my "primary" work - because so much on a submarine is hand-assembled - and fasteners need to be torqued correctly (not enough - they come loose, too much - and all manner of bad things can happen) - torque screwdrivers were just part of the "routine". These didn't need to be super accurate- (though they required their calibration to be checked every so often - depending on the individual driver and it's intended use). We had sever different kinds/brands - etc.

My last duty station was NWSYORKTOWN - Special Weapons Division - the Maintenance, Calibration and Repair Shop (MC&R). Since the principal business was assembly, diss-assembly, repair, testing, mating (to delivery system) and unmating of nukes - the number of fasteners - and installation, etc. requirements was truly staggering - and a great many called for a very accurate torque spec. The "primary" drivers were the PM series by Sturdevant Richmont. These are quite accurate, easy to set, can be calibrated, - and are extremely well built. Today a new one will set you back $175-$200 - however I just checked there is a used one on ebay (item # 110971985026) for something like $19.99 + S/H (no bid yet) less than a day to go...

Just before I got out - we had one in for calibration - and it failed - barely out of spec at an endpoint - we could adjust it to meet specs at one end or other - but then then opposite end would be *barely* out of spec. I checked with the weapons plant that "owned" it - gave them three options: 1) accept a limited calibration (i.e. only valid between say 2 and 25in lbs), try and get it repaired at the factory (which cost nearly as much as a new one) - or survey it and replace it with a new one (which was in stock at the local supply depot). The guy took the screwdriver from me - dropped in a near-by file 13 - and said "... draw the one from supply". Which I did. However - I

couldn't help but think about the one in the trash - and checking with my supervisor - went back and asked if I could have it. "Sure". Still have it - indispensable working on radios, teletype, etc. Had an opportunity to check it on a torque tester several months ago - it's still "just barely" out of spec on the top end. Since I use it primarily below 20In-lbs - that works just fine for me!

Date: Fri, 09 Nov 2012 15:01:13 -0500
From: "Charles P. Steinmetz" <charles_steinmetz@lavabit.com>
Subject: Re: [R-390] Torque and Clamps

Unfortunately, the eBay unit appears to use bits with round shanks and flanges, similar to (but almost certainly incompatible with) the Xcelite 99 design -- not 1/4" hex bits. But at the price, it might well be worth buying one to play with. Here is another possibility, one that I use: http://www.all-spec.com/products/0490-22.html

It's the Milwaukee 0490-22 cordless screwdriver with an electronic torque stop variable from 3.5 to 30 in-lb in both directions. I have three, and mine are extremely repeatable (though not calibrated -- the scale runs from 1 to 21 plus lock). I see the price has risen sharply since I bought mine, but they are widely distributed and I think you can still find them for less if you look. I've been using "flate rate screwdrivers" for years, and these are by far the best I've ever used. It's not surprising that this model has been in production for more than 5 years (in a world where 2 years is almost unheard of for products like this). And, unlike my mechanical torque-limiting screwdrivers, I use them almost every day for every conceivable kind of project. IMO, the optimum torque for 390/390A clamps is 4 to 4.5 in-lb.

Date: Sat, 10 Nov 2012 11:01:25 -0500 (EST)
From: Glenn <wa4aos@aol.com>
Subject: [R-390] Clamps and Torque

BTW, at this writing there are a number of Utica TS30 Torque Screwdrivers listed on ebay for $40 including shipping. They are used and appear to be from an EX workforce or application.

These are EXCELLENT Torque Screwdrivers and you can google the pdf to maintain them including calibration methods if you have a torque tester/calibrator. There are some offshore torque testers in the $20 range. However, I have NEVER seen any indication of my TS30 not being very close to cal. I use to send it to a shop in GA for an annual calibration and they always said, "in spec, no adjustments required. $25 please".... (I finally stopped that nose bleed and got my own tester that I use for verification from time to time; I never see a problem. As mentioned, I paid $160, 15

years ago for my unit and am very pleased.

I got to tell you that having a clamp too lose and slip out of alignment or equally as bad, too tight and crack a week or two after the receiver is back together and back to a customer is a SAD STATE OF AFFAIRS. That only happened once about 15 years ago. That receiver went to CA and I'm in SC. I paid to have it shipped back in, replaced the clamp and shipped it back on my dime. That is when, out of necessity, I started using a torque screwdriver.. After the expense of that come-back, I vowed to not make that mistake again and I have NEVER cracked a clamp since. Oh, that client has used me since for other work.

Date: Sat, 10 Nov 2012 11:59:02 -0500 (EST)
From: Glenn <wa4aos@aol.com>
Subject: [R-390] TS 30 and more

No problem with the question, we are ALL learning here. As far as I know a TS30 is a TS30, I think you are seeing slight variations in the description write-ups. The actual spec is 6-30 in/lb. I mentioned some of torque screwdrivers on ebay made in Asia cheap. I may buy one and do an A/B comparison. Some of the Asian made stuff these days is very well made. With regard to the Utica units on ebay. I would ask the seller if he can verify that the unit is in calibration and does indeed work properly. As mentioned, I have never had a cal problem with my unit and I have used it almost daily for 15 years. You can google Utica TS30 and get the pdf of the manual. Like a lot of manuals, it covers several model numbers but the info is there.

Good luck with your work. There is nothing like carefully going through these remarkable feats of engineering to really learn how they work. In the beginning I made lots of drawings as I started to take things apart then when digital cameras became affordable I bought one and life got even better.

If you are going to be taking the gear train apart, invest in a pair of curved tipped hemostats for setting anti-backlash gears. I dipped the tips in liquid plastic to prevent marring of the gears. Also, a spring hook is great for releasing and re-hooking the springs. If you are aligning the cams to their intended hash marks, you need to unhook all of the springs on the cans. Otherwise you will NEVER get things to align.

For what it's worth, I use Mobil 1 Synthetic grease and Mobil 1 high viscosity oil for the various parts on the gear train.(just a little dab will do ya) DON'T cake it on!!!!! Other people like other synthetic oils and greases and that's fine, SYNTHETIC is the operative word here.

I also found a 1oz eyedropper bottle with a little very dry talc inside is a PERFECT way to put a little talc in the coil forms to make them slide better and never stick. Just make sure it's very dry talc with no perfumes or other junk. I don't know if the perfume odor would hurt the coil forms but it certainly would not be very MANLY for you when your buds come over to look at your station; it's got to smell like a REAL RADIO!! Hi Hi.

Let me know if you have other questions. I don't know everything but with the collective knowledge on this reflector, you are sure to get answers you need and some you never anticipated.. Hi

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Date: Sun, 11 Nov 2012 13:04:47 -0600
From: Raymond Cote <bluegrassdakine@hotmail.com>
Subject: Re: [R-390] Curious about serial number...

Thanks Tom. I knew you might be one to answer.

On Nov 11, 2012, at 5:32, "Tom M." <courir26@yahoo.com> wrote:

> Each contract had its own serial numbers. So a rig can be relatively late production and still have a low number. The rig mentioned below is from the 1960 EAC contract.

Date: Mon, 12 Nov 2012 13:42:49 -0500
From: Mack McCormick <w4ax.mack@gmail.com>
Subject: [R-390] Proper Ant Connection for an R-390a

My R-390a restoration is complete and working great!
Here are some pictures in case you're interested:
https://plus.google.com/photos/103063296550398702279/albums/5809904019892837169?authkey=CO3YmIOmu6GX9AE <snip>

Date: Tue, 13 Nov 2012 20:41:35 -0500
From: "Todd, KA1KAQ" <ka1kaq@gmail.com>
Subject: [R-390] Bill Kleronomos KD0HG SK

It is with great shock and sadness that I report Bill KD0HG has passed away. Bill was one of our moderators on AMfone.net where Pete, WA2CWA, also a moderator, reported the news earlier tonight after speaking with Ray Osterwald at Electric Radio. He apparently passed away last night after suffering a heart attack. Bill was not an old man; he might've been 60 or so, if that. Bill wrote numerous articles for ER over the years, but was known by most here for two of them: one about audio deck conversion and another about the efficiency of IERC tube shields. Bill was an avid AMers who ran a nice ART-13 along with a homebrew 304TL rig he affectionately referred to as 'La Bamba'. He used and enjoyed a R-390 as his primary

receiver. He will be sorely missed by the radio community as a whole, and the AM community in particular, especially having lost Kim KE3SX yesterday as well, also from a heart attack.

Date: Wed, 14 Nov 2012 09:45:27 -0800 (PST)
From: John Saxon <johnbsaxon@yahoo.com>
Subject: [R-390] Fundamental question - setscrews

Another simple question... Straightforward goal: remove a knob
Problem: Bristol setscrew appears to be welded to the control shaft.
How to loosen it up?
I am afraid to twist any harder for fear of breaking my Bristol wrench.

Date: Wed, 14 Nov 2012 13:13:15 -0600
From: Mike A <mikea@mikea.ath.cx>
Subject: Re: [R-390] Fundamental question - setscrews

Apply a drop of penetrating oil, wait a few hours, try again?
If that still fails, then try alternating these:

- touch a hot soldering iron to the setscrew long enough to heat-soak the metal; then
- spray the setscrew with some freeze spray or other -- say canned air, upside down.

The idea is to try to break it free using thermal expansion and contraction.

Date: Thu, 15 Nov 2012 05:44:49 -0600
From: Don Reaves <donreaves@gmail.com>
Subject: Re: [R-390] Fundamental question - setscrews

It is counter intuitive, but I've had some success tightening a stuck screw ever so slightly first to break the tension. Righty tighty, lefty loosey. There must be some law of Newtonian physics that explains this phenomenon.

Date: Thu, 15 Nov 2012 13:39:09 -0500 (EST)
From: Glenn <wa4aos@aol.com>
Subject: Re: [R-390] R-390 Digest, Vol 103, Issue 14

I have had this problem many times. Seems some of these knobs were reset with Lock-Tight. Of course try the suggestions provided but if it still want budge this is what I do.

I made an 2.5 x 2.5 inch aluminum plate with a large slit in the middle for the knob shaft to go. I placed double Thin double stick tape on the back side and seat the plate behind the knob. Then use two straight screwdriver blades in opposing force and the knob will slide off; easily most of the time. Of course you don't have to make a protector plate but you may end up with

a few small gouges in the aluminum panel. I have also used 2 screwdrivers with the ends dipped in liquid plastic to prevent marring without the plate. I just prefer not having 2 tools tied up for 1 dedicated task. You may have to debur the shaft with sand paper afterwards from the sliding but this is easy too.

Date: Sun, 25 Nov 2012 13:06:42 -0500
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] Starting the tear down

> Well I'm starting the tear down on my R-390. I've read Medley's page
> http://www.r-390.com/ I read that he basically strips out the individual
> modules and gets everything down to the bare chassis. Then he uses 409
> and tap water to clean everything, then a good flush with distilled
> water and then a good drying...not in my oven, but near the wood stove.
> The exception is the RF deck gears get squirted well with WD-40 then the
> 409, then back in with a good lubing. Is it OK to get everything wet like that?

I only have one worry about dousing a boatanchor - mind you, I have done many dozens this way and I've never had a problem that I could trace back to a bath. My concern is that the ferrite material in the coils is porous. I worry that maybe some 409 could get in it and maybe not ever get washed away by the gallons of distilled water I slosh over the unit. Maybe, a decade later, it would morph into something nasty and crack the cores or freeze them or something. I have taken to taping over the ends of the coils to maybe keep most of the 409 out. I take them off for the final distilled water bath, after I think all the 409 is gone. Everything is squeaky clean, and my conscience has been sufficiently
deceived to carry on. Again, I don't know that it does anything bad, but what you don't know can sometimes come back to bite you in the bohunk.

Date: Sun, 25 Nov 2012 17:45:47 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Starting the tear down

The last two I done, I sun-dried.
After pulling the slug racks and cans off the RF deck,
Hang the gears off the end of the table out in the yard.
Buy two large cans of Wd 40 that you plan to spray both cans through the gears to clean them. The goal is not to see how fast you can get that done.

You may want to take some of the split gears apart to wash between them.

Work the WD40 in and blow it out with compressed air.
Spray it in and let it rest a few minutes and blow it all out again.

Repeat until you have just used both cans.

Your trying to get 50 years of dust out and you will not repeat this on that receiver again in your life time.

Then wash it all down to degrease and relube with Mobil One or other good synthetic oil.

No such thing as too much water into a receiver bath.

If you have a part that can not take water and dry out without hurting it in an R390 or R390/A it needed replacing any way.

Do let the receiver dry out good.
Lots of compressed air to work out water and dust.
But that is no substitute for real air dry time.
It just get more dust out than a water wash.
You can not reach in and rub soap on every surface.
The compressed air helps to reach in and rub the surfaces you can not reach.

Date: Mon, 26 Nov 2012 01:48:20 -0600
From: "Bill Hawkins" <bill@iaxs.net>
Subject: Re: [R-390] Starting the tear down

Conversations like this are why I still read this list, after age has made it necessary to sell off the heavy stuff. Roger is a precious resource, and I read every word. Remember that WD-40 is intended to displace water from naval equipment, and not to lubricate. You must re-lubricate, as Roger says. My guide to washing electronics was Stan Griffiths of Tektronix. Your main concern is with ions left by the cleaner. Use plenty of compressed air and rinses with distilled (no ions) water. Use brushes to help remove dirt. Compressed
air may not be enough. Use compressed air from cans or whatever until water drops are not seen, then let it dry in hot sunlight or -20 dewpoints (only available in the frozen north) before you even think of applying power.

Completely ignore those who advocate using the dishwasher. The detergent is ionic and hard water will make it worse, not to mention the extreme temperatures of the drying cycle. Yours for cleaner equipment, Bill Hawkins
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Date: Mon, 26 Nov 2012 14:12:54 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>

Subject: Re: [R-390] Starting the tear down

Agreed that most items in the receiver are OK with a water bath. I would definitely protect the panel meters (by removal first) and try not to soak things down like transformers, the rectifier or antenna relay coil. Capacitors or resistors that fail from getting a bath either were in trouble before or well along the road to chronic health problems. The drivetrain is going to need something more than a soap and water bath and probably requires dis-assembly with all gears, bearings and bushings getting individual cleaning with a parts bath or at the very least the WD-40 bath and re-lubrication. The clutch pack seems to only yield up its dirt to a soaking for a few days (or an ultrasonic bath).

Date: Sun, 02 Dec 2012 17:02:14 -0500
From: "Robert N. Newberry" <N1XBM@amsat.org>
Subject: [R-390] Parts request

Looking for missing parts for my R-390. Locking clip on BFO pitch knob (clip is found on underside of IF uniton BFO shaft) Tube shields V501, V507, V505, V509, V511, V510, V901, V902, V601, V602, V202, V203. Tube clamp V605. Also looking for front panel screws that hold front panel to chassis (I see someone sells them on ebay brand new, thought I would check here first). That should do it for now, please reply off list.

Date: Sun, 2 Dec 2012 17:23:42 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Parts request

The front panel bolts are 10x32 and 8x32 bolts.

You can get the recessed head bolts at the tractor supply store.
Ace hardware used to have them.
TrueValue did also.

Your best hardware store in town should have them in stock.

If you are going to run tube shields then you need the good ones with the thermal wrapper inside that fits snug on the glass tube and carries the heat out to the shield. If the shield does not have the wrapper inside, leave the shield off. Long ago the old shinny silver shields were discarded by the military. They understood that no shield was better than the shiny shields shipped as original parts.

Run one clip on inside of IF deck to keep knob from being pulled out.
Run the Knob on the front panel snug to keep the shaft from being pushed in.

The shaft collar is the same as found on many switch assemblies and one can often be salvaged from a switch shaft.

Try an E ring for a retainer. Again my Ace hardware offers a small pack in various sizes as a set. I hope some one offers you up the tube retainer

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Date: Sun, 02 Dec 2012 18:14:55 -0500
From: k2cby <k2cby@optonline.net>
Subject: [R-390] starting R-390 restoration

I am sure most of you will regard this is heresy, but here?s my two cents worth.

First of all, by all means DO REPLACE the ?killer capacitor? C-553 .01 µF 300 dcwv in the IF deck immediately preceding the mechanical filters. That should be first on your list. On the other hand, don?t go ?hog wild? about the voltage rating. Collins spec'd 300 wvdc, and I don?t see much point in going over 400 wv. This goes for the rest of the capacitors in the set. The Collins engineers designed a receiver that would give reliable performance from the Arctic to the Sahara regardless of wither it was connected to mains power or a flaky generator delivering anywhere between 90 and 150 volts.

I have, however, added inrush current protection in the form of a CL-80 varistor, and the receiver is plugged into a surge-protected outlet.

Second, there?s nothing whatever wrong with “Orange Drops” They are fine, high-quality capacitors, and I used them when I recapped my own R-390A. Let's face it, however, Orange Drops were not designed for RF service (nor, for that matter, were the ”Brown Beauties”). For my money, it makes a lot more sense to replace the ”Brown Beauties” with ceramic capacitors in all of the RF applications. The ”Brown Beauties” were axial and tubular. Orange Drops are radial and stand out like sore thumbs, so matching the original appearance isn?t an issue. Ceramics take up a heck of a lot less space, have
far better performance characteristics at RF, and are outstandingly reliable. They were my first choice which I re-capped my SP-600.

That said, I would still use Orange Drops in the audio stages, mainly because they are more economical than anything else in the higher values. One vital point: C609 ELECTROLYTIC: 8 µF, 30 dcwv. wet tantalum capacitor is as bad for the Aaudio subchassis (it leaks corrosive gunk) as C-553 is for the IF subchassis. Replace it with a 10 µF, 35 dcwv electrolytic or a tantalum (if you want to travel in style).

STAY AWAY from the corrector stack on the PTO unless you are prepared to make a career out of adjusting it. Been there. Done that. Gave up. Parted out the PTO.

I have rebuilt the R-390A gear train. Given a good manual like the ?Y2K? is it not a forbidding experience if you take your time. On the other hand, I wouldn?t do it unless there is a good reason to.

Other than re-capping, take time to be sure that the switches- especially the bandswitch- are clean and sparingly lubed.

My last piece of advice is that the R-390A is a modular radio. Don't try to do everything at once. Work on it one module at a time. Start with the power supply if you are going to replace the 35W4s with solid state rectifiers. Then go on to the audio deck. Then the IF deck, which will take up the bulk of your time. The crystal oscillator comes next. Finally, the RF deck. After each stage is completed, plug the module back into the main chassis and make sure the radio still works!

Date: Mon, 3 Dec 2012 12:19:44 -0500
From: <chuck.rippel@cox.net>
Subject: Re: [R-390] Starting R-390 restoration - My $.02

Not being a nit-pick on Mike but will expand on his points just a bit.

> I am sure most of you will regard this is heresy, but here?s my two cents
> worth. First of all, by all means DO REPLACE the killer capacitor: C-553 .01µF
> 300 dcwv in the IF deck immediately preceding the mechanical filters. That
> should be first on your list.

Well agreed . Failure of C553 destroys the mechanical filter selected by the front panel switch. .01 Orange Drops are largely rated at 600VDC, suggest one of those. There is little value in going overboard (I've seen 2KV caps used to replace C553) but the additional voltage headroom cannot hurt.

> I have, however, added inrush current protection in the form of a CL-80 varistor, and the receiver is plugged into a surge-protected outlet.

We differ here. I'm coming to the conclusion that the highest failure cause in the receiver is shaping out to be open power transformers and I'm about convinced its caused by inrush. There is a better, safer approach than using the varistor "fix" IMHO. I'm working on the prototype of a more realistic fix and will, with the owners permission, install it in the R390A I'm currently working on.

The design is close to being done and I'll be sharing it openly.

I pull those varistors in receivers I restore. My concern is how hot they run along with the that particular installation being a misapplication of the component. That said, I'd rather have my varistor burn in half the the primary of the power transformer.

> Second, there?s nothing whatever wrong with ”Orange Drops” They are fine,
> high-quality capacitors, and I used them when I recapped my own R-390A.
> Let?s face it, however, Orange Drops were not designed for RF service (nor,
> for that matter, were the ”Brown Beauties”. For my money, it makes a lot
> more sense to replace the ”Brown Beauties” with ceramic capacitors in all of
> the RF applications. The ”Brown Beauties” were axial and tubular. Orange
> Drops are radial and stand out like sore thumbs, so matching the original
> appearance isn’t an issue. Ceramics take up a heck of a lot less space, have
> far better performance characteristics at RF, and are outstandingly
> reliable. They were my first choice which I re-capped my SP-600.

I rely on polystyrene media Orangedrops in any circuit which passes signals up to the 455kc IF. They work very well and replacing them in the audio chain actually makes the audio sound smoother. Because of clearance, 400 or 600V tubulars go in the AF deck. One can squeeze in Orangedrops at the risk of breaking solder pads and compressing the board on the bottom of the audio deck.

Ceramic discs for anything which handles RF over 455 kc.

DON'T REPLACE EVERY CAP IN THE RADIO !!! This is especially true in the RF deck. You wanna really screw up an R390A? Fiddle around in the RF deck.

On the final subject of capacitors, rebuild, replace and locate under the chassis or buy the replacement on E-Bay, the 2 filter caps !!!!! Any originals are leaking electrically right now. They will also leak acid out of the bottom of the cap. I like the radios to look original and prefer to rebuild the caps in the radios I work on. Nothing wrong with locating them under the chassis leaving the originals showing. The caps off E-Bay work; I don't care for their looks and am unsure of their advertised quality. "Unsure does not equal "bad," it means unsure.

> That said, I would still use Orange Drops in the audio stages, mainly
> because they are more economical than anything else in the higher

values.
> One vital point: C609 ELECTROLYTIC: 8 µF, 30 dcwv. wet tantalum
> capacitor is as bad for the Audio subchassis (it leaks corrosive gunk) as
> C-553 is for the IF subchassis. Replace it with a 10 µF, 35 dcwv
> electrolytic or a tantalum (if you want to travel in style).

Yep, yank that one. Pay attention the polarity of the replacement. As I recall, the positive lead of the cap faces inboard on the audio chassis.

> STAY AWAY from the corrector stack on the PTO unless you are prepared to
> make a career out of adjusting it. Been there. Done that. Gave up. Parted out the PTO.

A career and retirement. Stay out of the PTO.

> I have rebuilt the R-390A gear train. Given a good manual like the ?Y2K? is
> it not a forbidding experience if you take your time. On the other hand, I
> wouldn?t do it unless there is a good reason to.

Stay out of the gear train. Getting the timing and cam placement as it relates to the electronic operation of the radio are critical. The Russians stole an R390A during the cold war in an attempt to duplicate the technology in the Workers Paradise. They gave up.

> Other than re-capping, take time to be sure that the switches ? especially
> the bandswitch ? are clean and sparingly lubed.

Well agreed on the bandswitch stacks and will add the selectivity switch. I use a small flux brush which have had the bristles shortened to about 1/4". The object is to try and scrub the black corrosion off the rotating CONTACT FACES. Don't even try to clean the small contactors. You'll spread gaps and the switch will be done.
>
> My last piece of advice is that the R-390A is a modular radio. Don?t try to
> do everything at once. Work on it one module at a time. Start with the power
> supply if you are going to replace the 35W4s with solid state rectifiers.
> Then go on to the audio deck. Then the IF deck, which will take up the bulk
> of your time. The crystal oscillator comes next. Finally, the RF deck. After
> each stage is completed, plug the module back into the main chassis and
>make sure the radio still works!

Good advice. One chassis at a time. An unabashed plug here for W8RO's Hi-

Res Communications video business. If you're really doing to take this project on, get the R390A videos and learn some of the tricks. It'll shorten your day quite a bit.

Date: Tue, 4 Dec 2012 18:36:22 -0500
From: frank hughes <fsh396ss@gmail.com>
Subject: [R-390] 1954 Air Force R-390 "Charts and Diagrams"

I came into possession of an interesting R-390 manual that I have not seen before. It is a 7 June 1954 Air Force "Charts and Diagrams", version C-5-15-(d) Rev 20 Sept 1956. The manual has notes and circuit coloring that look like what we would do in class while trying to reinforce the lessons and technical information, so that we could master the technology. It is very legible, but the paper is old and darkening, brittle. (I know that guy...) My wife works at an engineering place that has fancy scanners. The smaller pages were able to fit on a color scanner, came out great (but they are large files)

The 40" fold-out pages were done on a black & white only scanner, so the wonderful work that Airman Sullivan did coloring the circuit components and paths is not evident.

I have put the cover of the manual here:
http://i180.photobucket.com/albums/x257/fish1_07/R-390/cover.png
If you click on "options" there is a "download" selection.

If there is any interest expressed, I will see if it is possible to put all the manual pages on the same site. (Smallest file is 7.4Mb, largest is 71.8 Mb)

Date: Tue, 04 Dec 2012 19:01:30 -0500
From: Jeff Adams <physicist@cox.net>
Subject: Re: [R-390] 1954 Air Force R-390 "Charts and Diagrams"

Nice. Can you scan it and put it up on Al's website?

Date: Mon, 31 Dec 2012 14:36:31 -0500 (EST)
From: Glenn <wa4aos@aol.com>
Subject: [R-390] R390A Parts by Sigmapert

Yes, Kurt's, Sigmapert on ebay, parts are exceptional electrically and his workmanship with machining the various enclosures is also exceptional. I use his Capacitor, 3TF7, Diode and Balun replacements in all of my 390A restorations.

The small tube like enclosures that look like tubes are actually machined down at the top to give them more appeal. I am still puzzled about how he

made the enclosures for the baluns. He even machines the tube plugs which are now unobtanium for miniature tubes. Nothing like Excellent German Ingenuity.

Kurt has several PhD's in medical fields and needed special electronic apparatus for his experimentation. He went back and got a EE so he could understand electronics to make his own equipment; that and he is a true gentleman to boot.

I have done a lot of business with him and can only say VERY POSITIVE things about Kurt and his products. He's A+++++ in my book!!

I have no PECUNIARY interest in Sigmapert or his products; just acknowledging the integrity of the owner and his parts based on my extensive personal experience.

Date: Mon, 4 Feb 2013 21:44:55 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: Re: [R-390] Varying gain [WAS: Filters]

Great. Well I still can't figure out how to 'search the archives', which and where archives, please, link please? All I see is a list of months and years, no search feature that I can see. All I get is email and the R-390@mailman goes nowhere for me. I guess I'm missing something or I'm too dense.

Never saw the items about the metalized foil vs. the film and foil. The C551 was suggested here as the NTE. I suppose since I have it, I'll use it, they weren't cheap. I doubt if it will blow up. So, it looks like the 716P orange drop capacitors seem to be film and foil. I wonder why the metalized are suggested for HF filters and are not capable since I don't seem able to find the archives?

I really would appreciate some instruction on doing a search in the 'archive' which seems to be the R390 FAQ place, but I'm not sure. Even that doesn't seem searchable to me. It's a good resource, but seems I have to read through it page by page as a pdf.

Date: Mon, 4 Feb 2013 19:51:43 -0800
From: "Craig Heaton" <hamfish@efn.org>
Subject: Re: [R-390] Varying gain [WAS: Filters]

I'll try to clear up the mystery. The archives, there is no search feature. One has to read each post, month by month. PIA, but I started there before getting my first R-390/A.

Another must reading is http://www.r-390a.net/. Under the References

Wei-Li's "Pearls of Wisdom" has post that are categorized according to the section of the radio. Of course: The one & only Y2K manual!

I'll say no more about capacitors, it only leads to the resurrection of the "dead horse". And it gets beat upon once again.

Date: Tue, 05 Feb 2013 00:19:11 -0500
From: "Charles P. Steinmetz" <charles_steinmetz@lavabit.com>
Subject: Re: [R-390] Capacitors and archives [WAS: Filters, WAS: Varying gain]

Pasted below are the date and subject headers from a few of the relevant capacitor messages (not my posts, but I strongly concur with the advice). I think someone already mentioned Wei Li's "R390A Pearls of Wisdom" collection. I believe all of these posts (and others) are in that. If not, the headers should help you find what you need in the monthly archives at the list FAQ page.

For Pearls, I recommend the single file (almost 7000 pages in PDF), which you can search within Acrobat when you have the file open. (It is also available broken into 27 or so sections, but you can't search the whole thing at once if you have those.) The full version is here, courtesy of Manfred:

http://pozo.com/R-390A/R-390A-Pearls_of_Wisdom.pdf

Either Pearls or the monthly archives at the FAQ page should suffice for the Z503 posts -- that thread was active in the first few days of April 2011.

Date: Tue, 5 Feb 2013 02:13:00 -0600
From: Don Reaves <donreaves@gmail.com>
Subject: Re: [R-390] Filters

I don't know of any easy way to search the QTH.net R-390A archives. The actual messages are stored in html format which makes it relatively easy to
browse them with a web browser, and they are organized so it is rather easy
to sequentially read or scan each message in each month's compilation.

As others have pointed out, using the Pearls of Wisdom collection will save you some needless excursions off in the weeds of the archives. Due to software upgrades, glitches, QTH.net owner changes, most of the archives prior to December 2001 are missing.

I don't know if they are still hosted online but the Hollow State News

newsletters in .pdf format are very useful. Issue 1 goes back to Sept. 1983. There is a HSN reprint distilled with only R-390 information, which mentions the AGC problems caused by a defective C-551 and some discussion of the AGC time constants you may find relevant. I've put this file and its index up on my web page.

http://militaryradio.com/manuals/HSN/HSN-R390.pdf
http://militaryradio.com/manuals/HSN/HSN-R390Index.pdf

Don Reaves
R-390 List Manager

Date: Tue, 5 Feb 2013 05:48:42 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Varying gain [WAS: Filters] (self healing caps)

Self healing caps will rely upon supplying some amount of current across the cap to "pop" a shorted area open. (like a pimple). I suspect the thinking is that you definitely do not want any sort of current flowing through the filter bobbins. They are wound with such fine wire they are extraordinarily sensitive to cooking a winding open.

Then again we do not need to be putting a Sprague 715P, 600 volt cap in there when a '225 would work (different grade of Sprague Orange Drop capacitor). Just about anything we put in there is going to be better than some BBOD (black beauty of death).

We attach too much significance to "premium" capacitors in every application in the receiver. Putting 600 volt "715P's in some B+ bypass application where it will never see more than 220-250 VDC is overkill. There may be 4-5 spots in the receiver where a higher end cap would make a
difference (that "IF filter Killer Cap" and a few spots in the audio chain). It has gone from practical to mystical and the "mor is betta" approach seems to take hold.

The "Pearls" documentation is a distillation of the best of what has been posted in this email group for many years. It is better than reading through thousands of pages of debate and takes it down to "only a few hundred" pages. <lol>. It is sorted by topic to make your life a little easier. Still, if you are looking for a quick reference to just one answer you will be disappointed. Nobody on here thinks like that and W. Li did not take to revising the writings that far. They are cleaned up but still, in reading you will see how we jump around in topics.

Another resource is the HSN (Hollow State News) collection. Just be aware

that many of the things on HSN are raw ideas and more than a few are just wrong. It is a good historical reference to how we got to where we are now with solutions that are generally accepted by the majority and proven out by people trying things out.

If you printed out all of the significant documents like Y2K, the modifications references, "pearls" and detailed rebuild info (like how to take an IF filter apart, clean it and rewind the bobbins) you will be running around 2000 pages. A few years ago I printed it all up and it fills two 3" binders.

Date: Tue, 5 Feb 2013 10:34:23 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Pearls

.....<snip> The "Pearls" documentation is a distillation.....<snip>

Thanks for the observations on *Pearls*. What prompted this project of mine was frustration at being able to locate earlier posts re solving individual technical issues. Taking a hint from how the public library arranges its books, I felt attempting to segregate posts by topic would be useful for me. Obviously, others may or may not agree on how I separated topics. However, the one thing I did not want to do was alter what was posted (other than mis-spellings, typo's, or formatting).. and also give credit to each author by posting their qth. As they are posted as pdf files, they should be accessible to whatever computer we employ. My impression is that Adobe Reader does allow searches for either a keyword or phrase. (It does so on mine, but then I use a Mac with Reader version 11.001). So it is a matter of figuring out where such a subject might be sorted, then doing a simple *find* for the word or phrase that interests you. As time has gone on, these files have grown larger and larger, and I would be happy to consider suggestions on how to make them smaller.

I have taken the unilateral perogative of not including for sale items, jokes, political diatribes, or personal attacks. Anyone who does not want their postings included in Pearls needs to contact me directly off-list. Folks are obviously free to go through the R390A digests and create their own compact distillations. Perry has already done so in the Y2K Addendums. I have reviewed posts going back to 1997, most are there.

Date: Tue, 12 Feb 2013 10:24:24 -0800
From: "Scott Overstreet" <scott@becklawfirm.com>
Subject: [R-390] RACAL RA-6217E

Sometime ago, somebody started a string that compared the performance of the 390/390A with a number of later high performance receivers. I can't

remember if any of the RACALs were the subject of comparative comment.

The reason I ask is that I have just come up with a RACAL RA-6217E which is also identified as being a R-1555/URR-62. It is totally different than the 390's in internal makeup but it is in many ways similar in that from the operators position, tuning is via "megacycles" and "kilocycles" knobs and frequency coverage and bandwidth selectivity and other controls are essentially the same. Just looking at it , is apparent that the designers had replacement of the 390's in mind. It is early solid state and is about one third the size of the 390.

I haven't got this one working yet-----My question is just how good is it in comparison to the 390s?

Date: Tue, 12 Feb 2013 13:24:29 -0600
From: Raymond Cote <bluegrassdakine@hotmail.com>
Subject: Re: [R-390] RACAL RA-6217E

Do you have a picture and a way to post it? I have not heard of it.

Date: Tue, 12 Feb 2013 13:31:09 -0600
From: Mike A <mikea@mikea.ath.cx>
Subject: Re: [R-390] RACAL RA-6217E

Mine is shown at <http://mikea.ath.cx/6217/index.html>.

Date: Tue, 12 Feb 2013 14:31:41 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] RACAL RA-6217E

Try: <http://mikea.ath.cx/6217/>
Pictures and manual available.

Date: Fri, 22 Feb 2013 10:01:07 -0600
From: Les Locklear <leslocklear@hotmail.com>
Subject: [R-390] Hollow State Newsletter

I know that all the issues are available somewhere on the internet. I had them at one time but a computer crash took them out.

Particularly interested in issue 38.

Date: Fri, 22 Feb 2013 09:09:49 -0700
From: Anthony Casorso <canthony15@msn.com>
Subject: Re: [R-390] Hollow State Newsletter

Les, They are still available on my Mediafire site:

http://www.mediafire.com/download.php?0ljgwi19fhlbwno
I put them there in Sept 2010 and there have been 471 downloads since then. Lets see how many new ones I get from this post. This is a ZIP file with all of the isues I know about. Tony
---
Date: Sun, 24 Feb 2013 12:36:17 -0500
From: "Chuck Rippel" <Chuck.Rippel@cox.net>
Subject: [R-390] Sigmapert - Evaluation Results

I commented on the Sigmapert R390A replacement items couching my comments that I had not yet had the opportunity to install and evaluate any of the items save for 1 set of the electrolytic capacitor replacements. Just
finished the radio whose owner wanted to install 3 of the now 4 items Kurt offers and can now offer a few comments based on first hand knowledge.

The 3TF7 replacement is in item everyone ought to have. Ballast tubes fail and are increasingly becoming more expensive and harder to find. The Sigmapert replacement is easily installed and could be plugged right into the IF deck but for the addition of a ground. There are 3 grounding options in the well written instructions. Ground the case of the 3TF7 replacement, or ground either pins 1, 9 or both of the existing 3TF7 tube socket. In the installation I just completed, I chose to run a small wire from pin #1 on the bottom of the existing 3TF7 tube socket to a nearby ground lug. This enabled the owner to either use a standard 3TF7 Ballast Tube or the Sigmapert replacement as he choose without further modification. The Sigmapert replacement was slightly warm to the touch after 1 hours use and did not overheat. Fitted with a standard 3TF7 IERC tube shield, I doubt the casual eye will notice the modification.

I was equally impressed with the antenna input balun. The fit and finish are to be commended. The balun compensates for the slight mismatch on the BALANCED antenna input (some RF decks are factory modified) and isolates the input on a properly grounded from Common Mode pickup problems to a large extent. Simply having a reliable connector which to connect the antenna lead-in is worth the price of the balun ! I'm going to start suggesting that owners consider purchasing the balun on for use on radios I will be working on so that when I align the RF deck, it can be aligned with a balun installed so the antenna input alignments can be properly done.

The capacitors are.. capacitors but well worth the cost. Aging filter capacitors are a high failure item in every vintage radio and the R390A is no exception. Kurt offers replacements that both have a higher working

voltage and increased temperature tolerance. Yes, I prefer my rebuilt caps with Mallory elements on radios I'm working on but Kurts are easy to install and do the job!

I have not yet seen the new 26Z5W replacements but can comment that the original tubes often fail with sometimes disastrous results to the transformer! The Sigmapert units replace the hot running tubes and also drop the increased B+ voltage which results from changing the tube rectifiers to solid state. In the 2nd R390A video, we demonstrate only a + 9VDC increase in solid state rectifiers over tubes but the dropping the extra voltage is welcome especially when its coupled with getting rid of all the extra heat generated by the tubes and insulating your radio from the 26Z5's reliability track record.

I've asked Kurt to consider also making a quality device by which to dampen the turn on inrush using something other than thermistors. With the filter discussion of late, I also suggested Kurt consider building a replacement mechanical filter using the Dave Curry design which was an exact replacement (I have one of the 6KC models in one of my R390A's). A picture and technical review were sent to Kurt.

Date: Wed, 6 Mar 2013 15:15:16 -0800 (PST)
From: Wes Bolin <k5apl@yahoo.com>
Subject: [R-390] New to Group

I have just purchased a R390A and am now trying to find out info and tips, etc. about its restoration.? Its a Motorola unit and it receives signals weakly. So I will lurk here and absorb wisdom if that's ok.? I have been out of "radio" for about 5 years, and now feel the call to get back into it with old receivers.

Date: Wed, 06 Mar 2013 19:02:34 -0500
From: Al Parker <anchor@ec.rr.com>
Subject: Re: [R-390] New to Group

This is the place. Plus, if you haven't found it yet, Wei-i's Pearl's of Wisdom is a great source of info. <http://www.r-390a.net/Pearls/index.htm>
nice to see you here, is the SP-600 done?

Date: Wed, 6 Mar 2013 19:17:25 -0500
From: Bob Camp <ham@kb8tq.com>
Subject: Re: [R-390] New to Group

The first question is always - what's broken? Does it receive weakly on all bands? That narrows things down quite a bit.

Date: Wed, 6 Mar 2013 16:20:24 -0800 (PST)
From: Joe Foley <redmenaced@yahoo.com>
Subject: Re: [R-390] New to Group

Lucky you! Open it up and do some cleaning, that will familiarize you with a lot of the mechanical parts.? Get a manual, or at least the on-line version of one, and keep it handy while you work. One important first step is to tighten all of the ground connections, even the tube socket bolts.? Clean all of the plug-in connectors, tube pins, and such.? Work the controls back and forth to clean the sliding contacts.? Use De-oxit on all such contacts, but sparingly.? Don't let it soak into the switch wafers.? Work on that type of stuff and then we'll work on a mechanical tune-up.

Date: Wed, 6 Mar 2013 19:17:46 -0800 (PST)
From: Wes Bolin <k5apl@yahoo.com>
Subject: Re: [R-390] New to Group

Glad to meet you here.? I still need to finish Re-capping the RF deck on the SP600, then reassemble it!? I saw the R390 at a hamfest and it looked dirty but complete, and "it worked the last time he turned it on".? So that will be the next project. In the meantime, I can glean info and become familiar with it.? But the SP600 is on the front burner right now. Thanks for your advice and I'll keep you up to date.

Date: Thu, 07 Mar 2013 00:11:39 -0600
From: Sherry Guttery <comcents@bellsouth.net>
Subject: Re: [R-390] New to Group

Wes it has been years since I rebuilt my 391. One of the most major things I seem to recall is to _not remove_ the front panel with all the gears behind it without putting the keeper gear in to prevent a nightmare come re-assemble time. On my 391 it was the offset gear inverted so the green side was facing out - it meshed with the clutch gear to preserve synchronization, my keeper gear was green if memory serves. This was early 1970s when I rebuilt that radio so memories can definitely be fuzzy. this may not apply to a 390, but I think it would be wise to check on it anyway. Glad you renewed your interest - this is a nice group of people who are very knowledgeable. Good luck on your project.

From: Wes Bolin <k5apl@yahoo.com>
Subject: Re: [R-390] New to Group

Thanks for the info Sherry.? I am making a file of all suggestions and recommendations so hopefully I won't fall into a trap. This group of knowledgeable folks have been very helpful to me.

Date: Thu, 7 Mar 2013 06:20:22 -0800 (PST)
From: Wes Bolin <k5apl@yahoo.com>
Subject: [R-390] New Member cont'd

Thanks to all who have welcomed me and have passed on tips, recommendations, and sources of information about my R390A. I purchased it last week at a hamfest; very dirty but physically looked to be complete. The owner said "it worked the last time I turned it on".? Brought it home and powered it up- straight off 120VAC (no variac).? Had to use earphones cause no 600 to 8/4 ohm transformer (its on order). I was lucky. The calibrator worked on 28, 7, and .7 MC bands. Could barely hear a strong BCB station, and copied some SSB on 40M.? Selectivity 'worked' on all positions. BTW the calibrator was good signal strength. BFO 'worked'. I could see that a bulb was out, and no indication on Audio Meter. Fiddled with other knobs and switches and they apparently are 'good'. Turned it off and put it back on the shelf until my present project is finished (Hammarlund SP600). Might take me a few weeks to finish up my project, so in the meantime I will gather more info and parts for updating it.? The cosmetics of the front panel are very good, but dirty. The knobs will need re-paint.? The Carrier Meter works but is very opaque and smeared glass, on the inside of it. Any ideas how to clean it on the inside? It is very reassuring to have a source to go to when a question or need arises during this restoration.? Thanks again. Wes Motorola #1128

Date: Thu, 7 Mar 2013 10:06:20 -0500 (EST)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] New Member cont'd

Welcome to the group. Glad the radio at least works to some extent for you.

One thing to mention. You might want to avoid running it until you check out a potential problematic capacitor on the IF deck (C556 I believe). If it is shorted or leaks excessively, it can damage/destroy whichever mechanical filter happens to be switched in at that time. In this case, if you rotate through all bandwidths, you can destroy all four filters.

Since yours works in all positions, that cap is probably still good but is a risk factor that is easily avoided. Search the archives and/or the net for more info on this. Oh, and you can simply connect a low-impedance speaker to the 600-ohm output. You'll lose a bit of volume and fidelity, but it will work.

Date: Mon, 22 Apr 2013 08:31:40 -0400
From: "Lester Veenstra" <lester@veenstras.com>
Subject: Re: [R-390] Equipment for sale

Could I get a copy of " user?s guide by the late Bill Feldman"

Date: Mon, 22 Apr 2013 10:36:19 -0500
From: barry williams <ba.williams@charter.net>
Subject: Re: [R-390] Equipment for sale

I've got the file if you need it. Not very large.

Date: Mon, 22 Apr 2013 11:52:38 -0400
From: "Charles P. Steinmetz" <charles_steinmetz@lavabit.com>
Subject: Re: [R-390] Equipment for sale

It is also posted on the BAMA site (52 pages, ~800 kB):

<http://bama.edebris.com/download/hp/3586/A%20PRACTICAL%20GUIDE%20FOR%20USING%20THE%20HP3586A.pdf>

<http://bama.edebris.com/manuals/hp/3586/>

Date: Tue, 23 Apr 2013 10:13:37 -0700
From: Gordon <gordon@n6wk.com>
Subject: [R-390] Small cables

Where can I buy the little cables inside the 390A that have ends that look like miniature BNC connectors ? I need the one that goes from the IF board J514 to the port on the back panel J116. Also, is it normal for some of the tubes to be missing their shields? I noticed the Ballast tube on the IF board and V509 on the IF board are both missing the shields. I just purchased my first R-390A and want to be sure I have all the right pieces before I start to restore it.

Date: Tue, 23 Apr 2013 13:56:34 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Small cables

The mini-BNC connectors can be bought from Fair Radio:

https://www.fairradio.com/catalog.php?mode=search&keywords=minibnc&submit.x=-132&submit.y=-444

I used to have a supply of the small coax but I sold it all. You might find some from a list member or check eBay.

Date: Tue, 23 Apr 2013 15:53:58 -0700
From: Gordon <gordon@n6wk.com>

Subject: Re: [R-390] Small cables

I was hoping maybe someone had a parts radio where they might have the complete little cable with ends to sell. I might have to buy a couple ends from Fair Radio and make my own up.

Date: Tue, 23 Apr 2013 20:25:38 -0500
From: n4buq <n4buq@knology.net>
Subject: Re: [R-390] Small cables

They're not that difficult to make. Finding the correct coax can be a challenge. I think I have some "pigtails" but not a cable with a connector on both ends.

Date: Wed, 24 Apr 2013 15:00:03 +0000
From: "William A. Kulze" <wak9@cornell.edu>
Subject: Re: [R-390] Small cables

Does RG-174 fit the connectors and does it work as a replacement? I'm not having trouble with my cables but the nylon sheath is pretty cracked up in places. I've got some RG-174 and was wondering.

Date: Wed, 24 Apr 2013 11:22:26 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Small cables

As I recall (it's been a few years), RG-174 won't fit in the MBNC connectors. I think the I.D. is too large to go inside the MBNCs. Although it isn't the same cable I had (mine had clear outer insulation), I _think_ this is the correct cable:

eBay #380576703742

Again, IIRC, the stated O.D. (0.070") is a correct diameter for the MBNCs. I was able to slip the old metal cable tags off the old coax, slip it on the new ones, and "recrimp" it to a certain extent. Not sure if you can do that with RG-174.

Date: Wed, 24 Apr 2013 10:40:19 -0500
From: Dave Merrill <r390a.urr@gmail.com>
Subject: Re: [R-390] Small cables

According to the archives, RG-188A/U is the correct size for the MBNC connectors. eBay #380576703742 is smaller. I have the right cable and sell 10' lengths for $12 shipped CONUS. Color is green. E-mail if interested.

Date: Wed, 24 Apr 2013 11:45:12 -0400
From: "Lester Veenstra" <lester@veenstras.com>
Subject: Re: [R-390] Small cables

Try The RF Connection THERFC.com

Date: Wed, 24 Apr 2013 11:52:30 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Small cables

I think you're correct and 0.070" is indeed too small. I don't recall the number I was working with but it seems it was closer to 0.090" but don't quote me on that. Sorry for the misinformation. I think I may still have a very small amount of the coax I had. I should go measure it.

Date: Wed, 24 Apr 2013 15:27:37 -0700 (PDT)
From: John Kolb <jlkolb@jlkolb.cts.com>
Subject: Re: [R-390] Small cables

I've still got some MB to BNC adapters listed on my outdated website which could be used as is or the connectors removed from two adapters to make a single cable. http://www.jlkolb.cts.com/site/fs_misc.htm
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Date: Thu, 25 Apr 2013 10:58:47 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] a historical note

Hi, if any of you think that I *invented* Pearls... not true at all. Back in 1999 Jerry did it. Here is his post from the past to set the record straight. His comments on this exercise are well worth remembering
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Date: Thu, 25 Mar 1999 From: "J. Kincade"<w5kp@swbell.net>
Subject: [R-390] R-390A Compendium - Finally!

Finally, after days of effort and probably killing several trees in the process, I finished putting together the initial version of my personal R-390A Paper Compendium, sort of a giant hard copy FAQ. Regressing from electronic filing to paper may seem weird, but I have found that electronic archives, while a great asset, are a time-consuming pain to keep going back to repeatedly. I found I was constantly hunting for stuff I just knew I had read "somewhere" in a post on this reflector, and hated to waste bandwidth by revisiting the question on the list. So I set out on a quest to glean the most (IMHO) directly useful posts over the past year or so, with the idea of building myself a workbench-handy reference containing the best of the best from all you wizards out there. Ended up printing about 300 posts,

many several pages long, on my tired LaserJet 4L (it's little tongue is still hanging out), arbitrarily categorizing everything, and putting it all into a fat 3-inch 3-ring binder under the following subject categories:

ID/General Info (includes historical stuff)
General Rebuilding
Schematics/Manuals
Main Chassis
Connectors/Cables
General Test & Alignment
Cleaning, Paint & Cosmetics
Meters
RF Deck
PTO
IF Deck
AF Deck
Line Voltage & Power Supply
Xtal Cal/BFO
TroubleshootingCabinets,
Cases, & Covers

Some of the categories get a bit fuzzy and overlap and it was a definite pain to put together, but it's done now, and I will continue to add to it by saving, printing, and inserting what appear to me to be the most informative posts. I highly recommend that R-390 semi-newbies (like me) do this drill if you can stand the pain. It's amazing how much you will absorb and retain as you read and organize all this stuff, a disk crash will have no effect on it, and it will be an extremely handy addition to your workbench bookshelf. <snip>

From: John Saxon <johnbsaxon@yahoo.com>
Subject: [R-390] Another newbie question...

I am working on a R-390 (non-A), audio chassis. I suspected a problem with C-603, coupling cap to the local audio 6AK6.

It is mounted on a terminal board and appears to have been MFP treated. I was going to lift one end to test the cap when I discovered I could simply "unwind" the lead from the terminal stud, without having to unsolder anything. I tried another cap and found the same thing. These things were soldered, weren't they? Could the connection have deteriorated in some way? I thought I would ask the experts.

Date: Sat, 18 May 2013 20:02:23 -0400

From: Bob Camp <ham@kb8tq.com>
Subject: Re: [R-390] Another newbie question...

Yes they were soldered. They *may* have been soldered by NASA trained techs. The objective there was to use as little solder as possible in order to create a connection. Anything past that was "dead weight".

Date: Sat, 18 May 2013 19:05:21 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] Another newbie question...

Yes..they were supposed to be soldered...don't imagine that is the problem though. Share the symptoms...you will have a better chance that someone here can help.

Date: Sat, 18 May 2013 20:49:39 -0400
From: "Ed Tanton" <n4xy@comcast.net>
Subject: Re: [R-390] Another newbie question...

Yeah... I had a VERY hard time doing that somewhere around the late 70s early 80s when I was-finally (and reluctantly by the head QC guy)-qualified.
Just goes against my grain-even if I DO understand the reasoning in spacecraft costing.

Date: Sun, 19 May 2013 09:45:58 +0000
From: Sheldon Daitch <SDAITCH@bbg.gov>
Subject: Re: [R-390] Another newbie question...

Far to many years ago, when I had a job with the USAF at Robins AFB, I went to a 40 hour school on NASA soldering techniques. I seem to recall if you could not see the weave of the strands of the stranded wire on a terminal, there was too much solder.

Date: Mon, 20 May 2013 12:16:05 +0000
From: Bill Kulze wak9@cornell.edu
Subject:

At Ground Radio school at Keesler AFB we spent 2 days on nothing but soldering. At the time, they said the NASA certification class was 2 weeks. My dad worked for IBM from the mid 50's thru the mid 70's on the defense department guidance system stuff as well as a little bit on the Apollo project. I guess one of the things he did was designing wiring harnesses, and weight was definitely a major factor in the design!

From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Soldering School

I attended the two week "High Reliability Soldering & Connections" course at Keesler AFB in August of 1974. That class has been as useful to me over the last 39 years as anything I learned in the Air Force. The lead Instructor told our class that the soldering techniques taught in the class reduced the weight of the solder in an ICBM by 40 pounds. 40 pounds of extra payload capacity in an ICBM was considered priceless at that time.

Date: Mon, 20 May 2013 19:17:54 -0400
From: "Duffy Floyd" <duffyf56@verizon.net>
Subject: [R-390] Soldering School

The Navy had its version of soldering school for nukes called ETMS (Electronics Technician Maintenance School) which was 5 weeks long. I attended in 1984. The first 2 weeks were soldering for 8 hours a day 5 days a week. It was also based on the NASA High Reliability Soldering Standards. To the previous poster..yes one standard concerning the amount of solder used was that the individual strands of the soldered wires had to still have definition following the soldering process. Joints were inspected with a 10X magnifying glass. The ends of the strands of wire also had to be solder coated. The biggest pain in the butt was pre-tinning the stranded copper wires to be soldered since there was a spec on how far into the insulation the solder could wick.

The last 3 weeks were troubleshooting, much of it on equipment I had never seen. They taught a 7 step troubleshooting method that did not require you to be an expert on the operation of the equipment in order to effectively troubleshoot it. Of course you did have to be strong on schematic reading and analyzing circuits.

Date: Mon, 20 May 2013 19:56:04 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Soldering School

My dad soldered for NASA for many years in the '60s through the early '80s. His biggest complaint was not nicking the wire(s) when stripping them. Any nick and it was rejected. They could not always use a heated stripper (teflon, etc.) so stripping the wire properly was just as big of an issue as soldering it.

Date: Mon, 20 May 2013 19:50:14 -0500
From: "Bill Hawkins" <bill@iaxs.net>
Subject: Re: [R-390] Soldering School

Did that troubleshooting school teach the art of dividing the problem in half, then dividing the bad half, and so on? Works well for a linear signal processor like a receiver - maybe not so well for a computer. Another trick is to start with the power supply and make sure the voltages are right first. Works well for Tek scopes. Speaking of Tektronix, anyone interested in saving an early 514 AD (no rivets) from the dump?

Date: Mon, 20 May 2013 20:58:29 -0400
From: "Duffy Floyd" <duffyf56@verizon.net>
Subject: Re: [R-390] Soldering School

Half-splitting was one of the methods we could choose from depending on the
equipment. Checking the "gazinda" was always standard for the beginning of
troubleshooting problem. We were troubleshooting Nuclear Instrumentation, Primary Plant Instrumentation, Rod Control Systems, Steam Generator Water Level Control Systems and Air particulate radiation detectors.

Date: Sat, 22 Jun 2013 12:23:59 -0400 (EDT)
From: Glenn Scott <wa4aos@aol.com>
Subject: [R-390] NOW I CAN SEE!

From time to time I have shared with the group information that has helped me in my service work of R 390 series receivers. Last Christmas my wife bought me a pair of DORKY looking reading glasses with LED's. She bought these from Walmart for about $10 and that included the 4 required coin batteries. I used them for some of the micro-controller board work that my business also does but recently when rebuilding an IF deck from a 390A, I tried them and WOW did that ever help.

My electronics lab is very well lighted and I have bench mounted lights on all of our benches with magni-viewers as well as florescent ceiling bulbs above every bench. The magni-viewers tend to get in the way for some jobs like digging DEEP into R390A IF modules.

You can buy a pair of these on ebay for under $5 and choose the diopter you desire from 1.0 to 3.0. The pair from Walmart was 2.0 and these are perfect for me. The LED's provide a lot of light, noticeable, even under 2) 4 foot long florescent bulbs over each of the 3 benches. These are half height lenses that allow you to easily look over the lenses for normal viewing. If you are farsighted this will be frustrating but nearsighted folks like me will benefit..

http://www.ebay.com/itm/Multi-Strength-LED-Reading-Glasses-Eyeglass-

Spectacle-Diopter-Magnifier-Light-Up-
/171044979589?pt=LH_DefaultDomain_0&var=&hash=item27d3134385

My pair uses CR1630 coin batteries and the pair on the provided link uses CR927. I bought 20 of the CR1630 cells for under $10 with free shipping. I don't know if the 1630 and 927's are interchangeable. The fit is very tight in my pair. Here is a link for 26 of the CTR927's free shipping for about $5.

http://www.ebay.com/itm/25-CR927-DL927-ECR927-5011LC-Lithium-cell-battery-Happy-
/261234429504?pt=US_Single_Use_Batteries&hash=item3cd2c90e40

Typically, I use mine about 1 to 2 hours each work day and they last with very bright light for 2 to 3 weeks. I hope this will help others who do tedious work too.

Date: Sun, 23 Jun 2013 16:39:38 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] June 2013 *Pearls*

6,000 plus pages in my pdf file. super and thank you.

Date: Sun, 23 Jun 2013 14:08:53 -0700
From: Manfred Antar <mantar@pozo.comcastbiz.net>
Subject: Re: [R-390] June 2013 *Pearls*

I didn't realize it was so big till after I combined all the files.
You probably don't want to print it :)
I think the Y2K manual is only about 681 pages.
I printed it on a fast laser printer and it took about an hour.

Date: Sun, 23 Jun 2013 17:35:55 -0400
From: "Charles P. Steinmetz" <charles_steinmetz@lavabit.com>
Subject: Re: [R-390] June 2013 *Pearls*

No, probably not! But it is still of immense value, because it makes text searches across all of the Pearls possible. With the 27 files, one must guess which ones may have results you want to see, and search them individually. (This is NOT a criticism of the categorization used for the Pearls -- ANY filing system that attempts to organize that much data from a free-form source like the list would end up being more than a bit ambiguous in this regard.) Many thanks to Messrs. Li and Antar for their efforts.

Date: Sun, 23 Jun 2013 17:01:25 -0700
From: Dan Merz <mdmerz@frontier.com>

Subject: Re: [R-390] June 2013 *Pearls*

Hi, i have to thank you for providing this. One of the greatest features of my iPad is that it can be a portable reader for this and many other manuals such as Y2K 390a manual. I rarely look at my printed copy anymore. I'm sure there are other reader devices that work just as well.

Date: Mon, 24 Jun 2013 12:15:37 -0700 (PDT)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] June 2013 Pearls
Content-Type: text/plain; charset=iso-8859-1

Yup, the combo file is 29mB and lots of pages. Many thanks for posting it. Of course, there is repetition as we tread over the same ground repeatedly. However, each of us has a different take on any one subject, and makes for entertaining reading. Being able to search thru the entire archive for a specific text phrase is a real value, and corrects my errors in archiving. Been resurrecting my Apple II, and am amazed at how far we have come, when I compare a single Pearl file to what I had written back then!

Date: Mon, 24 Jun 2013 19:45:10 -0700 (PDT)
From: Kevin McGrath <kj_mcgrath@yahoo.com>
Subject: [R-390] no vendor tag: any way to ID vendor?

I recently acquired an R390A with no vendor tag. Is there any way to ID the vendor (Collins, EAC, Motorola...) by looking at small differences in the build, lettering or rear panel and the like? The PTO is Collins as is the tag on the power supply module. The panel is not engraved.

Date: Mon, 24 Jun 2013 22:00:44 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] no vendor tag: any way to ID vendor?

It can usually be identified by markings on the rear panel. On the Collins modules you may notice a stamping that is a square with a bird....that was used by Collins. If there is one of those on the rear panel it's a pretty good bet it was built by Collins.

Date: Mon, 24 Jun 2013 20:28:26 -0700 (PDT)
From: Milton <marleny@flash.net>
Subject: Re: [R-390] no vendor tag: any way to ID vendor?

The Square Stamp with the bird was not a Collins stamp. It was that of the DCA quality inspector indicating that it meet government requirements.

Date: Mon, 24 Jun 2013 20:37:52 -0700 (PDT)

From: Kevin McGrath <kj_mcgrath@yahoo.com>
Subject: Re: [R-390] no vendor tag: any way to ID vendor?

Yes it has that stamping. On the top right (as viewed from the rear) is a 5/8" square with a bird and 3 stars over the bird. Are reproduction tags available? Thanks for the info,

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Date: Tue, 25 Jun 2013 09:09:22 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] no vendor tag: any way to ID vendor?

I hear you but I see it mostly on the Collins gear and not so much on the others that pass through my shop....not really sure why. I'm not saying its a Collins stamp (bad choice of words on my part)....but with that stamp and no other identifying markings on the rear panel and mostly Collins modules and a Collins PTO...it all points to being of Collins origin. At least that has been my experience with Collins chassis that have moved through here.

Date: Tue, 25 Jun 2013 14:35:45 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] no vendor tag: any way to ID vendor?

A not engraved front panel is a clue you may have an early production model. Not necessarily a Collins build. On the IF deck does it have trimmer caps on the mechanical filters?

Are there four holes in the left side that let you adjust the trimmer caps on the under side of the mechanical filters with out the need to remove the IF deck to adjust the bottom caps.

First was no trimmers.
Then was trimmers and no adjustment holes
Then was the adjustment holes.

All the decks should have manufacture names stenciled on them.
But decks got swapped all over the place and are not a real clue.
You can have a IF deck with trimmers in a frame with no holes
Or no trimmers in a frame with holes.
But the decks could be a clue.

All the manufactures did a good job building the receivers and any one from any run has an equal chance of being a great receiver.

Love and cleanliness can bring any gear train into excellent easy operation. More love and adjustment will bring any receiver into good

operation.

Changing some caps
A leaky black things.
B some just need better values will bring the receiver past good to improved.

Then you start selecting and swapping tubes doing more alignment and any receiver can be brought into excellent operation.

It is not who built the receiver, it's who is maintaining the receiver today. There is a group of audio people who rant about tubes and what they hear. Do not let that fringe group overly color your knowledge.

Picking and choosing tubes in the receiver can and will change the signal to noise ratio in ways that can be measured with meters.

Changing some caps in the audio path will open up the frequency response. One side is more noise but better voice audio.

The other side is narrow reception better signal to noise and hearing weaker CW signals. (also TTY and today's other narrow band digital).

Changing some caps in the IF deck will take the noise down, within limits of logic but a couple dB here and couple dB there and soon you have 27:1 rather than 10:1.

As long as you have to move those big black plastic slug out of the IF and RF deck, you mite as well up the value by 10 on the bypass caps. Just getting good caps back in the signal path will do for those caps. Changing their value need care. A blanket statement does not cover the subject.

There is only 6K plus pages in the pearls of wisdom PDF so far. If you can not memorize it all, at least look through it once and read a few topics of interest. It is also available on line in small subject files.

Do not let that scare you.
Download the Y2K manual
Down load a copy of TM 11-5820-358-35 R390/A
Down load a copy of TM 11-5820-357-35 R390

There are thing in the R390 manual that did not make the R390/A manual like how to adjust the very first cap in the antenna trim section.

Date: Tue, 25 Jun 2013 18:44:04 +0000
From: <chacuff@cableone.net>

Subject: Re: [R-390] no vendor tag: any way to ID vendor?

Also another good indication of who the original builder was is to look at what name is marked on the Veedor Root counter. Probably spelled that wrong....anyway the mechanical digital display...but like Roger stated...it really don?t matter much who the original builder was...a couple of trips through Depot and it in many cases had mixed modules...their all good.

Some will tell you the 67 EAC is the one to have...other if it ain't a Collins it's junk... They are all what you make of them....

Date: Tue, 25 Jun 2013 18:46:42 +0000
From: <chacuff@cableone.net>
Subject: Re: [R-390] no vendor tag: any way to ID vendor?

And to answer the question you asked and no one has answered yet is Yes Fair Radio Sales sells repop tags. Just need to know if you have the wide spaced mounting holes or the more narrow spaced version. I think the narrow is more common. I think the wides were mostly Motorola...but I may have that wrong...

Date: Tue, 25 Jun 2013 15:01:03 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] no vendor tag: any way to ID vendor?

Motorola do use the wide-spaced tags. Don't know if others use them, though.

Date: Tue, 25 Jun 2013 12:23:29 -0700 (PDT)
From: Kevin McGrath <kj_mcgrath@yahoo.com>
Subject: Re: [R-390] no vendor tag: any way to ID vendor?

The screw holes are spaced 2 5/16 by 9/16 inches (as near as I can maeasure). Does that make a wide spaced or a narrow spaced version?

Date: Tue, 25 Jun 2013 16:02:39 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] no vendor tag: any way to ID vendor?

I don't have one to measure; however, the "wide" tags cover the large countersunk holes behind the tag. The "narrow" tags don't quite cover the entire countersink. You can see part of the countersink on either side of a "narrow" tag.

Date: Tue, 25 Jun 2013 19:39:26 -0500
From: Cecil <chacuff@cableone.net>

Subject: Re: [R-390] no vendor tag: any way to ID vendor?

That's the narrow tag. I looked at several in the shop. The Motorola tag is nearly 3" wide.

Date: Tue, 16 Jul 2013 21:36:50 -0700 (PDT)
From: Norman Ryan <nnryann@yahoo.com>
Subject: Re: [R-390] Nolan Lee's 1998 EAC overhaul narrative

Ah, the memories!? Nolan is unique.? Does anyone look in on him and learn how he is doing? Here's a link to his archived website:
http://www.antiqueairwaves.com/nlee/
Thanks for passing his notes on to the group, Don!

Date: Wed, 17 Jul 2013 10:09:05 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Nolan Lee's 1998 EAC overhaul narrative

Can we get these in the FAQs for the newer folks?
This is its own sort of historical, (hysterical?), items for folks.

Date: Wed, 17 Jul 2013 13:50:47 -0500
From: Don Reaves <donreaves@gmail.com>
Subject: Re: [R-390] Nolan Lee's 1998 EAC overhaul narrative

What FAQ? There isn't one officially attached to the R-390 mailing list. No need, because there is the excellent independent one at r-390a.net. (tip to Al and contributors) Some of Nolan's highlights are there, including a nicely formatted HTML version of the overhaul post and a link to his web page archives. AFAIK, there isn't a collected repository of his posts. Perhaps someone has them in a saved archive. I'd like to revisit Nolan's story about dressing out a deer in a New Orleans apartment parking lot (certainly OT) and snag a copy of his prophetic email tag line poking fun at Tempest internet "alert words".

Date: Wed, 17 Jul 2013 14:29:47 -0500
From: barry williams <ba.williams@charter.net>
Subject: Re: [R-390] Nolan Lee's 1998 EAC overhaul narrative

I think the last person to speak to his wife is Les. It appeared back then that the stroke did major damage to Nolan. I have a big, fat Netscape 3 file that is over 10 mb that would have years of his posts in it. I'll have to get the old thing in the basement booted up to look for it one day. I looked through the file a few years ago, and I think the deer dressing story was in there. (g) I liked his sig lines. "If you see us running, catch up - Bomb squad motto" was my favorite. He also liked to disrupt the local ham club

meetings with pranks too. I remember something where he said they were seriously unhappy with him. the other Barry

P.S. The story about washing his R-390A with a garden hose and drying it out under the tree was pretty good too as that stirred up a few people.

Date: Wed, 17 Jul 2013 15:34:50 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Nolan Lee's 1998 EAC overhaul narrative

I thought the stroke had taken its final toll and Nolan had passed. I'm glad to hear that's not true. I sure miss his posts.

Date: Wed, 17 Jul 2013 15:41:45 -0400
From: "Todd, KA1KAQ" <ka1kaq@gmail.com>
Subject: Re: [R-390] Nolan Lee's 1998 EAC overhaul narrative

I think I forwarded his 'Flight of the Phoenix' post some years back, about the receiver he dug out of his scorching hot attic filled with mud dauber nets. I found that Nolan's posts were almost always as entertaining as they were educational.

> I'd like to revisit Nolan's story about dressing out a deer <snip>

Don't recall that one, but do recall one about a sheep in a shopping center parking lot while his wife was shopping or getting her hair done. Yep, the Tempest/Carnivore key words were a hoot. I recall he had 'AK-47' in there somewhere. Echelon was such a big, scary thing then with its 4B/day capabilities. Probably comparable to a Commodore 64 next to the new system. (o: Rich McClung posted several years back that Nolan had suffered a stroke and didn't recall or care about any of the radio stuff. Someone later posted that he had died, though I don't recall that ever being confirmed. I've got his pages saved somewhere just in case they got shut down at some point. Apparently others do as well. I liked his Bomb Squad signature too, and his response to someone once about Amperex Bugle Boy tubes. He said something about shooting them with a .22 cal for target practice rather than stick them on ebay. When one of the new age experts suggested he could sell them for a lot of money to 'audiophiles' his response was something like "I'd rather gouge out my left eye with a rusty tire iron found on the floor or a New Orleans crack house". Definitely a piece of work, that boy....

Date: Wed, 17 Jul 2013 16:16:17 -0400
From: "Don Heywood" <wc4g@knology.net>
Subject: [R-390] Nolan's Flight of the Phoenix

Some one wanted to see the Flight of the Phoenix email from Nolan Lee, here is part one. I miss him too. Don WC4G

Subject: [R-390] Flight of the Phoenix Msg 1
> Date: Tue, 19 May 1998 17:30:22 -0500
> From: Nolan Lee <nlee@communique.net>
> To: R390A Gurus <r-390@qth.net>
>
> Starting a couple of days ago, I pulled what was left of my first
> (aquired in the mid 1970's) R390A out of the attic where it's been
> baking for 5 or 6 years or so at high temp, here in the Deep South.
> Is it soup yet ma? You bet! Mmmmm mmmmmm good bubba!
>
> I had retired it after a rather spectacular IF deck meltdown. When
> it went, it looked like a special effect from either Star Trek Next
> Generation or an old Voyage to the Bottom of ther Sea re-run. Ever
> wonder why they didn't used fuses on that submarine?
>
> After putting the fire out. I shut it down and stuffed one of the
> spare IF decks in it. No good, it was gone. DOA bubba. I didn't feel
> like looking for a cure at the time so I did something like was done
> to Walt Disney's body. Since I was just a rather poor Redneck at the
> time, and am still, I didn't have access to a cryogenic chamber to
> freeze it. Instead, I stuffed it in the attic where a generous coating
> of mud dauber nests and some of that there theroputic heat stuff would
> preserve it for future generations in the event I died before I could
> fix it.
>
> At any rate, a couple of days ago, I was up there fixing the attic vent
> fan that died a couple of three years ago and I happened to see it.
> It was setting there calling to me. "Fix me....fix me....." I sat the
> quart of beer down and hauled the 390A down the ladder. I let it sit
> in a low spot under a tree in the shade for a few hours to cool down
> before I hosed it off. I didn't want to subject it to sudden thermal
> shock. If might have damaged something. After it cooled (about 4 beers
> later) I took it apart and used about 6 cans of Gunk on it. Sure nuff
> looks purty now. All of the protective mud dauber nests are gone along
> with the grease off of the geartrain. A side benefit was that I finally
> got around to filling in that low spot that the wife's been complaing
> about for ten years or so. I bent me up a mess of hooks and then hung
> each
> of the modules on the clothesline to dry in the sun.
>
> I intend to go thru each of the modules and resurect this thing. Since
> the RF Deck is a pain to remove for occasional repairs, I want to pay
> special attention to it.

>
> Here is a list of questions concerning the repair of that there RF Deck
> thing that I'd really appreciate yall answering.
>
> 1. I've checked all of the carbon resistors in it and will have to
>replace about a half a dozen or so of them. Since carbon resistors suck in
>the long run, what would be the best non-inductive resistor to replace
>these with? Think it's worth the hell of changing ALL of them?
>
> 2. The three brown tubular caps suck (1 blowed up bubba, 2 cracked).
> What's the best long term replacement for these?
>
> 3. What's accepted as the best grease for lubricationg the gears and
> rollers. I used rifle grease for years, but remember, I'm a Redneck
> so I'm sure that there are higher tech lubricants.
>
> 4. Ideas on the best oil to lubricate the bronze bushings in the gear
> train where the various sharts extend thru the RF Deck panels? I
> used 40W motor oil, jes' like the tractor.....ideas on something
> better?
>
> 5. This deck is marked as having Mod 5 done. What exactly did Mod 5
> involve? What's the oldest bulldog you know of?
>
> 6. I don't like the looks of several of the little coaxial cables
> that extent to the other modules. Anyone know the specs on this
> coax? I'd like to replace several of them.
>
> 7. I've never knowingly had a mica cap go bad in a 390A. Come to think
> of it, I don't think I've ever had a mica cap go bad in anything.
> Removing and checking every one of them with a bridge would take
> forever. ;-(Should I even bother? I say know, but some of yall
> are a lot sharper. What do YOU think?
>
> 8. Have I missed anything concerning the IF deck? Anything I should
> look for that some of you guys that have repaired dozens of these
> things have seen? Evil forces? The dark side?
>
> 9. I'd imagine that the chokes and ceramic discs are all OK. Comments?
>
> 10.See, you didn't think I could count that high with only 9 fingers,
> huh?
>
> thanks in advance,
> nolan
>

>
> If an infinite number of rednecks riding in an infinite number
> of pickup trucks fire an infinite number of shotgun rounds at an
> infinite number of highway signs, eventually they will produce all
> of the world's great literary works in Braille.

Date: Wed, 17 Jul 2013 15:33:18 -0500
From: Les Locklear <leslocklear@hotmail.com>
Subject: Re: [R-390] Nolan Lee's 1998 EAC overhaul narrative

Well, let me attempt to set the record straight on this. The first week in March, 2001 (approximate time frame, + or - 1 week), Nolan drove over to my house and we spent most of a day talking about mostly R-390A's and other related items. We went out for lunch and ate a couple of fried shrimp po' boys, and had a grand time telling lies and convincing each other they were indeed true. He did arrive in the "infamous" black Chevy Suburban that was loaded to the gills with bullet proof vests, weaponry that included but wasn't limited to: M-16, Ingram Mac-10 various pistols, both semi automatic and revolvers, riot shot guns, bandoleers of all kinds of ammo, Sherriff's Deputy clothing, etc.. We made a trade of equipment rack cabinets, antennas and other ancillary equipment that he took home with him and I was to meet him later and get my goodies, A HP 180D scope, spare time base plugin, a data precision counter good to 120 mhz, manuals etc. We corresponded on March 10, 2001 (I have the e-mails, so I'm sure of this date), and agreed to meet later in the week as he was on call. Never happened, follow-up correspondence was never answered, phone calls went unanswered. Shortly after Rich McClung told me that Nolan had a major stroke that he recovered from, but had no memory of anything, radios or anything related to them registered "zero" with him.

I never spoke with his wife, all I knew about her was she was a nurse. Follow-up e-mails through September 2001 went unanswered. I'm not complaining, as I would rather have him here making ridiculous e-mails and being Nolan. I don't know if he has passed away or not, as I wasn't that curious to do obituary searches, etc..

Was he a Redneck? Damn straight, but down here, you can see them in every direction. In Northern Minnesota where I was born and raised we called them "Jack Pine Savages." They are everywhere.....

One small tidbit, I spied a woman's brassiere on the floor of his Suburban and he saw me looking at it, he said that belongs to Helga. I looked at him quizzically, he replied, you know, Helga Rubenstein.....That was Nolan.

Date: Wed, 17 Jul 2013 17:34:06 -0500
From: "Ba.Williams" <ba.williams@charter.net>

Subject: Re: [R-390] Nolan Lee's 1998 EAC overhaul narrative

I knew I had heard that from you and thought it was you who had called his home. You don't have a corner on the redneck market down there! I bet there's similar arsenals all around me here in town, and I'm in a nice neighborhood now.

Date: Wed, 17 Jul 2013 15:44:03 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Nolan's Flight of the Phoenix

Please send Part 2!, Part 2!!, Part 2!!!

Date: Wed, 17 Jul 2013 21:10:29 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Nolan's Flight of the Phoenix

Received the following response from Don in regard to a "Part 2".
"Sorry Chris, ain't got it..... 73 Don"
I'm glad Don kept Msg 1 of "Flight of the Phoenix Msg 1". As said by so many who actually had the pleasure and opportunity to interact with Nolan on the email lists, or like Les, who enjoyed a *most* memorable eyeball QSO with Nolan (thanks for sharing, Les), my initial exposure and nearly as immediate enjoyment of this unique individual's writing style was back in 2003 (or so) after I had acquired a TV-7A/U and TV-10D/U. I stumbled upon his website that was loaded with good info on them. I remember being struck by his picture and Redneck demeanor. It was an immediate colorful experience in an otherwise pretty bland landscape of web sites. I wonder, now that I know of his unfortunate stroke in 2001, who was maintaining the site then? I simply don't remember if Steve's name was posted as the caretaker of the site. Perhaps it was.

Anyway I ramble. I hope "the other Barry" is successful in resuscitating the old PC so he can hopefully extract his archives and share some additional priceless Nolan Lee commentaries....and maybe even find "Flight of the Phoenix Msg 2".

Date: Thu, 18 Jul 2013 06:15:50 -0700 (PDT)
From: Joe Connor <joeconnor53@yahoo.com>
Subject: Re: [R-390] Nolan's Flight of the Phoenix

That's what we're missing in today's world: real, honest-to-goodness characters. All of us radio guys are probably (to put it charitably) a bit eccentric but we really need more true characters.

Date: Thu, 18 Jul 2013 09:44:47 -0400

From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Nolan's Flight of the Phoenix

There really are more real, honest-to-goodness characters.
The basic problem is simply this stupid Politically Correct society!
The language that Nolan was noted for manages to upset some folks!
Every list starts grousing unless you are PC.
Quite frankly, I am NOT.
I just don't want to defecate in somebodies Wheaties.
I may get banned.
My $0.02 worth.

Date: Sat, 12 Oct 2013 20:56:17 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Digital Reproduction of the R-390A

I've digitally reproduced the schematic of the TM 4000 R-390A receiver. It has almost all of the mod's that have been published and some of my own that haven't. This is done as a bit image. You can take it to Kinkos or any printing service with printer and enlarge it without having it become fuzzy at any size.

Both parts were done with the same scale so they can line up. I didn't make any attempt to trim the edges so there will plenty of space to add your own notes Reply off list if you wish a copy. I will also post it on the R390 FAQ list

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Date: Tue, 5 Nov 2013 18:15:41 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: [R-390] Parts Manuals R390 and R390A

I have the R390 and R390A parts manuals scanned to PDF.
TM 11-5820-357-35P 4 November 1959 R390 14 MB
TM 11-5820-358-34P February 1972 R390A 56MB

I will burn you a CD with the two PDF files on it and get it in the box with the documents coming back to you. Thank you for lending me the paper copies. If you other Fellows E-mail me I will reply one on one with a PDF attached. If the web page holders will E-mail me I will send them copies to be posted to their sites also so we can find these and down load them in the future as needed. The parts manuals do detail the slugs and which are which for us.

Date: Tue, 05 Nov 2013 15:35:35 -0800
From: Manfred Antar <mantar@pozo.comcastbiz.net>
Subject: Re: [R-390] Parts Manuals R390 and R390A

I can put them on my website.
They will be at http://pozo.com/R-390A/ once I get them.

Date: Wed, 6 Nov 2013 11:23:22 -0500 (EST)
From: Glenn Scott <wa4aos@aol.com>
Subject: [R-390] THIS REALLY SUCKS!!!!

I want to share some info with the group that I think some will appreciate. I owned a computer company in the 80's-90's and we did component level work on everything from Commodore 64's through IBM PC's and clones. We also had contracts to do mini system work on Microdata and Western Dynax systems.

Back then I discovered a neat desoldering tool made by Airvac called the PVSG6. It's a hand held device and works perfectly with removing solder from Printed Circuit Boards, PCP's. I still use those for my industrial micro-controller work.

http://www.air-vac-eng.com/vacuumdesoldering.html

Unfortunately the head mass of the AirVac tool is insufficient and the Y configuration of the head makes it's utility for Point to Point work very poor.

Fast forward to 2012 and I did some more research for a desoldering tool that might be helpful with Point to Point work, P2P, on an IF module in a 390A. I Kept seeing reviews for the Hakko 808 on youtube but all were doing demos for PCB work. Looking at the head, I thought it might be helpful in a 390 or A for some of the post, and connectors due to it's sizable tip's thermal mass. The cost was about $200 and I decided to give it a shot. It looks a lot like the old Weller hand solder guns but is about half the weight. I was concerned that it's size might make it clumsy for PCB and P2P work but this has proven to NOT be an issue.

To my GREAT delight it does an outstanding job on all 390 and A models as well as the 392's I work on. So far, no one has done a video touting the 808's capability on P2P work. It works far better and far faster than solder wick and I was going through lots of that. No contest with a hand pump.. Annually, I go through enough wick to pay for the 808 in one year. Not to mention the HUGE savings in my bench time.

http://www.youtube.com/watch?v=-gVF-m-4EUc

When I rebuild an IF module with BB's I clip them out and then I can get to the resistors deep inside for evaluation. I used wick but now the 808 cleans all of the post and term-strips quickly. From there a soldering aid tool and needle nose allow for the easy and complete removal of the old lead pieces. (I HATE TO SEE WORK WHERE A NEW COMPONENT IS TWISTED ONTO AN OLD LEAD; THIS IS BIG TIME, MICKEY MOUSE)

Oh... there is a temp pot in the handle of the 808. I use 75% throttle for P2P and about 25% for PCB stuff. The 808's long narrow head makes it perfect for P2P.

One exception; The two small post near the front, right side, of the IF module of a 390A MUST be cleaned at no more than ~35% power. If you have reworked a 390A IF module you know g how delicate those post are.

Hakko makes a more expensive unit that more the 472 @ $650. This is more of a bench top unit. However, it appears that the length of the tube behind the tip is shorter. I have found the 808's length to be excellent for getting deep into an IF module on a 390A. This is the most challenging part or reworking the electronics of a 390A.

The other thing that is helpful for me is to quickly walk the 808 from bench to bench without having to haul the control box. The performance specs between the 808 and 472 are about the same. I have yet to be disappointed in the SUCKING POWER of the 808.. I know of one person who is using the 472 and is very pleased with his unit.

http://www.ebay.com/itm/Hakko-472D-02-Desolder-Tool-ESD-Safe-110W-w-Control-Card-and-60W-Gun-Style-Iron-/200981806892?pt=LH_DefaultDomain_0&hash=item2ecb72ff2c

There is a Chinese knock off for the 808 on epray for $107-$150, free shipping but I don't know if it's junk or if the consumable parts from the 808 will work with it. Hakko is well known and proven name in the industry and I paid the extra $100 for peace of mind. All of the consumables are available from several on-line tech houses such as tech-tools.

http://www.ebay.com/itm/S-993A-110V-90W-Electric-Vacuum-Desoldering-Pump-Solder-Sucker-Gun-e-/251317420880?pt=LH_DefaultDomain_0&hash=item3a83af8350

The knock off version of the 472 is reviewed on youtube at the eevblog. BTW, this is an excellent blog for more modern electronics. The reviewer gives the knock off neither a thumbs or down but rather a sideways thumb review. He believes it is cheaply made but works well.

http://www.youtube.com/watch?v=Ft50m8UU5WQ (Preview)

If you decide to get one, I would enjoy your feedback.

Date: Wed, 6 Nov 2013 08:50:43 -0800
From: "Leigh" <bipi@comcast.net>
Subject: Re: [R-390] THIS REALLY SUCKS!!!!

I have been using the Hakko 808 for a number of years now and is a great

tool. My only complaint for P2P is that it takes too long to reheat after solder sucking. I have heard no one else complain about this and wonder if my unit is not up to snuff (or maybe I just expect too much). Any comments from users?

Date: Wed, 6 Nov 2013 11:55:35 -0500 (EST)
From: ToddRoberts2001@aol.com
Subject: Re: [R-390] THIS REALLY SUCKS!!!!

Thanks for the review of the Hakko 808 desoldering tool for R-390A work. I have a Hakko 472B pencil-type desoldering tool and it does an outstanding job for desoldering point-to-point wiring also.

I would like to add one thing I found that at times works even better than just using the 472B alone. There are times when you run across some wiring points or turret terminals that have a whole mess of wire leads soldered together and it can take a lot of heat to melt all the solder at once. I found that sometimes the desoldering work can go quicker and easier if you heat the junction with another soldering iron or soldering gun at the same time you use the Hakko. By using double the heat on a tough junction the Hakko works easier and tends to pull every last drop of solder out of the junction with less heating time which can be easier on some components also.

Date: Wed, 6 Nov 2013 11:58:09 -0500 (EST)
From: Glenn Scott <wa4aos@aol.com>
Subject: [R-390] THIS REALLY SUCKS!!!!

I have had ZERO issues with the heat recovery time, at least on 390 series modules. Perhaps your heating element is weak or maybe it was improved on later models. When I go from one connection to the next the 808 is ready to SUCK IT UP!!!

Date: Wed, 6 Nov 2013 08:59:32 -0800
From: "Leigh" <bipi@comcast.net>
Subject: Re: [R-390] THIS REALLY SUCKS!!!!

Good suggestion...even with space available for only one tool at a time it would be advantagous to preheat with the larger iron. Thanks.

Date: Wed, 6 Nov 2013 09:01:09 -0800
From: "Leigh" <bipi@comcast.net>
Subject: Re: [R-390] THIS REALLY SUCKS!!!!

May be time for me to replace...sure is handy and does a much better job than wick.

Date: Wed, 6 Nov 2013 11:49:48 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] THIS REALLY SUCKS!!!!

I also own a Hakko 808, it is a pretty good desoldering tool. I had been trying without much success to recapture the performance of the old Weller station that had the iron and the pump with the little glass vial across the top of the desoldering tool. The vacuum was powered by a compressed air source and you had a foot switch. The Hakko comes really close in performance.

If you own one get the spare parts that include a replacement heater element and the little black diaphragm pumps and some spare tips. On the old Weller station usually the tips would plug up and we ended up drilling those out to clear the blockage. Even with that they would last many months of continual use. Looking for a Hakko or one of the Chinese clones, make sure it is a 120 volt model. Most of what they make are 240 volt units.

Date: Wed, 6 Nov 2013 09:52:25 -0800 (PST)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] THIS REALLY SUCKS!!!!

I have a Hakko 808 and second what Leigh said. I originally bought it so I could replace the 45 pin final power amp IC in the Onkyo stereo in our family room which I blew out when I keyed up the mic. on SSB while my wife was listening to music and the long speaker leads were not filtered/choked. Whammo! RFI pickup blew the amp right out.

When I replaced the stereo power amp IC the Hakko did such an amazing job of removing the solder on the close spaced PCB connections that the defective power amp IC literally fell out of the board when I unsoldered the last pin.

I have since used it, among other things, to replace an open 4Khz filter in one of my R390A's. It worked great. All I had to do after de-soldering the terminals on the filter was unwrap the connecting wires. It was EASY. Great tool.

Date: Wed, 06 Nov 2013 13:44:42 -0500
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] THIS REALLY SUCKS!!!!

The Hakkos typically come with a cleaning wire (just a steel wire that you poke into the tip every now and then while it's hot to keep it clear). A good

idea for any desoldering tool. Hakko makes other desoldering tools, including the fabulous FM-204:

<http://www.hakko.com/english/products/hakko_fm204.html>

Improved suction, very tight temperature control, faster recovery, handle can be used with or without pistol grip, station supports other tools (for soldering, soldering/desoldering surface mount components, etc.), and it can be used for nitrogen-shielded soldering for the ultimate in surgically clean joints. It is considerably more expensive than the 808.

Date: Wed, 06 Nov 2013 14:15:37 -0500
From: "David C. Hallam" <dhallam@knology.net>
Subject: Re: [R-390] THIS REALLY SUCKS!!!!

I used one of those Weller desoldering stations for several years. I purchased a Hakko 808 after reading several recommendations for. After using the Hakko for a couple of days, I took the Weller off of the bench and ultimately sold it. In my opinion, the Hakko is superior in all respects.

Date: Wed, 6 Nov 2013 15:06:04 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: [R-390] Parts Manuals R390 and R390A follow up.

The R390A parts PDF file is to big for my mail site to send as an attachment. How do I split a PDF file into 2 parts? I will put the file on a CD and send it via snail mail to all of you fellows who will send me a post office address. I have offers to put the file up on some web sites. Once that happens we can post and let every one know where to find the PDF files on line.

Date: Wed, 06 Nov 2013 13:20:51 -0800
From: Gordon <gordon@n6wk.com>
Subject: Re: [R-390] Parts Manuals R390 and R390A follow up.

I would use Acrobat Pro to create a new PDF and drag half of it to it, therefore making a part 1 and a part 2 PDF file. If I had it, I could host it on my website for everyone.

Date: Wed, 06 Nov 2013 15:33:35 -0800
From: Manfred Antar <mantar@pozo.comcastbiz.net>
Subject: [R-390] Parts Manuals R390 and R390A are online

The Parts Manuals are available online at http://pozo.com/R-390A
They are: R390-TM-11-5820-357-35P.pdf for the R390 and
R390A-TM-11-5820-358-34P.pdf for the R390A

Date: Wed, 06 Nov 2013 19:28:40 -0800

From: Gordon <gordon@n6wk.com>
Subject: Re: [R-390] Parts Manuals R390 and R390A are online

I have the files available for download here:
http://www.n6wk.com/collins/

Date: Thu, 7 Nov 2013 08:17:55 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] desoldering stuff

Funny that we all use the same tool: Hakko 808
Mine has been around for years and gets a lot of use
Only effective way to get stuff off of a PC board
Not too useful in traditional P to P wiring, where wicks and dental tools work
better
Can do a lot of damage desoldering on older mil gear
Old Bakelite can literally vaporize
Sometimes, it is better to just clip the lead and use *quigs*
Looks bad, works swell
Some of us would think that practice heresy Duckin' and running.....

Date: Thu, 7 Nov 2013 09:14:26 -0800 (PST)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Desoldering part 2

Standard procedure is to heat and unwrap using needle-noses and dental picks. This puts a lot of stress and torque on the post, and can fracture them, as we have seen. What I do, is first clip off the wrapped lead of the offending component flush with the post using a real sharp flush wire cutters, whose nose has been filed narrow. Then with a hot 100W narrow tip iron, touching the post momentarily causes that component to literally fall off. It takes only seconds to just heat those portions of the post holding the old lead, and lessens the damage caused by conducted heat to neighboring components like resistors or coils.

Principle is to use a hot enough iron to loosen the solder for removal, and not heat up the entire assembly.

Reassembly is another matter, since now the entire post and other leads require cleaning and re-tinning, and you should use hemostats or other narrow heat sinks to prevent collateral thermal damage.

At least, that is my routine.....

Date: Thu, 7 Nov 2013 11:37:34 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] desoldering stuff

Oh, nothing heretical with not wanting to break off turrets or rotary switch posts. If I am going to be running around with a soldering iron in a chassis it is to remove components that need to be replaced, snip goes the leads. Then I will figure out how to attach the new component.

My only grievance with quigs is when they look like cr_p with little solder strays sticking up everywhere, mixed in with cold solder joints. A place where you really do not have many other choices is on ring terminals inside of an IF can and you are replacing a capacitor, on that same terminal there will be that 40 AWG wire that will break if you look at it funny.

The art of soldering is really on the decline. Surface mount components are nearly impossible to work on unless you have a hot air station. It is easy to see where the skills are eroding with "kits" coming with pre-soldered circuit boards and just being screws and plug in the connectors.

It once was point to point wiring where any respectable technician also knew how to lace a wiring harness and properly place components from terminal strips and tube sockets. Then it was PCB soldering where multi-layer circuit boards were the state of the art. Wave soldering showed up with surface mount components and ball mount with hot air and reflow.

Desoldering is an even rarer art. Now if a PCB does not work they just scrap it as even spending 10 minutes on a tech bench to troubleshoot erases any profit margin. To be competent in all of these areas requires experience and practice to keep your skills up. Clearly there are folks on this list who still do their own repairs and mods.

Date: Thu, 7 Nov 2013 10:24:51 -0800 (PST)
From: Norman Ryan <nnryann@yahoo.com>
Subject: Re: [R-390] Desoldering part 2

Good routine overall, but I'd add this: Where possible, after clipping leads off the post, undo its mounting screw and finish desoldering the post's terminal outside the chassis.

These little guys are very susceptible to breaking under heat and physical stress, so one should take every precaution to avoid damage to the posts.

For desoldering I use a Weller DS-600 that I found on eBay that was missing its bottom cover.? Due to that and bidders' apparent lack of

interest I got it really cheap.

Cooper Industries (Weller's parent company) graciously sent a replacement cover gratis. Ya gotta love that kind of technical support!

Boatanchor restoration is strictly a hobby and retirement pastime for me, thus the high cost of state of the art desoldering gear is beyond my reach financially. However, the current thread on desoldering (plus the raves about Hakko) has me rethinking this.

Date: Thu, 07 Nov 2013 13:43:14 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Desoldering part 2

This terminal post is a bigger issue when the age of the modules are greater.

A '67 EAC is far less prone to this fragility. The first run of the Collins built R-390As is an entirely different thing. I found that I had to locate new terminal posts, as every one that I dealt with would fracture and then required replacement. I found some on the Auction Place, and bought a pkg of 100.

I find I've become more and more like Tisha! The less work and effort the better. I want to do repair and restoration, not mental and physical abuse that is self inflicted.

Date: Thu, 07 Nov 2013 13:52:14 -0500
From: "David C. Hallam" <dhallam@knology.net>
Subject: Re: [R-390] Desoldering part 2

I have found the Hakko 808 to be very useful for point to point wiring on our boat anchor gear. The tube holding the tip is long and fairly small diameter. I can get into places where I never could before with my Weller desoldering station and I don't have to listen to the air compressor run. I just did some upgrading work on a 75S-3 and replaced the film capacitors and resistors in Hallicrafters SX-100 filter network. I never would have gotten to some of them with the Weller. I would have had to remove the whole SX-100 front panel. A job I really didn't want to do.

Date: Thu, 07 Nov 2013 14:28:12 -0500
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] Desoldering part 2

The turret terminals are so fragile, and such a pain to replace (if you can even find replacements), that cutting the leads before desoldering is

mandatory. Even if you don't know the part is bad, cut the lead. If afterwards it is too short to reattach, replace the part even if it's still good.

Cutting leads before desoldering is also very useful generally in both point-to-point and PCB construction.

If possible, it is helpful to unmount the terminal from the chassis before unsoldering. That way, you can't put any force on the fragile insulator while you are wrestling with the wires.

When working in close quarters, use scraps of glass-epoxy circuit board material (or similar fireproof insulating sheets) to isolate the joint you are working on so you don't accidentally burn other wires and parts with your soldering or desoldering iron.

Finally, troubleshoot with your meters and your brain, not with your soldering iron, and this issue will not come up so often. "Oblique" or "angled head" cutters are extremely useful for reaching into close quarters and clipping leads in both point-to-point and PCB construction. For example:

<http://www.micro-tools.com/store/P-32728/Flush-Oblique-Front-Cutter.aspx>

<http://www.micro-tools.com/store/P-45821/Esd-Safe-Flush-Cut-Cutters-45.aspx>

Date: Thu, 07 Nov 2013 14:54:07 -0500
From: "David C. Hallam" <dhallam@knology.net>
Subject: Re: [R-390] Desoldering part 2

If you go to your local craft store such as Michael's. In the section where they have tools and supplies for beaders, you will find some very nice wire cutting and bending tools. Beaders use them and they are made to cut hard wire.. I use those from Beadalon. They will cut memory wire, SS, and other hard wire. They probably wouldn't cut spring wire. They cost about $12-$15.

Date: Fri, 8 Nov 2013 12:47:43 -0500 (EST)
From: Glenn Scott <wa4aos@aol.com>
Subject: [R-390] WTF What The Flux?

I have been pleased to see that manywho use this reflector already have and use the Hakko 808 or similardesoldering tools. I have tried to share, from time to time, toolsand ideas that have helped me in my R 390 series receiver work.Personally, I would enjoy seeing more post about techniques othershave found helpful in their endeavors,

WTF What The Flux.
On a recent visit to youtubeI ran across an old video on soldering techniques from the late 60's.For giggles, I decided to watch it and ran across part of the videotalking about Solder Flux, where the narrator suggested NOT to useZinc Chloride, ZnCl, flux for electronics soldering. Although, thatseemed to make reference to Printed Circuit Board, PCB, work. I amnot a Chemist but wouldn't ZnCl be Ph neutral and not either acidicor alkali?

Like all of us, I use a goodquality Rosin core solder but I also have both Rosin and ZnCl pastethat I use occasionally for P2P work. Most of the time, I use theRosin paste if I need a little more help in getting the solder toflow on multiple connection points where there are 3 or morewires/leads coming together.. However, sometimes the ZnCl paste isVERY handy and does a fantastic job of getting good flow and nicebright, CLEAN joints on post where 4 or more components merge.

So, what do others thinkabout ZnCl as a solder paste for Point to Point electronics work. Ihave seen no problems associated with using this paste whatsoever. Even in work done on modules/electronics from years ago.

Date: Fri, 08 Nov 2013 12:58:23 -0500
From: "David C. Hallam" <dhallam@knology.net>
Subject: Re: [R-390] WTF What The Flux?

Do not get ZnCl flux anywhere near electronic gear. No, ZnCl flux is not neutral. It is very acid and corrosive on copper and related metals. It's not a good idea to leave even rosin flux on a soldered. I clean all my joints with 91% isopropyl alcohol when I finish a job.

Date: Fri, 08 Nov 2013 14:08:34 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] WTF What The Flux?

Rosin flux and ONLY Rosin Flux! Always clean afterwards. ZnCl is a *bad* thing to use. You may as well just go and get the acid flux used on old radiators! You open the door to nasty endings. I use Kester 43 for solder, and have several good old Dutch Boy paste
tins. Can't go wrong there.

Date: Fri, 08 Nov 2013 14:13:41 -0500
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] WTF What The Flux?

Zinc Chloride IS the acid flux used on old radiators.

Date: Fri, 08 Nov 2013 15:20:56 -0500
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] WTF What The Flux?

Just shows how bad my memory really is! I only know that it was the ONLY place for it to be used! Never bothered to learn *what* its chemical name was. Just knew where to use it, and where NOT to use it. It does NOT belong in electrical/electronics/plumbing. It eats what it gets applied to. Electrical use results in big time failures, and plumbing use results in water leaks everywhere. I definitely am also NOT a fan of this RoHS nonsense either! It is worse in plumbing than electrical, and is a royal PIA to get a good joint. Manufacturers may have found "the" method to use it, but I sure haven't!

Date: Fri, 8 Nov 2013 15:24:26 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: [R-390] Parts Manuals R390 and R390A are online

Thank you for getting the parts manuals on line.
Roy was also going to put the files on his web site.

If you Fellows can not get the parts manuals as PDF from one of the location please come back with a new mail I will burn and mail a CD to you. For years I did mail on a dial up and down loads did take forever. That's why I like the Y2K in sections. If you are on a slow line do ask me for a CD.

Date: Fri, 08 Nov 2013 13:14:25 -0800
From: Gordon <gordon@n6wk.com>
Subject: Re: [R-390] Parts Manuals R390 and R390A are online

I'll be happy to host any files you'd like on My website. In fact, I can host any that anyone has related to the 390 / 390A / Collins. I am more then happy to do so. http://www.n6wk.com/collins/

Date: Fri, 8 Nov 2013 16:54:35 -0800 (PST)
From: Gary Geissinger <geissingergary@yahoo.com>
Subject: Re: [R-390] WTF What The Flux?

I agree; even cleaning a soldering iron tip with ZnCl is a bad idea. I use Kester 186 for tinning parts and leads. While it is officially RMA Flux and therefore can be left without removal, it is nearly as strong as RA Flux. And yes, I clean it off wiith IPA after tinning or soldering.

Date: Sat, 9 Nov 2013 20:24:13 +0100
From: djelatnik slavonija <djelatnik.slavonija@gmail.com>

Subject: [R-390] Screws for panel

I make restoration job on my first R390A receiver, because of living in Europe some parts for front panel is very difficult to obtain. Tell me guys, do any of you have some spare screws.. I need 4 screws around BFO knob and one in between Phones and local gain and one in far right column for conecting front panel to the side panels.. If you have some spares of these screws and you want to donete to me please contact me before sending on adress posted od QRZ.com

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Date: Sat, 09 Nov 2013 16:26:08 -0500
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] WTF What The Flux?

>I use Kester 186.....

It may be as strong as the RA flux you can buy today, but today's RA flux is a pale imitation of the real thing, which hasn't been available in solder cores since the early '80s. Today's RA doesn't work as well as the RMA that was available in the '70s. I buy up all the '60s/'70s RA solder I can find for this reason. Some brands of new liquid RA flux (in bottles) still work like real RA flux.

Date: Sat, 09 Nov 2013 20:13:09 -0800
From: Gordon <gordon@n6wk.com>
Subject: Re: [R-390] Screws for panel

I have been ordering all the SS screws I need from Mcmaster-Carr. I have spent a small fortune there, but I sure do have a lot of Stainless Steel ,Screws, Bolts, Nuts and washers to show for it....hi hi I just didn't buy any of the flat head SS screws he needs.

Date: Sat, 9 Nov 2013 23:04:58 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: Re: [R-390] Screws for panel

If no one else can respond to this, I'll make an order for 25 or 50 (8-32x 5/8 flat head SS) or whatever the number is, it's only about $5 on ebay delivered and I'll be glad to send Dubravko some spares, gratis (I've had enough free stuff sent to me). I need a set anyhow. The tapered locks may be something else, but standard #8 external tooth locks will probably form just fine? It may take a few weeks to get to Croatia.

Date: Sat, 9 Nov 2013 23:32:13 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: Re: [R-390] Screws for panel

Actually I buy my most of my SS from BoltDepot, they have good prices but their shipping $ sucks, so you have to get everything you need at once (large order). McMaster usually means too much volume but they have sizes you can't find anywhere else. Small amounts of standard items can usually be found on Amazon or ebay for something reasonable. At least that's what I've found.

Date: Sun, 10 Nov 2013 09:37:35 +0100
From: djelatnik slavonija <djelatnik.slavonija@gmail.com>
Subject: [R-390] Cleaning blue stripes

I have receiver with only one painted blue stripe on front. I am not sure for now how to progress on this mather.. (1). idea...thinking at first to make complete restoration job on front plate with painting and lettering as well (2). idea...to make only cleaning of blue stripe and leave all other intact... my frontplate have scrubed circles around KC knob and part of MC knob and in my eyes give some sort authenticity to this receiver..in this light receiver will show real marks of service and history use...What will be best chem solution for cleaning this blue spray paint? Please dear hams and army/navy operators..what you think about my ideas...to make rejuvenation or to leave this fine piece of communication equipment with marks of use? Thanx for all advices..

Date: Sun, 10 Nov 2013 13:52:19 +0000 (UTC)
From: bavarianradio@comcast.net
Subject: Re: [R-390] Cleaning blue stripes

I'd leave the blue stripe intact, it's part of it's history. Think of how few of the "stripes" are left...

Date: Sun, 10 Nov 2013 15:12:10 +0000
From: <chacuff@cableone.net>
Subject: Re: [R-390] Cleaning blue stripes

The original paint on these radios is quite tough. I'd try a rag soaked in lacquer thinner to clean off the painted stripe. Should work fine and not harm the panel. Try a small area first to see how things go before doing the whole thing.

Date: Sun, 10 Nov 2013 11:00:06 -0500
From: "KR4HV" <kr4hv@numail.org>
Subject: Re: [R-390] Screws for panel

You may want to try the company Fastenal. They are on the web and have 100's of stores about. They can get most anything for you. If you have a

store nearby they will order in for you. I get all the way down to #0-80 SS and brass. You can also get BNC crimps and electrical ring terminals. They are mostly industrial suppliers but will sell to individuals over the counter and on the web also. Very good service.

Date: Sun, 10 Nov 2013 11:01:03 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: [R-390] Screws for panel

I'm suprised no one caught me on this one. There are 8 - 6-32x1/2" and 8 - 8-32x5/8" (80?)screws on the front panel. Zare, I'll be in touch when I get the screws. I've marked the different ones here.
http://i251.photobucket.com/albums/gg287/DogTi/R390A/frontpanelscrews_zps5012ff86.jpg
Most, if not all the screws Zare needs are the 6-32. I can get them on ebay for about $5/100 shipping included so I'll get 100 of each plus the external tooth washers and maybe some other stuff I need. Fastenall has them about the same price but closest store is in Front Royal and I hardly ever get in there, it's just as easy to wait for free shipping where I am.

Date: Sun, 10 Nov 2013 10:53:29 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Cleaning Blue Stripes

If you are planning on removing the blue stripe check and see if the panel is an engraved one. Most radios had an aluminum front panel with engraved lettering. There are a "few" that were just a flat piece of aluminum with letters that were stenciled onto the front.

If it is an engraved panel you could completely remove it from the radio and use a paint stripper chemical and a plastic or wooden scraper to take it down to the base metal. You can remove the white filler from the engravings and start all over again.

There have been some beautiful results of front panel restoration. You can also clean up the knobs and refinish those as well. We have thoroughly documented the restoration process and many on this list are experts in helping you get the radio up to near perfect, brand new condition.

Date: Sun, 10 Nov 2013 12:14:36 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: [R-390] Cleaning blue stripes To paint or not to paint?

This is a radio not an auto.
This is a radio not a weapon.
Everyone paints auto's and we think it OK.

Repaint or over clean an antique and the value goes in the trash.

Time is money even 10 hours to pull down, strip, clean, paint, detail the engraving, not mess up the back side or re stencil the back side, then reassemble the panel and your in over $300.00 just for labor. How do you ever recover the cost? Do one your self for your self for the rest of your life OK. Its your hobby and it's just your time. I favor a good wash and clear wax to keep the oxide shinny. And easy to wipe the finger prints off.

Repaint on the meters knobs and dial bezel is a mixed bag.
Are you all in or all out?
I'm not sure I would take the strip off.
You are denying your receivers unique history.

Just the feelings of an old man who spent a part of his youth maintaining these receivers buy the hundreds in service.

Date: Mon, 11 Nov 2013 19:34:53 +0100
From: djelatnik slavonija <djelatnik.slavonija@gmail.com>
Subject: Re: [R-390] Cleaning blue stripes To paint or not to paint?

I will clean from the dust and grease, then reoil and repair minor things. And straight the corners of my front plate that was bent. Some drops of two component epoxy resin on back terminal strips that is broken. And tune up...This will be all...Masterpiece with marks of the past..

Date: Tue, 12 Nov 2013 02:16:55 +0000 (GMT)
From: chuck.rippel@cox.net
Subject: [R-390] Screws for panel

The original supplier is here in Norfolk. They have all of the original hardware used to fasten on the front panel including the concave star washers that fit around the screws in the front panel and thread into the IF deck platform and AF deck divider. Those, as are all the front panel screws, are originally stainless steel and may be out of stock by now but they do have nickel plated star washers.

These people even have the screws and washers for the builders tag and the meters. What they do not have are the special nuts which hold the wiring harness clamps against the front panel. The screws and lock washers, yes. The small nuts with the larger thread are gone.

They are good quality stainless and are not cheap. I buy a box (usually 100 count) of each individual type when re-stocking and the bill is typically $120-$140.

If anyone wants a full "kit" of all the front panel staniless, drop me a note odd liat and we'll one together for you. I'm out of the 8 screws that hold the front panel on and need an excuse to give them a visit to pick them and probably a few others up.

I replace every front panel screw and lock washer. Its amazing how quickly they get used up.

Date: Mon, 11 Nov 2013 18:44:28 -0800
From: Gordon <gordon@n6wk.com>
Subject: Re: [R-390] Screws for panel

Are you referring to the "Small Pattern" nuts for the harness clamps? McMaster Carr has those in Stainless and they are pretty inexpensive. I just purchased a couple hundred to have around here.

Date: Thu, 21 Nov 2013 22:07:59 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: Re: [R-390] Screws for panel

I bought 100 each of the 6-32 x 1/2, 8-32 x 5/8 and 8 tooth external tooth washers and sent 9A5BDP a set plus spares gratis. If anyone wants a set of 8, I'd be glad to send them for about $3 including postage, I have about 75 I don't need, that's only 8 orders. But I'd like to get a list together, I don't want to make 8 trips to the PO for each order. I'll give it about 2 weeks and see what happens, just send me your call or address and I'll make a list. First come first serve and after 2 weeks I'll expect payment and then send it all out. This is going to be a big money maker for me, I'll be able to retire again.

http://i251.photobucket.com/albums/gg287/DogTi/R390A/frontpanelscrewsnew1_zps81b29f56.jpg

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Date: Fri, 22 Nov 2013 09:23:05 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: Re: [R-390] Screws for panel

Boy that filled up quick. Here are the ones that got in first and it adds up to 8 sets because some wanted 2 sets and I thought that was reasonable.
KB3JFS (2)

KJ4CC

K1LKY
W7JPG (2)

DH2FA

WA2DVU

I'll get the packages ready and since it's not much I'll just send them out all at once. You can either send me a check (address in qrz is good) or paypal to commandos69(at)hughes(dot)net. Heinz, es kostete mich nur $4 f?r das Paket, um Croiatia so bin ich davon aus, es k?nnen die gleichen sein, um Deutschland.

Date: Fri, 22 Nov 2013 09:32:59 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: Re: [R-390] Screws for panel

Oh, you double set people maybe just add another dollar, making it $4. Boy I'm making a killing on this. I never realized sales could be so profitable or fast.

Date: Fri, 22 Nov 2013 20:47:38 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: Re: [R-390] Screws for Panel

Well I bought 100 of each for $17 delivered (the screws were only $5 and $6/100) so I think people would figure it out right away. But yeah, if you sold them for something less than buying 100 screws it may work, but I think I've probably already filled up most of the loose screws (pun intended)? Besides I still need to finish off the filters I started last spring. I got side tracked with my Nortel GPS, making 1575 MHz QFH antennas and the X-Ref for the TS-2000 (works great). I do that a lot, but now I'm 70 so I have an excuse, but I can still kick start the '69 Norton Commando 750 'S' plus help the wifey in the garden hauling mulch bags around (with a hand truck of course since the herniated disk).

Date: Sat, 23 Nov 2013 15:30:38 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: [R-390] Panel Screws again

There have been a few extra people that didn't get in on the 8 front panel screw and washer set. I could order another 100, but I'll need another 12 sets to sell. Plus I'll have to charge $5/set or about $1.50 more per extra set unless it gets large enough for a package because the postage will go way up if I have to send more than about 2 sets. Either respond on the list or by email to me and I'll make another list, but it will take me another week at least to get another set of 100 screws.

Just send me a simple message how many sets you want and your call or

address if it's not right in qrz, I'll give it another week and see if we have enough for another group buy.

With these small orders paypal also takes about 12%. I need to get into the business of playing with other people's money and skimming off the top too.

Date: Sat, 23 Nov 2013 15:09:16 -0600
From: Dave Merrill <r390a.urr@gmail.com>
Subject: Re: [R-390] Panel Screws again

It is possible to send funds via PayPal without fees to the sender or recipient as long as the funds are already on deposit in the sender's account (ie no credit card): Send Money-> (button) I'm sending money to family or friends

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Date: Sun, 24 Nov 2013 10:48:31 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: [R-390] Panel Screws

OK, here's the deal. I can buy 250 of each and drive the price per set down to $0.71. Postage and mailers will be the same, that's always the killer. If anyone knows of a cheaper way to mail these things, I'm open for suggestions. I've been using the padded envelopes, and they cost about $1.20 each and they can go as a flat, but that's pushing it. I'm sure the screws wouldn't stay in an envelope, but if I could find a cardboard envelope, it may be able to go as a letter even cheaper, but since I worked in the PO for a while, I know you can't send this kind of letter through the mail processing machines, it tears them up and the screws will end up all over inside the machines. If I could send them as a letter, it would push the price down probably by .50 or so, even if they're heavy.

The other thing is, the 3 bottom 6-32 flat head screws are for mounting the wiring harness on the back of the front panel. I've been looking in the book, but can't find what the specs are for them. I pulled one out of mine but it's only got a 6-32 x 7/16 with a small pattern nut. Can someone tell me what goes on these things? I would think there is probably a flat, spring lock and then the small pattern nut. Is there an external tooth lock under the flat head for those 3, or just the 5 for the chassis screws? Then I could also supply those parts and I bet 9A5BDP needs the nuts and washers from the description he gave.
I think there's enough guys so far for an order of 250, and then I could keep supplying guys for quite a while, it's only about $30 for the 250 screws/washers/nuts. That's the other thing, the 6-32 screws are 7/16, not 1/2, meh. I hope no one has been offended by that.

Date: Mon, 25 Nov 2013 12:20:00 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Panel Screws for harness

The wire harness screws had a flat washer and a locking nut. The locking was a plastic insert in the top of the nut. Much like the locking device in the captive nuts where the front panel goes to the frame. The flat washer was a "fender washer" small hole for 6x32 and larger diameter to cover the hole in the wire harness clamp. Things got dropped on the floor and sweep up in the trash. You just used what ever you could find in the ME9 kit. As mail cost is going to exceed parts cost, you could include a couple five of the 6x32 locking nuts and flat washers. I could see you doing a whole $10.00 Kit

10 x32
6x32
star washers.
some 6x32 straight heads for the terminal boards
10x32 green screw sizes.
some 4x40 spline or Allen head for the clamps.
4x40 nuts for the clamp screws
some spline screws for the knobs.
some little screws for the bezel.
some little screws for the meters.
add in a micro scope slide for the dial glass
four little screws for the ID plate.

Put all the parts in a padded mailer

Post the package on your web site. You will become the go to place for every one who needs some thing in the kit. $10.00 solves it all. You will never get rich but R390 owners around the world will love you.

Date: Mon, 25 Nov 2013 16:25:10 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: [R-390] Front Panel Screws

Well, I've had someone tell me that the screws for the harness used a large flat and nylock. I looked at mine, and granted both the rxs I have are missing a lot of the hardware there. However, looking closely at the aluminum clamp, it appears that the one I have access to may have just had a spring lock washer and small pattern nut from looking at the scaring on the clamp, the spring lock just fits in the scarred area. A large flat would crush the bent section at the end and a 5/16 o.d. #6 flat just fits beneath the curved part. I'm not sure I've ever seen a nylock in an R390A, but I come late to them, I never worked on them except the ones I bought later in

life. I'm sure the repair guys just put something on them to hold it together and fill the hole if they had to work in that area. Not that I'm adverse to nylocks but they make working on them a bit harder, you have to deal with both ends and the way we use these rxs I doubt if a nylock would be of much use.

Feel like I'm getting a bit anal here. So I think I'll just assume that a split spring lock and small pattern 6-32 nut will suffice and no external tooth on the panel front because both rxs I have don't look scarred up from an external tooth washer in the 3 harness mounting screw holes. Anyhow here's a pic of the clamp with a spring lock, 5/16 o.d. #6 flat and the small pattern nut.
http://i251.photobucket.com/albums/gg287/DogTi/R390A/frontpanelharnessscrews_zpsb6ec2d38.jpg

I've got about another 7 or 8 people that want sets at this point, so if anyone wants nuts, flats and split spring washers, let me know. It'll take probably the rest of the week to get the stuff together. I'm just sticking with the 8 #8 screws, the 8 #6 screws, 3 spring locks and nuts for now. It was suggested I make a kit with a whole bunch of items, but that's getting out of control for me. It's not like I need to do this, but since I needed some hardware anyhow I thought I'd help others out. I'm sure a lot of those #8 and 6 front panel screws are pretty chewed up or lost at this point, like mine.

I'll add up the price of everything and let you know, but last time it really came to nearly $5, but if I can knock down the hardware price.....

Date: Mon, 25 Nov 2013 16:45:18 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Front Panel Screws

I understand you thoughts on the nylocks.
They are and were a pain in the ass.
The washer in your photo looks like the right size.
Nothing wrong with a lock washer and flat nut it gets the job done.

I see the bolt is a self taping tapper. Nothing wrong with that either. It gets the job done also. It may help get the job done better as you can get the nut started easier.

Date: Thu, 28 Nov 2013 11:58:03 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: [R-390] Bristol Wrench

What is the standard size L wrench for the knobs. S-096-6? Which would

make the bit size B-096-6. 0.096" max dia.? I'd like to get a few of them. Are there any other Bristow sized screw heads in the R390-A? I do have a complete L set, but would rather have a screwdriver type.

Date: Thu, 28 Nov 2013 11:21:57 -0600
From: Bill Breeden <breedenwb@cableone.net>
Subject: Re: [R-390] R-390 Digest, Vol 115, Issue 18

Tecra Tools sells individual Xcelite blades and handles. The Xcelite 99-66 is the 6 flute .096" blade that I use on my R-390A. You can see these if you scroll down to the bottom of the page at the following link:
http://www.tecratools.com/pages/service/blades.html
I have a set of these in my tool chest in the garage, but keep an extra handle with a .096 blade in my radio room for the R-390A..

Date: Thu, 28 Nov 2013 22:55:12 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Bristol Wrench

If your receiver is original it only had 1 size Bristol knob screws, slug screws and clamp screws. Or bolts. Other things got installed over the years that are not standard. I once found some long handle drivers that were meant to hold Allen key stock I used a grinder to cut a Bristol L key off to get a length of straight stock and mounted it into the driver. My driver was about 8: long. But the grip was not overly large in diameter. It makes a nice Bristol wrench for the receivers.

Date: Fri, 29 Nov 2013 19:38:56 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: [R-390] Hardware

I've got the new hardware now, 6-32x7/16, 8-32x5/8, #6 small pattern nuts, #6 5/16 o.d. flats, #6 split spring lock washers, and #6 8 external tooth locks. All in 316, 304 or 18-8 stainless.
http://i251.photobucket.com/albums/gg287/DogTi/R390A/hwset_zpsc8b95ca3.jpg

Here's the list of people that have requested sets of 8 of both screws, only 5 external tooth washers are needed, 3 nuts, 3 flats and 3 spring locks will be the new set supplied unless there are special requests or only machine screws are requested, but that's not going to make any difference in price, so you might as well take the complete set. <snip>

Here's the price at cost.
3 - #6 flats .02476
8 - 6-32x7/16 .028

8 - 8-32x 5/8 .02812
3 - 6-32 nut, small pattern (1/4" AF) .02528
3 - #6 split spring locks .01616
5 - #6 external tooth locks .019
So a complete set as described above is $0.742, so lets make it $1.

Shipping will be determined tomorrow. The Postmaster at the Hume PO the last time didn't know how to calculate shipping or packaging, I'll go to another PO to figure that out in Orlean, VA where there's a career Postmaster. I'm thinking I can get it sent for less than $1 (USA) from talking to her the other day if we're lucky. $2 for that set would be nice, but don't count on it yet, shipping will determine the final price. Then paypal takes 12% or more so maybe it should still be $4.

I may buy some #4 hardware in the future, but I really don't need any, but I always seem to be missing little parts here and there and lots of other equipment I have uses #4 pan head machine screws and associated hardware.

It appears that I have sent a set to zip 01337 that has not been paid for yet. I really don't want to publish names or I've made some mistake or the check is in the mail?

Date: Mon, 2 Dec 2013 12:40:01 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: [R-390] Hardware

It's going to be a few more days, I had to order some mailers. Anyhow, I'm going to change the set to
8 - 8-32x5/8 FH Phillips
8 - 6-32x7/16FH Phillips
8 - #6 5/16" o.d. flat
8 - #6 external tooth lock washer
8 - #6 split spring lock washer
8 - 6-32 small pattern (1/4" AF) nut
all stainless of one variety or another, 18-8, 304, 316.

I think that will be a good set without getting into all the #4 sizes and it's more than is needed for the external front panel stuff. I think I can keep this still at $3 for a single set and $5 for a double set. Don't ask for more, the weight and size gets into package postage. But I still need to take the packages to the PO to get a final price.

Date: Tue, 3 Dec 2013 22:08:23 +1100
From: Pete Williams <jupete@internode.on.net>
Subject: [R-390] Wiring diagrams....

Subject: R-390A /URR and R-390 wiring diagrams... AVAILABLE G'day List. I have unearthed point to point wiring diagrams - NOT SCHEMATICS) of the following modules. Officially called 'wiring assembly'
R-390A----, Crystal oscillator module IF module , and RFunit.

R-390: RF sub chassis wiring assy Crystal oscillator wiring assy, AF subchassis wiring ass, IF subchassis wiring assy and Cal osc assy

These came from a member some years back and are in A4/A3 format.. They may be useful to those wanting to know what wire went where on some questionable module , They are probably what were issued to the online assembly people. I could do copies for a small cost and mail over. My scanning facilities not too bright and I lost the original source after several HD failures. They are probably still around in someone's doc. files .

Date: Wed, 4 Dec 2013 12:04:48 +1100
From: Pete Williams <jupete@internode.on.net>
Subject: [R-390] REF ...P to P wiring diagrams R-390A/URR and R-390

Thanks all for the enquiries... Details. there will be total of 9 diagrams for R-390 and 4 for R-390A/URR. All will be sized A3 after copying.

COSTING .... Total cost INCLUDING airmail document postage to anywhere $20 for the set of 9 ... I'd appreciate that picking and choosing is not an option.----- take the lot and what you don't need give to a similar mind to a friend.for Xmas ! Suggest Paypal to my email address with YOUR address will get my attention.

Date: Mon, 23 Dec 2013 16:15:12 -0800
From: Dan Merz <mdmerz@frontier.com>
Subject: [R-390] R390 tag

Hi, has anyone ever posted examples of original R390 tags (non-a)? I see what I think is a replica tag being sold on eplace with s/n 5002 and also on a set being sold with s/n 4942. Both tags look similar but are quite different than the one on my set with much lower s/n 2064, which I believe is an original. The most striking difference is that on mine the bottom two lines of text are the same width, and the font size for the "COLLINS RADIO COMPANY" is smaller than that for "500 KC TO 32 MC", which are the bottom two lines. There is a similar difference in font size for the two tags online but the lower line is wider than the line above it. The contract number on mine is 14214-PH-51-93, same as that on the two online examples. There are other differences for the top two lines regarding width of lines of text. Dan
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Date: Mon, 23 Dec 2013 20:11:49 -0800
From: Dan Merz <mdmerz@frontier.com>
Subject: Re: [R-390] R390 tag

I did find a pic of what my r390 tag looks like,
http://www.motorhomesusa.com/k1kq_com/restoration_r390a.html

which is KIKQ restored set, so I assume this and mine are original. Dan
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Date: Tue, 24 Dec 2013 11:17:58 -0500
From: <w4thq@cox.net>
Subject: [R-390] R-390 serial numbers question

Where are serial numbers stamped on R-390 receivers? Are rubber stamped numbers on the panel under the metal tag location? Does the chassis have stamped numbers like the modules? I am awaiting delivery of an R-390 (non A) and it is the first one I will have. Looking forward to trying it out soon. I have had Collins S-line for years and always wanted the R-390's to round out my boat anchor experience.

Date: Tue, 24 Dec 2013 10:30:52 -0600
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] R-390 serial numbers question

Serial numbers are stamped on the tag affixed to the front panel. There are also serial numbers ink stamped on each module and they probably won't match. They may even be a mix of Motorola and Collins modules. None of this is unusual for a modular military radio.

Date: Mon, 13 Jan 2014 02:47:56 -0800 (PST)
From: Chris Farley <kc9ieq@yahoo.com>
Subject: [R-390] R-390a tools

Turns out the R-390 yahoo group has been abandoned- Luckily one of your fellow list members alerted me about this list.? Unfortunately there doesn't appear to be a very user friendly way of searching the archives, at least that I've found so far.?

Anyway, I am in the process of reproducing the always missing spline wrench, from the back of the R-390a. Ultimately a decent quantity will be available, I will post when they are in my hands and know what the end cost will be. I have an original wrench for a sample, but not the companion screwdriver.

That being said: I am looking for a few Signal Corp EDMICS drawings?. (Engineering Data Management Informationand Control System).

Apparently a CD was made available sometime in the past, but I have not yet found anyone who has a copy, nor have I found any of the files online. They are as follows:

- Bristol Wrench:
Wrench Assy, SM-B-249114
Wrench, SM-B-249197 (the spline part)
Handle, SM-B-249109

- Phillips Screwdriver:

SM-B-249198?

There is a currently produced equivalent for what is reportedly an acceptable replacement for the screwdriver, but it measures about 1" shorter than the line drawing shown in the Depot service manual appears.? Just trying to nail this bugger down once and for all.

Likewise, if someone has solid information for the non-A R-390 and R-388 tools, it would certainly be helpful for possible production in the future.?

Date: Mon, 13 Jan 2014 09:05:47 -0500
From: Glenn Little <glennmaillist@bellsouth.net>
Subject: [R-390] Value

What is a R-390A worth that is clean, working and with all covers? There is one available to me, but, I have to drive a considerable distance to pick it up. The front panel is in overall good condition. He also has a set of tubes, what would they be worth if the ballast is not included? Any advice appreciated.

Date: Mon, 13 Jan 2014 10:29:51 -0500
From: "quartz55" <quartz55@hughes.net>
Subject: [R-390] Tools

I have a Vaco P23 that has an 8" shaft. It will reach down into the RF deck just fine. Appears to have a hardened tip too. Have no clue where I got it. Sears has a Craftsman 8" #2 for $11. It's easy enough to buy Bristo straight bits and put them in an Allen bit holder. Of course none of this looks like the originals but it's perfectly functional. That long Phillips is real nice, I'd be lost without it.

Date: Mon, 13 Jan 2014 10:46:24 -0500
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] Value

>What is a R-390A worth that is clean, working and with all covers?

You will probably receive a number of very different replies. Also, note that you have asked two different questions -- *worth* and *value*. If you are asking about intrinsic *worth*, IMO the worth of an R390A as you describe is $200, or maybe $250, based on what it is and what it will do. However, they are generally overvalued by the market these days, so the market price is probably $350-$500.

You can still find them for $100-$300 if you wait patiently and don't confine your search to venues where prices tend to rise to the market value (i.e., avoid popular auction sites). Hamfests and estate sales are good places to look for prices closer to worth than value. I am long out of the boatanchor buying game, but I have come across at least a dozen clean R390s and R390As in the past couple of years at hamfests and estate sales that I could have had for less than $100 each.

One I had seen at 4 or 5 hamfests marked $550. When I inquired, the seller said he hadn't even had any inquiries the whole season and immediately offered it to me for $125. I'm pretty sure if I had waved $75 cash at him, it would have been mine. Or, if he had marked it down to $200, he probably could have gotten $150 for it. But by marking it $550, he scared everybody away from even asking.

At estate sales, the agent generally takes bids on everything not sold by the end of the day and the item goes to the highest bidder. Anything left after that goes to the dump. I have seen more than a few R390s and R390As fail to attract any bids at the end of the day, so they went to the dump along with the rest of the items that didn't sell. Those would have sold for $1 if anybody had been willing to bid that much.

Patience, knowing where to look, and a little effort (attending estate sales and hamfests) can save you hundreds of dollars when it comes to big, heavy items for which there is a very limited market.

Date: Tue, 14 Jan 2014 03:05:14 -0500
From: Roy Morgan <k1lky68@gmail.com>
Subject: Re: [R-390] Tools

It appears that Vaco tools can be had at amazon, granger and on ebay.

> Sears has a Craftsman 8" #2 for $11.

Could not find an 8? no.2 phillips on the sears.com website so I gave up.

> It's easy enough to buy Bristo straight bits and put them in an Allen bit

holder.

The military manuals (at least used to) use the term “bristo wrench”. The original American manufacturer is the Bristol Wrench Company

Max Gain Systems has a variety of wrenches from the Bristol Wrench Company

From my notes file:

Possible sources for the Bristol wrenches are: Jensen Tools, Techni-Tool, McMaster-Carr, MSC Hardware, Grainger and probably any commercial hardware/tool supplier. (If you want to pay more than anyone ever has for spline wrenches, contact Snap-On Tools.)

Bristol Wrench Company (the originator of the tools):
http://www.bristolwrench.com/
Their table on spline wrenches (also found at Max-Gain Systems in partial form)
http://www.bristolwrench.com/spline.pdf
Bristol Wrench Co.
P.O. Box 4317
Salem, OR 97302

Phone: 503-371-9655
Fax: 503-371-9662

Max Gain Systems is at:
http://www.mgs4u.com
http://www.mgs4u.com/Bristol-spline-L-keys.htm

To avoid confusion, the “Bristol Tool Company” seems to make bicycle racks and not Bristol spline wrenches.

Date: Wed, 15 Jan 2014 18:00:58 -0500
From: "Todd, KA1KAQ" <ka1kaq@gmail.com>
Subject: Re: [R-390] Tools

According to the original patent dug up by the astute and knowledgeable Mike Hanz of AAFRadio fame, the original wrench was indeed a Bristo. Designed by Dwight Goodwin of the Goodwin Hollow Set Screw Company in Waterbury CT.

http://www.datamp.org/patents/displayPatent.php?id=42304&pn=1,075,710

The confusion comes in due to the wrenches being manufactured by the Bristol company, also of Waterbury. I think they bought the rights to the design.

Date: Wed, 15 Jan 2014 18:51:59 -0500
From: Roy Morgan <k1lky68@gmail.com>
Subject: Re: [R-390] Tools

I was no doubt in error. I can't say what the earliest military equipment I've seen is, but it may be an LM frequency meter. It may well that it, and earlier militarily things, have Bristo set screws and perhaps tools in them.

> According to the original patent.....

I'm glad to see this and have added it to my notes file on the topic.

> The confusion comes in.....

There is a chance here for a bit more confusion. From 1922 Through 1925, the Bristol Company of Waterbury CT made radios and radio speakers.
http://www.radiomuseum.org/dsp_hersteller_detail.cfm?company_id=2079
They also made recording instruments: the kind which had a rotating paper dial, marking pen, and clock mechanism to record such values as pressure, temperature and vacuum. These were apparently used throughout the world.
https://archive.org/details/BristolsRecordingInstrumentsManufacturedByTheBristolCompanyWaterbury

(Many clock and watch companies were located in the area - the Union Station clock tower still stands and houses a Seth Thomas clock.)
It appears that the Bristol Company factory building still stands on Bristol Avenue, though derelict. See a picture at:
https://foursquare.com/v/bristol-company/50ecc634183f75b39ebad374

Further, the Wikipedia entry
http://en.wikipedia.org/wiki/Waterbury,_Connecticut

includes this tidbit: "One of the first full-length sound motion pictures was made in the 1920s at the studios of the Bristol Co. at Platts Mills by Professor William Henry Bristol, who experimented for years with sound pictures. I can't find any online information that links the Bristol Company of Waterbury with spline wrenches, but it may well be out there.

The Bristol Wrench Company makes them now:
http://www.bristolwrench.com/

Bristol Wrench Co., Inc.
PO Box 4317
Salem OR 97302 USA

i

nfo@bristolwrench.com

Their web page says:
"The originators of the superior Bristol multiple spline drive wrenches for socket screws offer a wide range of spline wrench sizes and styles. Quality hex wrenches are also manufactured, with a focus on custom hex keys and bits. All products are Made in USA.

and:
"Decades ago, Bristol engineers invented the Bristol Spline Drive System for use in electro-mechanical instruments. They required screws and wrenches that could stand up to industrial environments, vibrations, and frequent removal and resetting. The effectiveness of their invention, for that original application and thousands more since, has never been surpassed. Bristol wrenches have been in continuous production in the United States since their original introduction.

So, there is still room for wonder. But the good news is that you can still get gen you wine Uh Murrican made spline wrenches of verily good quality.

My notes file has this line:

(If you want to pay more than anyone else has for spline wrenches, contact Snap-On Tools.) Their .096" L-wrench lists for $6.55 each, and their set, "Set, Wrench, L-Shape, Multi-Spline (15 pcs.) (.033" to .454") lists for $152.45. See: http://store.snapon.com

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Date: Wed, 15 Jan 2014 22:53:09 -0500
From: "Todd, KA1KAQ" <ka1kaq@gmail.com>
Subject: Re: [R-390] Tools

You're actually right, Roy. I was just adding additional info. The Bristol Company produced and at some point bought the Bristo design. For years there have been a number of collectors and other armchair experts who have insisted that Bristo was nothing more than a typo in an early Collins manual that got carried forward. Of course, there are also people out there who truly believe that there's such a thing as a radio with nomenclature of R-390 non-A, too. Some myths die hard. (o: Carry on, sir. Just don't eat those panel meters. Or stop to pick up loose change in a busy intersection.

Date: Tue, 21 Jan 2014 13:29:57 -0800
From: Rick Popovich <RickP@uei.csus.edu>

Subject: [R-390] R-391 Set-up

Time to tap the collective's knowledge and experience again - I am in the process of setting up my R-391 and PP-629 and need to know what the other connector marked "Auto Tune" on the back panel of the R-391 is for. Am I missing another piece of the pie ? Also, where is the best spot for me to find a copy of the manual for this receiver ? All information on this set-up is welcome.

Date: Tue, 21 Jan 2014 16:32:53 -0600
From: "Phil Mills" <pmills7@comcast.net>
Subject: Re: [R-390] R-391 Set-up

It has been quite a few years since I had my one and only R-391, but my guess is that the connector marked "auto tune" is for the 28 vdc necessary for the autotune motors. It should be easy to trace the wiring.

Date: Tue, 21 Jan 2014 19:45:56 -0500
From: Roy Morgan <k1lky68@gmail.com>
Subject: Re: [R-390] R-391 Set-up

Not exactly, as I remember. (I have not checked the manuals). As I remember, the 28 volt supply is brought in from the main AC supply connector, along with the 115 volt line current. The other multiple pin connector is used to REMOTELY select any of the pre-set frequencies. Without checking the manuals, I don't know how the system is set up to not respond to the local channel switch.

Date: Tue, 21 Jan 2014 20:11:18 -0500
From: "Paul" <w2ec@bmjsports.com>
Subject: Re: [R-390] R-391 Set-up

Yup, you're missing a couple pieces. The Auto Tune connector on the back panel is for the remote channel selection switch cable and the separate remote channel switch. I don't recall the nomenclature but they are just a cable and a remote control box with a rotary channel selection switch similar to what is on the front panel, which allows remote operation of the channel selection. That is the purpose of the "Remote-Local Autotune" switch on the R391 panel, just below the left hand side of the frequency bezel. You use that to select between the panel mounted "local" switch and the remotely mounted switch for channel control.

I have a couple versions of the R-391 manual in .pdf format, but they are quite huge, even when zipped and I couldn't email them as complete documents, too big for an email attachment with my ISP. I could probably split them up into four or five sections so I could send them individually

and you could either merge them together to make a complete manual yourself, or just view them as separate files to see the entire document.

Let me know if you would like that, or if you are after a paper manual. I won't let go of my original manuals so you have to find a paper manual elsewhere. If you didn't want an original, just print off the .pdf file, a little over 300 pages.

Date: Tue, 21 Jan 2014 17:16:49 -0800
From: Rick Popovich <RickP@uei.csus.edu>
Subject: Re: [R-390] R-391 Set-up

Thanks to all who have responded, the link to the manual is exactly what I needed, I have already started getting familiar with the various connections and operating steps/ procedures. Hopefully in a few more days I can give it a go and see how the auto-tune works - if it works. I will be taking my time on this step to avoid any mistakes. Best regards and many thanks!

Date: Tue, 21 Jan 2014 21:36:48 -0500
From: Nick England <navy.radio@gmail.com>
Subject: Re: [R-390] R-391 Set-up

The R-391 manual is available at
http://bama.edebris.com/manuals/military/r391/

The AN/FRR-33 is the full setup - Its manual has info on the dial-up control box, etc.
Radio Receiving Set, AN/FRR-33
Reference: TM 11-871
NSN: 5815-00 503-1501
Components: CU-286/FRR-33 Antenna Coupler, CY-1119/U Electrical Equipment Cabinet, PP-629/URR Power Supply, 2 ea R-391/URR Radio Receivers, C-975/URR Receiver Control, C-973/FRR-33 Remote Switching Control, C-974/FRR-33 Selector Control
Weight: 800 lbs
Size: 20-13/16 x 21-27/32 x 76
Mode: A1, A2, A3, F1
Frequency Range: 0.5-32 MHz in 32 Bands
Power Input: 115/230 VAC 48-62 Hz 1475 W
Part of: FRR-33 Description: Radio Receiving Set AN/FRR-33 is a dual-diversity equipment used for minimizing the effects of fading in radioteletype signals. It is operated in conjunction with Radioteletype Terminal Equipment AN/FGC-1 in fixed plant military communication applications at higher headquarters. This equipment includes two identical radio receivers, an antenna coupler, a selector control, and a power supply

for the receiver autotunes, all of which are rack-mounted in a steel cabinet. A complete diversity antenna system, providing two rhombic antennas for each set, is required but not supplied with this equipment. As many as three AN/FRR-33 systems can be controlled by the remote switching control, Manufacturer: Collins Radio Co. Cost: $9087.23

Date: Tue, 21 Jan 2014 20:58:43 -0600
From: Raymond Cote <bluegrassdakine@hotmail.com>
Subject: Re: [R-390] R-391 Set-up

Wow Nick. Thanks a bunch. Great info.

Date: Wed, 22 Jan 2014 08:36:06 -0500
From: "Paul" <w2ec@bmjsports.com>
Subject: Re: [R-390] R-391 Set-up

Glad you found the manual you need, I forgot that BAMA would probably have a copy. One thing -- under no circumstances do you want to activate the "autotune" operation unless you have both the MC and KC knobs tightened down using the locknut in the center of each knob. If they are not locked down and "autotune" is activated there is a good chance the auto operation gear train will get out of synch and then you will have to become a real expert in how to realign the gear train of the R391!

Check out my web page www.w2ec.com/W2EC.html for my station and scroll down to the R391 entry. There is a link to video of my R391 (and also a link to my ATC/ART-13) in operation but the links on my webpage are broke. Instead go to www.w2ec.com/R931.wmv and www.w2ec.com/ART13.wmv to see those radios in "autotune" operation. Good luck with your radio

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Date: Wed, 22 Jan 2014 09:09:01 -0500
From: "Lester Veenstra" <lester@veenstras.com>
Subject: Re: [R-390] R-391 Set-up

Remote control similar to front panel channel select switch

Date: Thu, 13 Feb 2014 12:16:41 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] BFO Question on Newly Acquired R-390A

Will one you of you please remind Chuck and I of the size number for the spline wrench.

Chuck, I see into your future and you are about to acquire a spline wrench. All the clamps and knobs on the R390 and R390A when assembled with

the proper bolts and set screws have a Bristol wrench AKA spline wrench "drive bit recess" <snip> Common practice is to pick up a set of spline Bristol wrenches on line as a set of Allen wrenches. Find the size that fits. Grind the hook end off and square it up on the grinder. Insert the length of bit into a long handle and make your self a spline wrench tool for your R390. Splines are also available in nice long handle screw driver like hand tools. You can buy just the one you need. You will not find Bristol or spline bits at the Home Depot. Lowes or Ace stores. A good tool shop may have a set.<snip>

Date: Thu, 13 Feb 2014 14:31:27 -0800
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] FW: BFO Question on Newly Acquired R-390A

Do yourself a favor and buy the set of Bristol wrenches made by Xcelite. (Xcelite 99PS60 Series 99 Compact Bristol Multiple-Spline Socket Type Screwdriver Set: 9 blades, extension, and handle- Amazon $44 bux!)

Long time ago I bought the Max-Gain set of "standard L keys" before I met up with the nasty, tight, corroded, hard to reach Bristol set screws. I found that for most of my needs, I couldn't get the L keys where I wanted them (too small for clumsy fingers), I couldn't apply the amount of torque needed to loosen/tighten the set screw (too difficult and/or tiny to grip for the "twist" needed), or the shaft was too short to be free of obstructions.

With the Xcelite set, you can pretty well eliminate all these issues. Plus, if you need a new or special Bristol (or allen, or Phillips or...) "blade", you just buy the blade you need cause you already have the handle.

To be fair, Max-Gain now carries handles for Bristol spline blades, but the available lengths do not look to be as long as Xcelite blades based on what I could find on the M-G site; and the handles...well, that's probably a push but Xcelite does have that extension for when you need a really long reach to a very stubborn set screw. ;-)

Date: Thu, 13 Feb 2014 17:46:02 -0500 (EST)
From: millerke6f@aol.com
Subject: Re: [R-390] FW: BFO Question on Newly Acquired R-390A

Another nice feature of the Xcelite unit is that when the end gets booogered up, you can just file off a a mm or two and you're back in business. I've had a set for years and would not be without them. Worth every buck....

Date: Fri, 14 Feb 2014 10:25:57 -0600
From: Ed Rafferty <dktedr@gmail.com>
Subject: Re: [R-390] FW: BFO Question on Newly Acquired R-390A

I concur with the Xcelite tools... indespensible; and the extension that comes included with the 11 piece set is worth it. For Stubborn ones, breaking free the bristols will also go a lot easier with the twist if you simply dip the tip of the driver in Kroil so the lubricant makes its way into the fastener threads... a few drops is all it takes. I usually spray a little bit into the cap and dip the tip in it.

Date: Fri, 14 Feb 2014 13:51:41 -0800 (PST)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] R-390A Info

Another somewhat obscure source gem of information is the Hollow State News re-posts on line.? Most subjects covered were articles on the R-390A, R-392 (including a SS IC audio output circuit) and SP 600 receivers. Many of the posts are still relevant today.

Articles range from short posts to extensive and enjoyable tutorials by Dallas Lankford.

From its origins the first Y2K manual was produced.

Considering that most of the issues were typewritten and there was only snail mail available it was a truly magnificent technological accomplishment.

It's a good read from a historical point of view just to see how far we've come.

Date: Fri, 14 Feb 2014 19:57:11 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Size of Bristol wrench is .096" 6 fluted spline wrench.

Just to confirm, yes it is a .096" 6 fluted spline wrench. Thank you for the size information. I'll try and remember it for a while again. As some of the Fellows posted you can get just the one you need if you go for the better tools. I am looking forward to Chris getting your reproductions completed. Back in 68 - 75 the tools were already missing. If you were lucky you had one passed to you as some one left. They were gone from the school house, Phu Bia, every site I visited in Korea and Torii Station in Okinawa. The Marines and Navy guys said the tools did not exist. Guys I knew from Germany, Turkey, Japan, Thailand, Shemya, Taipei and Africa also never seen the spline tools or Philips screw drivers. We never seen them in the black markets either. All the other tools were in the market any day you wanted one. By the time I dodged the draft by enlisting no one knew where they had gone to. Some think they were never actually supplied with the

receivers. We mostly had one each in our tool kit. We never seen a spares kit either.

Date: Fri, 14 Feb 2014 23:48:58 -0500
From: N4BE_Jim <N4BE_Jim@Yahoo.com>
Subject: [R-390] SW R-390a Second Pass

I put my first 390a, a SW oldie, through its first refurb about 8 years ago. I thought it was a hot Rx then. After sitting more or less idle since then, it became once more deaf, compared to my 2nd radio, a Collins mfg 390a. So I launched into it again. Discoveries: I thought I had done a fairly comprehensive recap and resistor replacement in the SW back then. But after further investigation with a capacitance meter, I now suspect just about every mica box and ceramic disc cap are out of tolerance or otherwise leaky. I was having to screw in too much inductance on the mixer and RF slugs. So I am replacing all caps across IF and RF tuned circuits. Already about 50% done, the performance is much better. I will also be going inside the cans that have caps in them. Likewise on the carbon comp resistors, drifted up out of tolerance. Replaced every bloody resistor with new carbon films. Almost like a new radio fresh off the assembly line now. Lesson learned: I am over the idea of wanting an unmodified museum piece. Shotgun approach works.

Date: Sat, 15 Feb 2014 19:16:35 -0500 (EST)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] SW R-390a Second Pass

I agree,
Are you looking at it?
Or trying to listen to it?

We only need one for the Smithsonian.
Lets get on with fixing the rest of them.
New caps, resistors and things under the deck are plain out of sight.

Date: Sun, 16 Feb 2014 02:04:29 +0000 (GMT)
From: chuck.rippel@cox.net
Subject: [R-390] Complete Re-Cap and Change all resistors ?

Wow, you must have one that has seen a LOT of use. I've never seen one in which ALL the resistors had drifted out of tolerance. If they change 10%, I change the resistors. I worry more about DC leakage through the caps than a change in value. That said, there are a number I change either because they have failed multiple times over the radios I've done or, I want to take advantage of a different media type to either clean up the audio a bit or to increase audio reciovery.

Be REAL CAREFUL to replicate lead dress in the RF deck !

Date: Sun, 16 Feb 2014 13:02:55 +1000
From: Ken Harpur <igloo99nz@yahoo.co.nz>
Subject: Re: [R-390] SW R-390a Second Pass

I too have a SW and found exactly what you have...I've replaced nearly every mica in the radio...including the ones inside the RF tuned circuits. I replaced all resistors that were greater then 10% of their marked value. All paper caps replaced also.

End result is a radio that performs significantly better than before I started work. Particularly the RF deck...rebuilding that brought huge gains. The only downside is I used the 716P Sprague orange drops and no matter how nicely they are dressed, they just look ugly in there, moreso in the IF deck as there are so many in there...if only they made an axial version they would look more 'natural' in there.

I'm still not quite done yet. I am getting sensitivity variations between bands, not octaves but bands within an octave. The only module untouched so far is the Crystal Oscillator deck and I'm expecting a number of bad micas in there too causing the variations. So that will be investigated shortly...

Date: Sat, 22 Feb 2014 02:23:27 -0800 (PST)
From: Chris Farley <kc9ieq@yahoo.com>
Subject: [R-390] R-390a shaft collar/clamp 4-40 spline screws

One of my many projects has hit a dead end. As we all well know, the Bristol (or Bristo) spline screws used on these radios are often buggered up from people in the past trying to mess around without the proper spline driver.? For restoration, it would be VERY nice to have the option of replacing these screws.

There is a person on eBay selling custom made replacement knob set screws, so at least for now there is a source for those.? The RF deck slug adjustment screws should never see any kind of torque, so they are relatively safe from damage. The screws used in the RF deck geartrain and elsewhere aren't so lucky.

One of the RF geartrain shaft collar/clamp screws is a 4-40" x 9/16 cap screw with the .096" 6 fluted spline drive.? There is also a 1/2" long 4-40, and a 3/8" long 3-56 used on different clamps. Unfortunately, the standard available spline drive size for a #4 cap screw is .111", not .096". The original .096-6 screws were a custom item so that all hardware in the unit

used the same size tool.

Yes one could obviously use the standard available .111 drive screws or even plain hex cap screws for replacement in a pinch, but again it would be preferable to replace them with the correct screw. I'm just trying to make a final determination re: availability of the actual, correct ones.

I have searched, and cannot find one single source for these screws. I have only located one manufacturer (so far) who is willing to make them-? and the quoted SS 9/16" long example is scary.? 1000 pieces for $2.25/ea, 3000 pieces for $1.10/ea, or 5000 for $.80/ea. Any way you twist it, this just isn't a cost effective option- at least not for me.

I FINALLY found old Stewart Warner Electronics part numbers for the originals, they and their corresponding descriptions are as follows:
035111319-213
Drawing number SM-D-343600-5 "PART SHALL BE 1/2LG, 4-40 NC-2A, FINISH, M262AOR M264A PER SPEC MIL-F-14072" ASA B 18.3
035111319-386
Drawing number SM-D-343600-6 "PART SHALL BE 9/16LG, 4-40 NC-2A, FINISH, M262AOR M264A PER SPEC MIL-F-14072" ASA B 18.3

Google turns up NOTHING for these numbers, and the original Stewart Warner Electronics company is long gone for any hope of them turning up something. Does anybody on the list have paperwork or resources to find out if there are any additional records, SWE number cross references, Collins part numbers, FSN or NSN numbers, _anything_ that might uncover availability of NOS surplus stock of these screws (and potentially other old SWE part numbers for these RF decks) someplace? Any information you can share would be appreciated, as efforts towards this search will benefit us all.

Date: Sat, 22 Feb 2014 03:05:29 -0800 (PST)
From: Chris Farley <kc9ieq@yahoo.com>
Subject: Re: [R-390] R-390a shaft collar/clamp 4-40 spline screws

Ah HA I spoke too soon. On a hunch I checked one more thing, and waddyaknow- Old Collins part numbers. I'll follow up on this and see if I can't nail something down. Any additional info or resources is still always welcome.

Date: Thu, 13 Mar 2014 17:21:07 -0400
From: rbethman <rbethman@comcast.net>
Subject: [R-390] Location of ALL FAQs

The following is the site with the latest FAQs for the R-

390A:<http://www.r-390a.net/>

It is a very comprehensive compilation of knowledge. Wei Li, Roger R., Tisha Hayes, Perry Sandeen, and many more have worked very hard to update this over a long span of time. Troubleshooting is one element alone. The complexity of this receiver is high, and in both mechanical, and electrical/electronic ways. The variables when loss of and entire segment, either below 8MC or above 8MC are not simple or trivial. Roger has mentioned many times that the MC band switch wafers CAN be misaligned slightly, resulting in many issues. He has stated the "simple" ways to resolve this confined area.

Yes! I have indeed been technically wrong more than once! However, this Reference is by far the best information to READ and pay attention to.

Date: Mon, 17 Mar 2014 18:15:13 -0400 (EDT)
From: Glenn Scott <wa4aos@aol.com>
Subject: [R-390] Tungsten Disulphide question

Recently, I required some Tungsten Disulphide powder which arrived in 2 separate plastic storage bags. I washed and cleaned, very thoroughly, 2) 1 litter diet Pepsi, plastic bottles. They were rinsed thoroughly and dried. Using a funnel, I dumped the contents of both bags into the 1 litter bottles. They were about 1/3 full each. They have been stored in my climate controlled storage room for the last 2-3 months. Last week, I went to use some W2S and noticed both bottles were deformed as if the air had been vacuumed out?? The walls were pulled in, although, the vessels seem rigid, at least for now. Any thoughts on what may have happened to these plastic bottles or hat might be a better storage container?? These were DIET Pepsi bottles, perhaps the bottles are the secret to the DIET since they have lost their width????? Hi hi

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Date: Mon, 17 Mar 2014 18:46:08 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Tungsten Disulphide question

Using anything else than a medical container simply is *not* advisable. A glass "flask" with a glass stopper is really the only way to go. Soft drink bottles were never intended for pure Ethanol. I went to a Compounding Pharmacy to obtain the containers that *they* use when dealing with such.

Date: Mon, 17 Mar 2014 18:58:22 -0400
From: Mark Richards <mark.richards@massmicro.com>
Subject: Re: [R-390] Tungsten Disulphide question

The Great Oracle (Wikipedia) says that Tungsten Disulphide has hydrodesulfurization properties. I thought maybe we'd see something about being a desiccant or an oxygen eater. Hmmm.. any chemists in the house?

You might try this fellow: https://www.youtube.com/user/bkraz333
I think Ben would be very interested in this, so I've forwarded this posting.

Date: Wed, 19 Mar 2014 05:36:13 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Tungsten Disulphide question

The same thing happens with the Tungsten that I had purchased several years ago in liquid form. The bottle draws negative pressure over time, that is in the container that it was shipped to me in. The liquid concentrate I have been using an ounce or so of in my Mercedes at each oil change for the past five years. Now it is 130,000 miles later and other than turning a new oil change with golden oil into something as black as sin there have been no negative effects.

The liquid base is some sort of light solvent, not an alcohol so I do not really know what is going on. Maybe it opens a portal to an alternate dimension where liquids in any form are in short supply and gradually it is wicked away. It does not degrade the plastic bottle.

Date: Wed, 19 Mar 2014 17:46:11 -0400 (EDT)
From: Glenn Scott <wa4aos@aol.com>
Subject: [R-390] Tungsten Disulfide Question

Thanks for your input regarding W2S. I had not considered a portal to another dimension as the source of air deprivation in my bottles but I am sure you are right..Perhaps this is the same portal that Kielbasas come from. Hi. Kidding aside, I am considering mixing my W2S 1:1 ratio with several synthetic batches I use and cutting it later to the equivalent of 1:10. Not being a chemist or even have played one on TV, I am not sure if there may be some degradation of the synthetics from this Titration. Are there any chemist/alchemist/hobby chemist or Know-it-all's among us that care to comment? Meth-lab users need not reply! I am now reluctant to keep W2S in dry form. From the Internet reading I have done, looks like this stuff is nasty dry and you do NOT want to breath it into your lungs. I suspect my respirator is not much help with this either. Any thoughts on the care and nurturing of dry W2S from the group?

Date: Thu, 20 Mar 2014 14:49:24 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Tungsten Disulfide Question

I just keep it in dry form. I have a mason jar full of the stuff and it has never been a problem. When I use it I cut it with alcohol in very small quantities for that application and just put the mason jar back on the shelf. If you buy bulk from the original supplier you can get a tub of grease or the half-quart bottle of the engine additive concentrate (that I have been using in my car). One time I "lost" the engine additive bottle (lost in plain sight, in the trunk of my car) so I just took a scoop full of the powder (one of those scoops you find in a PowerAide drink concentrate) and dumped it into a half empty bottle of Mobil 1 motor oil and added that to my car engine.

I have not been too concerned about the mixing ratios, concentrates, etc.. with the stuff. For the car the only real purpose it serves is for that first second or so when cranking over a cold engine when the oil had drained into the sump after a few days. The tungsten stuff is klingy enough (in my belief) to keep the cams and maybe the bottom end of the piston sleeves at least a little lubricated. The only negative effect I have seen is at oil change time. If I do it at 3000 miles the people at the local shop go "whoo-hee, that is some black motor oil!". I do not explain or elaborate, they would look at me as if I had grown a third eye out of the middle of my forehead if I explained. For those who have participated in Perry's offering to the list, what have been your experiences? Do you think it was worth the effort to spend the few bucks to use it?

Date: Thu, 20 Mar 2014 21:59:15 -0400
From: Mark Richards <mark.richards@massmicro.com>
Subject: [R-390] R-390A: Soul of the Machine

I am sitting here soaking in the wonderful sounds of a Real Radio Receiver. Having fixed most of the issues in my sad-case of an R-390A (Stewart-Warner S/N 2786) the tubes glow and the signals now flow. I am like an eager child, opening the holiday gift before the sun rises. I have the wonderful and esteemed members of this list; all those whose inspired work made such miracles as this so possible, to thank.

Working on the R-390A I have reflected upon this concept: Soul of the Machine. Today's modern, ultra-compact, digitized, flat-screen flat-world E-devices, laden with useless facade and equally-useless features, lack the heft, presence, and character of an earlier time, where electronic wonders actually took a few minutes to come to life. Those 30 dramatic seconds from dark to signal are a deeply satisfying pause... this receiver's way of saying, "I have something worth waiting for". And, she's right. Her individual character, warm tone, and satisfying rich sound are all made possible through the magic of that which our modernity lacks: a beating heart. This machine has soul. In
her presence, the false and vacuous melt into the goo from which they were

molded. Tonight there is the R-390A, and nothing else. There's more work to be done on this old and venerable Real Radio Receiver, but tonight I am taking in her wonders as band after band speaks in ways the transistorized, processed, and homogenized modern gear simply can never achieve. I am, to put it plainly, in love.

Date: Thu, 20 Mar 2014 21:42:06 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] WS Powder use

>Wrote: I am now reluctant to keep W2S in dry form.

After your experience with the Pepsi bottles that is a reasonable thought. However, I still have several pounds of WS powder stored in ordinary zip lock bags which have shown no degradation since I purchased it many months ago. It is inherently safe with ordinary precautions. I filled many small zip lock bags with it and I did get some on my fingers but it washed off easily with soap and water. Most of the time I used cheap latex gloves as I was measuring out many bags. The reason one doesn't want to breathe it is the same reason ones doesn't want to inhale coal dust or fine cotton particles. If any of the above gets into your lungs it stays there. Enough over a long period of time will lead to a form of "Black Lung" problems. Because of the fineness of the particles, when I was lifting it out to the smaller bags, was that I would get almost vertical side walls when lifting it out with a tiny spatula. Yes, if you?re going to have a big sneeze or a fast airflow that is not good around WS powder. But it is perfectly useable without a respirator. One uses alcohol as a delivery system that evaporates leaving the WS on the part one wants lubricated. Reasonable care of use yes, fear no.

Date: Fri, 21 Mar 2014 08:23:05 -0400
From: <Jbrannig@verizon.net>
Subject: Re: [R-390] WS Powder use

This sounds like nasty stuff, what is it used for?

Date: Fri, 21 Mar 2014 10:05:10 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] WS Powder use

WS2 is a very advanced lubricant. It is normally distributed in the dry form. It is less expensive to ship dry, vs. wet. The fluid used as a carrier is combined with the dry powder. Ethanol, Isopropyl alcohol, denatured alcohol, and other carriers simply make it manageable to use. There are quite a number of things that are equally "nasty" that are used daily in the lives of people.

Carburetor and Choke cleaner in a spray container can be procured across the automotive parts and cleaners arena.

Reading its MSDS papers show it to be nastier. It will simply enter the body through the skin. Trichloroethane 1 1 1, a very common solvent in use during the '60s - '70s is way up on the list of *unhealthy* solvents. Once again, its MSDS show it to be nastier. It will simply enter the body through the skin. It had wide use in cleaning High Voltage stress cone terminations to prepare the cross linked polymer insulation to prepare it for application of various tapes to create the profile of the stress cone.

Trichloroethane 1 1 1, was also distributed in 55 gal. containers, and down to 1 gal. cans for cleaning aircraft parts and components. It was also used in any engine works. An example of its efficacy, the rubber coated wire looms on engines were sometimes placed in an open air bucket to clean them. "Trico", completely dissolved the rubber.

Many hands were immersed in this solvent, as were many other solvents. Stoddard solvent isn't exactly a safe one to use either.

It is really a case of understanding what the hazards are, and take care when handling. WS2, Tungsten Di-Sulfide, has one of the lowest coefficients of friction available. Lubricating the gears assembly of the R-390A with it is very beneficial. It also is a very good lubricant for firearms, engines, and far more. The nano particle nature of it makes it bond to the surface and reduce friction between parts.

Date: Fri, 21 Mar 2014 12:42:04 -0400
From: <Jbrannig@verizon.net>
Subject: Re: [R-390] WS Powder use

Thank you for the explanation.
I'll stick with Mobil 1 for the gear train.....

Date: Fri, 21 Mar 2014 11:57:27 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Hazards, they are all relative

Sometimes we inadvertently fall into the nanny-trap and begin to worry about every possible thing that can happen to us. Nano lubricants, PCB's in capacitors, radioactive paint on panel meters. I never had the honor of serving my country in the armed services. A significant number of people on this list have, and in that time many of you became acquainted with our radios. There were probably many other things that were relatively more risky or dangerous that you dealt with every day while you were in the

service (other than the mess hall chow).

By virtue of surviving decades of hazards, many of them self inflicted, so far we are all winners. Our decrepit bodies have not reached room temperature yet, the dirt nap has not happened this morning.

I am not going to snort WS like Tony Montana from the movie "Scarface" Or stick my arms in up to my elbows in PCB oil or trichlor (been there, done that, most of us have). We have all ended up on our butts from grabbing B+. Those little incidents are great ways to have it pounded into your head "oh! I am NOT going to do that again!"

If you use WS lubricant I would not get too worried about it. You probably pull in more fine particulates into your lungs from when you went on family vacation with your parents, who were smokers, and had the windows rolled up tight on that cross country trip. Or if you ever visited Beijing or Paris for a weekend. We are not talking about occupational exposures for what we are doing, just use common sense and a little bit of caution.

Date: Fri, 21 Mar 2014 13:09:06 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] WS Powder use

I *always* recommend that individuals stick with whatever they feel most comfortable with. I, for one, did obtain the WS2 powder. I keep it in the plastic bag(s) received in. I only use it very sparingly. Isopropyl alcohol in 91% concentration is available in pharmacies on the shelf. I also obtained 98%+ Ethanol. I have soaked a cloth with it, dipped it into the powder, and applied it. Indeed some did get on my skin. It readily washed off. At no time did I inhale the powder. The results on the application were extremely satisfactory. The nano particle bonded with the metal object being lubricated. The function of the moving parts is far better than any other lubricant I have ever used. I *NEVER* take use of potentially hazardous materials lightly. I indeed did use a Nitrile glove on the right hand. I simply erred by NOT using one on the left hand. This is where powder and skin came into contact. I never have taken exposure to hazardous chemicals lightly. I've been exposed to some without my actually being involved in its distribution. Therefore, I have tissue submitted to the Agent Orange Database. It was simply a matter in being where I was directed to be, and happened to end up under the path of a C-123 Provider, a flight of several, spraying massive quantities over a broad area. Life simply is what it is.

Date: Fri, 21 Mar 2014 18:04:14 +0000
From: Bill Kulze <wak9@cornell.edu>

Subject: Re: [R-390] Hazards, they are all relative

When I was at Keesler in 77 they used to do the fogging, most every night. I guess in the old days when you were incarcerated, the 'delousing' involved getting all powdered up with ddt.

Date: Fri, 21 Mar 2014 15:30:14 -0400 (EDT)
From: bonddaleena@aol.com
Subject: Re: [R-390] R-390 Digest, Vol 119, Issue 24

I use both WS2 and HBN powders of all my firearms and bullets. I store the WS2 (and HBN) in plastic PETE jars. Although I purchased the jars some time ago, Peter Pan peanut butter comes in a PETE jar. If one was so inclined, there are 2 great sites that discuss these materials:

6mmbr.com (info on plating bullets using Moly, WS2, and HBN.)

Bobistheoilguy.com (some excellent discussions by real Engineers, and Tribologists that formulate additive packages for oil companies). BIOG, has some great info on a product called "Lubromoly" that was designed to be used in auto engines. The particle size is SO small, they go right through the filter, and stay suspended in the oil. The best grease I have made so far, is a mixture of engine assembly lube (high in Zinc) and WS2.

Date: Sat, 22 Mar 2014 14:45:14 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: [R-390] PDF File has been sent

I think I sent out files to every one that asked.
If you got a wrong file or no file please ask again.
If you got more than one sorry. You can keep both copies.
Thank you all. Please pass it around to all.

Date: Sat, 22 Mar 2014 15:14:34 -0400
From: rbethman <rbethman@comcast.net>
Subject: [R-390] Latest Checklist Available NOW

Received it from Roger just a bit ago.
Here is where it is currently.
<http://home.comcast.net/~rbethman/Inspection_Check_List.pdf>
Enjoy! No login or password necessary!

Date: Sat, 22 Mar 2014 12:23:16 -0700 (PDT)
From: John Saxon <johnbsaxon@yahoo.com>
Subject: Re: [R-390] PDF File has been sent

Roger, this is great! ?Thanks for all your hard work.

Date: Sat, 22 Mar 2014 16:06:42 -0400 (EDT)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: [R-390] A note of thanks to Bob Bethman NODGN for posting Inspection List on his web site.

Thank you for posting and hosting the inspection PDF file. May it serve many R390A owners well as they continue to maintain and use their wonderful R390 and R390A receivers. Thank you

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Date: Sat, 22 Mar 2014 13:32:10 -0700
From: Manfred Antar <mantar@pozo.comcastbiz.net>
Subject: Re: [R-390] Latest Checklist Available NOW

Hi I mirrored it at:
http://www.pozo.com/R-390A/R-390A_Inspection_Check_List.pdf
I had the old one there and replaced it with this one.
If anybody has anything else they want mirrored let me know,
I have a server that is up 24/7 and fairly high speed cable.

Date: Sat, 22 Mar 2014 17:19:29 -0400
From: <Jbrannig@verizon.net>
Subject: Re: [R-390] Latest Checklist Available NOW

Thanks, I think....
I've been putting off some repairs and maintenance on my R-390A
Now I HAVE to go through this great check-list....
My back hurts thinking about dragging the 390 to the workshop.....

Date: Sat, 29 Mar 2014 00:55:52 -0500
From: Chris <kc9ieq@yahoo.com>
Subject: Re: [R-390] SCREWS and NUTS

I have not received any recent emails from you about this, when did you last send me something? Nothing in my spam folder, either. I hit some snags, and have placed the payment an distribution on hold. I have two un-cashed checks from people, and have declined further payments until I can get this squared away.
1) I was supposed to be getting 300 of the 9/16" screws, and was shorted by the distributor. They don't have any more. Thus I don't yet have enough to cover everyone who wished to have some reserved. I am in the agonizing process of searching for more at the same price- so far no bueno, unless someone wants to take over and have about 1500 custom made in Stainless Steel for 80 cents/ea.

I am also now searching for the shorter, 1/2" screw used on the smaller clamps, as I could put together "sets" to help make up the deficit.

2) the square nuts probably aren't going to happen, unless people want the "real deal." Reason being, the standard OD for a #4 square nut was discovered to be 1/4". The nuts used on those clamps have a 3/16" OD. There isn't room for a "normal" nut. I have yet to find the 3/16" variety anywhere, aside from buying the expensive, NOS original parts.

If any of you have a good working relationship with a NSN supplier who can be bargained with, you could certainly be of assistance here.

Date: Tue, 1 Apr 2014 11:07:06 -0400 (EDT)
From: Glenn Scott <wa4aos@aol.com>
Subject: [R-390] Chris Farley R390A Tool Kit

I just received 2 sets of Rear Panel Tools for the R390A provided by Chris Farley. The tools are very high quality and shipping was fast. Chris had the right angle bristol wrench faithfully replicated by a shop that knows what they are doing. The fit and finish as well as the functionality oe both tools is TOP SHELF. The bristol tool rod is a nice stainless steel piece and where the bristol wrench fits the tool shaft it is pressed in and crimped with a small crimp to keep the blade stable.
The #1 screwdriver is better than the original due to the hardened tip. The handle is slightly wider than the original I have but I consider this to be a very reasonable replica of the original. A set on the rear of your 390A is a very nice touch even if you only want them to make your unit complete. However, these tools are ready to go to work on your work bench as well. I will now include a set on all of my restorations as icing on the cake for my clients; nice touch! Perhaps other 390A restorers will take advantage of supplying these to their clients while they are being re-manufactured. . Nice job Chris!!! You get FIVE STARS in my book * * * * * !! Now if someone will take on having QUALITY replacement meters made!! Hint hint!!

Date: Fri, 4 Apr 2014 20:49:13 -0500
From: "Gary H. Harmon, Jr." <gharmon@idworld.net>
Subject: [R-390] Hollow State Newsletter

The latest version I have in the file is #53 dated summer 2002. Are there later issues and if so where can I get them? I am missing #39. Does that issue exist?

Date: Fri, 4 Apr 2014 23:45:45 -0500
From: GRANT YOUNGMAN <nq5t@tx.rr.com>
Subject: Re: [R-390] Hollow State Newsletter

#53 is the last issue I have, and is the last one I am aware of. I'd be happy to scan and email a PDF of #39.

Date: Sat, 5 Apr 2014 10:32:07 -0500
From: "Gary H. Harmon, Jr." <gharmon@idworld.net>
Subject: [R-390] Hollow State Newsletter - Search Complete

Thanks to all who sent #39 and commented.
All agreed that #53/summer 2002 was the last issue presented.

Date: Sat, 5 Apr 2014 12:52:37 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Hollow State Newsletter (HSN). PDF versions available (with index)

If anyone wants PDF copies of the entire Hollow State News series, starting in September of 1986 up to Summer of 2002 just drop me a personal email. It will take 4-5 emails to get them all across the network, I will send them out on Monday when I am at work and connected to a much faster network. I will include the Index created by Reid Wheeler that is dated May 2010 and a special HSN reprint of just R-390/ R-390A articles that were from editions 1-30, dated February 2010

, 5 Apr 2014 14:27:03 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] (no subject)

I have made sure that every edition of the Hollow State News is up on my DropBox site. If you have a DropBox account here is the link to the folder that has a bunch of radio things on it;

https://www.dropbox.com/sh/qjnu6cp03ahajpc/2yi0gjqmrw

If you do not have a DropBox account you can use this link to create a free account. This would allow you to download stuff that I am sharing out and... if you want to... create your own storage site for free to share things out to others. If you use the link it gets me additional storage space for free so I can put even more things out on DropBox. I have tens of gigabytes of radio manuals, schematics, electronics tutorials, etc... I would eventually like to share all of that out to the collector community.

Here is the link for a free account; https://db.tt/YGxx17GZ

DropBox has been around for four years or so. I have never had a problem with it doing evil things to my computer or files. It has a good reputation.

When you log into dropbox this cloud storage folder will appear like an additional drive on your computer. Please-Please-Please.. copy things off of that drive to a spot on your computer. Do not delete things in the Dropbox folder. If you delete things it actually makes them unavailable to everyone who is shared to the drive. For me it is just annoying because I would have to copy the original materials back off of my computer and on to the cloud storage. Naturally, virus scan anything you download from anyone. I check the storage site every few days and have not had a problem with viruses/spyware/ bots.

To take creative liberties with what Bowman/HAL said; "All these files are yours, except ROOT. Attempt no landings there. Use them together, Use them in Peace."

Date: Sun, 6 Apr 2014 05:52:22 -0700 (PDT)
From: John Saxon <johnbsaxon@yahoo.com>
Subject: Re: [R-390] Dropbox

Many, many thanks, Tisha. What a treasure of information. Yet another of your significant contributions to the group, it is greatly appreciated.

Date: Sun, 6 Apr 2014 14:42:11 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Hollow State News, archive emails sent to those who had requested a copy

Today I sent out three massive archive ZIP's of every edition of the Hollow State News to everyone who had emailed me and asked for a copy. There are now seventeen people from the list who have the complete collection. This is in addition to those who have connected via DropBox to download the collection. I think that we are probably in good shape now that the information from those years of HSN will not disappear overnight (unless there is a EMP caused by a supernovae and if that is the case we will probably be the only group who has radios that still are functional.. if we can find a reliable power source).

Date: Sun, 06 Apr 2014 18:41:35 -0700
From: Manfred Antar <mantar@pozo.comcastbiz.net>
Subject: Re: [R-390] Hollow State News, archive emails sent to those who had requested a copy

I missed the dropbox link, can you email it to me.
I will put the files on my website when i get them.
They will be at http://pozo.com/HSN

Date: Sun, 06 Apr 2014 21:07:35 -0700

From: Manfred Antar <mantar@pozo.comcastbiz.net>
Subject: [R-390] Hollow State News Website

Thanks. I'll put them on http://pozo.com/HSN
Also at http://www.pozo.com/HSN
Same place just an alias
Also I modified the HSN Index 1-45-2.xls so that the top row is always visible.

Date: Mon, 7 Apr 2014 09:02:22 -0700
From: "Leigh Sedgwick" <bipi@comcast.net>
Subject: Re: [R-390] Hollow State News Website

Thanks to all involved in making these HSN issues available.
I very much appreciate the copies.
Happy Trails

Date: Wed, 9 Apr 2014 17:29:07 +1000
From: Pete Williams <jupete@internode.on.net>
Subject: [R-390] Info wanted

G'day all... Is there a source, new or used for the 'mini BNC' (can't recall ever seeing a classification) type plugs as used in the R-390. I have several ex- stuff with various ID .... One has IPC 44925 engraved on it but search of Google or IPC as a company, nil ping returns. Straight and right angle types needed, Thanks. Pete VK3IZ

Date: Wed, 09 Apr 2014 08:58:55 -0400
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] Info wanted

Those are "MB" series connectors. Here is one source:
http://www.surplussales.com/Connectors/MB.html
You occasionally find them at surplus dealers and hamfests.

Date: Wed, 9 Apr 2014 12:10:00 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Mini BNC

Here is what I wrote to the list in December 2008 on the connectors;

QUOTE:*"I finally found out what the mini BNC connectors on the R-390A are designated as. This has been a question asked by many on the R-390A reflectors and on the Hollow State News, no answer was readily apparent. Since I have a large amount of coaxial inter-series adapters as part of my professional work, I decided to pursue an answer to this question through

the Amphenol tech-rep. Here is what I found out; The series connector is designated as MB. It is not rated for a specific impedance like 50 or 75 ohms. The specification has a wide variety of impedance's that the connector will work with, ranging from 50 to 150 ohms. I also found that the connector, chassis plug, Tee's and terminators are still available through a variety of sources. Since this is a little-known specification without any widespread knowledge of it's applications the parts are available cheaply from some surplus sites. At the higher end, there are still suppliers who can make custom cables with the MB connector. One surplus site that has the connectors is Surplus Sales of Nebraska. Of course, their prices are on the high end of what is considered surplus but they have a decent array of connectors. This can be found at http://www.surplussales.com/Connectors/MB.html <http://www.surplussales.com/Connectors/MB.html> These are a direct fit and I have purchased connectors and tested them on my R-390A. This may be a great tip on rebuilding the R-390A when the coax cables are seriously deteriorated or when connectors are badly corroded."*

Date: Wed, 09 Apr 2014 10:48:19 -0700 (PDT)
From: John Kolb <jlkolb@jlkolb.cts.com>
Subject: Re: [R-390] MB Connectors (was) Info wanted

I have a number of the straight plugs in the form of a short MB to BNC cable; no right angle ones left. Postage to be determined.

http://www.jlkolb.cts.com/site/fs_misc.htm

Date: Wed, 9 Apr 2014 11:16:09 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Mini BNC

Thanks for your (repeat) info on the mini BNC's. Coupla questions, Tisha. My Google searches for MB connectors ("amphenol MB BNC connector"; "MB mini BNC connector", etc) turned up some suspiciously similar looking connectors but only Surplus Sales - as you noted - appeared to have the right stuff.

For example, please check this search result:
http://www.amphenolrf.com/products/CatalogPages/MiniBNC.pdf

Are you aware of any other surplus outlet(s) that may have these connectors? Since my sense of humor is a bit convoluted at times, I have to ask – Did you request your current call sign? What caught my eye (today) is the prefix and suffix... AA HA Add some punctuation, like AH HA!, and it kinda fits your style of coming into a conversation to add the benefit of knowledge based answers. :-) :-)

Date: Wed, 9 Apr 2014 14:23:01 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Mini BNC

www.fairradio.com
They still have some of the connectors.

Date: Wed, 9 Apr 2014 14:24:12 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Mini BNC

I guess this might be more helpful.

https://www.fairradio.com/catalog.php?mode=search&keywords=mbnc&submit.x=0&submit.y=0

Date: Wed, 9 Apr 2014 14:00:41 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Mini BNC

That is a 75 ohm connector. The R-390A connector was a bit of a freak. From the very old literature I had found on it there seemed to be some distancing from the idea of giving it any sort of electrical characteristics.

A few years ago I went through the parts list for the R-390A and found the national stock number for those dratted connections. After extensive searching I was able to track it down to a very old catalog that showed the commercial (non-mil) part numbers. It seemed like an afterthought. Right now I cannot find what I did with that information, it is somewhere in my collection of stuff. The same search process can be repeated, it was tedious.

I bought a few scrap RF decks that were doorstops at a hamfest and an IF deck that had been cannibalized for the filters so I picked up a set of plugs and connectors. I bought some of that teflon coax from eBay and made extension jumpers and I also made another so I could add a 9 KHz roofing filter (one of those little torsional filters, really cute) between the RF and IF decks.

It was frustrating enough that I was sorely tempted to tear out those connectors and just put SMA connectors everywhere (that noise is Art Collins rolling over in his grave). I ended up not doing that because these poor radios have to endure enough hacks as it is.

Yes, my callsign is a double-pun with an additional meaning AA-HA! and "AAay four HAy" but the HA at the end is also the first two letters of my last name "Hayes". In CW it makes a very distinctive sound (that some find confusing when sent fast, like maybe my keyer was stuck with dits). [.- .- ...- .... .-]. (ooh, I would really want AA4EE).

Date: Wed, 9 Apr 2014 14:25:42 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] Mini BNC

Modern miniature COAX terminated with SMA connectors using SMA to BNC adaptors might be an acceptable substitute. It should look good and be cost effective. What do you think purists!

Date: Wed, 09 Apr 2014 15:54:36 -0400
From: "David C. Hallam" <dhallam@knology.net>
Subject: Re: [R-390] Info wanted

The coax connectors used on the R-390 were the MB series. I have a 1969 Newark Electronics catalog that lists Amphenol MB connectors. The specs given are useable to 500 Mc, 500V and 400 degrees F.

I don't know where else they may have been used.

Date: Wed, 9 Apr 2014 15:34:18 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] Mini BNC

Sorry for the brain dead reply, wrong connector, I guess I was thinking of the r-390.

Date: Wed, 9 Apr 2014 14:58:30 -0700 (PDT)
From: Chris Farley <kc9ieq@yahoo.com>
Subject: Re: [R-390] MB Connectors (was) Info wanted

OK gang here's the lowdown- These are conclusively, simply considered "2 stud Miniature Bayonet" connectors-? AKA "MB".

The original R-390A connectors were Automatic Connector type
Straight- RF-0701-23 (Amphenol 45425)
Right angle- RF-0702-23 (Amphenol 45875)

There are other Amphenol numbers that cross reference. Later on, connectors were used with a larger, plastic compression nut system instead of silver plated brass. I have not yet found numbers for these.

The small adapter cables John offered up appear to be for a larger OD coax- Although still quite useful, keep that in mind before hoarding them up. The correct connectors are rare because of the compression nut hole size, meant to work with the 0.085" OD coax. Which incidentally, was NOT originally a 50 ohm cable- It was originally Suprrenant type 70-390-12 which is:

70 ohm
0.085" OD
Teflon insulation
Nylon sheath
20pf/ft
#29 solid conductor (changed to stranded in 1966)

Supposedly this was changed to a 50 ohm cable for the Fowler contract radios, but I have not yet with my own eyes seen paperwork, nor have I access to one of the radios to physically look.

You do NOT want to know what surplus houses want for these connectors- Believe me, I've been down that road.

Date: Wed, 9 Apr 2014 17:06:56 -0500
From: Chris <kc9ieq@yahoo.com>
Subject: Re: [R-390] MB Connectors (was) Info wanted

<snip> Your best bet is to disassemble, clean, and reuse your originals. The right angle one is a bit of a pain as the soldered on cap must be removed to gain access to the center pin, but very doable.

Also an item of note- the company who originally made the aluminum tags found on each cable is still in business- but the die for making those tags is long gone, and creating another for a special run would be quite cost prohibitive.

I was looking seriously into gathering together all the components needed to manufacture and make available brand new cable sets- Nobody would pay what the price would end up being though.

Date: Wed, 9 Apr 2014 15:14:49 -0700 (PDT)
From: Garry Stoklas <jergar@sbcglobal.net>
Subject: Re: [R-390] Mini BNC

Doing a google search for "MB RF Connectors" I found the following website for HDCommunications http://www.hdcom.com/mbconn.html
that has bulkhead jacks and crimp plugs for RG-59A/U cable that are identified as MB connectors. The pictures are a bit small for my poor old

eyes, but the jacks certainly look like the right ones. Considerably cheaper than the ones at Surplus Sales, but you have to buy a minimum of ten. Might be worth buying to find out.

Date: Wed, 9 Apr 2014 19:25:35 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Mini BNC

The ones at Fair Radio are just a little over half of Surplus Sales' prices (I sent the link earlier).

Date: Thu, 10 Apr 2014 09:54:41 -0700
From: "Chris Kepus" <ckepus@comcast.net>
Subject: Re: [R-390] Mini BNC

Just like to add to Garry's research. Please see the "copied" email from them with regard to the minimum order quantity. Based on individual needs, this might not be much of an issue.

email "copy"* * * * *

On 4/9/14 10:27 PM, "Chris Kepus" <ckepus@comcast.net> wrote:

In regard to your minimum of qty 10 for your MB Connectors (http://www.hdcom.com/mbconn.html): Can the 10 qty be achieved by mix and match in the MB connectors or only by individual item? Thank you,

-----reply---------

Yes, you can mix and match. If you have any questions, please contact me.

Kari Squicciarino
HD Communications
2180 Fifth Ave.
Ronkonkoma, NY 11779
Phone: (631) 588-3877 Ext. 133
Fax: (631) 588-3879
Email: kario@hdcom.com
* *

Based on their quick response and mix and match policy, this company appears to be "ham friendly". :-) Bet they would even be willing to send a sample.

Date: Fri, 11 Apr 2014 10:35:48 -0700 (PDT)
From: Chris Farley <kc9ieq@yahoo.com>
Subject: Re: [R-390] MB Connectors (was) Info wanted

I sent this on Wednesday, but it was apparently eaten by the server- Here goes-OK gang here's the lowdown- These are conclusively, simply considered "2 stud Miniature Bayonet" connectors-? AKA "MB".
The original R-390A connectors were Automatic Connector type:
Straight- RF-0701-23 (Amphenol 45425)
Right angle- RF-0702-23 (Amphenol 45875)

There are other Amphenol numbers that cross reference. Later on, connectors were used with a larger, plastic compression nut system instead of silver plated brass. I have not yet found numbers for these.

The small adapter cables John offered up appear to be for a larger OD coax- Although still quite useful, keep that in mind before hoarding them up. The correct connectors are rare because of the compression nut hole size, meant to work with the 0.085" OD coax. Which incidentally, was NOT originally a 50 ohm cable- It was originally Suprrenant type 70-390-12 which is: 70 ohm, 0.085" OD, Teflon insulation, Nylon sheath, 20pf/ft, #29 solid conductor (changed to stranded in 1966)

Supposedly this was changed to a 50 ohm cable for the Fowler contract radios, but I have not yet with my own eyes seen paperwork, nor have I access to one of the radios to physically look. You do NOT want to know what surplus houses want for these connectors NOS- Believe me, I've been down that road. Your best bet is to disassemble, clean, and reuse your originals. The right angle one is a bit of a pain as the soldered on cap must be removed to gain access to the center pin, but very doable.

Also an item of note- the company who originally made the aluminum tags found on each cable is still in business- but the die for making those tags is long gone, and creating another for a special run would be quite cost prohibitive.

I was looking seriously into gathering together all the components needed to manufacture and make available brand new cable sets- Everything considered, nobody would want to pay what the final price would end up being though.

Date: Mon, 14 Apr 2014 22:07:30 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] SP 600 Upgrade Schematic

I've been working for a while on a SP 600 major upgrade schematic. While it is a work in progress it is still quite expansive. It is a 3Mbyte 8BIT TIFF image done with photoshop elements. Because it is a bit image it can be enlarged to any size W/O smearing.

If you take it to FedEx Office (Kinko?s) they can make you a very large copy for $7 to $8. If you'd like a copy, please send me a NEW email, NOT a *replyto* from the reflector and I'll be glad to send you a copy.

Also feel free to cross post to any other lists. <snip>

Date: Tue, 15 Apr 2014 10:29:02 -0500
From: barry williams <ba.williams@charter.net>
Subject: Re: [R-390] SP 600 Upgrade Schematic

The schematic sounds nice. Choosing TIFF as the format was a good choice because it is NOT a bit image. Bit images are the original blocky looking images that got worse as you enlarged them. That is where the term 'jaggies' came from. TIFF can be a vector or object oriented type of file based on mathematical calculations from point to point rather than blocky, fixed bits. That is how bezier curves began. I haven't used Elements but have used Photoshop for 20+ years. I'm not sure what you mean by smearing.

Date: Tue, 15 Apr 2014 10:40:32 -0700 (PDT)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] BIT Images I Used

>The schematic sounds nice. Choosing TIFF as the format was a good choice because it is NOT a bit image. [Snip]/

Not so Barry. I use the PE elements image mode function to change all my images to BIT files before I start editing the them as a TIFF file. Because of all the crapola that is left after the conversion I essentially redraw the entire schematic creating the electronic symbols from scratch. It's very time-consuming but that is the only way I know how to make schematics that can be enlarged without smearing. There may be other or faster ways to do a conversion but it's the only one I know and it has worked on other schematics I've done such as the R-390A heretic's version. When I went to Kinko's to have some original large size schematics digitized, they use the full version of PS which created a fine looking reproduction on their monitor. When I looked at them at home using PE elements instead, they were awful. What I found out after a bit of research is that the full version of PS used saved the image as a native 16 BIT TIFF image. However the native bit image created by PS elements is an 8 BIT Tiff image. So the 16 BIT is not compatible with PS elements AFAIK.

Date: Tue, 15 Apr 2014 13:45:14 -0400
From: Robert Newberry <N1XBM@amsat.org>
Subject: [R-390] Schematic prints

Reading a recent post to the list. It got me thinking. I have digital copies of schematics for my r-390. Is kinkos where you can go to get big poster prints of schematics? I've been wondering about this since I just use my ipad at the work bench on my r-390 project.

Date: Tue, 15 Apr 2014 13:12:49 -0500
From: barry williams <ba.williams@charter.net>
Subject: Re: [R-390] BIT Images I Used

Okay, I think I know what you are meaning. Just so it doesn't seem like nit picking here, I was a graphics design major and illustrator, and have worked with those formats since the 80's. I know what I"m talking about. I think what you mean is that you are converting your images to a background template, and then you redraw over the top of that, right? This would produce the object oriented TIFF files that you save in Elements.

Photoshop Elements is a stripped down program that was initially bundled free with scanners, so that explains the limited modes you have. The full Photoshop file format is a compact file that contains a lot of information including layers and other illustration options not available to PE. The same goes for Adobe Illustrator. The ideal method, if you have the software, is to always save in the Photoshop format. This saves everything and gives you all options. Then, save out to whatever you need for printing and use that just for the print job.

I think some of the confusion is that you are calling a bit-mapped image a bit image. Bit images are bit mapped to screen pixels. Thus, the fixed and poor resolution like we had to put up with in the early 80's. It's okay most of the time as a background to trace over. I've done that often. TIFFs are not bit mapped files. They can import and save bit-maps as-is, but they won't up convert them to the higher resolutions that true TIFFs produce.

Date: Tue, 15 Apr 2014 13:17:56 -0500
From: barry williams <ba.williams@charter.net>
Subject: Re: [R-390] Schematic prints

Yep, and the iPad is in my shop for repairing all kinds of stuff if I can find the files, manuals, or illustrated repair guides on equipment blogs. You can't beat it. I need to replace the optical drive in my iMac, which is a 3-4 hour job taking out the screen, bezel, rf shields, etc and I have a step by step guide created by some kind person saved on my iPad. Same goes for working on guns, etc.

Date: Tue, 15 Apr 2014 14:16:59 -0500
From: "Keith R. Erickson" <kognw@gte.net>

Subject: Re: [R-390] Schematic prints

I store manuals for equipment on my hard drive, and then back up to the "cloud" using Acronis Software. Then using the ipad with an Acronis APP, which can access the cloud. Then I have access, anywhere, I have a wifi connection, even off site. To the manual on my iPad.

Date: Wed, 16 Apr 2014 18:53:58 -0500
From: barry williams <ba.williams@charter.net>
Subject: Re: [R-390] More PSE comments

Please put me on the mailing list for the file. I'll look over what you are doing and maybe can suggest an easier program to do schematics. Photoshop and Elements are probably not the best programs anyway. If you think about it, you are using a limited amount of symbols and a lot of lines with some text. I'll contact you off list, but I'm not up to speed in the Windows software world anymore. You can do schematics in those programs, but a layout (draw) program is geared to your kind of work. Some have called their draw programs CAD, but you are really just drawing. Illustrator is about the best drawing/illustration program on the market.

I know I'm sort of weird, but I like doing this kind of work all day.
It's better when they pay me though.

Date: Thu, 17 Apr 2014 06:49:27 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] BIT Images I Used

I have had the distinct pleasure of being a guest in Perry's home and have had the opportunity to watch him editing schematics. He does redraw most of the elements on the schematics and then layers those on top of the existing schematic. He redraws all of the lines and when complete you pretty much have a new schematic but without the old raster graphics that are so fuzzy when you look at them in a pixel by pixel view. It is tedious and tiring work. I would not have the patience for it but Perry does a great job.

Date: Thu, 17 Apr 2014 07:52:53 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] BIT Images I Used

The stuff I have received from him has been fantastic. As I age my eyesight is making it increasingly more difficult to read the old manual schematics. The redrawn schematics are like putting on a good set of glasses. And you can blow up an area of interest and it stays sharp. Great work by Perry and all who might have participated in the efforts. I look forward to more...

Date: Thu, 17 Apr 2014 10:05:15 -0500
From: barry williams <ba.williams@charter.net>
Subject: Re: [R-390] BIT Images I Used

That's what I meant when I said he had chosen the ideal format. You can blow up or reduce them and they look good. If you have a printer, you can print out enlarged sheets of just the area you need to work on. Or, carry your iPad with you to the shop.

Date: Thu, 24 Apr 2014 13:15:14 -0700 (PDT)
From: Chris Farley via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] Chris Farley EXCELLENT R390A Replica Tool Kit

I have four more reproduction R-390A tools sets available at a 10% discount to list members if anyone is interested. $35 including CONUS shipping. Pictures may be seen here: http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&rd=1&item=331162687400 If you would like a set, send me an email and I will confirm with payment instructions.

From: Glenn Scott <wa4aos@aol.com>
To: r-390@mailman.qth.net
Subject: [R-390] Chris Farley EXCELLENT R390A Replica Tool Kit

I just received 2 sets of Rear Panel Tools for the R390A provided by Chris Farley. The tools are very high quality and shipping was fast. Chris had the right angle bristol wrench faithfully replicated by a shop that knows what they are doing. The fit and finish as well as the functionality of both tools is TOP SHELF. The Bristol tool rod has a nice stainless steel shaft. Where the Bristol wrench fits the tool shaft, it is pressed in and crimped with a small crimp to keep the blade very stable.

The #1 screwdriver is off the shelf but? better, "IMHO,"? than the original due to the hardened tip. The handle is slightly wider than the original I have but I consider this to be a very reasonable replica of the original.

A set on the rear of your 390A is a very nice touch even if you only want them to make your unit complete. However, these tools are ready and capable to go to work on your work bench as well.

I will now include a set on all of my restorations as icing on the cake for my clients; nice touch! Perhaps other 390A restorers will take advantage of supplying these to their clients while they are being re-manufactured. .

Nice job Chris!!! You get FIVE STARS in my book * * * * * !!?

Now if someone will take on having QUALITY replacement meters made!! Hint hint!!

Date: Wed, 30 Apr 2014 08:11:20 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] SP 600 Wiring Colors

Funny, The one commonality I have seen with SP-600 wiring.. if you have even the slightest provocation, tear it out and replace it. Especially anything that penetrates to the front panel.

On the '600's I have known (I really cannot say love, they are like a stepchild that you just know is up to no good), the wiring insulation turns to a million little crunchy pieces as soon as you remove the front panel. This usually happens where the wiring goes through those rather sharp-edged circular holes in the lower chassis.

So you do the standard thing; sigh, snip off the wire lacing (and it was so pretty looking) gently work that one wire loose, unsolder it from whatever pot or switch it was attached to and thread on a thin piece of spagetti or heat-shrink tubing. Usually it takes an entire six to ten inch length of tubing and as you are going more of the insulation chunks are breaking off of that wire. Looking closely you see that many of the conductive strands are corroded and broken on that one wire. You bravely muddle along and now that wire looks all pretty.

Hmm, getting ready to re-bundle everything else and you find that you cracked insulation on three or four other wires while working on that one wire... Darn. Now the experience gets repeated on those too. This is turning into a day-killer.

Ok.... it is now 11:45 in the evening, you have done a half-dozen of those wires. A few times you find that the cracked insulation extends all the way into the lower chassis but you are set in your mind; "there is no way I am cutting apart the lacing in the lower chassis". Yea, keep thinking that, maybe it will help you sleep at night. Wait until you need to do something silly like replacing a bad paper cap or BBOD."

All this happens because you wanted to fix a slipping tuning dial. Maybe in your zest for cleanliness you disassembled the brass plate that retains the geartrain under the front panel so you could make the tuning bezels look pretty. (been there, done that) and you used brass cleaner to make all of that stuff look nice. Maybe you were really foolish and used something even in the slightest bit greasy so the edge of the tuning dial is slightly slippery so the brass wheel that is driven by the tuning knob is no longer gripping

the edge tight enough (that is what usually causes a slipping tuning knob, weak hairpin springs, corrosion on the cadmium plated front pan and the little gear carrier that is supposed to be spring loaded against the edge of the display disk, all quite clever for its day.).

BTW, even though it caused me almost a week of grief, fixing other things that geartrain looks spectacular! I strongly recommend that if you have metal that needs to be polished, give "Simichrome Polish" a try. It smells ammonia based but things I have polished ten years ago still look brand new.

Date: Thu, 1 May 2014 00:32:36 -0600
From: Transmaster <22hornet@gmail.com>
Subject: [R-390] Spline wrenches, found a great place to get them

Been lurking here for years. I was Looking for a new set of spline key and found Max Gain Systems great prices, good selection.

http://www.mgs4u.com/Bristol-spline-L-keys.htm

Date: Thu, 1 May 2014 10:24:39 -0400 (EDT)
From: Glenn Scott via R-390 <r-390@mailman.qth.net>
Subject: [R-390] R390, SP 600, other receivers

I have a fair amount of new waxed line I use for R390, SP600 and other receivers. The line I have is more white than the yellowish stuff used in these receivers but looks great. For an SASE, I'll send enough line and then some for 1 receiver. The 390A manual has the stitch procedure and it's easy once you get started..Please, I am not making this offer for stockpiling material but rather to anyone who really plans to rework his/her own receiver harness.

I have replaced harnesses with old brittle wire with new Teflon coated wire and it's not that bad if you take your time.. I figure about 7-8 hours for a 390A and this includes removal building the harness and rewiring it back in, including front panel and connectors. This is having everything ready and buzzing out your work before powering your receiver back up. First time rewiring a receiver,, expect it taking twice as long, like most things. Ebay has proven to be a good source for Teflon wire in bulk, although, I don't have exact matches for every wire color combination but I do provide a chart with the new color designations with the receiver..

It goes without saying, have all of your new wire ready before starting this project. Also, a digital camera to take pics as you go can save you a lot of grief during such an undertaking.. My address is on my webpage dsmlabs dot com

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Date: Sun, 18 May 2014 11:12:36 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] R390a Help

If it was already rebuilt you should be in pretty good shape. The only "different" things about the R-390A would be the speaker impedance of 600 ohms and depending upon how you feed the antenna.

The antenna has a 50 ohm unbalanced connection but it is on a "C connector" on the back of the radio. There is also a balanced, 125 ohm connection with the two pin plug near the C connector. For that you would need the right kind of connector and possibly a impedance adapter to get to whatever your antenna is matched for.

The radio takes 120 VAC (normally but it can be restrapped to 240) at about 2 amps. It is good for AM/CW and with a bit of tuning it can be fairly effective on SSB. Most R-390's were intended for fixed frequency service on RTTY but make pretty good receivers for amateur radio use.

There is a large number of tubes but really only a half-dozen different types (more or less). If the radio has been rebuilt you should be OK with the geartrain and alignment so unless you know what you are doing or have something very specific in mind then keep out of the mechanicals. You would do yourself good to get some NOS tubes that test good as quite a bit of the troubleshooting and even performance peaking comes from having the best tubes in the best spots.

Download the R-390A R2K guide. It goes into excruciating detail in how to do just about everything to the receiver.

There are some work-arounds to match the speaker impedance from 600 ohms to something like 8 ohms. Ask around, we have some good tips on that.

Date: Mon, 19 May 2014 15:00:50 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: [R-390] Ungar/Weller(?) Soldering Iron Tips?

A little OT, but does anyone know of a source for the old copper soldering iron tips that have #6-32 threads? These are for old Ungar heaters. All of my tips have pretty much disintegrated. I thought the #824 tips were correct, but I think those are most likely #10-24 (3/16"?). Not even sure if these are still available. Worst case, I could probably turn the 824's down and rethread them but that's kind of a lot of trouble...

Date: Mon, 19 May 2014 16:30:11 -0400
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] Ungar/Weller(?) Soldering Iron Tips?

OMG, someone's still using the Wood Burning Tool as a soldering iron? They run WAY too hot for soldering. You will forever thank yourself if you replace it with a Weller. Even the simplest, AC Weller with no temperature control is a big step up. I have an ancient WTCP (temperature controlled) soldering station I bought in the '70s that is still going strong (though it is not my main soldering implement these days). I think they still make a version of that. Buy one and you'll wonder how you ever soldered without it.

Date: Mon, 19 May 2014 16:47:00 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Ungar/Weller(?) Soldering Iron Tips?

Well, ummmm, yes, believe it or not, I still use those. I guess since I learned on one of them all those years ago, it's what I'm used to. Yeah, I know, you can get used to just about anything, right...

I've always thought I'd upgrade my soldering "station" but never have. Would love a desoldering station, though. A solder sucker, well, usually just sucks.

BTW, I find a hot iron to work very well - especially for BA things. Get on it, get it hot quickly, apply the solder, and get off of it. My solder joints are pretty much always shiny and have never encountered a cold solder joint that I've made that I can recall.

Date: Mon, 19 May 2014 14:12:29 -0700
From: Pete Lancashire <pete@petelancashire.com>
Subject: Re: [R-390] Ungar/Weller(?) Soldering Iron Tips?

Setup a Email notification on Ebay is a good option. It may take months but one day you will see 10 new blah blah blah with a Buy it now for $5. A year ago I got just over 50 Weller gun elements for less the the scrap value of the copper, it took just over a year. for the offer to show up.

Date: Mon, 19 May 2014 17:22:56 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Ungar/Weller(?) Soldering Iron Tips?

Yep! I still have one of the old Weller guns. There are times when working on a BC-610 that you can't beat it!

Date: Mon, 19 May 2014 17:28:03 -0400
From: quartz55 <quartz55@hughes.net>
Subject: Re: [R-390] Ungar/Weller(?) Soldering Iron Tips?

I bought a bunch of large Ungar elements from ebay last year when I was working on those filters. I remember seeing the screw on tips, you will have to do some searching, but there is still the stuff out there. I use my elements with a lamp dimmer, after a few tries I've figured out where the temp likes to be for what I'm doing. I do like the large tips that don't loose heat when trying to solder some large BA thing. Getting them in where you need them is another issue. I got some pretty good deals though.

Date: Fri, 13 Jun 2014 12:53:52 -0400
From: quartz55 <quartz55@hughes.net>
Subject: [R-390] Filter label glue

I removed the label on one of the filters I repaired and now am wondering what kind of glue to put it back on with? I don't want to use epoxy although it probably would work, but may become brittle and may not stick too good to the shiny metal. The original seemed to be some sort of contact glue. Any good ideas out there, or just a good quality contact cement?

Date: Fri, 13 Jun 2014 14:07:22 -0400
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] Filter label glue

I think they were originally "gummed" (like the old lick-em stamps), in which case it was probably fish glue (isinglass) or possibly vegetable gum. Any of the common contact cements (Pliobond, etc.) should work.

For an out-of-the-box solution, consider using a piece of clear heatshrink tubing a bit larger than the filter. Hold the label in place with a tiny dot of cement, or just lick it and place it in position. Slip the heatshrink tubing over it, then shrink. This makes a very secure and protective lamination.

This is also a good (but somewhat tedious) way to mark cables, using labels you print with your computer and cut to size.

Date: Tue, 17 Jun 2014 14:32:56 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: [R-390] Fair Radio Panoramic Display

I recently had the opportunity to purchase a pair of Google Glass. On my recent trip to the Dayton Hamfest I spent the Wednesday prior visiting my friend Phil, at Fair Radio, in the city of my beginnings, Lima Ohio. For those of you who have not had a chance to visit in person, I stitched some

Glass shots together. They can be found here, be patient, they are big ...73,
tom, N3LLL http://www.kitparts.com/Pictures/

Date: Wed, 25 Jun 2014 09:17:08 -0600
From: Transmaster <22hornet@gmail.com>
Subject: [R-390] The Tool that clips on the back of the R388/URR

Now that I have the tool set for the R390A clipped home, thanks Chris, I was wondering about the "L" shaped tool the fits on the back of the R388/URR. The pictures in the Tech manual are not very clear but it looks like a straight slotted screw driver on the long side and a Philips on the "L" side. I have the complete set of alignment tools clipped inside I am only missing the "L" driver tool. on the back does any one know where I might find one.

Date: Wed, 25 Jun 2014 08:32:56 -0700
From: Chris Farley via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] The Tool that clips on the back of the R388/URR

That tool is a 3/16" L shaped driver, with a #1 Phillips bit on each end.? I have an original, and devoted a fair bit of time tracking that bugger down through Collins paperwork, NSN numbers, and discontinued part numbers. In a nutshell, it is no longer available.? I even looked into having them custom made, but never came across a shop that was able/willing to do them. If you have any leads and don't care to go through the hassle and expense yourself, let me know. Good look in either event-

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Date: Thu, 24 Jul 2014 07:36:36 -0400
From: "Bill Riches" <bill.riches@verizon.net>
Subject: [R-390] Minibnc connectors

Interesting quote: I was seeing if the small coax connectors were available for our R-390A receivers. Here is what I found:

Hi, We are pleased to quote to you as follows:
Automatic Connector PN : RFL0701-847 (M1)
IAW : 2615078 Rev. --
10 pcs @ 1,504.30 each
90 day delivery
Regards, Ashlee Flower
Automatic Connector
375 Oser Avenue
Hauppauge, New York 11788-3607
(631) 543-5000 Phone
(631) 543-5107 Fax

How many do you want???!!!

Date: Thu, 24 Jul 2014 07:44:37 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] Minibnc connectors

They can't sell them to you for less than the current contract price to our government. Try Pasternack. Also...they are reusable they can be removed and put on new coax. If you are only short a few you can probably pick those up from Fair Radio Sales.

Date: Thu, 24 Jul 2014 07:50:08 -0700
From: Pete Lancashire <pete@petelancashire.com>
Subject: Re: [R-390] Minibnc connectors

Automated connector is a DOD parts supplier. One of hundreds from around the country. They can not sell an item for less then what they currently have on record to the DOD. You make a lot of money on selling replacement parts to the DOD but it is very easy to get trapped. The orders at $1,500 each stop coming in and you either scrap them or if thats is you whole business, you fold up.

Date: Thu, 24 Jul 2014 09:04:47 -0700
From: Bill Guyger via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] Minibnc connectors

Fair Radio has Mini BNC's on their website. As usual they're a bit high, but they do have some. But as someone else noted the connectors can be re-used.

Date: Thu, 24 Jul 2014 09:19:22 -0700
From: Steve Toth via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] Minibnc connectors

Wow, I think the resale value of my R390A's just increased exponentially!

Date: Thu, 24 Jul 2014 09:25:11 -0700
From: Chris Farley via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] Minibnc connectors

Before somebody buys the wrong thing, I just want to clarify a detail-These are NOT "mini-BNC" connectors, which do exist and are readily available. The connectors used are simply called "miniature bayonette", or "MB" connectors. They are NOT the same, nor compatible with each other.

I spent quite a bit of time digging for these things a while back, and

basically you're not going to find new ones from any dealer unless you want to spend A) more than the whole receiver is worth, or B) buy NOS from a surplus dealer. Even then the prices were insane for the most part. I found ONE surplus dealer who was willing to work with me on their tarnished NOS stock, but didn't feel the rather large investment required was worthwhile.

IMHO just rebuild your original ones, it will save you time and be less aggravating in the long run. If you have a missing or broken one, I do have just a few 90 spares.

Date: Thu, 24 Jul 2014 14:04:10 -0400
From: "Lester Veenstra" <lester@veenstras.com>
Subject: Re: [R-390] Minibnc connectors

Try the RF Connection

Date: Fri, 25 Jul 2014 07:01:50 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Minibnc connectors (really MB connectors)

It is much easier to buy a junker RF deck off of eBay for $25 that still has the cables attached. With careful work you can remove an old MB connector and put it on new cable.

I cannot believe that someone has that much need for a bunch of MB connectors. If they became unavailable I would just replace the chassis connector and the cable with an SMB. Even if you had a half-dozen RF and IF decks you could replace every connector with SMB's over a weekend.

At least the SMB (or SMA) connector is an industry standard where you could buy a whole bunch of test jumpers for working on radio decks outside of the radio.

Date: Fri, 25 Jul 2014 08:58:23 -0400
From: Bob Camp <kb8tq@n1k.org>
Subject: Re: [R-390] Minibnc connectors (really MB connectors)

If you go the replacement route, there are also things like the MCX that are a *lot* more common. You may run into locations where an SMA / SMB / SMC is simply to large. I haven’t done the conversion so no idea if they fit everywhere or not.

Date: Fri, 25 Jul 2014 08:43:37 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Minibnc connectors (really MB connectors)

I had stuck with the SMA/SMB form factor as there is a chassis mounting hole to contend with if you remove the existing MB connector. The MCX connectors I have were suited for a much smaller chassis opening.

SMA requires that you thread that little thing in place, kind of a pain in the keester when working in the back corners. SMB is a snap coupling that you just press down on the cable.

I only modded one radio in this manner, my primary '390A where I added a 12 KHz roofing filter (Rockwell/Collins torsional filter) and it only took the move of a single coax cable. For a while I was getting all worked up about MB connectors and just decided to bite the bullet and go with the SMB connector on the coax coming off of the RF deck. The two connectors on the roofing filter can (that is screwed to the back wall of the chassis) and the connector on the IF deck.

Date: Sun, 27 Jul 2014 15:51:31 -0700
From: Perry Sandeen via R-390 <r-390@mailman.qth.net>
Subject: [R-390] R390A Troublesome components

Just food for thought.

On my Super Heretic R390A upgrade schematic I listed a compendium of problem parts. Email me OFF LIST for a TIFF Bit Image copy.

Also there is similar parts information as well as invaluable trouble shooting info by Roger Ruszkowski in the R390A Y2KR3 manual on the R390 FAQ site. You have a *new*old R390A. In reality you need to become used to the word *shotgun*.

Date: Thu, 7 Aug 2014 12:29:32 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: [R-390] Suggestions for better soldering iron or techniques?

A while ago, I posted a need for some tips for a pencil-style soldering iron and a generous list member sent me a few replacements (thanks Foster!).

While I received some friendly comments regarding the use of a "wood burning tool" for soldering, I still use this iron and it works well for the most part; however, I'm trying to solder some things for which this iron is not working well.

The item (an older Marantz solid-state stereo amplifier) has some somewhat larger soldering posts to which the interconnecting cables were soldered and I'm in the process of reassembling it and reconnecting these

cables; however, the shielded cables are rather small and the insulation is not very heat resistant so this is presenting some challenges for me.

I managed to solder a couple of these with a larger-tipped, and quite hot, iron; however, that isn't working as well as I'd like due to the excessive heat. My thinking (again) was to hit this with an iron with sufficient mass so as not to cool the tip too easily and to get on and off the joint as quickly as possible; however, I'm still seeing some melting of the small diameter insulation that I'm not happy about.

I'm considering staying with the large tip and reducing the heat (with my variable transformer). If I do this, I think the likelihood of melting the insulation should be reduced but with a cooler iron, it would mean having to stay on the post longer so that may not work either.

Any suggestions on 1) a different method or 2) a better soldering iron? I realize this is probably an age-old question and it's more technique than anything but this particular situation is frustrating me just a bit so thought I'd reach out for some advice.

Date: Thu, 07 Aug 2014 13:01:44 -0400
From: quartz55 <quartz55@hughes.net>
Subject: Re: [R-390] Suggestions for better soldering iron or techniques?

You could try wrapping the insulation that won't take the heat with some paper towels or even cloth that's been wetted. Tedious, but if it works... I like using a large mass iron like the Ungar 1239 plugged into to a light dimmer. It takes a while to figure out the temp, but I like it other than getting a pro station.

Date: Thu, 07 Aug 2014 13:07:04 -0400
From: rbethman <rbethman@comcast.net>
Subject: Re: [R-390] Suggestions for better soldering iron or techniques?

I'd tin the braids first. I'd also exit the insulated wire a longer distance back from where you are doing so now. Your Soldering Iron is really applying too much heat to the "cluster" of braiding shield and unless you try what I'm suggesting, you will only end up replacing every single wire with braiding shield, in a futile attempt to find a solution. Hope a try at this shows a working method for you. The Old Marantz from late '60s or early '70s will love you!

Date: Thu, 7 Aug 2014 13:25:08 -0400 (EDT)
From: Glenn Scott via R-390 <r-390@mailman.qth.net>

Subject: [R-390] Suggestions soldering info

You are sure to get a lot of opinions with your question. This is kinda of like asking which car should I buy. My 2 cents worth is based on my experience of running 2 electronics companies and about 35 years experience, however, this is just my preferences. I also like GM but you may prefer Ford, the next guy swears by Honda...Hi hi

There is a lot of great stuff on the market these days. In my lab I do everything from point to point work, Printed circuit board work, through the hole and surface mount as well as cables and connectors. I have used Weller temp controlled stations since the early 80's and find them to be excellent for about 75% of what I do.

http://www.ebay.com/itm/Weller-Analog-Soldering-Station-/301271073068?pt=LH_DefaultDomain_0&hash=item462527c12c

You can spend another $100 and get this station with a temp display but for me and having had a lot of experience, I know approximately where to set the pot when I solder various connections. If I am too low, I just turn the wick up. With the Weller series, there is a myriad of tips from what I call the BERTHA or large tips down to small tips to delicate PCB work.

For the SMT stuff use a hot air station and a very small tipped Weller solder station. For larger blobs of solder, I have had great results with the Esico 100 watt solder iron. Here is a link for a 50 watt unit by Esico..

http://www.ebay.com/itm/Esico-50-Watt-Industrial-Grade-Soldering-Iron-NOS-121394107520?pt=LH_DefaultDomain_0&hash=item1c43a71480

As important for PCB solder work is the ability to desolder without tearing or lifting traces. About 3 years ago , I bought a Hakko 808 desoldering gun and it works very well even on solder blobs often found in point to point wiring around terminal post. Occasionally, I will ad extra heat from a second solder gun but usually the 808 is plenty. I posted about this unit recently and several of the other R390 series receiver guys chimed in about their Hakko units including Chuck Ripple.

http://www.ebay.com/itm/Hakko-808-KIT-Desoldering-Kit-with-808-Gun-120-VAC-/271338131301?pt=Electronic_Battery_Windup_Toys_US&hash=item3f2d034f65

Also plan to have some good solder wick for places where you can not stick the 808's nose. ot the cheap stuff from the local Shack store. You can check on epay and find deals on some of Weller's older stations. I have several

from the early 80's that are still running, though I did have to finally replace a heating element on one. Hakko is another excellent company with decent soldering stations. I have seen a few of the cheap Chinese stations and though inexpensive, I would not own one. There may be some Asian brands that are very good; I just don't know. For me, I have used Weller products for decades and very much like their products. As mentioned, I have a few Hakko and Esico products and are pleased with them too.

Date: Thu, 7 Aug 2014 14:15:56 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Suggestions for better soldering iron or techniques?

It isn't the braid that's the problem. I'm not getting things _that_ hot. It's the inner conductor's insulation. It's not burning it through and down inside the wire, etc., just melting it a bit towards the end.

Unfortunately, there's not much slack for some of these cables to create new ends and I'm trying to work with what's already there. There's just not much room for any kind of heat sink, etc.

Hopefully a cooler iron will help. I'll find out soon.

Yeah, it's a 1030 I probably overpaid for that needed restoration. I have a 1060 I bought new back when that I also need to refurb but I wanted to "learn" a bit on the 1030. I had to remove the main boards from the chassis in order to clean up some rather nasty corrosion. The 1060 doesn't have this so I plan to leave the boards in place (at least as much as possible) and replace parts in situ.

Date: Thu, 7 Aug 2014 11:17:36 -0700
From: wli via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] Suggestions for better soldering iron or techniques?

At the risk of getting flamed, I have been using an Unger wood-burning tool for soldering since the 50's. Mine happens to be attached to a Variac so that I can drop the tip temperatures as needed. I make up my own copper tips from round stock, cutting threads for use. In my case, this has served me for 50% of what I do. Spare 50W and 37.5W elements are around, since no one wants them anymore.

For heavier work, I like my dual heat Weller 8200 soldering gun.

I have had the best luck de-soldering small stuff like PC boards with an

expensive Hakko 808. There is nothing wrong with braid for other tasks.

Desoldering small shielded cables is indeed difficult. Sometimes, you just have to either cut flush and redo the ends, or simply run a new shielded cable. Splices are a real bad idea.

Date: Thu, 7 Aug 2014 14:22:02 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Suggestions for better soldering iron or techniques?

I'm pretty sure Eric Clapton could make my guitar sound better than I do. So much of soldering is technique and the wood burner has served me well for over 40 years.

One of these days, I'd really like to "invest" in better soldering tools - particularly a desolderer. A cheap-o Radio Shack solder sucker and braid works okay most of the time, but I'd get a lot of use out of a true desolderer.

One day...

Date: Thu, 7 Aug 2014 13:57:59 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] Suggestions for better soldering iron or techniques?

May sound strange but cooler is not better. It requires that you stay on the joint longer and with the low melting point of the plastics involved that still exceeds that temp. Actually hotter may be the answer...high heat and quick is the ticket and everything must be very clean and ready to flow. Just my experience...

Date: Thu, 7 Aug 2014 14:07:10 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] Suggestions soldering info

About the same number of years experience and working on the same range of stuff..

All my soldering work is being done with used Hakko stations bought off EBay. I have one dual soldering station with an iron with a tiny tip and one with a heavy tip on the same station. I also use a Hakko desoldering gun...it's great.

I'm using a Chinese knockoff hot air rework station for SMD work...it has the hot air iron and a very tiny soldering iron in the same station....works

great and was very affordable...again...EBay. Parts are available for all there as well.

It's amazing...from switch on to on temp on the Hakko irons is no more than about 30 seconds.

Date: Thu, 7 Aug 2014 15:32:15 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Suggestions for better soldering iron or techniques?

I would suggest maybe having two or three soldering irons for different applications.

1. I have a nice Weller ESD-safe, temperature controlled station with a few tips for through-hole mount PCB type work. This iron does most of the work around the bench.

2. There is one of those Hakko desoldering stations with a couple of heads and a hot-air reflow-type for surface mount components. I bought this for a specific application (replacing audio caps and EPROMS on a bunch of Motorola Spectra radios), used it for a few days and put it back in the box. It is in the closet somewhere in case I ever need to do surface mount stuff again. app

3. A giant old fashioned (but new-new) Weller gun. This has the doo-dads like the two or three soldering elements, even a rope cutter and a few chunks of 13 AWG nichrome wire that I put on the ends when I want to cut PVC pipe. This is useful when soldering together a chassis or tinning ground braid. Mostly this sits in the trunk of my car for when I am on a job-site and need to fix some really screwed up coaxial connections.

No-one soldering iron is the perfect solution to any application. That gun generates a tremendous amount of heat but I would never try to use it inside a radio to do things like cap or resistor replacements. The Hakko hot-air reflow is the opposite end of technology but is pretty much useless for anything other than surface mount or PCB rework. The temperature controlled iron does 90% of the work.

Date: Thu, 07 Aug 2014 19:09:18 -0500
From: Dan Osborne <wb5afy@wb5afy.net>
Subject: [R-390] Nolan - '67 EAC

Quote: I just turned off my '67 EAC R-390A...it's ran long enough for now. It's going to take me a while before I can get used to seeing a darkened dial in that rack. All of this talk about tube life and heat shields etc. just made me realize that it's been a week more than two years since I powered up my

'67 EAC after I put it back together.

That's 17,640 hours of 24/7 operation since October 13th of 1998. Oops, better add a day in there, we just had a leap year. <grin> Damn, time sure flies, huh? In that time frame it's been setting here in the shop running around the clock while experiencing ambient temperatures from below freezing to well over 100 degrees.

I've had two problems with it. I slid it out of the rack after the first thirteen months to correct what I had thought was an AGC problem where it seemed to overload easily. This problem was corrected by the replacement of four tubes. A 5654 (weak), a 5814A (gassy and could have been fixed) a 6DC6 (weak), and a 6C4W (weak). Other than the two rectifiers and the voltage regulator tube, these were the original 1968 date stamped tubes that were in the set when it was built. All of them tested OK when I checked them. I replace the rectifiers and the regulator because of previous bad experiences with those tube numbers.

Two months ago, it died due to an open filament in the 6DC6 while I was sitting here listening to it. A new tube fixed it while the body was still warm.

Right now, it works fine and exhibits zero problems. But, I suspect that I'll end up replacing a number of tubes in it. Probably every thing except the 3TF7. As high a mileage as they are I'd be paranoid of them even if they tested OK. Hell, the thermal shock of powering if back up might fry half of them with my luck. ;-(

I attribute this long life to several things. The and primary one was the replacement of all of the paper capacitors in the receiver. In 25 years of messing with R-390A's, this is the first one that I've had for any length of time that didn't have a cap shorting and taking something with it or having to spend hours and hours troubleshooting some obscure problem that is almost always caused by a bum cap. Come to think of it, I might have been the first person to even consider replacing all of the paper caps in one. <grin> I think I just dislocated my shoulder patting myself on the back. ;-)

The second is that I used heat conductive shields on all of the tubes. The set had all of the original WPM black shields with the inserts when I got it. I replaced the ones on the rectifiers and the 3TF7 with extra tall NOS IERC shields and added the conductive base inserts to some of the "critical" tube sockets. And no, In 25 years I have NEVER had a 3TF7 fail. The only replacements I've used were for sets that had missing ones or they were bad when I received the set.

Running it on a variac at 115 volts probably had a lot to do with it too. My normal line voltage here is 125 volts.

On a side note, the use of the Mobil-1 synthetic motor oil for the primary lubricant has proven to be a winner. It's easier to tune today than it was two years ago.

I spent a hell of a lot more time checking everything when I put it back together than I probably needed to. But all in all, it was well worth it to me and I think that it was effort well spend.

For what it's worth, I just checked the log on one of the R-1051B's and it's been running 24/7 since October 8, 1996. That's well over 35,000 hours. I cheat on them though and replace both of the tubes in each one every 6 months without even bothering to check them. nolan

Survival Kit contents check. In them you will find: one 45 caliber automatic, two boxes of ammunition, four days concentrated emergency rations, one drug issue containing antibiotics, morphine, vitamin pills, pep pills, sleeping pills, tranquilizer pills, one miniature combination Rooshan phrase book and Bible, one hundred dollars in rubles, one hundred dollars in gold, nine packs of chewing gum, one issue of prophylactics, three lipsticks, three pair of nylon stockings -- shoot, a fellah could have a pretty good weekend in Vegas with all that stuff...." ---Dr. Strangelove---

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Date: Fri, 08 Aug 2014 16:35:06 -0400
From: k2cby <k2cby@optonline.net>
Subject: [R-390] Suggestions soldering info

Back in the day (late 1950s) when men were made of iron, chassis were made of zinc-plated steel, and terminal strips were made of Bakelite with ? inch between posts I started my career with a 150-watt American Beauty iron with a 3/8 inch diamond pointed tip. I still have it, but it doesn't get much use today unless I am sweating braid or a ground bus.

The next step up was one of those little Heathkit solder stations with the built-in (High-Medium-Low) transformer and a low-voltage GE iron. I had two tips one 35-watter with a 3/8" chisel point and the other 25 watts with an inch chisel tip. That's still in use, although the larger tip is starting to give out.

Lately, I've been using the little Weller irons that use handle-heater-tip cartridge assemblies. I've got one with a 1/8 inch chisel tip and another with a pointed tip that tapers down to nothing which I use on surface mount parts.

I've never tried any of the hot air systems.

In all instances, the secret to good soldering is the combination of clean parts (I use a stainless steel plater's brush the size and shape of a tooth brush " Enco tools"), the right heat (I just use a home-brew "motor control" box with a triac, diac, capacitor and pot; see any 1980 decade Handbook), and I always tin the parts before I join them.

My only problem lately has been finding solder larger than #18 wire. It's a pain in the neck to have to use about 3 feet of the tiny stuff to solder one microphone plug pin.

Date: Fri, 8 Aug 2014 18:03:12 -0600
From: 22hornet <22hornet@gmail.com>
Subject: [R-390] soldering suggestion

I have a Hakko fx-888d soldering station and it is the best soldering tool I have ever owned. Precise temperature control from 120 to 899 degrees, you can store 5 temperature settings to match the alloy of the solder you are using, and it takes about 2 minutes for the tip to get to temperature, and it holds the set temperature. Hakko also makes excellent hot air systems. I have tried them and they are OK but they work best with surface mount stuff which I don't get into.

Date: Mon, 8 Sep 2014 12:49:35 +0300
From: Grayson Evans <wa4gvm@gmail.com>
Subject: [R-390] Wiring harness removal and cleaning

I recently got very lucky and found (and rescued) three R390A?s from a junk yard here in Turkey. They are in amazingly good condition, nothing missing except a knob or two. Never owned one of these "hummers" before but always wanted one. I figured I would use one for parts, but even the worst one is totally restorable if I can figure out how to get the dents out of it.

So I am starting a long restore process. I have restored a lot of Collins S-line (really easy radios to work on), but nothing this complicated. I love it. I bought the Hi-Res videos and I have downloaded all the amazing docs from the 2K site (amazing site). This has got to be the most well documented radio in history. Is there ANYTHING someone hasn?t written about this radio?

The radios are fairly dirty so I want to strip them down completely. I have removed all the modules and the front panel from the oldest one (Collins, 1955 or 56). I removed all the controls/pots/switches still attached to the wiring harness. I want to completely remove the harness from the chassis

for cleaning. It looks like the best thing to do is leave all the stuff attached to the harness and try to clean it as one piece, being careful not to break any of the connections to the pots/switches, etc. Any suggestions on cleaning the harness? I thought about submerging it in a bucket with water and a mild detergent for awhile then spraying it off, then clean the pots/switches with WD40 and Deoxit and blow dry (or oven dry).

The chassis side pieces are dented and bent at the corners. One looks like it was dragged behind a truck, but no damage to the modules. I'll ask more questions about that later.

Date: Mon, 8 Sep 2014 19:09:41 +0300
From: Grayson Evans <wa4gvm@gmail.com>
Subject: Re: [R-390] Wiring harness removal and cleaning

Thanks guys for the info. I think I will avoid the WD-40. I remember it leaves a bit of a residue. My problem over here in the boonies, is I can't find any distilled water. No one seems to know where to get it. Tap water isn?t too bad. The bottled drinking water actually has more desolved minerals (I did an evaporation test). So anytime I wash, I try to blow all the water off before it dries. (the blowing is me through a hose). I photographed everything as I took it apart, easy nowadays.

Date: Mon, 8 Sep 2014 16:14:59 +0000
From: Sheldon Daitch <SDAITCH@bbg.gov>
Subject: Re: [R-390] Wiring harness removal and cleaning

Check the broadcasters. If they have a water cooled transmitter, there is a possibility they have a water distiller. Kind of depends on the transmitter, of course, as some of the solid state transmitters are water cooled, but the purity requirements might not be nearly as high as a tube type transmitter.

Date: Mon, 8 Sep 2014 19:16:19 +0300
From: Grayson Evans <wa4gvm@gmail.com>
Subject: [R-390] More issues removing wiring harness

I have got two very stuck, corroded front panel controls. The AGC switch and the Limiter pot are frozen to the front panel. I tried many applications of penetrating oil, WD40, and hitting the shaft from the front with a hammer as hard as I dare. Several other controls were corroded, but they came out.
I tried turning with my hand from the back, no luck. Any way to avoid damaging them?

Date: Mon, 8 Sep 2014 11:22:44 -0500
From: Tom Frobase <tfrobase@gmail.com>

Subject: Re: [R-390] More issues removing wiring harness

I would put the nut back on loosely and find a deep well socket that fits over the shaft and rests on the nut. Then give it a crack with a small hammer. I am sure the sophisticated scientists on the list will come up with a hundred other ways to solve the problem.

Date: Mon, 8 Sep 2014 12:23:29 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] More issues removing wiring harness

I don't know for sure, but some of the controls have a locking pin that is seated in a shallow hole in the back side of the front panel Twisting too hard might break that pin.

As for getting them out, if you have a deep-well socket that will fit the threads from the front, that would be the safest way to tap on them to loosen them. Tapping directly on the shaft is much more likely to cause damage.

Date: Mon, 8 Sep 2014 11:32:56 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Wiring harness removal and cleaning

Do not be too worried about using distilled water. Chuck's videos show the garden hose cleaning method of working on the radio and it is just fine.

Since you are pulling the decks and modules for individual cleaning and hopefully removing the panel meters you can treat the chassis like one big object for cleaning.

Hot soapy water, lots of it, a soft scrub brush or paint brush and a bit of scrubbing power similar to doing pots and pans. Work the hot soapy water into all spots, clean out the bushings and all of the mechanicals on the front panel of dead grease and dirt. Rinse it all down with a garden hose (blast things a bit if you like).

At the end you could use a gallon of distilled water to just do a splashdown rinse of the chassis to chase away any mineral-laden water. Blow it out with compressed air, then either leave it in the hot sun for a day or two or bake it gently in an oven at around 120 F for a few hours.

Be nice to the potentiometers on the front wiring harness if you can. After things dry they might like a little bit of De-Ox-It, the same thing with the connector contacts.

Since these radios were probably exposed to much worse than what you are going to do to them with the bath, what's the net-loss?

Lots of the flat metalwork that may be dinged up or bent can be pulled off and re-flattened with a hammer and a hard surface. Some of the metalworking
wizards could do even more.

Date: Mon, 8 Sep 2014 11:55:26 -0700
From: Steve Toth via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] Wiring harness removal and cleaning

>Lots of the flat metalwork that may be.....

For the bent panels: I removed mine and then used a rubber mallet to pound them out flat. Laid them on a piece of plywood on the concrete garage floor. Checked them again on the flattest piece of floor by laying them on a towel and gently tapped them again. They came out OK with no mars, dents, dings or scrapes. For side and top-bottom panel dents and dings use a shop hammer and gently tap the ding repeatedly while laying the panel on a flat surface or using a small piece of steel for a back stop until it smoothes out.

Date: Mon, 8 Sep 2014 14:22:01 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] Wiring harness removal and cleaning

I have a big orange colored shot-filled mallet that I labeled Control-Alt-Delete.

Date: Mon, 08 Sep 2014 18:10:48 -0600
From: Robert Moses <rhmoses@earthlink.net>
Subject: Re: [R-390] Wiring harness removal and cleaning

For sheet metal work talk to an auto body shop. Warn them that the metal is aluminum and subject to cracking so go easy on it. (Of course after the electronics are out of the chassis.)

Date: Tue, 9 Sep 2014 19:43:50 +0000
From: "comcast mail"<pmills7@comcast.net>
Subject: [R-390] OFF Topic -- great radio & Tv magazine and book site

I came across the reference for this website in the latest ER magazine that I received today. It has a lot of publications of 1940's and up radio and electronic magaines in readable and often searchable format. I encourage everyone to have a look at it. http://www.americanradiohistory.com/

thanks, 73, Phil W5BVB

Date: Thu, 11 Sep 2014 22:19:31 +0300
From: Grayson Evans <wa4gvm@gmail.com>
Subject: [R-390] A real treasure

Someone passed this on to me and I thought this group would really appreciate it. http://www.americanradiohistory.com

This site has the most incredible library of electronics, radio, television, etc. magazines, in PDF format, free for downloading. I just wish I had them in the original magazine format. I really dont like reading books, magazines, on my laptop or even my iPad. Hurts me eyes after awhile. But, I will put up with it to read some of these back issues. They are really amazing!

Date: Sun, 14 Sep 2014 17:57:39 +0300
From: Grayson Evans <wa4gvm@gmail.com>
Subject: [R-390] R390A Antenna relay

Is the R390A antenna relay plated with something? It looks like it could be silver. Just took the antenna relay off. The plating is badly tarnished and looks like it is flaking off, corroded under the plating I think. Is this worth restoring? I have no idea what to do with it. Any ideas?

Date: Sun, 14 Sep 2014 11:50:39 -0400
From: Robert Newberry <N1XBM@amsat.org>
Subject: Re: [R-390] The BFO pitch counter dial?

Man what's going on in Turkey that so many r-390s are ending up in the junkyard?

Date: Sun, 14 Sep 2014 19:15:53 +0300
From: Grayson Evans <wa4gvm@gmail.com>
Subject: Re: [R-390] The BFO pitch counter dial?

I should have figured that out. i was thinking RTTY, but this knob counts from 000 to 999. Could not imagine it would require that much fine tuning. Never seen that on another receiver that is set up for RTTY. Interesting.

I have only found 3 R390A?s so far, but there is a lot of the junk yard I have not seen. It is about 1km x 1km but only about 10% electrical/electronic. Found did a place out there with bags and bags of NOS tubes. Gotta stock up.

I have NO idea how to get these back to the states. I am returning in a few years so need to figure out something. I also found a 51S-1 that I brought home. There are a lot of radios, got to be very selective!

Date: Sun, 14 Sep 2014 12:29:19 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] R390A Antenna Relay

The antenna relay contacts and fingers can end up looking really blackened
and ratty. I think they are silver plated, the oxide really does not affect the performance of the relay but you can clean them if you want to. Just be careful as you do not want the spring fingers to lose their temper (springiness).

I used an ammonia based metal polish for silver and brass (Simichrome). You
could use a very soft bristled toothbrush to apply it and polish it down. I also use it on the brass gearing in the drive-trans of radios (as if anyone will ever see how pretty they look).

Date: Wed, 8 Oct 2014 12:20:28 -0400
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Further AGC measurements

You ask about order of events.

If you understand the theory and can trouble shoot then you can do the cosmetic bathing and cleaning first. If your skills are not yet well developed then you sort of want to keep the receiver running and learn things from it in steps. Back in the school house you started every hour with a working receiver and ended every hour with a working receiver. Within the hour some thing would go bad (a bug got inserted while you were out smoking) you trouble shot the problem, provide a fix and again had a working receiver to end the hour.
Of course you were working on a clean receiver that did not need cosmetic cleaning.

But you do mention cosmetics and dirty switches and oxidized contacts and grounds.

So there is a two edge problem. In the process of doing a good full tear down clean and lube you get to cure / reset / avoid a bunch of contact problems, dirty scratchy pot problems, oxidation problems an discover any obvious bad resistors and caps. In the process of doing a good full tear down clean and lube God only knows what you will break and thus have to

fix.

We are blessed as the R390 R390A has wonderful systematic back audio end to front RF end trouble shooting procedures that will let you find and fix any and all single or multiple problems.

Forty five years latter I favor the bath first, Swap all the caps, reset all the mechanical ground lug, clean up the past bad solder, clean up the tube socket pins and switch contacts, re clean / lube the pots, test all the tubes and then put it all back together.

Then with a prayer and good ground just apply power watching for smoke and spontaneous part disassembly. Then you can check the fuses, check the B+, eye ball all the filaments and do a front panel diagnoses.

Now you have a clean machine and you can go about debugging and repairing one problem at a time with faith that the problem is not an oxidized contact or bad ground or bad mechanical alignment or obvious broken resistor or cap.

I have found that you shotgun more small problems out than you introduce new problems.

The mechanical size of the receiver is such that you do not have to worry a lot about introducing shorts as you go about soldering in new parts.

I have gone after signal to noise problems one solder joint and ground lug at a time. I have learned to save a lot of time by just doing all the ground lugs in the IF deck at once. Then troubleshoot the IF deck for the one point I screwed up to return the IF deck to operation. Just believe there is sixty years of oxidation in every mechanical connection and repair it.

You are only going to do this level of overhaul to a receiver once when you take possession of it and then you are just going to use it for the next ten to twenty years with the minimum of tube testing / replacement and IF - RF deck alignment. Blow the dust out every fall and wash the face plate every spring.

Only when the oxidation on the contacts again get to the point where the receiver does not operate on all the bands reliably as you tune around will you want to repeat a deep overhaul and cleaning.

You will know when its time to service your receiver.

Date: Wed, 8 Oct 2014 14:04:29 -0400
From: Bob Camp <kb8tq@n1k.org>

Subject: Re: [R-390] Further AGC measurements

If you have a dirty, grimy, ugly receiver (= a normal one from a ham fest or attic) - clean it up physically first. Get the cruddy old lube out of it and do the mechanical work first. Find the dead animals buried down inside it, spot the “improvements” done at some time in the past. Take care of all that early on. If you do the teardown second, you will simply have to re-do all the electrical stuff you did before the teardown. It’s *much* quicker to do things in Roger’s order. Yes, it’s a bit daunting to do it that way, but it’s the right way to do it.

Date: Mon, 13 Oct 2014 22:35:20 -0700
From: Perry Sandeen via R-390 <r-390@mailman.qth.net>
Subject: [R-390] Some chassis marking tips

One technique I used when working on equipment is to annotate inside the chassis with the fine tip Sharpie. It cleans off fairly easily with most common
solvents. Before you remove either the PTO or BFO if you put some nail polish (a color mama doesn’t want anymore) one the shaft where it exits the
module it will hold it in place very nicely. After re-assembly a little acetone or nail polish remover will take it off.

Date: Tue, 21 Oct 2014 11:03:21 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] top and bottom cover source

If I remember correctly, a lot of the mechanical drawings are available. I think I have them on a CD somewhere. I would assume the top and bottom covers are there. Perhaps someone else has those handy?

Date: Tue, 21 Oct 2014 14:45:14 -0700
From: Chris Farley via R-390 <r-390@mailman.qth.net>
Subject: [R-390] MB T connectors? Adapters?

Has anybody ever physically seen, or better yet have a part number for Miniature Bayonette (MB) connector T? How about adapters from MB to BNC? IDEALLY, I would like to find T connectors with one male MB, one female MB, and one BNC. This probably never existed, so an all MB T would be great. Brainstorming a project and don't really want to change connectors on the modules if I can help it.

Date: Tue, 21 Oct 2014 18:36:39 -0400
From: "David C. Hallam" <dhallam@knology.net>
Subject: Re: [R-390] MB T connectors? Adapters?

I have an adapter for MB to BNC The bag is marked 94375-RF-0752 Automatic Connector, Inc. Commack, NY. It has a BNC jack to a MB plug. It's from a long ago project to convert a R-390A IF to work in a R-390. I didn't like the way it worked in the R-390 so it didn't last long.

Date: Tue, 21 Oct 2014 19:01:21 -0400
From: Richard Wojnar via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] MB T connectors? Adapters?

I just had my r391 restored and I had the adjustable bfo replaced with the original knob. I am not sure of the correct name of the adjustable bfo but does anyone know what they sell for as I do not need it. The bfo is in great shape and I can send photos if wanted.

Date: Tue, 21 Oct 2014 20:03:40 -0500
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] MB T connectors? Adapters?

I believe Fair Radio had them several years ago. I don't think I've ever seen one in person, though.

Date: Tue, 21 Oct 2014 21:26:50 -0400
From: djed1--- via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] MB T connectors? Adapters?

I do have a few adapters laying around. Defining m as having the center pin and f as having a center socket:

MB m to m marked IPC 47225
MB m to BNC m marked IPC 47275
MB f to BNC f marked Amphenol 47250

Maybe the part numbers will lead you to some current products. Since there is a straight MB connector, there might also be (or used to be) a "T" .Let us know what you find.

Date: Tue, 21 Oct 2014 22:01:48 -0400
From: Bob Camp <kb8tq@n1k.org>
Subject: Re: [R-390] MB T connectors? Adapters?

Very few of these mini connectors series got going well enough to get people interested in more than very basic adapters. I doubt that a Tee ever existed.

Date: Tue, 21 Oct 2014 22:26:59 -0400 (EDT)

From: Barry <n4buq@knology.net>
Subject: Re: [R-390] MB T connectors? Adapters?

http://tinyurl.com/FairRadioMBTee

Date: Tue, 21 Oct 2014 21:09:20 -0700
From: Perry Sandeen via R-390 <r-390@mailman.qth.net>
Subject: [R-390] Top and bottom covers-Why?

The *A* is already a component cooker that could use fan cooling to extend its operational life. Why would you want to put them on an operational radio?
Unless of course you are using them as cooling fan mounts. The only radio I know of that really benefits with its OEM cover is the R388 series. But them if you don't add the later models type of heat shield between the rectifier tube and
the power transformer the power transformer will go goodbye. Got one real cheap, including a replacement power transformer because of the missing shield.

Date: Tue, 21 Oct 2014 22:00:19 -0700
From: "Drew P. via R-390" <r-390@mailman.qth.net>
Subject: Re: [R-390] Top and bottom covers-Why?

I would suppose that the covers and Utah (not Nevada) plates would be nice on a museum piece, or if you operate the radio in arctic temperatures where the heat buildup would be of no consequence.

Otherwise, they might keep out a little of the dust and dirt. This would be of most advantage for the RF deck with all its gears and cams. I've thought about fabbing a cover for just the RF deck and a little of the surrounding region which would mostly seal out the dust. I'd reduce heat input by solid stating the calibrator - would save the filament heat and don't need all that lovely olde-timey toob dynamic range there anyway. Howzabout a glass cover so you could see all the nice shiny mechanical parts staying shiny?
I'll get right on it just as soon as those darned "Tall Penzons" go away and stop altering all my plans, and those "Round Tuits" stop siphoning away all my time.

Date: Wed, 22 Oct 2014 09:27:23 +0200
From: sigmapert <sigmapert@gmx.de>
Subject: Re: [R-390] MB T connectors? Adapters?

Recently I got some NOS mini-BNC T-adapters (female to male/male) from a surplus dealer in Germany. They are produced by Automatic Metal Products Corp, Brooklyn, N.Y. The adapters are stamped:

94375 - RF 0755G G350057S-1

Here a photo: http://schmid-mainz.de/mini-BNC-T.jpg

Date: Wed, 22 Oct 2014 07:12:13 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: Re: [R-390] MB T connectors? Adapters?

You could do what we did in the lab when we needed a custom converter. We
would take two connectors and connect the center pins with teflon coated wire and silver solder the bodies together.

It would take about a half hour to get things to line up nicely and to use a torch to heat things up so the silver solder would flow. We created some real weird connections, GR connectors to SMA, APC-7 to RS-225. For one-off testing we would just use adapters stacked on adapters but when we needed to make a test jig then out came the creative use of a torch.

The first (and only) time I ever ran across the MB was in the R-390A. I hate the little things, if you are doing something special than make an adapter from MB to SMA and do everything outboard of the chassis connections with SMA. I literally have hundreds of short SMA cables, adapters, attenuators, tees, diode detectors, etc.. for SMA.

Date: Wed, 22 Oct 2014 14:19:16 -0500
From: Raymond Cote <bluegrassdakine@hotmail.com>
Subject: Re: [R-390] Top and bottom covers-Why?

I've been lurking to see if anyone would give a hint on what the different plate are that is presently being discussed. So, what and where are the Utah and any other "named" plates? I have every Collins radios from 51J3 on up and have not heard of these names used. No I don't have manuals available or I'd look it up myself. Anyone care to explain?

Date: Wed, 22 Oct 2014 19:42:34 +0000 (UTC)
From: Norman Ryan via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] Top and bottom covers-Why?

The "Utah" plate is so named for its resemblance to the outline of the state of Utah.? It covers the RF deck's IF coils and slug racks in the R-390A.

Date: Wed, 22 Oct 2014 17:26:38 -0500
From: kc9ieq via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] MB T connectors? Adapters?

THANK you to all who have responded to this- I am now armed with some part numbers and possible sources, and will continue digging from here to out what is available!

Date: Wed, 22 Oct 2014 18:39:28 -0400
From: djed1--- via R-390 <r-390@mailman.qth.net>
Subject: [R-390] Top and bottom covers

This discussion got me rummaging under the workbench to see if I still had a pair of R-390A covers. They've been sitting there for 40 years and I haven't used them, so maybe it's time to send them on. I'll offer them for $50 plus shipping. They are used and have some wear, especially on the bottom of the lower cover, but the top looks pretty good. I could e-mail pics to interested parties.

Date: Wed, 22 Oct 2014 16:48:01 -0700
From: Perry Sandeen via R-390 <r-390@mailman.qth.net>
Subject: [R-390] OD Demise Redux

>The world is moving towards surface mount technology. Point to point wiring >and thru the hole passive components is for us dinosaurs. Stock up now, if >you can find ODs anywhere

Well now, I believe it isn't quite all that bad. And Mouser still has a lot of OD's left in stock. There just being slowly phased out. OD's are much higher priced that many good equivalents. Their price-performance ratio may not justify their use in volume manufactured equipment. It's true that some of the more exotic IC's only come in SM technology. But some types are easier to get and adaptor and are easier to solder than others. But SM components aren't applicable to our B/A units.

When looking for film capacitors at Mouser, the list over 300,000. Mostly name brands. They also stock a wide variety of resistors, mostly metal film or carbon film for the small wattage sizes. What are getting almost impossible to find are the ancient carbon composition resistors that were OEM in our radio's. The market has decided that the metal film and carbon film resistors are far superior to CC's and they are now priced significantly lower than CC's. AB quit making them years ago so now only an obscure asian company has them listed with Mouser.

The good side of the issue is that there are many good SS parts for surge limiting, spike limiting and voltage regulation that weren't economical/available years ago.

IMNSHO, one should shop for tube deals on ebay. The *super tubes* that can replace the 6DC6, 6BA6, and 6BE6 to name a few examples, can be

found for quite reasonable prices if one waits. See the Osterwald R-390A article in ER magazine for an example. Or email me for a copy of my “almost ultimate
R-390A schematics” which show the *super tubes* Ray used as well as annotations of commonly troublesome components as reported on this list from many sources.

Date: Wed, 22 Oct 2014 19:33:51 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] OD Demise Redux

I'm finding there are loads of carbon comp resistors available at hamfests...I've bought thousands in bulk and jumbled up... Got to sort them or hunt through them to find what you want. I think the same will be the case with orange drops...I've found many of those as well...not as many as resistors but there over out there..

Date: Tue, 13 Jan 2015 17:52:55 -0500
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] R390-a repair in Minnesotta

If the R390 is rebuilt and in good working order, it could last 20 years needing nothing more than tubes and alignment. The Fellows here on the R390 reflector have talked more than new guy through extensive R390 repairs. Once the Fellow has a good R390 and then finds himself in need of getting it serviced, He can ask for some help with it. It could be years before the receiver needs work and the lot of fellows around to do work is always changing. Sell the Fellow a receiver and help him get signed up here on the reflector and help him get to the R390.net pages where he can find the history and documents.
If you had to wait for a mechanic in the neighborhood before you brought a car
neither Ford or Chevy would have ever sold one.

Date: Sat, 9 May 2015 06:06:54 +0000 (UTC)
From: Perry Sandeen via R-390 <r-390@mailman.qth.net>
Subject: [R-390] R390A Annotated Schematics

I annotated both parts of the R390A schematics with ongoing known trouble parts as well as upgrade modifications. It is total heresy to the purists, but if one wants a copy (8Bit TIFF file) please send me an original request off line and I will email you a copy. If taken to Kinko's they can make you 24 by 36 inch copies for about $6 each or you can use the windows app to view.

Date: Sun, 10 May 2015 06:17:10 +0000 (UTC)

From: Perry Sandeen via R-390 <r-390@mailman.qth.net>
Subject: [R-390] SP 600 info

For those who don't subscribe to ER magazine and may have an interest, I wrote an article called *The Hammarlund R620, Rarest of B/A receivers* ?They only made 100. It was the last of the SP 600 series and incorporated a number of upgrades not found on the other SP 600 series. What I will send it the digitized schematics (2 pages), the supplemental TM (which is a crappy kludge) and a digitization of all the individual section schematics from the TM.
I've also developed an experimental Heretic SP 600 schematic incorporating a vast number of improvements, many of which I've gotten from other authors.
I'm like the Drudge Report in the fact that I'm an aggrigator of information from many sources. I haven't had time to perform the mods yet. I'm a bit like the shoemaker whose kids were barefoot. If anyone wants wants any or all of the information, PLEASE send an ORIGINAL email. In the past many haven't and as Yahooey lumps them together, there is a good chance that I might miss a request. On my previous post about 75 percent were too lazy too do an original email. So if anyone making a request was left out, please sent me an email again as I'm glad to share all the stuff that I have. I have also digitized several other SP 600 versions which can be found on Andy Moorer's site. In the near future I will post a number of SP 600 mods on Andy's site. Sometime in the near future after this I'm going into and editor emeritus status as as I'm too far behind on my personal receiver work. ?FWIW, When I digitize a large schematic like the SP 600 or one page of a R390A, I end up putting about 100 hours per page. I'm not complaining as I like to do it but the Y2KR3 manual, the SP 600 anthology and other tech articles I've done have taken the better part of 13 years part time. Now others will have to step up and continue the tech info as I cannot. I'm not leaving the group, but at 74, I can't continue doing what I've done in the past. Regards, Perrier Heretic - In - Chief (and proud of it!)

Date: Sun, 10 May 2015 15:38:48 +0000
From: <joldenburg2@new.rr.com>
Subject: [R-390] SP-600 info

I'd appreciate receiving your articles. I own 3 SP600's and they are a favorite here.

Date: Sun, 10 May 2015 11:51:58 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] SP-600 info

It seems many don't know what it means when one asked for an original email from you. Go to your email software and create a new email...paste or

type in Perry's email address in the "To" line and in the body of the note request what it is you are wanting and hit send. Selecting reply or reply all from the list posting can get messy and get things sent to folks that may not want it...so don't do that....as requested.... Create a clean, original, new email... It's not hard....

Date: Mon, 11 May 2015 10:30:08 -0500
From: Chris Farley via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] SP 600 info

How about just uploading your files to a public depository such as BAMA? Would save you the hassle of replying amd adding attachments to all those individual emails, plus the information will (ideally) forever be out there for the masses. If you'd like to send me the files, I'll upload them for you (with your express consent, naturally).

Date: Mon, 11 May 2015 08:39:19 -0700
From: Pete Lancashire <pete@petelancashire.com>
Subject: Re: [R-390] SP 600 info

I 2nd that. And with BAMA or most of the other repositories being mirrored,
they will live 'forerver'

Date: Tue, 1 Sep 2015 19:51:18 -0400
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: [R-390] OT: Manuals Plus demise and Archive Corps

Anybody else see this?
http://www.theatlantic.com/technology/archive/2015/09/introducing-the-archive-corps/403135/

For one who has depended on Manuals Plus over the years, this is a stunning development. I hope Archive Corps can do something to save the collection, either in scanned form or in paper.

Date: Wed, 2 Sep 2015 17:41:01 +0000 (UTC)
From: Norman Ryan via R-390 <r-390@mailman.qth.net>
Subject: Re: [R-390] OT: Manuals Plus demise and Archive Corps

Not really OT!? Thanks for sharing the link to the article. There is a link in the article that one can click on to sign up for updates from ArchiveCorps via e-mail: signup@archivecorps.org

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Date: Sun, 25 Oct 2015 19:06:32 -0600
From: "Robb Urie" <rurie@bajabb.com>

Subject: [R-390] R-390A Manufacturer ID help

I have an R-390A that is missing the data plate from the front panel...besides removing the modules, any clue on how I can identify the manufacturer? There is nothing on the rear panel that indicates the source, the PTO is a Collins version, but that may have been changed in the past. It works great, but looks rough and looks as it was dropped on it's right-rear panel at one time. Plan to attempt to refinish the front panel someday and if I can ID the maker, will get a tag from Fair Radio. It is currently rack mounted with a nice R-388 and a National HRO-5TA-1. Any help would be greatly appreciated.

Date: Sun, 25 Oct 2015 22:35:23 -0400
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] R-390A Manufacturer ID help

If this radio is like most R-390A receivers, it went through depot for repair. At this point all of the modules were pulled and they were cleaned, repaired and updated along with all the others in depot at that time. When the receiver was reassembled, any module was fair game for the reassembly regardless of who made it. So, unless you have a receiver that has never been through depot, or someone along the line ensured that all modules were made by the same
company, the receiver is a hybrid of modules. Any tag should work. IIRC there were two tag sizes. I may be confusing R-390 and R-390A.

Date: Mon, 26 Oct 2015 10:46:32 -0500
From: brloper@gmail.com
Subject: Re: [R-390] R-390A Manufacturer ID help

It may be all Collins. Does it have a silk screened panel or etched?

Date: Mon, 26 Oct 2015 09:25:08 -0700
From: Rick Popovich <RickP@uei.csus.edu>
Subject: [R-390] HELP ! Deaf R-390A

I am working on a R-390A and initially thought there was an issue with the IF deck. I swapped in a known good deck and still am not getting any receive. The Audio deck and PTO were checked previously and checked out OK. At this point it looks like the RF deck is the culprit, and I would like to get suggestions or thoughts from the group on what most likely may be the problem or where I should begin my search for the issue.

Date: Mon, 26 Oct 2015 11:28:00 -0700
From: "Craig" <hamfish@comcast.net>
Subject: Re: [R-390] HELP ! Deaf R-390A

Start in the beginning. Inject, using a sig-gen, a modulated signal into the balanced antenna input. Follow the signal thru the receiver with a scope & tube extender. Shouldn't take long to find the problem.

Date: Mon, 26 Oct 2015 20:29:07 -0400
From: Roy Morgan <k1lky68@gmail.com>
Subject: Re: [R-390] HELP ! Deaf R-390A

Divide and conquer.
No tube extender needed (though they are VERY handy).

The RF deck has a number of test points, many at the grids. Get a signal generator warmed up, study the manual till you know what frequency signals are expected at each test point, and inject that signal (use a series capacitor on the signal generator output)**.

Start at the input to the IF deck. 150 millivolts modulated 30 percent (or is it 100) should get you a standard output (half a watt audio?) Use the line output meter because that's convenient.

Then go backwards toward the RF stages and see where the signal quits.

**The URM-25 signal generators had an adapter with just a single series capacitor in it for this purpose.

If there is not info on the web somewhere about what signal levels are to be expected stage by stage, I'd be surprised. As a rule of thumb, each stage in RF or IF strips may have a voltage gain of 10. W Li's Pearls of Wisdom pages are an astounding compilation of info and experience. The only trouble is that the one on the IF section is many hundreds of pages long!

Date: Mon, 26 Oct 2015 19:29:36 -0600
From: "Robb Urie" <rurie@bajabb.com>
Subject: Re: [R-390] R-390A Manufacturer ID help

Was asked that question and it appears to have a silkscreen panel. Some minor paint wear on the "BFO Pitch" and I can't see any indentations in the metal. Only trying to figure what data plate to purchase and for my own curiosity. I would imagine an engraved panel would be much easier to re-paint if I decide to go thru the entire radio. Thanks for the help.

Date: Mon, 26 Oct 2015 21:47:15 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] R-390A Manufacturer ID help

Yep, engraved panels are more convenient to refinish. There used to be folks who would silk-screen them for a quire reasonable cost but those services are almost completely gone now.

As for manufacturer, are you looking for the manufacturer of the front panel or the entire chassis (bearing in mind that the front panel might have been swapped)? I'm unaware of any tell-tale nuances that would identify a front panel from one manufacturer from another manufacturer but who knows - there could be some way to identify a manufacturer.

Date: Sun, 15 Nov 2015 00:08:11 +0000 (UTC)
From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] OT: RCA Manufacturing Film

If you like BA's you will love this RCA manufacturing film.?
https://www.youtube.com/watch?v=5TF2DZ0E0Q4

Date: Sun, 15 Nov 2015 17:17:07 -0700
From: "Richard W. Solomon" <w1ksz@earthlink.net>
Subject: Re: [R-390] OT: RCA Manufacturing Film

Ah, the good old days, white shirts and ties, clean looking, no beards.

Date: Mon, 23 Nov 2015 14:41:37 -0600
From: Phil <pmills7@comcast.net>
Subject: [R-390] OT Need Amphenol mil connector help

I'm looking to buy single pin mil style amphenol connectors and 12-5P and 12-5S are the numbers I know now.....these are a chassis mount male and a cable mount female. It seems that I remember a company named Williams or some such that specialized in these mil type connectors but I cannot find a link
or reference. Can anyone help with a pointer to them?

Date: Mon, 23 Nov 2015 21:47:00 +0000 (UTC)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] OT Need Amphenol mil connector help

Mouser stocks both - just checked. <snip>

Date: Mon, 23 Nov 2015 15:47:38 -0600
From: Dan Osborne <wb5afy@wb5afy.net>
Subject: Re: [R-390] OT Need Amphenol mil connector help

Phil - www.alvatek.com has whatever you need. Be sure to have the EXACT amphenol part numbers and a high limit on your credit card.

Date: Mon, 23 Nov 2015 17:13:35 -0500
From: Nick England <navy.radio@gmail.com>
Subject: Re: [R-390] OT Need Amphenol mil connector help

William Perry in Louisville specializes in Mil connectors.
http://militaryradio.com/Images/WilliamPerryCompany.jpg

Phone call works best. Bill isn't an email guy. 502-893-8724 He is very knowledgeable, great to work with, and has very reasonable prices. He has tons of vintage connectors as well as newer types.

Date: Mon, 18 Apr 2016 15:44:18 -0500
From: Phil <pmills7@comcast.net>
Subject: [R-390] Need info on R-390A type or variation

I recently lucked into an R-390A at a hamfest less meters and a few tubes that is dirty but restorable. However, it is missing the front panel tag and black spray paint has been added to the back panel to cover any printed info.

There is a long rectangular cover about 1 1/2 inches wide that runs across the back panel and covers up the barrier strips as well as the power connections. There is one larger 3-pin amphenol military style connector in the middle labelled "power" and two smaller 2-pin mil style connectors near each end that are not labelled but I'm guessing might be for the two audio output channels.
Can anyone tell me what this version was used for?

Date: Mon, 18 Apr 2016 16:46:40 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Need info on R-390A type or variation

I believe that's a Navy mod. It's documented somewhere but I don't know exactly where at the moment.

Date: Mon, 18 Apr 2016 20:49:28 +0000 (UTC)
From: Norman Ryan <nnryann@yahoo.com>
Subject: Re: [R-390] Need info on R-390A type or variation

Well described! It is a US Navy accessory from what I gather.? I have a couple sitting here idle.

Date: Mon, 18 Apr 2016 16:33:25 -0500
From: wes Bolin <k5apl41@gmail.com>
Subject: [R-390] R-392 Extender Cables

I need to troubleshoot the RF Section of my R-392, and extension cables would be very helpful. I can extend the RF cables but need the multi-conductor cables #3 RF-Front Panel and #4 VFO- Front Panel and Osc-Front Panel.
Might as well inquire about Cable #2 from AF- Front Panel. These would be a great help, and I could purchase them, rent them, or borrow them. If connectors are available, I could build my own. Thanks for your help.

Date: Mon, 18 Apr 2016 22:48:33 +0000 (UTC)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] Need info on R-390A type or variation

The rear panel you describe is for shipboard use. The US Navy manuals and updates here on the R390A Frequently Asked Questions
Page:http://www.r-390a.net/faq-refs.htm#US Navy

Date: Tue, 19 Apr 2016 12:32:53 +0000 (UTC)
From: Mark Donaldson <wa1qhq@yahoo.com>
Subject: Re: [R-390] Need info on R-390A type or variation

Navy modified receiver. This is fairly common to find and is not a factory variant but rather a modification that was performed after the receiver was delivered to the Navy.

Date: Tue, 19 Apr 2016 12:06:27 -0400
From: Nick England <navy.radio@gmail.com>
Subject: Re: [R-390] Need info on R-390A type or variation

In particular, this manual change reflects Field Change 3-R-390A/URR and shows a schematic for the new rear panel connections
http://www.r-390a.net/NAVSHIPS-0967-063-2031-T-1A-1964Nov30.pdf

NAVSHIPS 0967-063-2080 has the actual Field Change procedure but I can't
find a copy of that one.

Date: Tue, 19 Apr 2016 17:29:21 -0400
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Need info on R-390A type or variation

As Nick said this was a fairly common add on by the Navy.
It bolts on it bolts off.

When you were pulling this receiver out of a hot rack every month to do monthly PM, and this receiver was not to be off line for more than two

minutes because it was in a critical application. IE Navy ship board communication. You wanted some thing you could swap out from the front side only. The back of the rack was not accessible. Two audio plugs, a power cord and antenna connection.
Very neat.

Slide the receiver out and uncouple.
Put up the spare receiver and recouple.
Its hot and ready to run before you can get the front panel screws reinstalled.
No tools needed on the back side that could be dropped into the rack where the tool may not be recoverable with out extreme maintenance activities.
Right now in front of everyone.
Things can not be left adrift inside cabinets.

The Signal Corps would of liked to have had this setup inside some radio huts.

The setup was a hot swap for a style of Navy shipboard cabinet.
Hang on to your bit of history. But get it off the receiver and do some thing proper with the new power cord you are going to install. These receivers were real working units doing day to day operations keeping our military logistics flowing.

Date: Thu, 21 Apr 2016 07:33:33 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Re-blast from the past, Hollow State News 1-53

I still have the entire collection of Hollow State News in PDF format. This is from editiion 1, Septemper of 1986 up to edition 53, Summer-Fall 1994. It runs around 20 megabytes for the entire collection and I can send it in a series of four seperate emails of around 5 meg each.

In 2010 I reached out to the original editors who still have active emails or are not SK to ask for permission. In every case they were more than happy to see the work archived and shared.

If you wish a copy of the series just send me an email. I will wait a week and do an email blast to everyone who asks for a copy.

Most of the editions are in grouped emails; 1-12, 13-25, 26-37 with editions 38-53 as individual documents. There is also a rewritten version of #29, and an excel spreadsheet to help you find articles.

Shoot me an email off-list, I will wait until Friday April 29th before sending them out. Otherwise I end up responding to a dozen different

requests and it gets a bit burdensome.

Date: Thu, 21 Apr 2016 07:03:16 -0700
From: Manfred Antar <mantar@pozo.comcastbiz.net>
Subject: Re: [R-390] Re-blast from the past, Hollow State News 1-53

I can put these up on a website. I think I have all the issues in PDF format. Give me about 1/2 hour. They will be at:

http://www.pozo.com/HSN <http://www.pozo.com/HSN>

Date: Thu, 21 Apr 2016 11:40:38 -0400
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] Re-blast from the past, Hollow State News 1-53

The complete set is also available for download at:

<http://www.ko4bb.com/getsimple/index.php?id=manuals&dir=03_App_Notes_-_Proceedings>

Date: Thu, 21 Apr 2016 18:14:25 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] HSN and other radio files

It had been asked for me to put up the HSN collection on Dropbox. I do have it up there along with LOTS of other information, including the Y3K R-390A
documents and an ENTIRE collection of other tube based and amateur radio
documents. You can get to my dropbox collection at;

https://www.dropbox.com/sh/qjnu6cp03ahajpc/AAABcWVmOZdyPWquiz3az58Ha?dl=0

There is ARC-5, BC-348, Cubic, FCC, NTIA standards, electronics fundamentals (training programs), grounding and surge protection, Hammarlund SP-600, Harris gear, ITT Mackay, PRC-174, Racal, Watkins Johnson, TT-1 tube testers, Sencore LC53 manuals, radio conversion manuals, some stuff I have written professionally and the most unusual R-220/URR.

I will continue to send HSN editions to those who ask by email. So far today I have forwarded the collection to 33 different people.

Date: Mon, 25 Apr 2016 08:04:34 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>

Subject: [R-390] Before you attach power to your newly acquired R-390A

There are a few steps that you absolutely must do before you power up any untested R-390A receiver;

1. Replace C553. This is on the IF deck and keeps B+ off of the mechanical filters. When this cap shorts out it will blow out the input coil on the mechanical filters. As quick as you would rotate the bandwidth switch you would destroy every filter in turn. You should never-ever see B+ on the filter side of this capacitor.

2. Check the power supply filter capacitors. These are the plug-in can-type capacitors on the audio deck. and are several capacitors inside of each can. These age badly (wine turning in to vinegar) and while you may have some success in reforming the capacitors so they do not draw excessive current they will never come back to their full capacitance or ESR values. If your radio has the B+ fuse mod (in an external holder on the back) the bad caps will keep blowing out this fuse. If you do not have a B+ fuse you can end up burning up a transformer, rectifier or power supply choke.

There are at least another dozen steps you should be taking before powering
up the radio. These first two are ones that keep the components from releasing their "magic smoke packets" and making what could be a fairly easy restoration turn in to a major rebuild/ overhaul with unobtanium parts.

Date: Mon, 25 Apr 2016 08:28:50 -0500
From: Raymond Cote <bluegrassdakine@hotmail.com>
Subject: Re: [R-390] Before you attach power to your newly acquired R-390A

Good post Tisha! Everyone should print this out so it is visible and reviewed occasionally. Many do not bruise the list daily so an occasionally posting is warranted as a reminder. Can anyone point me to where the most needed fixes that should be done before power-up?

Date: Mon, 25 Apr 2016 15:13:20 +0000 (UTC)
From: Bill Guyger <bguyger@yahoo.com>
Subject: Re: [R-390] Before you attach power to your newly acquired R-390A

Well thought out as always. Would you please include me on the list for the Hollow State News mail out?

Date: Mon, 25 Apr 2016 09:53:13 -0700

From: David Wise <David_Wise@Phoenix.com>
Subject: Re: [R-390] R-390A s/n improvement 6HA5 mixer

Thanks for the pictures, Larry. If the spirit moves me, I'll put a couple together.

Date: Mon, 25 Apr 2016 18:24:57 -0500 (CDT)
From: Adam Vaughn <adamant316@verizon.net>
Subject: Re: [R-390] Before you attach power to your newly acquired R-390A

Great post. When I first got my R-390A, I searched for info online, and found Chuck Rippel's sadly-gone R-390A site. Fortunately, it has been archived, and can be found here:
https://web.archive.org/web/20090204020515/http://www.r390a.com/

Following instructions there, I replaced both C-553 and C-549 (which affects audio, IIRC) with orange drops, and restuffed both filter cap cans before applying power to my R-390A. I also checked the infamous 3TF7 ballast tube and found its filament to be open, so I replaced it (I won't get into the myriad replacement options here).

Another tip I would give to new R-390A owners is to use a current-metered variac to bring up voltage slowly to the rig upon first turn-on, while watching the meter to make sure the set isn't drawing too much power. In addition, this protects the filament of said ballast tube, as well as the microswitch on the function control. Of course, they should be sure to turn said function switch to AGC before doing so, as the antenna relay will make buzzing noises if the variac is used with the switch set to Standby.

Date: Sun, 29 May 2016 12:39:36 -0400
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Help part numbers

Extender cable use is mentioned in the manuals. You can set an R390 or R390A up on end swing any one deck out and plug the deck in. This has been the way it is done since day one. Some wood blocks help this activity along. Recommended as you drop the front panel. You may have to unbolt the wire harness from the frame to let the front panel be dropped. The wire harness needs some extra slack.

Save your self the effort and do not build these extender cables just because.

Some Fellows doing VFO rebuild and testing have made up the cable to operate the VFO in a jig to allow the exact 10 turn alignment. The VFO is dialed 10 turns with an indicator better than eye ball.

If you need help with other problems let us know. But I am trying to save you from yourself. I am sorry those bad books still exist to miss lead us.

The US Army trained me in 68 to maintain these receivers. I made a career of that for 8 years until 75. And I have been talking about the receivers and writing about maintaining these receiver and own a few and still listen to them every since. Please believe you will not need extended cables to maintain and repair the receiver.

A signal generator, A DC volt meter, An AC volt meter and 600 ohm one watt resistor (2 ea 1200 1/2 watt in parallel) is all you need for equipment. A magic spline wrench, a tweaker, nut driver for filter cover in IF deck, and long Philips screw driver are the only tools you need.

More tools are better. calibrated signal generator, freq counter, tube extenders, AC meter with scale in DB. all help things along. But are not required.

There is an inspection check list at R390.net, I am only the last editor of the list. I was taught the inspection sequence. I was developed long before I ever seen an R390. It has worked ever time I have applied it.

I use to work six day weeks and gave two of these receivers my full attention for an 8 hour work shift. each day. In six months I start the process all over.

A good Saturday 8 hours once a year. Give your receiver a bath, tube test, alignment and noise level mitigation. Swap the tubes around for the very best signal to noise ratio you can get with the parts at hand. A morning in the yard a lunch hour drying in the sun as you do the chores for the day. A 4 hour evening doing the alignment.

Between 500 KHz and 32 MHz the receivers sensitivity exceeded atmospheric noise levels. The limits for the receivers is the antenna.
If the signal can be heard the receivers will hear the signal.

Date: Tue, 19 Jul 2016 18:23:26 +0300
From: Grayson Evans <wa4gvm@gmail.com>
Subject: [R-390] OT: need online source of Army/Navy electronics books

Hoping someone in this group might be able to help.

I am trying to find a downloadable copy of one of the old Navy or Army ? textbooks on basic electronics used to train electronics technicians.
I used to know a site that had a lot of old technical books (vacuum tube era)

probably printed in the 1940?s or 50?s in PDF form for downloading
I have downloaded several books from the site a few years ago, but now I can?t find it.

I have found these old military text books excellent for a beginner learning electronics to get into ham radio. The older 1950 and 60 ARRL handbooks were also good (this site had those as well). Especially someone that is interested in vacuum tube electronics.

I am familiar with this site:
http://www.tubebooks.org/technical_books_online.htm

But its not the one Im looking for.

Hoping someone here knows where I can get a copy of one of these old texts.

Date: Tue, 19 Jul 2016 11:32:54 -0400
From: Tom Chirhart <k4ncgva@gmail.com>
Subject: Re: [R-390] OT: need online source of Army/Navy electronics books

The early Navy Radioman training manuals were great, look for early RM3/2 and RM1/RMC. The Electronics Technician rate came out of the Radioman rate where some were called Radio Technicians.... They had the "sparks" on their rating patches...Predates me.. I have several of these training manuals.

Date: Tue, 19 Jul 2016 11:47:17 -0400
From: Nick England <navy.radio@gmail.com>
Subject: Re: [R-390] OT: need online source of Army/Navy electronics books

Here are the Navy NEETS training manuals
http://www.phy.davidson.edu/instrumentation/NEETS.htm

I have links to some Navy Radioman and Electronics Technician training manuals here -
http://www.navy-radio.com/manuals.htm#training

And you can get Terman's "Radio Engineering" here
https://archive.org/details/RadioEngineering

Date: Mon, 10 Oct 2016 15:00:09 -0400
From: "Don Heywood" <wc4g@knology.net>
Subject: [R-390] killer and mica caps

The below is a link to Chuck's old site. 73, Don WC4G

https://web.archive.org/web/20090204020515/http://www.r390a.com/

Date: Sun, 16 Oct 2016 05:33:34 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Capacitor leakage testing

If you want to test your high voltage capacitors for leakage there are a couple on ways to do it. One is to buy a Sprague TO-6 or similar that will apply the rated voltage to the caps and measure leakage. A much, much older way is to use a HV supply and a 11 megohm vtvm. One end of the cap goes to the B+ and the other to the input lead to the vtvm and the vtvm ground goes to the poer supply ground. Using Ohms law of 11 megs and the B+ value and read the dc vtvm scale to calculate leakage. NOTE. After testing your capacitor make sure to keep both leads shorted for a 10 or more minutes as the *memory* voltage can give you a nasty shock the next day. Found that out the hard way.

Date: Sun, 16 Oct 2016 05:46:58 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Data collection update

First thanks to all who sent me encouraging emails. It looks like I will have 20 to 30 Gigabytes of data. Several have asked for copies and/or volunteered to host it, which would be great. Now, no thanks to mohammad ISIS LLC, I can't put the data on a SD chip and mail it as the it will jam in the letter sorter the P.O. uses. I'll have to put it on a USB stick in a padded mailing envelope. I then have mail it in person, to a post office clerk. No Postage Paid drop off or giving it to my local mail carrier is allowed. So this will complicate distribution a bit.

Date: Tue, 18 Apr 2017 16:39:28 -0500
From: Don Reaves <donreaves@gmail.com>
Subject: Re: [R-390] Some of you will hate this

Don't beat yourself up, Jim.

Who on this list over the age of 50 hasn't "modified" their share of surplus military radio gear over the years?

Your rack mount R-392 reminds me of the Tektronix ARR-15. An excerpt from Hue Miller commenting about them:

I also met Ken K7RPX... (who) had a super interesting story about a rare variant: "The Tektronix ARR-15". Seems that in the late 1960s, a couple or 3 hams at Tek had tooled up to convert the ARR-15 to a rackmount version, with a new front panel. ARR-15s were being released

in numbers to MARS members, and relayracks were obtainable from Boeing surplus. (altho the 3-bay rack "weighed about a thousand pounds"). The ARR-15 because of its calibration feature, at the time offered the only possibility for the average person to have this kind of calibration in a receiver, without going to an R-390. They were popular in an SWL type application, for monitoring use on specific services, like WWV or the national "Transcon" (HF aircraft) frequency. Ken sez there were about 50 - 60 of these built for individual hams, as their own project, just using Tek facilities. There were 2 models, one with an S-meter circuit. The ARR-15 manual was reproduced, but in blue 'Ozalid' blueprint format, singlesided, and with the 'Tek ARR-15' circuit additions added to the schematic. Ken sez he has two of these receivers. I begged him to write a short article about the 'Tektronix ARR-15' for ER or some other such venue....

regards, hue miller

Me again: I had one of the ARR-15 receivers, rack mounted, with a professionally machined panel. Didn't know at the time it was a product from the skunk works of Tektronix.

Date: Tue, 17 Oct 2017 20:45:54 -0500
From: Stan Gammons <s_gammons@charter.net>
Subject: Re: [R-390] First R390A - let the adventure begin

I don't know for certain, but I'd guess the MFP stands for Moisture Fungus Proofing. It's a varnish or varnish like coating use to protect electronics from moisture and fungus. I don't know that I believe the story, but I was told at one time it contained a poison to kill rodents that chewed on the wiring.

Congrats on getting your first R-390A. I'm sort of at the stage you are with the one I recently bought. It's very clean though. I replaced all of the paper caps and the electrolytics. I have a couple of broken gear clamps though. I made a gear clamp out of some T6-6061 3/16" thick aluminum plate scrap I have. It needs dressed up a bit and the hole for the screw drilled but I think it will work. I'd post a pic of it, but I don't believe attachments are allowed on this list.

Good luck with getting the one you have going.

Date: Tue, 17 Oct 2017 22:20:25 -0500
From: Stan Gammons <s_gammons@charter.net>
Subject: Re: [R-390] First R390A - let the adventure begin

Ok. I cut the section a little lone where the screw goes, but this is what it looks like. Still needs a little work, but I think it will clean up and work Ok.

Instead of using the band saw, I think I'll try a 20 TPI blade in a scroll saw to cut out the next one. Never cut metal with a scroll saw before though.

Date: Tue, 17 Oct 2017 22:22:11 -0500
From: Stan Gammons <s_gammons@charter.net>
Subject: Re: [R-390] First R390A - let the adventure begin

I meant I cut it a little long. Dang I can't type today...

Date: Tue, 17 Oct 2017 22:57:28 -0500
From: Don Reaves <donreaves@gmail.com>
Subject: Re: [R-390] First R390A - let the adventure begin

Looks serviceable, Stan. That's pretty good to cut a near perfect circle that big relative to a small workpiece, in aluminum.

Date: Wed, 18 Oct 2017 04:30:07 +0000 (UTC)
From: Bill Guyger <bguyger@yahoo.com>
Subject: Re: [R-390] First R390A - let the adventure begin

I cut aluminum all the time with a saber saw (scroll saw) works great. 20 TPI might be a bit fine, I typically use 14 T. You DO NOT want to use really fine blades for aluminum they start galling i.e. teeth filling with metal and metal coating itself onto the sides of the blade. I cut a tiny bit outside the line and then use a sanding station with 100 grit (or so) to bring it down to the finished dimension. You can cut circular areas with a saw by approximating the curve (kind of like you'd do in a Calculus equation) then filing it down to the line. I typically draw the line with a metal scribe so I have a sharp line to file down to. After deburring you can "polish" the edge by running a round steel object like a screw driver round and round the opening.

Date: Wed, 18 Oct 2017 00:55:00 -0400
From: jbrannig <jbrannig@verizon.net>
Subject: Re: [R-390] First R390A - let the adventure begin

I've cut rack panel aluminum with a radial arm saw fitted with a fine tooth blade.The key is to "push" the blade, not pull, through the material and take just a bit with each pass.This produces a nice straight cut. Some sanding and filing is needed to clean up the edge.

Date: Tue, 7 Nov 2017 21:38:10 -0500
From: Nick England <navy.radio@gmail.com>
Subject: [R-390] R-390A longevity

I was searching for another spec and came across this Newport News

Shipbuilding doc - "Latest Effective Issue of Specifications Currently in Use at Huntington Ingalls Industries - Report Effective Date: November 2017" and there on page 370 it says
"RE-F2686233 R-390A/URR GOVERNMENT SPEC"
which is the interconnecting wiring diagram for installing an R-390A - so there you have it - the shipyard is still prepared to install our favorite receiver....

Date: Wed, 8 Nov 2017 04:35:32 +0000
From: Raymond Cote <bluegrassdakine@hotmail.com>
Subject: Re: [R-390] R-390A longevity

Thats a good find Nick. There is still hope!!

From: Sherry <comcents@bellsouth.net>
Subject: Re: [R-390] R-390A longevity

I agree this is great to know.
Thank you for your research & post Raymond.

Date: Tue, 21 Nov 2017 05:03:05 -0500
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] latest Pearls

Also, I'd like to advocate for a combined Pearls file in addition to the section-by-section version that is posted. I frequently want to search the whole thing, because it is often not obvious which sections lots of list messages responsive to my search might be filed in.

At one time, Manfred Antar was hosting combined files, but I haven't seen a new one for several years. Even though these files are around 8000 pages long, they open fine and search rapidly in all of the PDF readers I have tried. I have found them extremely useful.

Date: Tue, 21 Nov 2017 06:21:01 -0800
From: Manfred Antar <manfredantar@gmail.com>
Subject: Re: [R-390] latest Pearls

I've just put a new combined Pearls File at:
http://www.pozo.com/R-390A/R-390A-Combined-Pearls-of-Wisdom.pdf
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Date: Tue, 21 Nov 2017 22:10:00 +0000 (UTC)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Pearls

Charles has a salient point. A huge file of all the pdf's in one file would make

a search not only easier, but would catch any that were misfiled by me. There are many free pdf merge programs on the Web, that run on PC's or Macs. In fact, the newer Mac OS's will merge pdf files as well using Preview. However, rather than post such a large file, any member may perform this simple task on his own (it does not take that long).

Date: Fri, 1 Dec 2017 00:41:04 +0000 (UTC)
From: Larry H <dinlarh@att.net>
Subject: Re: [R-390] R-390A longevity

Good find Nick. Thanks for letting us know. If they were to install them, where would they get them? Do they still have a stash of them, or would they make a bunch of new ones? How much would they cost today?

Date: Wed, 6 Dec 2017 12:37:47 -0500 (EST)
From: Barry <n4buq@knology.net>
Subject: [R-390] MBC

Someone should update this for our beloved MBC connectors.
https://en.wikipedia.org/wiki/BNC_connector

Date: Wed, 13 Dec 2017 07:37:36 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] R390A and SP 600 Schematics

Hi, For those newcomers or other members that might have forgotten, I have digitized the R390A, SP 600 and the R620 both in original and heretic versions.? They are BIT TIFF images that can be taken to Kinko's and printed in 18" X 48" size for about $6 t0 $10 depending for where you live
.
The good thing abou the the Ski's is that you can view them on windows image software and can print the in any size or any portion in any sizes without smearing.

IIRC tge files are around 250 Kbytes. You will want both versions as the HERETIC version of the R390A has all the trouble parts annotated. So it is useful even if your going to keep your receiver OEM style.

A special note to Tisha: One can add SRPS to the SP 600 and R390A and save 12 pounds of weight, reduce power and heat consumption by about 50% for a cost of less than $50.? I have the modules but not the time. For all. I turn 77 in Jan 2017 so my contributing days are now quite limited.

Date: Mon, 1 Jan 2018 12:01:20 +0000 (UTC)

From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] Updated Contract List

This is an updated R-390A production list.? Six contracts have new high s.n.s. Hope this pastes OK. Send me a pic of your rig if you have a higher s.n. Credit Les Locklear.

R-390A	Order or Contract	Hi s.n.
Collins	14214-PH-51	992
Collins	375-P-54	310
Motorola	363-PH-54	3427
Collins	8719-P-55	4982
Motorola	0014-PH-56	4909
Motorola	14385-PC-58-A1-51	6537
Stewart-Warner	42428-PC-59	2120
Stewart-Warner	20139-PC-60-A1-51	4511
Electronic Assistance Corp.	23137-PC-60	4255
Capehart Corp.	21582-PC-61	4237
Capehart Corp.for Natl Bureau Stds.	None	12
Amelco/Teledyne Systems Corp	35064-PC-62	3982
Capehart Corp.for Adler Electronics	20878-PP-63	5
Imperial Electronics/Teledyne Sys	37856-PC-63	3976
Electronic Assistance Corp	DAAB05-67-C-0155*	10717
Electronic Assistance Corp	Consumer/Rocket Ship Tag	151
Dittmore-Freimuth (made by EAC)	DAAB05-68-C-0040	215
Fowler Industries?	N 00024-84-C-2027	5
?	Total of high s.n. 390A	55,343
*Same production run as	?	?
FR-36-039-N-6-00189(E)	?	?

Updated Jan 1, 2018 N5OFF

Date: Tue, 2 Jan 2018 01:50:34 +0000 (UTC)
From: "Tom M." <courir26@yahoo.com>
Subject: [R-390] Contract List Web Address

Jose is kind enough to host the contract list.

See here: EB5AGV's R-390A Production Data

Date: Wed, 14 Feb 2018 17:58:20 -0500
From: W4QG <w4qg@cfl.rr.com>
Subject: [R-390] 390A test jigs

I acquired a set of 4 devices which appear to be test fixtures/jigs.
They appear to be commercially made. They have markings similar to what

would be found 390(A) modules. Stamped on them is "R390A" "CODE 26916" and the part numbers 150-017274, 150-017275, 150-017276, 150-017277 I've looked through my meager documentation and can't find any reference to these. Can someone give me some info on them? (pictures available if anyone is interested)

Date: Thu, 15 Feb 2018 21:31:42 -0500
From: Tom Chirhart <k4ncg@yahoo.com>
Subject: Re: [R-390] 390A test jigs

These are mods made by Manson Labs to the R-390/A..

Date: Fri, 16 Feb 2018 19:05:57 +0000 (UTC)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] 390A test jigs

My understanding about the Manson labs receivers (I'm doing this of the top of my head, so help me out group if need be), was that Manson Labs produced and converted R390A's for NASA starting with the Apollo space program. They also produced an in-field conversion kit so the conversion could be done on-site. The conversion enabled the R390A to be used with external precision oscillators for precise frequency control and stability. After the conversion the R390A became an R-1247. The only physical appearance difference was three additional BNC interface jacks for the external equipment mounted on a plate mounted on the rear panel below the standard IF output jack and above the terminal strip and possibly no nameplate designating it as an R390A (I happen to have unintentionally acquired one of these receivers). So maybe this is one of the in-field conversion kits

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Date: Fri, 16 Feb 2018 14:38:31 -0500
From: Bob kb8tq <kb8tq@n1k.org>
Subject: Re: [R-390] 390A test jigs
Message-ID: <A807BD3F-116B-4476-9E1E-1482E42D9969@n1k.org>

One would guess that there was depot level service required on these radios. My guess is that there are fixtures involved to do this. Unfortunately, it’s now about 15 years since I parted ways with the last guy I knew who worked at Manson on these radios. Would have been a simple question to ask back then.

Date: Wed, 3 Oct 2018 10:09:14 -0500 (CDT)
From: Ken Perales <kenperales@comcast.net>
Subject: [R-390] Navy R-390A Maintenance and Troubleshooting Handout Cleanup and rewrite

I took the original PDF download of the handout and cleaned all the pencil marks and specs from the pages and then converted the whole thing to a word document to scrub the whole thing and put the hand written notes that I could read into text. Re-drew any diagrams that had parts missing and put it back together in the same sequence it was sent out. When I tried to send in the resulting MS Word document and a PDF version, I got a message back that the files were to big and the moderator is holding them for review. Not having a website or anything but an email address, I do not know how to post the files where anyone can get them if they want. There were a few areas where the hand written notes were to faint and I do not know enough about the electronics in question to retype them to include in the handout. So with the word doc available, anyone who could fill in that part could complete the document.

Anyone that has a way to publish the two documents, I will send them by email to get it out.

Date: Wed, 3 Oct 2018 08:45:36 -0700
From: Manfred Antar <manfredantar@gmail.com>
Subject: Re: [R-390] Navy R-390A Maintenance and Troubleshooting Handout Cleanup and rewrite

I'll take copies and post them at:
http://www.poz0.com/R-390A

Date: Wed, 3 Oct 2018 22:06:35 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Navy R-390A Maintenance and Troubleshootin Handout Cleanup and rewrite

Ken Perales, Ken, there are size limits on mail attachments. Down loads and up loads are not E mail attachments. The R390 Fellows are supporting two sites R390.net and R390.com. The Fellows would like to see your project and contribution to the items of interest to?them. Check both sites for the contact person and pop them a mail to make a delivery to them. The Navy maintenance school presented things differently. More than one way to convey the story. The Navy used the R390s with a whole different set of accessories than the Signal Corp or the ASA units. Thank you for saving another item and sharing it as openly as we can. Thank you Ken for engaging in the project, and sharing it with the R390 reflector Fellows.
Roger Ruszkowski

Date: Thu, 4 Oct 2018 11:48:35 -0400
From: "Jerry O. Stern" <jsternmd@att.net>
Subject: Re: [R-390] Navy R-390A Maintenance and Troubleshooting Handout Cleanup and rewrite

I could put it in a special page on my website www.ny2kw.com

Date: Sun, 10 Jun 2018 17:40:48 -0400
From: Bob Weiss <bobweiss1967@gmail.com>
Subject: [R-390] Another R-390A back among the living, and
de-nuclearized....

New to the group, and just finishing up the repair/restoration of a Stewart/Warner R-390A (s/n 2211) which I received as several boxes and bags of parts, and have managed to put back together into a fully functional receiver. Thanks to all who maintain this list, and who contributed to the Y2K manual(s), which were a huge help during the process.

In addition to replacing all the paper and electrolytic caps, I installed a GFCI-compatible AC line filter, solid-stated the power supply, added inrush limiting, and swapped out the selenium rectifier for silicon. Unit works great, and will go through one final iteration of the complete alignment before installing into a rack in the operating location.

Another upgrade was the replacement of the infamous radioactive panel meters. A check with a Geiger counter (Ludlow, with 2" pancake tube) showed nearly 10,000 CPM at the (completely intact) meter face, and much of that was gamma, verified by shielding the probe with a sheet of aluminum with little effect. Figuring that having a couple unnecessary gamma sources a few feet from my head when sitting at my bench certainly wasn't helpful in any way, I decided to go for the ALARA approach, and seek replacement meters.

I lucked into ma nice matched pair of DeJur VU meters on eBay, which were exact mechanical replacements for the DeJur meters that were originally installed. The meter faces were marked as "Electro Ind. Corp.", who apparently made magnetic tape recording gear at one point.

Replacing the line level meter was a simple matter of connecting the new and old meters to an audio generator, and checking the sensitivity of the new meter against the original. The new meter was quite a bit more sensitive, but adding a resistor of around 950 ohms in series produced a reading that perfectly tracked the original across the whole range.

Of course, the carrier level meter was a bit trickier to replace. I began by carefully opening the other VU meter, and removing the internal copper oxide rectifier bridge and resistor, ending up with a DC meter with around 1.5k resistance, and 250 uA full scale sensitivity. I also

removed the scale card from the meter, and scanned it into MS paint 3D, where I reworked the scale into an S-meter, rather than the simple 0-100 scale of the original 390 meter.

Digging around online, I came across KH6GRTs design for an opamp circuit for adapting common meters to the R-390 bridge circuit. I decided to update his design somewhat, eliminating the long-obsolete LM308N in favor of an Analog Devices OP07, and building the entire circuit using SMD components to save space. The board fits nicely right on the back of the meter, with plenty of clearance from the cam gears behind it. Powered from the dial lamp supply, it was tested against the original meter and adjusted to 1 mA full scale using an external current source. It tracked nicely against the original across the scale.

The replacement meters with white faces and black/red lettering look much nicer and are easier to read that the black-faced originals, IMO.

Pictures of the installed meters and the amplifier PCB available at:
https://www.flickr.com/photos/140826987@N07/

If anyone on this list is interested, I had a couple extra PCBs made, and would be willing to sell them at $20 each (fully assembled, just add meter and one resistor) to anyone who wants one. Done by OSHPark, they have a dark purple soldermask that hides well inside the radio, without drawing much attention to the somewhat heretical sand-state parts attached to it.

As to the original pair of meters, they are fully functional, and available free to anyone on the list who wants them, and is willing to

be a careful steward of them going forward and keep them out of a landfill or other improper disposal. The only catch is that I am not willing to mail them, as radioactive materials are banned according to 2 separate PO clerks, and I'm not willing to see what happens if I mailed one and it happened to trip a radiation detector somewhere in shipping. They would need to be picked up in Northern NJ. Contact me off-list if interested in adopting them, before I consign them to hazmat disposal.

Date: Sun, 10 Jun 2018 15:16:48 -0700
From: Pete Lancashire <pete@petelancashire.com>
Subject: Re: [R-390] Another R-390A back among the living, and de-nuclearized....

Congrats and thanks for another rescue. I hope to get both my 390 and 390A in a condition to where at least I can pass them on to someone who will fully restore them, and make a few $'s for my son.

Date: Sun, 10 Jun 2018 21:40:28 -0400
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] Another R-390A back among the living, and de-nuclearized....

Really nice job on the meters, Bob!

Date: Sun, 10 Jun 2018 22:13:08 -0400
From: W2xj <W2xj@w2xj.net>
Subject: Re: [R-390] Another R-390A back among the living, and de-nuclearized....

The real original meters were radium and were replaced with non radioactive meters while in service. If you come across original meters, the face has green markings and glows in the dark.

Date: Wed, 20 Jun 2018 10:04:53 -0400
From: <wb3fau55@neo.rr.com>
Subject: [R-390] broken pins in shafts

I had a broken pin in the bandswitch gear. I was not able to drive out the pin. The pins can be drilled out with a titanium coated drill bit. Just take your time and let the drill do its job, do not let it get hot. Use a good cutting oil or Kroil. If there is enough material and depth, you can tap the hole and use a allen head setscrew in its place. Worked for me on a bandswitch shaft. 73s Russ.

Date: Mon, 25 Jun 2018 20:39:25 -0400
From: Bob Weiss <bobweiss1967@gmail.com>

Subject: [R-390] My next restoration project--EAC 390A

Threw a lowball offer at a scruffy looking but apparently complete EAC unit on eBay, and the seller accepted. Looks fully restorable, but will know better when I pick it up over the weekend.

The nametag has the standard nomenclature, but also the "EAC rocket" logo, and Red Bank NJ location, which I haven't seen on most EACs. Is this one of the units that was a production overrun or built to use up spare parts from a contract, and sold into the civilian market Paint on the knobs looks like it has seen a lot of use, more than a typical hamshack/SWL would likely dish out.

Date: Tue, 26 Jun 2018 10:30:28 +0000 (UTC)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] My next restoration project--EAC 390A

Yes that is a commercial unit. Let us know the sn's of the modules and if they have govt contract stamps.

Date: Tue, 26 Jun 2018 20:33:20 -0400
From: Bob Weiss <bobweiss1967@gmail.com>
Subject: Re: [R-390] My next restoration project--EAC 390A

Will do. What is the collective experience with these units Any evidence that they were off-spec or rejected units I take it they are fairly rare...

Date: Tue, 26 Jun 2018 18:00:00 -0700
From: Pete Lancashire <pete@petelancashire.com>
Subject: Re: [R-390] My next restoration project--EAC 390A

Off the EAC series I have seen only one was made by EAC. Two of the others had a very shiny new EAC id tags. And the 4th most if not all modules inside were not EAC

Date: Wed, 27 Jun 2018 10:45:41 +0000 (UTC)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] My next restoration project--EAC 390A

I had one of the EAC commercial units. They were not rejects. All modules were EAC except the sn’s were all over the place. Some were low, some were high. Perhaps the modules went back for repair and then install. Anyhow the unit worked just like an other R-390A.

Date: Wed, 27 Jun 2018 04:03:17 -0700

From: Pete Lancashire <pete@petelancashire.com>
Subject: Re: [R-390] My next restoration project--EAC 390A

My A it's kind of like the neighbors dog one of the sweetest in our neighborhood what is made up of so many breeds they gave up trying to figure her out. Like your restoration project mine needs restoring as well.

Date: Wed, 27 Jun 2018 11:08:49 -0400
From: Bob kb8tq <kb8tq@n1k.org>
Subject: Re: [R-390] My next restoration project--EAC 390A
Message-ID: <71EB2C4B-DCB8-463B-B66B-5E29503345E3@n1k.org>

Back in the day, inventory control was not what it currently is. Modules as built would go into the stock area and sit. When needed modules would get pulled. What order they got pulled in nobody cared. The first module built might be sitting in stock on the last day of production. If the project wanted things done more formally, they called that out in the contract and paid a premium for it.

Date: Wed, 27 Jun 2018 08:21:45 -0700
From: Pete Lancashire <pete@petelancashire.com>
Subject: Re: [R-390] My next restoration project--EAC 390A

Things were pretty much the same at Tektronix: you had boards and a replacement pool and as long as the version compatibility or the board was updated to a compatible version you basically had no choice which one you got.

Date: Wed, 27 Jun 2018 10:00:20 -0700
From: Renee K6FSB <k6fsb.1@gmail.com>
Subject: Re: [R-390] My next restoration project--EAC 390A

There was an article (IMSMC) in Electric Radio about the EAC red bank units. all had to meet same specs. I worked on one for a friend worked just as well as the other contracts..may be less of them because (1) sold to civilians (not cheap) and (2) did not make scads of them.

Date: Wed, 27 Jun 2018 14:04:26 -0400
From: "Jim" <Jbrannig@verizon.net>
Subject: Re: [R-390] My next restoration project--EAC 390A

My receiver, R-390A/URR, is an Electronic Assistance Corp.
Order No. FR-38-039-N--6-00189 (E) U.S. Serial No. 78. Does this mean anything to anyone I don't know if the modules are original and I'm not dragging it out of the rack to look.....

End of R-390 Digest, Vol 170, Issue 21
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R-390 Digest, Vol 171, Issue 1
June 27, 2018

Date: Wed, 27 Jun 2018 14:07:25 -0400
From: "Jim" <Jbrannig@verizon.net>
Subject: Re: [R-390] My next restoration project--EAC 390A

Found this site: http://www.virhistory.com/navy/rcvrs/r390a-manuf.htm
Over 10,000 made under this contract ID

Date: Wed, 27 Jun 2018 14:23:06 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] My next restoration project--EAC 390A

Not understanding that. Looks like only 151 Rocket Ships were made.
Is there a similar list for the R390

Date: Wed, 27 Jun 2018 15:24:52 -0400
From: Bob Weiss <bobweiss1967@gmail.com>
Subject: Re: [R-390] My next restoration project--EAC 390A

I came across that site, as well. FWIW, my unit is s/n 137. I had an unexpected day off work, and was able to pick the unit up today. Just finished wrestling it out of the truck and onto the bench for a quick inspection. I pulled all the modules except for the RF deck and the PTO. All the modules are EAC, with the government contract/order number crudely blacked out using sharpie marker or something similar.

Here are the serial numbers of the modules, as requested:
AF module-- s/n 4809
PS module-- s/n 0044
IF module-- s/n 8886
Xtal Osc module-- s/n 9499

Unit is complete, but I resisted the temptation to try powering it up until I can at least replace C553, clip out the GFCI-tripping line filter, and check the electrolytics for shorts. The tubes in the unit are a motley mix of JAN types and Hammarlund branded civilian tubes (made by RCA). Interestingly, the Hammarlund types installed aren't exactly what SHOULD be in the set, with 6AU6s in place of many of the 5749/6BA6s and one of the 6AK6s. A Hammarlund 6BZ6 is used where the 6DC6 RF amp should be. The 3TF7 is actually present, and has continuity. PS is still hollow state, with a really nasty blackened pair of 26Z5W's in it.

This unit has a style of antenna relay I haven't seen before, which is much smaller than the usual one, but appears to be original. The twinax input connector has been smashed, so I may be replacing the antenna relay assembly if it can't be repaired.

Geartrain seems to work pretty smoothly, and cams seem to line up nicely at 7+000 as they should. Previous owner must have smoked like a chimney, as the whole unit is covered with a fine nicotine haze, and smells like an ashtray. nothing that simple green and elbow grease won't handle.

Will likely be a few weeks before I can really dig into this beast, as I have a few other projects going on at the moment. But it looks like a nice, complete unit to start from, from one of the more unusual production runs. Glad to see that the nametag is in great shape, as I haven't seen reproductions for the "rocketship" tags anywhere online.

Date: Sun, 8 Jul 2018 18:53:55 -0400
From: Bob Weiss <bobweiss1967@gmail.com>
Subject: [R-390] EAC "Rocketship" IF Deck Recap.

Started digging into my recent EAC purchase, and began with recapping the IF deck. The installed caps all look original, but there were a mixture of the the hermetic paper-in-oil West-Caps, one Sprague Vitamin Q, 2 of the infamous Brown Beauties, and 2 different styles (round and oval cross section) of CDE film caps. Was it usual for a wide variety of different capacitor types to make it into one module, or could this be a result of the lateness of the production, and using up whatever parts were left in the bins There were 0.1 uF caps from 4 different manufacturers in this thing!

All being replaced with 630V rated mylar film caps, including the 2 uF AGC cap, which is being stuffed inside the original can.

Date: Sun, 8 Jul 2018 19:35:10 -0500
From: "Francesco Ledda" <frledda@att.net>
Subject: Re: [R-390] EAC "Rocketship" IF Deck Recap.

They always have more than one supplier to secure the supply chain.

Date: Fri, 13 Jul 2018 21:51:17 -0400
From: Bob Weiss <bobweiss1967@gmail.com>
Subject: Re: [R-390] EAC "Rocketship" IF Deck Recap.

Finished up the IF deck recap last night.

Ran all the removed caps through capacitance and leakage tests using a

Heathkit IT-11. All of the tubular Westcaps and the Vitamin Q tested OK, one of the CDE film caps showed leakage (and signs of physical delamination), and the BBODs were leaky at under 25V applied. The big 2uF AGC cap (C551) was leaky above 400V applied, despite a 500V rating.

C551 was pretty easy to restuff. The impregnant was a soft paraffin wax, not mineral oil as in others I have restuffed. It was also a Westcap brand, FWIW.

So all new 630V rated film caps installed, given a good wipedown to remove the grime, run the tubes through a tube tester, and ready to move on to the AF deck. IF looks much nicer with all the caps of the same make.

Date: Sun, 5 Aug 2018 09:55:10 -0400
From: dog <agfa@hughes.net>
Subject: [R-390] Lacing cord

Anyone got some of the black lacing tape for the 390A I need a few feet that got burned up with my filament issue.

Date: Sun, 5 Aug 2018 08:19:29 -0700
From: Renee K6FSB <k6fsb.1@gmail.com>
Subject: Re: [R-390] Lacing cord

For lacing thread-I have been using heavy carpet thread, bees wax run over the exterior. If you cannot find any let me know
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Date: Sun, 5 Aug 2018 10:51:16 -0500
From: "Ron.K3PID" <ron.k3pid@sbcglobal.net>
Subject: Re: [R-390] Lacing cord

No Black but I have a spool of white. If you can't find the black I will be happy to send you some...

Date: Sun, 5 Aug 2018 16:16:26 +0000 (UTC)
From: John Saxon <johnbsaxon@yahoo.com>
Subject: Re: [R-390] Lacing cord

FWIW: Thought I would mention this, some may like to know. I get my lacing cord from McMaster-Carr, a source I didn't really expect. Good stuff and McMaster-Carr is one of my favorite sources of many things: McMaster-Carr is the complete source for your plant with over 570,000 products. 98% of products ordered ship fro... search for lacing cord, down the page on the right column, look for "Comfort-Grip Waxed Twine."
I do not own any stock in McMaster-Carr, just a very happy customer
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Date: Sun, 5 Aug 2018 12:19:58 -0400
From: dog <agfa@hughes.net>
Subject: [R-390] Lacing cord

Since Tom N3LLL responded first, I'll let him send it to:
David Thomas
12137 McDonalds Ln
Hume, VA 22637

I did look but all I saw was a roll for $40. I have some brown waxed cord but I'd rather keep the black tape type. I understand the round stuff tends to dig into the wires.

Date: Fri, 24 Aug 2018 20:51:21 -0400
From: Bob Weiss <bobweiss1967@gmail.com>
Subject: [R-390] EAC Rocketship project--PTO endpoints WAY out.

Have been plugging away on the EAC, and have it up and running , at least well enough to pick up local AM stations. The Cosmos branded PTO cannot be endpoint adjusted, as the adjustment screw runs out of range. Unit is out by 18KHz over the 10 turns travel. It appears that a previous owner was already poking around (first sign of any work other than tube changes) in the PTO the factory seal tag has been violated, and signs of the green mounting screws and the endpoint adjust screw having been "diddled"with quite a bit previously.

Anyone have a good PTO available, or thoughts on how to repair this one I have heard about removing a turn from some internal coil

In other project notes, I was surprised to find the meters on this unit to be just as "hot" as the old ones I pulled from my Stewart Warner. Trying to track down a suitable set of replacement meters for this one. I had heard that the later production were supposedly non-radioactive, but this being one of the last units built, I wonder how it got hot ones, which look original, no evidence of swapping.

The cores in the IF cans are VERY stiff/sticky, particularly the bottom slugs. Any particular solvent/heat technique to break them free without damage

Found a couple completely unsoldered connections in the AF deck, on the filter can sockets. They do seem to have been making good contact, no sign of arcing. Assembled on a Monday, and inspected on a Friday, I guess

After the recent thread about the filament choke burning up in the RF deck, I checked the area on mine. Mine was also quite close to grounding out on

the chassis, but no sign of arcing/burning, so I redressed it slightly and it should be fine.

Have lined up a set of IERC shields to replace the cheap silver ones (many of which are cracked/split). Guess the civilian market didn't rate those Or were they all field change additions

The civilian unit apparently didn't ship with the tools attached to the rear panel. The spring holders for them were never installed.

Date: Fri, 24 Aug 2018 19:06:40 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] EAC Rocketship project--PTO endpoints WAY out.

Glad you're making progress, Bob. If the PTO is good mechanically (tuning shaft: 1. turns smoothly, 2. no end play, 3. has good light turning resistance (not too hard), and 4. is straight, then it might be worth while to try to save it. Also check that there is very little slack in the linearity compensator gear when the main shaft is turned back and forth. You can look through the linearity hole and watch the disc move. There's lot's of good info about them. There's '*A JOURNEY THROUGH THE COSMOS (PTO) by *Jim Miller at: http://www.r-390.com/cosmos.htm and mine at: http://www.r-390a.net/Pearls/PTO_Cosmos_Observations.pdf and Tom Marcotte's in the PTO section in the Pearls at the end: http://www.r-390a.net/Pearls/PTO.pdf

18 khz is too much to correct by removing 1 turn off of the ep coil. One turn on a Cosmos is about 6 khz. This is less than the others, due to the extra compensating coil in the circuit. Keep at it and have fun.

Date: Sat, 25 Aug 2018 13:03:14 +0000
From: Steve Hobensack <stevehobensack@hotmail.com>
Subject: Re: [R-390] PTO endpoints WAY out

Look for one of the small compensating coils to be shorted out where the fine copper wires feed around to the solder lugs. BTDT

Date: Sun, 26 Aug 2018 18:43:06 -0400
From: Bob Weiss <bobweiss1967@gmail.com>
Subject: Re: [R-390] EAC Rocketship project--PTO capacitor types

Taking a dive into the Cosmos, I guess.... Have a used unit on the way, in unknown condition. Spent a few hours diving into my unit, with the help of those excellent photos. The solution on mine seems to be reducing the capacitance across the main tuning coil. I temporarily replaced the 2 10 pF ceramics across the main cap with a single 14 pF silver mica and

it seems to get it much closer, probably into range of the adjustment. What type and temperature coefficient should the permanent replacement cap(s) be The originals were a pair of tiny square ceramics, which the Y2K manual parts list just refers to as a non-replaceable part of the PTO can assembly.

Any thoughts on replacing the dessicant capsules in the can I removed the ones that were installed after reading about them splitting open and making a mess. Have to look through McMaster carr, and see if they have anything similar. Needless to say, the nitrogen charge was long gone, and the rubber o-ring seals are all rock hard.

Date: Sun, 26 Aug 2018 17:04:52 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] EAC Rocketship project--PTO capacitor types

Good work, Bob. A ceramic or silver mica should be fine. The NTC value should be about 50% to 100% more than the originals. It should be readable on them, and they are usually 100 to 400.

Date: Mon, 27 Aug 2018 17:34:25 -0400
From: Bob Weiss <bobweiss1967@gmail.com>
Subject: Re: [R-390] EAC Rocketship project--PTO capacitor types

Thanks, Larry! Only marking on the removed caps is a simple "10" on one side, and one has a blue dot on it. These are tiny little things, maybe 1/8" square. Looking at the photos in one of the online guides, the unit shown uses a different style of cap, which is clearly marked as 10 mmf, NPO. So I ordered an assortment of every value between 10 and 20 pF, in NPO/COG ceramic. I should have whatever value I need to get it back into the adjustable range. Now just to wait for the DigiKey order to arrive...

Date: Wed, 5 Sep 2018 03:33:03 -0400
From: Mister Mike <w1rc@near-fest.com>
Subject: [R-390] Great R-390A Maintenance and Troubleshooting

Every once in a while something really cool comes along that is of great interest to R-390A radio folks like us - and here it is! This 78 page handout is from the US Navy Technical Training Center in Pensacola FL. It is the “A” School R-390A training handout for the Cryptological Technician Class: A Cryptologic Maintenance Course (A-102-109). The document is not classified and in the public domain so distribution is completely legal. This handout is an absolute gold mine of information on how the R-390A works and how to maintain it. It is a very interesting and informative read. Some of the pages especially towards the end are very light and hard to read but it is all there. Perhaps some day someone with too much time on

their hands will retype it.

Date: Wed, 5 Sep 2018 07:36:40 -0400
From: John Schachleiter <jwsavn@aol.com>
Subject: Re: [R-390] Great R-390A Maintenance and Troubleshooting Handout

Thanks Michael, great job. I have a R-390A that has been "re-manufactured" by Rick Mish, Miltronix and it is a great radio. I'm not technical like a lot of guys on this net, my interest stems from a long Army career and my association with their Field Stations.

Date: Wed, 5 Sep 2018 12:30:27 -0400
From: Roy Morgan <k1lky68@gmail.com>
Subject: Re: [R-390] Great R-390A Maintenance and Troubleshooting Handout

Indeed a great find - thanks much!
(I don’t see it yet on Wu Li s Pearls of wisdom - FAQ/Technical References pages: http://www.r-390a.net/faq-refs.htm <http://www.r-390a.net/faq-refs.htm>.)

With so many manuals out there for the R-390A, I wonder which one is used in this troubleshooting handout. There are enough references to diagrams and page numbers so a diligent person could figure that out. (I would be able to add that pub number into the PDF file.) ‘m going to print this a section at a time, and have it handy when I start restoration of the three radios I have at hand.

Date: Wed, 5 Sep 2018 22:35:26 -0600
From: "Gary I. Biasini" <gary.biasini@shaw.ca>
Subject: Re: [R-390] Great R-390A Maintenance and Troubleshooting Handout

When I click on the link, it brings me to a spoofed Facebook page telling me I must log into access. That would require anyone with a Facebook account to give up their credentials. Not sure I want to do that or am I mistaken about this page
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Date: Thu, 6 Sep 2018 01:30:45 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Great R-390A Maintenance and Troubleshooting Handout

Well isn't this interesting. I just tried it and got the facebook logon page like Gary, BUT when I did it yesterday at 1:18 am, it worked fine (it

downloaded the file), no stopping, no questions. I don't have a facebook account.

Date: Thu, 6 Sep 2018 05:15:59 -0400
From: Mister Mike <w1rc@near-fest.com>
Subject: Re: [R-390] R-390 Digest, Vol 173, Issue 4

Thanks, Martin. I changed the link to your site on our hamfest's web site so there is no further confusion. Al says it will be on the main R-390A repository r-390a.net very soon.

Date: Thu, 6 Sep 2018 08:45:49 -0400
From: Nick England <navy.radio@gmail.com>
Subject: Re: [R-390] Great R-390A Maintenance and Troubleshooting Handout

Thanks Michael and Chaz - I have added a copy to my list of manuals and links at http://www.navy-radio.com/manuals-rcvr.htm#r390a
Any additional links or scans to post are always greatly appreciated.

Date: Wed, 3 Oct 2018 10:09:14 -0500 (CDT)
From: Ken Perales <kenperales@comcast.net>
Subject: [R-390] Navy R-390A Maintenance and Troubleshooting Handout Cleanup and rewrite

I took the original PDF download of the handout and cleaned all the pencil marks and specs from the pages and then converted the whole thing to a word document to scrub the whole thing and put the hand written notes that I could read into text. Re-drew any diagrams that had parts missing and put it back together in the same sequence it was sent out. When I tried to send in the resulting MS Word document and a PDF version, I got a message back that the files were to big and the moderator is holding them for review. Not having a website or anything but an email address, I do not know how to post the files where anyone can get them if they want. There were a few areas where the hand written notes were to faint and I do not know enough about the electronics in question to retype them to include in the handout. So with the word doc available, anyone who could fill in that part could complete the document.

Anyone that has a way to publish the two documents, I will send them by email to get it out.

Date: Wed, 3 Oct 2018 08:45:36 -0700
From: Manfred Antar <manfredantar@gmail.com>
Subject: Re: [R-390] Navy R-390A Maintenance and Troubleshooting Handout Cleanup and rewrite

I'll take copies and post them at:
http://www.poz0.com/R-390A

Date: Wed, 3 Oct 2018 09:56:03 -0600
From: "Gary I. Biasini" <gary.biasini@shaw.ca>
Subject: Re: [R-390] Navy R-390A Maintenance and Troubleshooting Handout Cleanup and rewrite

That must have taken a lot of work!

Might I suggest that you consider obtaining a free cloud account from any one of:
1. Microsoft Onedrive;
2. Dropbox;
3. Box.com.

You can then upload the files to your account and share it and provide us with the resulting URL for the files. I hope that helps and thanks for your great contribution!

Date: Wed, 3 Oct 2018 12:04:41 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Navy R-390A Maintenance and Troubleshooting Handout Cleanup and rewrite

Google Drive can support that as well (I think...).

Date: Wed, 3 Oct 2018 22:06:35 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Navy R-390A Maintenance and Troubleshootin Handout Cleanup and rewrite

Ken, there are size limits on mail attachments. Down loads and up loads are not E mail attachments. The R390 Fellows are supporting two sites R390.net and R390.com. The Fellows would like to see your project and contribution to the items of interest to them. Check both sites for the contact person and pop them a mail to make a delivery to them. The Navy maintenance school presented things differently. More than one way to convey the story. The Navy used the R390s with a whole different set of accessories than the Signal Corp or the ASA units. Thank you for saving another item and sharing it as openly as we can. Thank you Ken for engaging in the project, and sharing it with the R390 reflector Fellows.
Roger Ruszkowski

Date: Thu, 4 Oct 2018 11:48:35 -0400

From: "Jerry O. Stern" <jsternmd@att.net>
Subject: Re: [R-390] Navy R-390A Maintenance and Troubleshooting Handout Cleanup and rewrite

I could put it in a special page on my website www.ny2kw.com

Date: Sun, 10 Mar 2019 22:51:17 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Navships manuals

Larry, You ask about Navship manuals. The Army signal corps taught the R390 as part of a radio teletype long haul communication systems.The US Navy, Marines, Embassies, and Air Force also utilized this same long haul communication system hardware. RTTY was copied to punch tape. Printed from punch tape to paper.Copied punch to punch and edited on the fly to an error free tape. Put a new mimeograph stencil in the TTY printer instead of paper.Read the punch tape and print to the TTY printer.Put the mimeograph stencil in the mimeograph machine and crank out 50 copies of travel orders, promotion orders or awards.Save that good punch tape in backup as more copies may be needed and the mimeograph stencil maxed out its ink doing the first 50 copies.We are out 20 years before the electrostatic copy machine, (Xerox). Keyboard to punch tape memory on the transmit side before sending with edit capability. Radio was mobile.RTTY was mechanically ahead of everyone else offering security. HF two tone RTTY receivers were electronically ahead of everyone else offering a different form of security.Rock on crystal transmitters may have been easier to find but not copy with out electronic detector and mechanical printer but we had the best fastest most reliable system and secure system. Very few players had the ability to even eves drop on our military communication.And then we added real encryption to the plain text. Every branch of the services had their own training school and manuals for the R390 receivers. Manuals for the use of the receivers in the communications system as used in their branch of service existed. Manuals for the periodic inspection, cleaning, alignment and repair of the receivers all existed were read, used, and some times saved. The R390.net web page group would host a PDF copy of the manuals if they are not already listed on the site and downloadable. No free lunch. some one has to scan a paper copy to pdf and submit the PDF for posting. If any one looks your name will appear as the contributor of the PDF file. Such fame we offer to each other. Copies of the manuals from the different branches of the service have come into the "surplus market" through the same processes. Collins did the original manuals for the receivers they had designed and manufactured the receivers under a joint Army Navy contract.Other branches of the military had their copies in their book sets that looked all the same setting on the shelf. Roger
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Date: Fri, 15 Mar 2019 09:24:56 -0500
From: Cecil Acuff <chacuff@cableone.net>
Subject: [R-390] Y2K

Probably should know this but...where is the latest greatest version of the Y2K manual available. I'm days away from retirement and would like to print out a copy before I no longer have access to the high speed printers.

Date: Fri, 15 Mar 2019 11:20:48 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] Y2K

https://www.r-390a.net/Y2K-R3/index.htm

Date: Fri, 15 Mar 2019 14:52:28 -0400
From: Roy Morgan <k1lky68@gmail.com>
Subject: Re: [R-390] Y2K

Beware. the "Pears of Wisdom" is a good part of one thousand pages. The Y2K Rev 3 may be half that. DO download the stuff of most interest if you have fast connectivity at work and print what's most interesting.
(I left free fast double sided printing a year ago and miss it.)

Date: Sat, 30 Mar 2019 06:46:58 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Is there (or will there be) a Y2KR3 Update

The short answer: NO.
The long answer. I gathered all the info and authored the Y2KR3 manual what seems eons ago. Since then I have 20 or so more articles to add to it. When I asked for help on this list there was only one person who said he might be able to donate one hour a week but he wasn't very familiar with using MS word. As I posted recently, I've turned 78 (going on 18 according to my wife as well as some others opinions). We are moving from Californicate to SC for financial reasons and we have some medical issues to deal with. There are at least four regular posters to this list who could help. Fortunately for the guilty they shall remain nameless.
So the cold, cold hard facts of life is that since there is no commitment by them to only post opinions or take info I've produced there isn't going to be any more. A couple of examples. Several years back I digitized the two sheet R390A schematic. It took about 100 hours per sheet to make an exact reproduction BIT TIFF images that one could take to Kinko's and have reproduced to any size without smearing. I shared these with any who wanted. No problem. I also did an upgrade on these schematics annotating the problem/high probability parts reported over the 18 years I've been on this list. Yet there are self anointed guru assholes who

ridicule the information. But those who really know the truth almost always say nothing. The other problem is wrong/misleading/impractical advice. Wrong: You can't just take a signal generator and use it until things get better. IE RTFM! Also not to buy a good used HP signal generator. Yes, it can break but so can everything else. HP made professional equipment for professional use. If it works OK when you buy it it is a 99 44/100 percent bet one will never wear it out.

Misleading: Just follow the TM. Now read Rogers info in the Y2KR3 manual. He worked on the A for 8 continuous years. There is absolutely no one who knows and has shared more.

Impracticable: Use a SDR receiver for a calibration generator. OK, which model(s) and how That's no help to a newbe (and even to me who was trained on the A in 1963.) If it's a good idea write it up and share it with all of us. Otherwise is just a pie-in-the sky concept.

I have additionally collected and authored 20 or so more articles that would make everyone's A's better. But why should I go to the effort
A further example is that these same SAGA's ridiculed, belittled, baited and badgered off the list two of the most knowledgeable technical people to post, Dr. Jerry and Dallas Lankford. Between them they have forgotten more about our B/A receivers than almost all anyone else knows.
Years ago I as well had a load of abuse dumped on me. I wrote a defense on the list but no one came forth to my defense. Even a complaint to the list administrator elicited no response of help.

Now I've been able to put together all the clues that Chuck Felton revealed over the years for how he made his R390F model. He made a living doing this upgrade on a good working A for $985 Plus S+H.

Any info I have will either go to the R390 FAQ site or to ER magazine to publish. Fortunately there are the Hi Rez DVD's for us. They are a real live hands on training tool and the only one in existence

Unless others who do work on the radios besides Roger R contribute and encourage on a continuing basis this list will just die.

The A was without question the most complex tube radio ever made. It takes a lot of reading time and hands on to become skilled. But there aren't any more schools. Old farts like me are fading into oblivion hoping each day that we'll wake up in the morning and when we do, we know who we are, where we are, and still remember what we planned to do from the nite before.

So it's time for a number of you to belly up to the bar and either put or shut

up and go away and play somewhere else. Now that I've shared my gracious, soft, kind and gentle encouragements it's bedtime for Bozo.

Date: Wed, 3 Apr 2019 20:06:44 -0500
From: "Joe Koester" <jwkoest@charter.net>
Subject: [R-390] R725 revival!

I have been working to get my R725 working and I just got a power supply and an audio amplifier chassis from Robert Ramirez in Florida. Both were missing from my set. He has a bunch of boat anchor parts listed on QTH dot com site. He did an excellent job of packing the units which arrived in excellent condition. I think there are some issues with the RF Deck and I may have to order one from him soon. Hopefully this will complete everything needed to make this rare bird sing again. Don't know much about the R390 series receivers. I have an R390A that works quite well and would like to breathe life back into the R725. I have a friend who can trouble shoot and repair once I get the needed parts. Enjoy the info here on this group even though much of it is over my head.

Date: Wed, 3 Apr 2019 23:06:40 -0400
From: Roy Morgan <k1lky68@gmail.com>
Subject: Re: [R-390] {Collins} 390A Identification Needed

Bob, (Replying to his post to the Collins list.): Indeed the R-390A?s were made with two different sized name plates. I have forwarded this reply to you also to the R-390 mailing list. Someone there will no doubt have your answer off the top of their head. Yes someone did at one time make replacement plates, but I’m not sure who or whether they may still be available. I will wait for replies, and help further if I can.

Date: Wed, 3 Apr 2019 23:41:17 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] {Collins} 390A Identification Needed

I believe that only Collins and Motorola made R-390As with long data plates. The true Collins can be differentiated from the Motorolas (when the original plate is absent) as having "raised serigraphied" front panel legends and a more cursive font style. More info about makers / data plates styles at: https://www.r-390a.net/faq-manuf.htm
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Date: Sat, 6 Apr 2019 23:02:55 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Cutting Aluminum With Power Tools

A while back I posted a request for advice for cutting aluminum sheet with power tools (OK nitpickers it was a long time ago). I received many good

responses of advice. I recently had to cut up a number of chassis' and plates so this is how I did it using both a hand skill saw and a cutoff (chop) saw. First and foremost: WEAR EYE PROTECTION. The shavings are sharp and travel with both a surprising distance and velocity.? A couple hit my cheek and it was not a pleasant feeling. I installed a new 10 inch, 40 tooth carbide red *Diablo* blade in the normal direction. I briefly considered buying an 80 tooth one but decided it was too expensive. Going slowly I got mirror finish cuts. any burrs can re removed with a fine file or 220 grit sandpaper.

On some of the thinner material I placed it on top of scrap wood so there was no chatter. This is a judgement call but with the normal blade gap that comes with the saw using a scrap under piece is preferred.
On my hand skill saw I also used a new Diable 40 tooth carbide blade and got equally good results. I also had some hobby aluminum sheets from Do-It-Best (a mirror of Ace Hardware stores) that were IIRC .019 inches. I did not try to cut them with power tools. I think the only safe way to cut them is to sandwich them between two pieces of at least 3/4 plywood. I found out that time wise, it was better to clamp the piece down on scrap OSB, clamp a straight edge along the desired cut line then use a large Dewalt retractile blade knife and repeatedly score the edge using light to moderate force.? It's a learn by doing technique only.The cut lines are easily smoothed with a small flat jewelers file or a bit of emery cloth sandpaper. At this time I don't have access to a table saw but I suspect with the same carbide blade setup and doing a slow feed I'd get the same results.

Date: Sat, 6 Apr 2019 19:50:56 -0500
From: Bill Guyger <bguyger@yahoo.com>
Subject: Re: [R-390] Cutting Aluminum With Power Tools

Just as more input / point of view. I do a lot of construction on electronic projects, and use a Sabre / jig saw with a medium tooth per inch blade. Fine blades like you'd use for steel gaul up rapidly. I then finish off with the disc sander on my sanding station. You can obviously file as well or as required. You can sand or file aluminum but don't try grinding, you'll gunk up your grinding wheel because aluminum is so soft it gauls into the pores in the wheel.

Date: Tue, 16 Apr 2019 18:03:13 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] Tutorials available on R390FAQ site

Al Tirevold has added Larry Hanely's info to the R390FAQ site tutorial section. More stuff will be posted there in the future. The hope is to get all the info I and others have to be eventually posted there so that if someone on the list comes up with info it just does't stay as an *email me if you'd like

a copy* but gets public posting for all who might be able to make use of it in the future.

Date: Tue, 16 Apr 2019 20:34:52 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] SP 600 data repository

The Hammarlund Historian website has gone 404 and I don't kow if there are any plans to resurrect it. My concern is two fold. First now the BAMA site seems the only one posting the SP 600 anthology. Second is that I have several more full SP 600 articles. circuit mod articles but most of all many SP 600 TIFF images that are good for taking to Kinko's and having them enlarged W/O smearing. Some images are the stock ski's while others are various modded versions. The articles and circuit info could be probably be incorporated into a anthology supplement. Probably the most interesting for those interested in upgrading their SP 600 is the R620 information. This was Hammarlund's last SP 600 type receiver. They only made 100 and I got mine by shear dumb luck in a trade with Mike Fisch (too whom I'm greatly indebted). Hammarlund made a number of circuit improvements that can easily be done to the stock SP 600.

Having just turned 78 in January and attempting to get moved to SC is consuming all my time so I'd be grateful for any and all web postings by others I don't care if someone puts them on a CD or DVD and sells them for a few bucks. My goal is to make sure all that I did does't get lost somewhere along the way.

Date: Tue, 16 Apr 2019 13:40:45 -0700
From: Manfred Antar <manfredantar@gmail.com>
Subject: Re: [R-390] SP 600 data repository

I can put them on my website. If you can get them to me. Also if you want I can put all on a DVD iso image and post on website for free. I would put everything in a folder at: http://www.pozo.com/Hammarlund

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Date: Tue, 16 Apr 2019 20:06:09 -0400
From: Al Parker <anchor@ec.rr.com>
Subject: Re: [R-390] SP 600 data repository

I know it hasn't been kept always up to date, and there's some of it's past content that has been lost forever, (if anyone wants to pitch in and help, I'm open to offers). But I plan to keep it going and will get info up there as needed/wanted. The SP-600 Compendium/Anthology has been there for at least 5 yrs, thanks to Perrier. I've kept it fairly well backed up, but until I dig up a recent one, or it comes back online, I can't say if Perrier's other articles are there or not, I know

he's been sending them to me. I'll keep you all posted on the short term problems. It should be back up in a day or 3 at the most.
73, Al, W8UT
www.boatanchors.org
www.hammarlund.info

Date: Tue, 16 Apr 2019 17:47:59 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] New Tutorials on R-390A.net

Al has graciously installed 2 files I recently sent to him that are of common interest.

1. Improved R-390A BFO Neutralization Method -
http://r-390a.net/R390A-BFO-Neut-Improved.pdf
2. DB and S Signal level relationships -
http://r-390a.net/DB%20and%20S%20signal%20level.pdf

They are in the 'Tutorials' section, link to it here -
http://r-390a.net/faq-refs.htm#Tutorials

Thank you very much, Al.

Date: Tue, 16 Apr 2019 20:50:52 -0500
From: Jim Shorney <jshorney@inebraska.com>
Subject: Re: [R-390] SP 600 data repository

Has anyone looked here?

https://web.archive.org/web/20180419160319/http://www.hammarlund.info/

Date: Wed, 17 Apr 2019 16:26:21 -0400
From: "James A. (Andy) Moorer" <jamminpower@earthlink.net>
Subject: Re: [R-390] SP 600 data repository

Al, if you can figure out how I can get a dump of the entire file tree on the server, I can put it up on the server I use. It is just a matter of copying the files over, fiddling the Apache startup files and convincing Network Solutions to send me theHammarlund.info hits. It is on AWS, and I'm getting quite a good rate. I put in my will that somebody should continue to pay the bills until both me and the SP-600 are forgotton (shouldn't take too long). It might take a bit of fiddling to transfer over the hammarlund.info registration to me, but it might not be necessary - I can just give you a new IP address. Thoughts?

Date: Thu, 18 Apr 2019 14:24:41 -0400
From: Al Parker <anchor@ec.rr.com>
Subject: Re: [R-390] SP 600 data repository

hi agn folks,
Yes, the Hammarlund Historian website is down. The server it was on suffered a hard disk failure, maybe more than one. The server folks are on it, got an old version of my boatanchors.org site back up last nite, still waiting for the Hammarlund site.
It will be back, and with the help of many folks that have expressed concern, hopefully will be back in a better, more useful form. It will be on a new server. More details later.

Date: Sun, 21 Apr 2019 21:18:52 -0400
From: <jgedde@optonline.net>
Subject: [R-390] Frankenradio gets its Front Panel Restored

I call her Frankenradio since every module is from another manufacturer: Teledyne, Motorola, EAC, etc.

I really had no desire to take the front panel off since it was in somewhat nice shape, but since the restore was coming along so nicely, I couldn't leave it be. Stripped it, filled it, Alodyned it, Rustoleum Dark Machinery Gray, and squeegeed in ivory acrylic paint for the engravings. Didn't come out half bad I think. Not perfect but WAY better than it was. Put in new orange drop and film caps to get rid of those paper punks in the IF chain, took apart the meters and cleaned them up (yes I know.) , full alignment, AGC mods, audio mods, limiter mod, carrier meter mod, etc. Still a couple of electrical issues, but it nonetheless works very very well.

Date: Tue, 23 Apr 2019 20:51:40 -0400
From: <jgedde@optonline.net>
Subject: Re: [R-390] Frankenradio gets its Front Panel Restored

Back together.. Lots of glare..

Date: Sat, 27 Apr 2019 13:33:19 -0500
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Meeting up with other list members at Entelec

It was surprising to have this guy walk up to our booth at Entelec in Houston and start up a conversation with "so, does your company make the 390 model?"

I was instantly confused, I asked about three times in a row what he was asking about; My personal radio hobby so rarely collides with my

professional life that it just did not compute. Finally with my bad eyes I was able to read his name... Tom Frobase" and it still took a second to click in my brain... then the conversation made sense. Tom had set up a table in a back corner of the convention hall with a BC-348, Heathkit transmitter, CW key, box of QSL cards and a very nice little tribute to an SK who was a past member of the Entelec board. Entelec is an association for oil and gas communications folks. Our company was there with a booth to present our radios, I was there to do five different sessions over the three days. Tom happened to hear my speaking at a vendor-shootout discussing the merits of narrowband radio and the Internet of Things.. He teased me because I commented about how the people who write standards are often divorced from the reality of making systems work or supporting them in the field.

When I made it back to the booth I was quizzed "how do you know Tom Frobase from Boardwalk?" I had to explain about R-390A's and boat anchors and that just classified me even further in to the "weird radio chick" category. Later that day Tom swung by as I was sitting on the floor, taking about booth furniture. He always gets me at the most inconvenient moments! But it was nice to see another boat anchor enthusiast. I am fortunate to work for a company filled with electrical engineers who are also hams and radio nerds. *Ms. Tisha Hayes, AA4HA*

Date: Sat, 27 Apr 2019 13:47:27 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] Meeting up with other list members at Entelec

Thank you for the nice comments. It is not the first time this has happened. Several years ago at a vendor's office in the Boston area and my phone started to ring, the ring tone was DE DE N3LLL in Morse code. When we took a break John Flood, N1JAF came over and introduced himself. Said he heard the callsign and recognized it from the 390 list. It has been interesting to me how many of the folks who really get it, get their hands dirty doing what we do! It really is a small technical world ... Tom, N3LLL

Date: Sat, 27 Apr 2019 23:55:56 +0000 (UTC)
From: John Flood <kb1fqg@yahoo.com>
Subject: Re: [R-390] Meeting up with other list members at Entelec

Interesting story Tom.? I remember you stopping by my office. Now the last item on my bucket list is to meet Tisha! Don't worry, I am a polite stalker! Also, Near-Fest is this coming weekend in Deerfield, NH

Date: Sun, 5 May 2019 14:04:55 -0400
From: <jgedde@optonline.net>

Subject: [R-390] Latest Pics

It's coming along nicely - almost done. I've also restored the DX-100 enclosure it came with. Sensitivity issues are a thing of the past and I now only have two issues left. A partially broken antenna relay (CBNC broken off) and an issue with the 1 kHz filter (which isn't a priority unless I get bored). It needs a serial number stamped on the placard but I've no idea what to use. John

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Date: Sun, 05 May 2019 15:41:23 -0500
From: chacuff <chacuff@cableone.net>
Subject: Re: [R-390] Latest Pics

Sometimes the original serial number is penciled in under the tag. Something you would have to note before the panel refinish...lots of time it's stamped on the rear panel too...rubber stamp type of thing.CecilSent from my Verizon, Samsung Galaxy smartphone

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Date: Sun, 5 May 2019 16:43:01 -0400
From: <jgedde@optonline.net>
Subject: Re: [R-390] Latest Pics

My panel had already been refinished by the previous owner. No stampings on the back.

Date: Mon, 6 May 2019 14:30:19 +0000
From: <joldenburg2@new.rr.com>
Subject: Re: [R-390] How did you ?

I have a R-390/URR that was restored by Dr. David Medley. He would take the stripped chassis and run it through a dishwasher to clean it up! With as aggressive as dishwasher soaps are it did a great job. He noted to follow up with a distilled water rinse to eliminate any caustic soaps remaining.

Date: Mon, 6 May 2019 13:49:40 -0400
From: "Lester Veenstra" <m0ycm@veenstras.com>
Subject: Re: [R-390] How did you ?

I have been looking for an second hand Dishwasher to use up in the shop. I have seen very good results with the caustic domestic dishwashing power previously. However, my wife did ban me from the house dishwasher ever again.

Date: Tue, 7 May 2019 17:03:33 -0400
From: <jgedde@optonline.net>
Subject: [R-390] Right angle mini BNC disassembly

I need to replace the coax due to an open in my IF output cable. On one end there's a straight mini-BNC connector which comes apart easily and the center contact can be reused. The right angle one is not so clear to me. The wire is easy to take out, but it's not at all clear how to get at the center conductor to solder on the new coax. Any ideas? It almost looks like there's an end plate that's soldered in but it doesn't seem to come out.

Date: Tue, 7 May 2019 14:44:11 -0700
From: "Foster" <Fosterp@pahrump.com>
Subject: Re: [R-390] Right angle mini BNC disassembly

At the elbow the round disk is soldered in. Good Luck.(new ones are available Thanks for the pictures too..

Date: Tue, 7 May 2019 18:02:22 -0400
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] Right angle mini BNC disassembly

That endplate was probably pressed in place. If there is solder present, remove as much as possible then use a piece of piano wire or similar to push the plate back off.

Date: Wed, 31 Jul 2019 21:46:01 +0000
From: wb3fau55@neo.rr.com
Subject: [R-390] Racal RA-17

Folks, i know this not where to look for this item, but seeking info on sales and availability of these . Some folks say these are even better than a good R-390A. Thanks for your help and info. Russ

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Date: Wed, 31 Jul 2019 18:02:56 -0400
From: "John Gedde" <jgedde@optonline.net>
Subject: Re: [R-390] Racal RA-17

Better than a R-390A??? Blasphemy! LOL...

Date: Wed, 31 Jul 2019 18:09:14 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] Racal RA-17

They’re fun radios to use. Lots of fun to rebuild too...way different than the 390 series. Extremely well built. I consider it a bit of a step up from an SP-600 in some regard. Won’t go as far as saying it is better than the 390 series, but more fun to use for sure.

Date: Wed, 31 Jul 2019 19:43:00 -0400 (EDT)
From: ROSS HOCHSTRASSER <bavarianradio@comcast.net>
Subject: Re: [R-390] Racal RA-17

Hi all, I have a 17L and enjoy using it. I don't think it's better than a 390A(or 390) but it certainly is quicker if you're band cruising. It only has 1 cascode RF amplifier which IMHO may be noisier than the 390 series. If you're looking to buy one, Chris Seig at Piexx in Hillsboro NH had a bunch of them a few years ago. I don't know if there are any left. Contact me off list if you can't find his contact info. I think the ones he had came from Australia. Good Luck!! W1EKG

Date: Wed, 31 Jul 2019 19:49:03 -0400 (EDT)
From: ROSS HOCHSTRASSER <bavarianradio@comcast.net>
Subject: Re: [R-390] Racal RA-17

Picture from "Dr. No" James bond early 60's
Name: bond-drno.jpeg Type: image/jpeg
Size: 96865 bytes Desc: not available
URL: <http://mailman.qth.net/pipermail/r-390/attachments/20190731/ded8dcd7/attachment.jpeg>

Date: Thu, 1 Aug 2019 01:12:23 +0000 (UTC)
From: w1nzr@cs.com
Subject: Re: [R-390] Racal RA-17

The RA 17 is a fine radio, very "English" in it's construction but a good performer. I have one stored in California that needs a new home....

Date: Wed, 31 Jul 2019 20:29:17 -0500
From: Robert Nickels <ranickel@comcast.net>
Subject: Re: [R-390] Racal RA-17

Of course "goodness" would need to be defined but the most significant advantage that the RA-17 has over an R-390 and most other receivers of the same vintage is the Wadley drift-cancellation loop. This circuit eliminates drift without the complexity and other issues associated with a frequency synthesizer. Unlike a PLL, the Wadley Loop does not attempt to stabilize the oscillator, instead it cancels the drift mathematically. Dr. Trevor Wadley invented this elegant circuit in South Africa and attracted the attention of Racal in the mid-50s when the emergence of SSB was putting a premium on receiver stability, especially at the higher frequencies. It came at an opportune time for Racal as negotiations to build the Collins 51J series had fallen through, and the Royal Navy was supportive.

The RA-17 beat all other receivers for stability but was a solid performer otherwise as well, and introduced other innovative design features including upconversion. which provided a very high degree of image rejection, and the tape-type dial scale.

The complete story of the RA-17 development is quite interesting and can be found here: https://www.electronics-notes.com/articles/history/radio-receivers/racal-ra17-development-story.php

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Date: Thu, 01 Aug 2019 06:38:52 +0200
From: fdigio1 <fdigio1@gmail.com>
Subject: Re: [R-390] Racal RA-17

Hi all, I owned in the 80s a Racal RA17 with its VLF, SSB AND diversity converters. It was fun to operate but difficult to align. It was great to receive SSB, even without external adapter. Simple to zero beat an incoming signal to less tha 1 Hz only observing the s-meter oscillations.

Date: Thu, 1 Aug 2019 07:40:11 +0000 (UTC)
From: Robin Filby <robin.filby@yahoo.co.uk>
Subject: Re: [R-390] Racal RA-17

Thanks for the group email on the Racal RA17.
A good website for information on the valve Racal equipment is:
http://www.chavfreezone.me.uk

Like myself, Ian repairs and services these fine receivers.If anybody is needing spares for the RA17, drop me a line and let me know what you are after as I have a store unit full of them. I also have some brand new brass Racal front panel badges for saleon ebarf. The RA17 and the R390 / R390a all have their own merits and I use all 3 of these receivers in anger so to speak. There is a good RA17 forum on yahoo which I moderate.

Date: Sun, 11 Aug 2019 18:21:18 +0000
From: James Anderson <ScottA0227@outlook.com>
Subject: [R-390] R-390A Antenna matching, 26Z5W, 3TF7, 0A2 replacements available? Recommendations?

Do you know if Sigmaperts replacement as follows are still available?

1. BNC 50 ohm unbalanced to Twinax 125 ohm balanced antenna adapter for the R-390A
2. 26Z5W replacement
3. 3TF7 replacement
4. 0A2 replacement

I am looking to update my R-390A and from a couple of recommendation you made of them I would like to buy them.
If not available do you have suggestions for substitutes?
Thanks for your help,
J. Scott Anderson
503-789-3438

Date: Sun, 11 Aug 2019 18:00:57 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] R-390A Antenna matching, 26Z5W, 3TF7, 0A2 replacements available? Recommendations?

Hi Scott, You can contact them directly at: sigmapert 'at' gmx 'dot' de and I believe they still produce some of those items. However, unless your 120 vac power fluctuates, a 3TF7 is not necessary. I suggest using a 12BH7 or 12BY7, instead. There's been discussions about this you can look up (search the archives with the HHI email reflector search tool).

And, as for the antenna balun, if you are not experiencing common mode interference, the balun signal loss is something to consider on weak signal reception. The 125 ohm balanced antenna connection on these receivers is designed to work with impedances of 50 to 200 ohms without much of a mismatch. The loss is extremely small, so using a balun to overcome the imbalance would introduce more loss than without a balun. The least insertion loss available today in this type of balun would be about .5 db on the low frequency side, and up to 2.5 db on the high side. The maximum loss without a balun due to a mismatch on an R390A is about .3 db. Impedance matching in this range on a receiver is not very important.

Date: Mon, 12 Aug 2019 04:45:01 +0000
From: James Anderson <ScottA0227@outlook.com>
Subject: Re: [R-390] R-390A Antenna matching, 26Z5W, 3TF7, 0A2 replacements available? Recommendations?

Thank you for your help.

Scott Anderson
IEC-USA
503-789-3438

Date: Mon, 12 Aug 2019 06:22:39 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] R-390A Antenna matching, 26Z5W, 3TF7, 0A2 replacements available? Recommendations?

Sigmaperts are high quality beautiful looking parts.

IMNSHO, they are a very poor value for the money spent. I admit that I take a value approach out of necessity and the low cost solutions I favor are far from aesthetically pleasing but work as well. The Sigmaperts antenna matching balun is very nice but there are DIY circuits available on the web that can be made for less that $5. And the question arises: do you really need it?? Transmitters yes, receivers are usually very happy with the longest single wire one can provide.

Replacing 26Z5's with silicon diodes and a 300 - 500 ohm power resistor will cost less than $2. 3TF7's have been happily replaced by many members with a simple dropping resistors. There are some slightly more exotic solutions going back to the days of the Hollow State News which featured a number of circuits in its publications that are free on the web.
If you want something a bit more sophisticated there is one on ebay for about $28 that's had good reviews.

An 0A2 SS replacement can be made of less than $2. If you go to the R390AFAQ site. I've posted a SS regulated PS circuit that uses one HV 3 terminal regulator IC, 3 1% MF resistors and 2 caps.? New from Mouser would be $5 at most.? The advantage of the IC regulator is that you can add far more (.01 mF) bypass capacitance at the point where the +150 goes to a tube pin. Also one doesn't need the high wattage dropping resistor that goes to the 0A2 input. A 0A2's useful life and stable regulated voltage output is directly related to the current it is dropping. There is an article about it in the SP 600 anthology. With the 0A2 one is limited to about 5,000 pF max as any more causes it to behave as a relaxation oscillator. Sigmaperts also sells plug in replacement filter caps for IIRC $85.? It is very pretty. A number of posts to the list have shown several far less expensive alternatives. So you pays your money and make your choices.
Regards, Perrier

Date: Sun, 11 Aug 2019 23:41:53 -0700
From: Don R <organlists1@sonic.net>
Subject: Re: [R-390] R-390A Antenna matching, 26Z5W, 3TF7, 0A2 replacements available? Recommendations?

I just checked and VTI has NOS 25Z5 rectifier tubes for $3.90
https://vacuumtubesinc.com/index.php/25z5.html

3TF7 is $37.50
https://vacuumtubesinc.com/index.php/3tf7.html

0A2 is $5.50
https://vacuumtubesinc.com/index.php/catalogsearch/result/?q=0A2%2F1

50C2

Don Resor hammondorganservice.com

Date: Sun, 11 Aug 2019 23:44:20 -0700
From: Don R <organlists1@sonic.net>
Subject: Re: [R-390] R-390A Antenna matching, 26Z5W, 3TF7, 0A2 replacements available? Recommendations?

Ooops! NOS 26Z5 is $20.00
https://vacuumtubesinc.com/index.php/26z5w.html

Date: Sun, 1 Sep 2019 20:30:14 -0500
From: Richard Anderson <n0abt1976@gmail.com>
Subject: [R-390] (no subject)

Looking for part number of the mini BNC connectors inside the R390A. I am rebuilding one completely and want to replace all of the coax between modules. I have coax and want to build new cables.

Respectfully
Richard Anderson
(816) 896-5232 cell

Date: Sun, 1 Sep 2019 18:54:56 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] R-390A Mini-BNC coax connector source

Hi Richard, I've been looking for a source of new mini-bnc coax connectors for a while and have not found one. What I have found is 2 exact fit for the jack, but they both are for coax that is much larger than that used in the R-390As. They are: 1. Wedge-Lock by Automatic # 6843, and 2. Veam S.p.A. by Litton. It would be very difficult to make the mini-coax fit correctly into these connectors.

The only source I know of is at Fair Radio and they are used for $4 each for straight or right angled. They will need to be cleaned up. If anyone knows of a source for new or new looking ones, please let us know. ----------
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Date: Mon, 2 Sep 2019 16:19:58 -0500
From: <frledda@att.net>
Subject: Re: [R-390] R-390A Mini-BNC coax connector source

These should be the PNs associated with the Mini-BNC SMB 283181

NSN 5935-00-204-6391

Old NSNs 5935-00-615-9428 & 5935-00-833-2690

PNs
45425 30684 Airgas Safety Inc.
45425TYPEMB 30684 Airgas Safety Inc.
68725 02660 Amphenol Corp.
45725 74868 Amphenol Corporation
IPC45725 74868 Amphenol Corporation
328A4407 94990 Motorola Inc.
SM-B-283181 80063 US Army Communications

Best, Francesco K5URG

Date: Mon, 2 Sep 2019 16:19:58 -0500
From: <frledda@att.net>
Subject: Re: [R-390] R-390A Mini-BNC coax connector source

These should be the PNs associated with the Mini-BNC SMB 283181

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45725 74868 Amphenol Corporation
IPC45725 74868 Amphenol Corporation
328A4407 94990 Motorola Inc.
SM-B-283181 80063 US Army Communications

Best, Francesco K5URG

Date: Mon, 2 Sep 2019 17:52:40 -0500
From: Richard Anderson <n0abt1976@gmail.com>
Subject: Re: [R-390] R-390A Mini-BNC coax connector source

Thanks for the info. Will be doing some looking around the web and some of my other resources I have.

Date: Mon, 2 Sep 2019 19:50:20 -0500
From: <frledda@att.net>
Subject: Re: [R-390] R-390A Mini-BNC coax connector source

ILS is the place to look!

Date: Thu, 12 Sep 2019 08:40:08 -0500
From: Reuben Popp <reuben.popp@gmail.com>
Subject: [R-390] General valuation?

Quick question for the group. What is the general consensus on the price for a R390A in very good shape (with meters), in a restored CY-979A cabinet? I have a lead on such a unit; I have been told it is in great shape in the cabinet and was working when last used. However, it has not been powered on for the past few years.

Date: Thu, 12 Sep 2019 11:23:53 -0400
From: dog <agfa@hughes.net>
Subject: Re: [R-390] General valuation?

Generally worth what someone is prepared to pay. I've got a couple too I'd like to sell, but I'm not giving them away at the moment. It may come to that.

Date: Thu, 12 Sep 2019 19:51:28 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] General valuation

Reuben A. Popp in a restored CY-979A cabinet are pricy cabinets but make good table top operations. Receivers with meters start at 3 and end at 5.Fellows are selling face paint and now pin stripe knobs this year.As cosmetics. I have listened to paint dry but do not understand how it improves receiver selectivity. There is nothing in a R390/A that can not be repaired and return the receiver to operation. Receivers that have set years are no problem.The R390.net has the Pearls of Wisdom that has all the knowledge collected sorted and ready to help you get your receiver back on the air. There is a step by step walk from into the shack up through full inspection, repair, and alignment processto a good fully functional receiver. A Saturday afternoon activity once a year as you do an oil change and wash. One AC/DC volt meter a special spline wrench and long #1 Philip screw driver will troubleshoot any electronic problem in the receivers. You eye ball the gear train and you do own a military clean machine where dirt is friction. R390/A are receivers that ran 24 7 for six months. 4380 hours between maintenance activates. On time to warm up time of tubes is if the tube is on for more than two hours. Tubes will fail emissions before the filament opens from thermal cycling. Turning the receivers off and on will not change tube life or performance. The whole receivers do well to warm up and stabilize before going on air. About one a year the Amateur Owner needs to do 8 hours of cleaning, lubricating and alignment of the receiver. Do wash the front panel and pin strip knobs on occasion.It is a four hour job but that's not the way we move it. Tube life is over 10,000 hours. R390/A are mechanical and need all the knobs exercised to keep the

receivers happy. Yes, you need to pet the things to keep them purring. Every dollar under 500 is how well was the last PM done and how long ago in operating hours. If you move any R390/A in and out of a rack/cabinet it incurs the exact same mechanical vibration risk and will not care how long it was since last thumping by gravity stopped. Transportation cost exceeded anchor value. Nice 400 - 500 dollar receivers are setting because the cost of relocation is an equal cost. There are receivers available but the entire Amateur market for the R390 and R390/Aover the last 30 years has not supported a central pool. Fair Radio Sales in Lima Ohio keeps parts but has given up R390 receiver sales because cost to ship exceeds product value. Drive to Lima and spend a day shopping in an electronics logistics depot. Look in your R390 parts manual for part numbers when ordering parts. The company catalog is not the R390 or R390/A parts manual anymore. The receivers are still best on the Planet and doing well. Their value is holding and no end of parts is in sight. Receiver less meters is under 300 and with acceptable replacements at 300. Respectfully, Roger Ruszkowski AI4NI

Date: Thu, 12 Sep 2019 20:31:45 +0000
From: Tom Bridgers <tarheel6@msn.com>
Subject: Re: [R-390] General valuation

As a long-time R-390 a owner, repairer, and user, all I can say in response to Roger s post is: Well done, amen!

Date: Thu, 12 Sep 2019 20:42:36 +0000 (UTC)
From: james1787@aol.com
Subject: Re: [R-390] General valuation

As a relatively new R-390A owner and user (about a year), I can also say well done Roger! I suppose I should probably do a PM on mine and look forward to learning how to do that!

Date: Thu, 12 Sep 2019 21:53:42 +0000
From: wb3fau55@neo.rr.com
Subject: Re: [R-390] R-390 Digest, Vol 185, Issue 5

Folks, i have a local friend with a R-390A Collins contract very good orig cond. He wants$1000. My self, i have a Motorola contract S/N 30 excellent cond. Negotable price around 1000. Send email, we can talk.

Date: Thu, 12 Sep 2019 17:16:58 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] R-390 Digest, Vol 185, Issue 5

Best of luck...here for sure. Folks around here know what they are worth

and how to make them work. I haven't even seen those prices on eBay lately unless they were fully restored by one of the big named restorers. But every now and then someone comes along and bites...

Date: Thu, 12 Sep 2019 19:07:48 -0500
From: Don Cunningham <donc@martineer.net>
Subject: Re: [R-390] General valuation

Hello from a new member to the list. I guess I should say returning former member, as I was on this list many years ago. I sent a reply to Roger only by accident, so will try to put it on the list the right way now.

I wish we would see R-390A equipment/parts listed on here from time to time, especially parts available. A "parts donor" or even better might be in the offing if I could find one close and in reasonable shape. I am bringing back up two radios that have been down for a while, and will likely need some help from the list as well as a part or two along the way. Ebay prices on the parts are still a bit ridiculous and small parts (clamps, Oldham couplers, etc) non existent there or seemingly from Fair Radio anymore. One of these receivers is in very good shape, just not run for too long and the other had a previous owner that butchered sections to "improve" things, so it will be a long process of putting back right.

I appreciate all the work done in the past, and those that contributed to that work. More knowledge available than can be easily and quickly read!! Nice work though and helpful.

Date: Thu, 12 Sep 2019 22:39:32 -0400
From: Tom Chirhart <k4ncg@yahoo.com>
Subject: Re: [R-390] General valuation

Speaking as an old Navy Radioman... the only failure we ever had was with ONE R-390A was when we had a power surge when shifting from shore power to ships service generators.... blew a ballast tube...

Date: Fri, 13 Sep 2019 06:44:45 +0300
From: Edward <navydude1962@yahoo.com>
Subject: [R-390] R390As and corresponding PTOs

Is there a chart that shows R390A variants and the PTOs they used For example:

Motorola to Motorola
EAC 67 to Cosmos
Stewart Warner to Dubrow, etc

Date: Thu, 12 Sep 2019 23:56:38 -0500
From: Don Reaves <donreaves@gmail.com>
Subject: Re: [R-390] White lines on knobs and more

One tidbit I learned along the way about painting or powder coating aluminum is to get it clean before applying primer or alodine or whatever. By clean I mean no grease, oil, dirt, or fingerprints. The quick method I use is to lightly scrub the piece with a light dusting of plain kitchen cleaner Ajax and a plastic scrubbing pad using distilled water. I wear latex gloves to avoid contaminating the workpiece. My tap water has a high mineral content, and distilled water is inexpensive so I use that. Also use distilled water to rinse off the Ajax. The test to see if you have the item clean is water should gravity flow off the piece in sheets, and not bead up. If it beads up, or droplets form, it's not yet clean. Dry the piece once clean and its ready for the next surface treatment.

Date: Fri, 13 Sep 2019 06:01:17 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] General valuation

Valuation will depend on your *end game* Do you want a pristine looking radio or do you just want performance If you want both and to have it done is big bucks to have it done What can you do yourself What test equipment do you have or have access to What is your time frame for the final type of radio that you want Many on the list end up taking *wreaks* and make them better than new, but it takes a huge amount of time, money and elbow grease.

What parts have been replaced or need to be replaced Do you want a stock OEM radio or do you want to add a SSB module from TreeTop circuits or others If you want a nice panel, can you do it yourself with the trial an errors that come with the learning process or would you have to pay someone to do it for you. I'm the long time Heretic - In - Chief (and proud of it!) as I want to wring out all the performance that can be obtained. That means replacing all the fixed caps and resistors,just for the start. If you go to the R390A FAQ site you can download my *Almost best R390A* ski.
If you really, really want ultimate performance you can do the Ray Osterwald Competition R390A article found in the Y2KR3 manual.
There is the Kleronomos audio mod or one like Dallas Lankford did Also in the Y2KR3. It's the same scenario as people who restore an old car. You will never get back what you put into it with parts and labor.
You do what you enjoy doing and your opinion is the only one that matters. Screw the nit picker self-appointed gurus who occasionally chime in with their opinion (which they probably never did themselves).

They spew things like *keep it original for posterity or a museum* or *Don't drill any holes is it* or *It's got to have the original paint scheme* If you want make it and Elton John/Liberace tribute with a maroon panel, white knobs, and gold flake lettering. These radio aren't rare, never will be, and no one has ever been able to name a museum that wants or even has one. After mulling it over what you want let the list what help you might need for help and we'll be glad to assist.

.PS. Speaking of *r@re r@dios* as the moronic ebay shysters talk about, I have one of only three known Hammarlund R620's of the run of 100. It's in crappy physical condition but I hope in the near future to get a-round-to it. So go for it!

Date: Fri, 13 Sep 2019 22:07:02 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] General valuation?

Property has changed ownership in the last 20 years. Doing a catalogue of what you have nearly put one of the old R390 part sources into an early grave. Aggregation exceeds return on investment. All the R390 R390/A manuals and thirty plus years of collected wisdom are at R390.net All the readers please ask for what you need. Our readers ask what about this. this gets a written response. Ask about parts. That request will get you a one off offer from some one.Aggregation exceeds return on investment. The cost of the postage exceeds the cost of the parts and time to get it in the mail. So what ever happens is between buyer and seller and the U S Mail man. Don you could marry a frame and wire harness from Fair Radiowith all your modules, do a paint job on one front panel andthe receiver maintenance and listen to it for the rest of your life. The other threads are well supported for taking the time to do one for your self. It is a project and the art has many usesand stories that will carry on for years of enjoyment even ifit just setting quietly in near memory. Laundry mat service time to get to a clean machine to start will cost $1,000.00 to sub contract. A week on the patio table across a warm week and do it your self. Software audio from the diode load had made the receivers the the new band converters between technologies again. Don, when you get to it. You will look up the parts you need to makes some repairs. Once you get past stock tubes, resistors,caps and hardware available on line. Then ask for the clamp, slug, crystals, or even whole sub decks if you need one.The price is not free. What ever is agreed to is a steal, and we all know it. We give the parts away, not our time today. Roger AI4NI

Date: Fri, 13 Sep 2019 20:03:54 -0400
From: "Robert P. Meadows" <rpmeadow@bellsouth.net>
Subject: Re: [R-390] General valuation

Fair Radio has a pretty good selection of R390 radios that are essentially parts. You have to call for the part, and remember, those radios have been gathered up from all across the USA, trucked to Lima and preserved. Just the inventory maintenance cost is more than most would imagine. I have found that Fair Radio prices are ALWAYS better than dreaded ebay, or any other venue. Further, if Fair sends a bad part, they stand behind what they sell. Unless of course you butchered the part whilst trying to install it. I can manufacture Oldham couplers... have done so for Collins equipment, but, I doubt that anyone will pay the rate on making a one off part.

Date: Fri, 13 Sep 2019 20:03:39 -0500
From: <frledda@att.net>
Subject: Re: [R-390] General valuation

Agree 1,000,000 % They are great guys!

Date: Mon, 16 Sep 2019 11:08:37 -0500
From: Don Cunningham <donc@martineer.net>
Subject: Re: [R-390] IERC Tube Shields - Brand New

I wish to thank Rich for his posting here. He has an item I would have bought after my parts post last week. The only "list" I found in the great information on R-390A.net for tube shields said to use 6020B's, so that's what I was searching for and was glad to find that something else would work. I STILL need what looks like 13 of the 5020B ones for all these 6BA6's and 6C4's if anyone has a stash of those. The only one left in the rig I am working on was on the 3TF7! The rest were all the shiny shields.

I still need a couple of the shaft coupler clamps like used on the BFO pitch and Bandwidth shafts to the IF deck and a couple of Oldham coupler anti-backlash springs, or a source for a replacement. I do think I found an assortment of small springs on Amazon that just might have a couple of those springs in it, so I'll probably order it if I don't come up with anything else.

I recognize that postage is high, and parts this small aren't really worth a vendor's time to dig out, pack and ship, so likely I won't find what I want and will end up using some old "standard" shaft couplers on my other R-390A needing the clamps.

Date: Fri, 20 Sep 2019 00:24:09 -0600
From: "Gary I. Biasini" <gary.biasini@shaw.ca>
Subject: Re: [R-390] (no subject)

>Behalf Of Richard Anderson

>Sent: September 1, 2019 7:30 PM
>Subject: [R-390] (no subject)

>Greetings and good evening
>Looking for part number of the mini BNC connectors inside the R390A. I
>am rebuilding one completely and want to replace all of the coax between
>modules. I have coax and want to build new cables.

My apologies for getting late to the party.
Check out this URL: https://www.amphenolrf.com/031-70335.html
The drawing of the part is at:
https://www.amphenolrf.com/downloads/dl/file/id/75/product/2289/031_70335_customer_drawing.pdf

Sources follow - note some are out of stock.
Here it is at Digikey:
https://www.digikey.com/product-detail/en/amphenol-rf-division/031-70335/ARF 2142-ND/4037257

Here it is at Mouser:
https://www.mouser.com/ProductDetail/Amphenol-RF/031-70335?qs=%2Fha2pyFaduhDg7grfPyY2SAIamRqz6fZBRSkrZMjE78%3D

Here it is at Newark:
https://www.newark.com/amphenol-rf/031-70335/mini-bnc-straight-crimp-plug-for/dp/48AC2302

Here it is at Allied Electronics:
https://www.alliedelec.com/product/amphenol-rf/031-70335/71675687/

At online components:
https://www.onlinecomponents.com/amphenol-rf/03170335-50052143.html

Good luck!

Date: Fri, 20 Sep 2019 01:34:07 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] (no subject)

Hi Gary, Sorry to disappoint, but the connectors you are referring to have a male pin as the connector for the center conductor. The ones used in the R-390A have a female connector for the center wire.

Date: Fri, 20 Sep 2019 12:22:05 -0500
From: Richard Anderson <n0abt1976@gmail.com>

Subject: Re: [R-390] (no subject)

Gary and Larry thanks for the info. I may resort to taking the old ones apart cleaning them up for reuse. Been there done that before. Its tedious work but I also build small models. Working with small stuff is kind of a zen thing

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Date: Fri, 20 Sep 2019 15:15:30 -0400
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] (no subject) BSM Connectors

The connectors in question are Automatic Connector RF-0700 series and are their BSM series. The chassis mount is a RF-0730. I have not researched the cable mating end. These connectors are available from Surplus Sales of Nebraska at $25.00 each. Theirs appear to be the Amphenol equivalent MB series part number 47800 for the cable end. Kings made an equivalent connector in their KM line. These connectors are obsolete and unless you can locate some from old stock, you will not find them. These connectors were also used by Tektronix on some of their plugins.

Date: Fri, 20 Sep 2019 19:46:48 -0600
From: "Gary I. Biasini" <gary.biasini@shaw.ca>
Subject: Re: [R-390] (no subject)

Thanks. I was surprised how easy it was to find after others have had no luck. I appreciate your attention to detail.

Date: Sat, 21 Sep 2019 02:31:51 +0000
From: Shaun Merrigan <shaun_merrigan@outlook.com>
Subject: Re: [R-390] (no subject)
Message-ID:

Fair Radio used to sell these connectors as "surplus, used". I have not checked lately, but maybe they still do? They were not cheap even 15 years ago when I bought a bagful. These connectors are also used on the older Tektronix gear that I love: sampling sweep units and picosecond pulsers. As these are "pulls", you need some deft and skill with the soldering gear to clean them up and re-use them.

Date: Sat, 21 Sep 2019 15:38:12 -0600
From: "Gary I. Biasini" <gary.biasini@shaw.ca>
Subject: Re: [R-390] (no subject)

Following on Larry's message, I have now learned that the mini-BNC connectors used in the R-390a are "reverse polarity" mini-BNC connectors.

While I was able to find many reverse polarity BNC connectors on the web, no luck finding the mini-BNC variety. As my former classmate, Shaun Merrigan, mentioned, they are available at
Fair Radio for $4 each, at least when I checked last night.

Date: Mon, 23 Sep 2019 16:08:41 +0000 (UTC)
From: lasavidge@aol.com
Subject: [R-390] Cover screws

Does anyone know the specifications for the side screws that mount the top and bottom covers to the main chassis of the R390A. I have the covers, just no screws.

Date: Mon, 23 Sep 2019 13:19:40 -0500
From: Dave Merrill <r390a.urr@gmail.com>
Subject: Re: [R-390] Cover screws

6-32 Pan Head Phillips Machine Screw

Date: Mon, 23 Sep 2019 14:32:06 -0400
From: Glenn Little WB4UIV <glennmaillist@bellsouth.net>
Subject: Re: [R-390] Cover screws

The screw is 6-32 Stainless 1/4" long
https://www.mcmaster.com/91400A144
The flat washer is 5/16" OD Stainless
https://www.mcmaster.com/98019A314
The lock washer is Stainless https://www.mcmaster.com/91475A020

The above is for the original parts.
You can use what ever will fit.

Date: Fri, 18 Oct 2019 19:09:31 +0000
From: David Olean <k1whs@metrocast.net>
Subject: [R-390] Fixing a R-390A module connector

I just got started on restoring a 1967 EAC R-390A receiver. It looks pretty clean, with just a bit of schmutz on the chassis. I looked it over and saw that two slug racks did not move. That was easy. I found a gear that was not tightened with its' clamp. A more troubling problem was the big multi pin receptacle on the IF module. One of the exposed pins had been bent over and flattened against the chassis! I tied to unbend it, but it fell apart as soon as I touched it.? I changed out the problem caps in the IF assy with new modern capacitors, but was worried that I now had a bad connector to deal with.? Here is what I did.

I filed down what was left of the broken pin to get a flat surface. Next I gently tried to prick punch the flat brass so I could start a small drill bit. I ended up using a #66 drill bit in a pin vise and slowly got a hole started in the flattened area. When I had enough depth to start a real drill, I bolted the IF assy down on my drill press and drilled a small 0.030" hole in the brass. (Maybe 0.100" deep) Next, I opened it up with a #60 drill bit to 0.040" which is the diameter of the pins required. I turned down a new 0.040" pin out of HH brass on the lathe and adjusted the length so that it fit in the new hole properly and extended as far as the existing pins. A bit of flux and some solder to hold it in place and the busted connector now looks just like a perfectly good one! Hoo-Boy... shades of McGyver!! Now on to the next problem! I took some pictures, but I don't think pictures are allowed on this reflector.

Date: Fri, 18 Oct 2019 19:29:55 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Fixing a R-390A module connector

David, Thank you for this couple concise paragraphs going into the archives and Pearls of Wisdom.

Date: Fri, 18 Oct 2019 14:43:19 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Fixing a R-390A module connector

Dave, Great work on the connector pin.
BTW, pictures are allowed, just attach them to the post (note).

Date: Sat, 19 Oct 2019 10:17:03 -0400
From: dog <agfa@hughes.net>
Subject: Re: [R-390] Fixing a R-390A module connector

I fixed one of those pins, but all I did was dig out some of the connector so I could get more solder around the bottom of the pin. So far it's holding. I did get a new/used connector, but it looks like a lot of work to replace it. Plus I don't have a drill press or lathe. I just used a piece of #18 solid wire as I remember. Mine is easy to tell if it's working or not, it was the BFO on/off pin. There is a spare pin that can be used, but it would make it non compatible. Great work BTW.

Date: Sat, 19 Oct 2019 23:25:30 +0000
From: David Olean <k1whs@metrocast.net>
Subject: [R-390] Fixing a R-390A module connector

Here are some shrunken down pictures of the busted R-390A pin repair.

When I tried taking the IF deck out to clean it and replace the Vitamin Q filter capacitor, I was horrified to see one of those pins flattened down against the chassis. It broke off as soon as I touched it.

Here is a photo of the missing pin. There is enuf meat in the connector pin base to drill in about 0.100" without messing anything up. The hard part is getting a drill bit started, so I filed down what was left where the pin broke off and then gently (so I did not break the connector body)? used a prick punch to make a dimple to locate a small drill bit in the middle of the brass. I used a hand held pin vise and twisted it with a very small (#66)drill bit to get the hole started.? Once I had a small indentation, I used my drill press and a #66 drill bit to drill the hole.

Once I got it drilled to about 0.10" deep, I used a #60 bit to open up the hole to 0.040" which is the diameter of the brass pins in the connector.? Note that I have the IF assembly bolted down to the drill press so it won't move!

The completed job with the new brass pin. I rounded off the top to match the others. It might be possible to find some 0.040" brass wire so you don't have to make your own.

I just finished working on an old R-390/URR from the original Collins order in 1951.? It was in rough shape with regulator problems.The regulator was pumping out almost 300 volts instead of 180 volts, so all the surge resistors were cooked. I found a man made short inside where a bare lead on a capacitor was shoved into another component!? After fixing that, it regulated at 220 volts because of overheated parts in the VR tube chain.? I got it working fine after some more new resistors went in.? More cleaning and tweaking and a full alignment produced some really good sensitivity numbers. I am seeing 0.14 microvolts AM sensitivity in a 2 kHz bandwidth.? Most of my problems were in the Crystal deck with bad connections on the switch positions. It would make the oscillator develop output at twice the crystal frequency since the tuning capacitors were not making contact to resonate the output coil. That caused very poor LO injection amounts and poor sensitivity. It took awhile to get the switch to clean itself up. It is now working just fine on all bands.

One thing I noticed is that all of the crystals in the 390/URR do not show much aging even though they are 68 years old. They are all just about spot on!? The PTO was way out at 7.5 kHz and no more room for adjustment, so I removed a turn from the end point coil and got it working again within a few hundred cycles.? The R-390 is a joy to use, but you all know that!

I could very easily be persuaded to fix broken pins on these module connectors. I would not even try it without a drill press. You need precise control of the drill bit or the small sizes are easily broken.?
I should look around for some 0.040" brass wire. That would make the job much easier than rolling your own on a lathe.

Date: Sat, 19 Oct 2019 23:27:57 +0000
From: David Olean <k1whs@metrocast.net>
Subject: Re: [R-390] Fixing a R-390A module connector

I guess the pix did not go thru. They were 640 x 480. I guess they must get smaller.(?)

Date: Sat, 19 Oct 2019 19:29:32 -0500
From: Dan Osborne <wb5afy@wb5afy.net>
Subject: [R-390] R390A Collins module serial numbers

OK - recently I have obtained a couple of Collins 1955 contract R390A's that were used by NBS in Boulder Colorado. I do not believe that these receivers were ever subjected to "depot" reconditioning as all the modules are of Collins mfg. (and have the correct build dates and mods)

My question is - did the module serial numbers match the front panel serial number plate when these receivers were originally manufactured ?

The serial numbers on the modules are very close to the front panel serial - i.e. - front panel serial is 212 - power supply module is serial 95 - IF module is 220 - etc.. Just wondering if this was the way these were shipped from the factory? Any info welcome...tnx
---
Date: Sun, 20 Oct 2019 06:28:23 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] R390A Collins module serial numbers

Dan, I was just in time build but the finished receivers were neverrequired to have a matched set of numbers. The field stations had whole production contracts to them selves.The close modules were often swapped into the matchingchassis number. By 1970 I seen many receivers withmatching serial numbers. From the girls on the assemblyline or the fellows over the years I do not know. Some warrant officer once went over the end when hecould not get all the subassemblies in his property bookto match for a second lieutenant. The enlisted men turned the pair into their management.School house trivia. What you think only enlisted men hazed the new guys The man had receivers 1651 thought 1750 and expected a perfect match. If you had a module # 16 in a 1888 chassis you worried

whatkeep that module in rework so long. Sub assemblies chassis modules mixed across contract runs werethe results of the depot dog operations of the signal corps tomaintain these receivers at sites where service was crateand exchange via diplomatic courier services. Some site may swap four or five bad modules intothe depot dog and trade it in. Four fixes on sitebefore the crate exchange needed to be repeated.Maybe four crates traded all at once and thatwas your receiving side support in your diplomatic communication linkcomplete with US Marines for another year. Depot dog treatment was equal opportunity for all logistic supportat some communication sites around the world with service from the US Army Signal Corp. You may be more concerned for your transmitter spares. We do not have a need to know. Respectfully, Roger Ruszkowski ----------

Date: Sun, 20 Oct 2019 08:58:06 +0000
From: David Olean <k1whs@metrocast.net>
Subject: [R-390] Connector pictures

1269.JPG shows the broken pin in the IF assembly.
11268.JPG shows the new pin after the repair
1267.JPG shows the IF assy bolted down in the drill press and getting drilled with a #60 drill bit. (0.040" dia.)

Hopefully the pictures made it this time.
Dave K1WHS
---------- next part ----------
A non-text attachment was scrubbed...
Name: 101_1267.JPG
Type: image/jpeg
Size: 96456 bytes
Desc: not available
URL: <http://mailman.qth.net/pipermail/r-390/attachments/20191020/7b322c11/attachment.jpe>
---------- next part ----------
A non-text attachment was scrubbed...
Name: 101_1268.JPG
Type: image/jpeg
Size: 84697 bytes
Desc: not available
URL: <http://mailman.qth.net/pipermail/r-390/attachments/20191020/7b322c11/attachment-0001.jpe>
---------- next part ----------
A non-text attachment was scrubbed...
Name: 101_1269.JPG
Type: image/jpeg
Size: 87485 bytes
Desc: not available

URL: <http://mailman.qth.net/pipermail/r-390/attachments/20191020/7b322c11/attachment-0002.jpe>

Date: Sun, 20 Oct 2019 03:55:17 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Connector pictures

Dave, I got them this time. Thanks for the persistence on sending them. Great job on the repair. Good pics and explanation.

Date: Sun, 20 Oct 2019 08:01:06 -0400
From: "John Gedde" <jgedde@optonline.net>
Subject: Re: [R-390] Connector pictures

Looks great! Clever repair. What did you use as a new pin?

Date: Sun, 20 Oct 2019 16:53:10 +0000
From: David Olean <k1whs@metrocast.net>
Subject: Re: [R-390] Connector pictures

I made my own pin out of half hard brass rod. I had some 3/16" dia stuff and I turned it down on a lathe. The problem is that a 40 thousandths thick piece of brass will give abit when turning, so any unsupported portion can flex and it is hard to keep a constant diameter as you are turning it down. The solution is to have a sharp cutter and go slow, with repeated passes to remove as much material as you can.

I am sure that brass wire in 40/1000ths can be found. I checked K&S hobby tubing and they have 0.031 and 0.047 (1/32 and 3/64ths) rod. You could probably put the 3/64ths in a drill and file it down quite easily while running the drill, and skip having to roll your own on a lathe.

Date: Sun, 20 Oct 2019 13:23:31 -0400
From: "Robert P. Meadows" <rpmeadow@bellsouth.net>
Subject: Re: [R-390] Connector pictures

Why not just purchase a new or good used replacement connector from Fair Radio?

Date: Sun, 20 Oct 2019 18:17:42 -0400
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] Connector pictures

Metric to the rescue! 0.040" is very close to 1mm (1mm = .03937"). Using a 1mm drill bit and 1mm brass rod should work FB. You may even be able to find 1mm round header pins that are already rounded at the tip.

Date: Sun, 20 Oct 2019 17:33:19 -0500
From: <frledda@att.net>
Subject: Re: [R-390] Connector pictures

The Nike Hercules missile systems used those type of connectors everywhere, with one difference, the pins were removable with a special tool. Therefore, a broken pin was not a big deal!

Date: Sun, 20 Oct 2019 20:00:26 -0400
From: "Jerry O. Stern" <jsternmd@att.net>
Subject: Re: [R-390] Connector pictures

Now you tell us...
I was visiting White Sands Missile Range just 2 days ago !!!

Date: Mon, 21 Oct 2019 00:45:36 +0000 (UTC)
From: w1nzr@cs.com
Subject: Re: [R-390] Connector pictures

As Arty Johnson said many, many years ago "verrrrrry interesting" Radio !

Date: Mon, 21 Oct 2019 10:06:15 -0400
From: dog <agfa@hughes.net>
Subject: Re: [R-390] Connector pictures

That connector is a bear to replace. My dad worked on the Nike Ajax system after being an artillery officer in the war in Germany. I remember living in El Paso, must have been about 1950 or so. He worked at White Sands. I think I went to first grade in El Paso. I only found out about this much later, he never would talk about what he did.

Date: Wed, 30 Oct 2019 21:31:09 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] R-390A Easier Mini BNC plug disconnecting

I was just putting the IF deck back into the frame and was thinking 'how can I connect the mini BNCs easier' - my fingers don't work and pliers don't work. I can easily do the rest of them in the rx, but not the two on the IF deck next to each other. Well, guess what does? My forceps style tube puller works like a champ. The end that grabs the tube is rubber tipped and angled in a little so that the ends contact the plug correctly. The tube puller I have now is a GC 5092. It works great for disconnecting and reconnecting the Minis.

Date: Thu, 31 Oct 2019 21:14:21 -0400
From: dog <agfa@hughes.net>
Subject: Re: [R-390] R-390A Easier Mini BNC plug disconnecting

I have a pair of angled hemostats I use. Same idea.

Date: Sun, 1 Dec 2019 18:17:39 -0800
From: Manfred Antar <manfredantar@gmail.com>
Subject: Re: [R-390] Shock mount update

I got 2 of these on 2 R390's - work great !!!

Date: Mon, 2 Dec 2019 13:09:35 +0000
From: Les Locklear <leslocklear@hotmail.com>
Subject: Re: [R-390] Shock mount update

I wasn't sure of the time-frame, so I got out my old ER magazines there was my black faced 390A in the black CY-979 cabinet on the cover of issue 111 dated July 1998. I got it from Mac the year before in 1997.

Date: Sat, 7 Dec 2019 22:23:39 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: [R-390] Off Topic however still Merry Christmas

Fellows, Roger Ruszkowski AI4NI KC6TRU after practicing on the amateur communityfor more than 28 years responding to questions enabling amateurs to maintain theirvintage R390 and R390/A models of vacuum tube receivers admits to has been developing other fields of science. Wei Li has graciously been documenting the change in Roger's writing skills in thePearls of Wisdom over this span of time. Some critics suggest these skills if any have diminished. The truth be known Roger have been blogging a useful column on the r-390@mailman.qth.net for almost 30 years and has helped maintain a transit reader base for the reflectors central focus. Teach new amateurs skills in an area of interest that already has there attention. Keeping the customers in the community and supportingtheir interest in the moment. Nothing focuses an R390 reflector reader like a health problem with one of their prime toys. How many authors do you know that have been penning a column on demand for 30 years. How many editors do you knowwho have been digesting the daily exchange and distributing the digest to the readerswith an active interest in the narrow field of vintage radio receiver ownership and operation for over 30 years. Whole bunches of Fellows have ask questions here and left satisfied. Thank you for thequestion of the day that enable the reflector to stay a small current active thread wherenew Fellows can receive an answer that was composed today. It may be a cut and pasteanswer from 28 years ago. But the Fellow with the problem corresponded with

otherAmateurs in text time and had a focused feedback to the specific problem on the bench. We have seen that problem twice now in 28 years.The answer is owner maintainers are still making their own tools.Welcome to the world of the field engineer. In the spirit of keeping it together and passing it along Roger Ruszkowski offerseveryone a free ebook edition of his new book. Time Line: A history of earth correlating modern science and myths.
Merry Christmas and please enjoy a book.
Respectfully, Roger Ruszkowski

-----Original Message-----
From: Roger Ruszkowski <flowertime01@wmconnect.com>
To: flowertime01 <flowertime01@wmconnect.com>; flletters <flletters@mlive.com>
Sent: Sat, Dec 7, 2019 2:05 pm
Subject: Roger Ruszkowski has Published Time Line: A history of earth correlating modern science and myths

Released Saturday 7 December 2019 Roger Ruszkowski 1000 Perry St. Flint, MI 48504 1 810 853 9263 Flowertime01@wmconnect.com

Merry Christmas to All and your loved ones Time Line: A history of earthcorrelating modern science and myths B082BGJ99H Free Book PromotionScheduled to open on: Friday, December20, 2019, 12:00 AM PST Free Book PromotionScheduled to close on: Tuesday, December24, 2019, 11:59 PM PST Just in time for Christmas, Roger Ruszkowski hasfinished an old story. The publication of TimeLine: A history of earth correlating modern science and myths puts a formalfinish on a ninth grade history project. Every reader should enjoy the read, asthe onlyobjective of the author was to present a better story than wecurrently present of Earth shistory. The ebook edition passed the copyright censors andwent public on 04 December 2019. A search for B082BGJ99H should bring up a linkfor Time Line: A history of earthcorrelating modern science and myths by Roger Ruszkowski
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while building these reading skills Time line isa history of Earth. The reader is presented 263,854 total words thus repeatedpractice is from a large topic pool. 23,935 unique words bring English as afirst or second language up to reading speeds and comprehension that exceed theindividual s ability to compose improvisation speech. Time Line introduced 12 new words to the Kindle dictionary. With23,935 chances 12 new words is a worthy score. Four typographical errors werefixed. Humans can speak at 125 words and read at 500 words a minute. Humanscannot write (keyboard) but at about 65 words a minute. Slow down, keyboard it down,share it faster, and share it again with more people as the tangible (virtual)text product produced is passed along. The most synergistic method of broadcastcommunication yet devised. Humans are hard put to put down 500 coherent words infour minutes as improvisation speech with elegant style. The skill takespractice. Knowing humans want to exchange ideas in manageable blocks Time Line is styled to accommodate theinformation transfer from text to reader. Most readers of Time Line are not reading for the speed read drill skills. However,the same style that makes any story easy reading is brought to the book topresent the reader with the best reading experience possible from both thestory structure and the display of text to the reader for maximum readingenjoyment. After reading Time Line atany speed, the reader should think they now have a better feel for humanhistory and are better prepared to enjoy the future as nature unfolds even moremarvels for everyone. Gift an ebook with the current best display behaviorto everyone this year. The 29 page index offers a function that feels most likea book to the reader. The display device pointer can select from 1000 plustopics indexed by selecting a link to an alphabetical page and then select theindex hyperlink to the paragraph in the ebook. The dynamic book index on the device is ready to move the reader to a 1000 plus topics by multiple choicepick from the index vocabulary. Referenced in the endnote are more than 130books in the

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Date: Sat, 7 Dec 2019 22:52:15 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Off Topic however still Merry Christmas

Nick England K4NYW
You have copy number one. Roger Ruszkowski AI4NI My Netscape mail does terrible stuff to my text line returns.What I get back from a trip through just one other mail toolthat You are using scraps what I see I wrote and what my toolechoes back to me if I send the mail to my self. Time for me to move on to some new tools for Christmas myself.I can type it in or copy and paste it in. Netscape looks good anyway I can look at it. I would never ask any one to forward thetext block I received back from you. Did this mail open equally ugly above the Original Message line as text appears below Respectfully, Roger Ruszkowski -----Original Message-----
From: Nick England <navy.radio@gmail.com>
To: Roger Ruszkowski <flowertime01@wmconnect.com>
Sent: Sat, Dec 7, 2019 5:32 pm
Subject: Re: [R-390] Off Topic however still Merry Christmas

Thanks Roger - I have Kindle Unlimited so just downloaded a copy.Many thanks for all your interesting and helpful R-390 & R-390A comments!Merry Christmas
Nick England K4NYW
www.navy-radio.com

Date: Sun, 8 Dec 2019 00:04:08 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Off Topic however still Merry Christmas

Nick, Thank you for the feed back. Nice to know what went to the Flint Journaldoes not look so bad. As an Amazon Kindle Author I get an account on that mail serverand can upgrade my mail reader to what ever they are supporting. I have been with Netscape since I come out of Raytheon in 2004and had to revert to dialup. DSL is like transparent digital dialup wherethe phone company again owns the cash cow and golden goose. In 90 days I may want to upgrade my call sign, change my email name,withdraw a book and change hobbies yet again. I have been made over before and rebranded when reality trimmedimagination to real behaviors. No reason to beat the .Net guys up when my end is 15 years old.Time for me to do some upgrades. I want to move into Skype phoneinterviewing and You tube production. What else the R390.I have been holding the line while focused on finishing just onebucket item while it still had meaning to get it done. Nick, your direct reply to me is also scrunched. Looks likeNetscape has fallen behind in compatibility.

Date: Sat, 7 Dec 2019 19:33:21 -0500
From: Al Parker <anchor@ec.rr.com>
Subject: Re: [R-390] Off Topic however still Merry Christmas

I say thanks to Roger also, for all he's done. I have Kindle unlimited, but am a bit afraid to download it because my tablet has limited memory, and it's a huge file. I did download the "sample".

Date: Mon, 9 Dec 2019 16:07:42 +0000 (UTC)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] Dec "Pearls"

The Dec issue of "Pearls" is up thanks again to Al.
Apologize for the long delay from this spring's issue.
Just not as quick as I used to be....

Date: Thu, 12 Dec 2019 11:11:32 -0600
From: Paul Staupe <staupe@gmail.com>
Subject: [R-390] Shock mount update

I received four NOS Barry shockmounts from Surplus Sales of Nebraska for $12 ea plus shipping and they arrived last week only a few days after I ordered them.

Very nice condition, and the same size as my military mounts on the CY-979A/URR cabinet although the shock assembly is in an enclosed metal container rather than having the rubber dampener exposed which is probably better. Thanks to Steve Toth for helping me find these!

Date: Sun, 15 Dec 2019 20:04:29 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Searching email (R-390, Hallicrafters, etc) reflector archives

Hi all, I search the R-390 (and others) email list reflector archives once in a while using the *HHI Email Reflector Search* tool. It broke a couple weeks ago, but it's fixed now.

If you want to look at past reflector emails, this is the place to go. It takes about 3 minutes to search the whole archive for one list (eg: R-390), but it's worth it. Here's a link to it:
https://w9wze.net/ReflectorSearch/SearchReflectorArchives.php . If you have not used it before, you should try it. It's self explanatory.

Date: Mon, 16 Dec 2019 18:08:35 +0000 (UTC)
From: Joe Connor <joeconnor53@yahoo.com>
Subject: Re: [R-390] [Hammarlund] Searching email (R-390, Hallicrafters, etc) reflector archives

Larry, I just tried your link and got this message:
Error. Each search argument must contain at least 3 characters, not including punctuation. Please use your browser's back button and try again. Is it me or the site

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Date: Mon, 16 Dec 2019 14:29:42 -0800
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] [Hammarlund] Searching email (R-390, Hallicrafters, etc) reflector archives

Thank you, Joe. It was a bad link I put in there. My apologies. Here's the correct one:
https://w9wze.net/ReflectorSearch/SearchReflectorForm.php

Date: Fri, 24 Apr 2020 13:39:23 +0000 (UTC)
From: Terrence Harvey <terrencelharvey@yahoo.com>
Subject: [R-390] Unfamiliar R-390 variant on ebay overnight

The following appeared on ebay in last day or so.

https://www.ebay.com/itm/Collins-R390-Receiver/392774304538?hash=item5b732c431a:g:TPIAAOSwp6ReofXP

Thought I' d ask for some feedback from the more experienced members of the group on this receiver.

Date: Fri, 24 Apr 2020 10:21:41 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

I do not believe that it is a "variant". It is either an early prototype, or a "standard" R-390 with a replacement front panel made by someone. Despite the IF and RF decks looks like the first variants made, more clues could be provided by seeing what the PTO, PSU and Audio/Regulator modules looks like. See that there is no Line level controls in the front panel. Is there Line Amp stages in the Audio deck ?

Date: Fri, 24 Apr 2020 15:35:18 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

Fellows, that is a home brew project. No IF band select. No Antenna Matching. No BFO pitch adjust. Terminal board screws on the front bezel. It looks like a rebuild to a low power transmitter Who knows what the original design was, and the eBay seller does not know how to put of photos of the other sides of the box that would help the seller sell their box. Other than two big knobs, why does any one think this is an R390 thingy? Nice item.?

Date: Fri, 24 Apr 2020 15:37:02 +0000 (UTC)
From: james1787@aol.com
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

I am by no means an expert as I'm fairly new to R390/R390A's but to me it looks like an R390 Chassis with a homebrew front panel. My guess is that someone came across an R390 carcass missing a front panel or more and then made a panel up for it and got it working.

Date: Fri, 24 Apr 2020 12:25:19 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

Roger, you should have a better look.

IF band select is there (selectivity KCS)
Antenna matching is there (ANT TRIM)
BFO pitch is there (BEAT FREQUENCY)
Terminal board screws ?
Are you sure you looked at the right item?

Can be a home-brew project, I agree 100%, but what if it is something else? The antenna relay box is not the standard one either. We need to see the rear and bottom sides.

Date: Fri, 24 Apr 2020 14:21:10 -0500
From: "Les Locklear" <leslocklear@hotmail.com>
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

It is obviously an R-390/URR silk screened front panel that someone has taken liberties with and added a bunch of Raytheon (and other) knobs and the "Collins R390 Receiver" at the top right. Who knows what lurks on the underside of the chassis. The smart move would be to take the U-Shaped front panel to the garbage and piece the rest of it out.

Where R-390A/URR modules are abundant, the R-390/URR aren't. There are fewer of them today than there will be tomorrow. The seller has an bunch of other "junk" that was supposedly the estate of an engineer. From the looks of some of it, he must have been a railroad engineer and was testing to see which piece could derail a train...

Date: Fri, 24 Apr 2020 16:17:50 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

I do not believe that is an original R-390 front panel, but if ever it is an early prototype, this is the first one ever seen. I agree that what can be seen in the pictures could be useable. The RF deck is an early one (before MOD 2). The IF deck can be used to make a R-725, however it does not seems to be an early one. There are pencil marks on the top of Z501 that came from the alignment process. Seeing the serial number of the IF deck can provide more clues. Just wondering what the underside and back may look like...

Date: Fri, 24 Apr 2020 19:19:52 -0400
From: "thoyer" <thoyer1@verizon.net>
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

I asked the seller to post more pictures including the rear and underside - We'll see if they respond.

Date: Fri, 24 Apr 2020 20:42:47 -0400
From: "thoyer" <thoyer1@verizon.net>
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

Received notice seller added more pics

Date: Sat, 25 Apr 2020 17:08:06 +0200
From: "Paul Galpin" <galpinp@absamail.co.za>
Subject: [R-390] RRe: Unfamiliar R-390 variant on eBay overnight

Hi guys, have a good lockdown! Now that the seller has put up more pictures, it shouts out "early pre-production model" to me. If that is so, then surely it has some real value? I would bid on it myself, but I would probably have to get a second mortgage to pay for the shipping costs to South Africa. And now that I'm 80, it might not get here in time!
A nice piece of radio history!

Date: Sat, 25 Apr 2020 11:11:40 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

The new pictures added by the seller raises more questions than they give answers. The back panel looks like a homemade job, and not a good one either. If this set was originally a normal production R-390, why the two connector blocks had not been kept ?

Why also the signal level meter is on the left side when the related wiring have to be at the right ? Looking at the only underside picture provided, the PSU seems to be a "normal" one, despite that the 26Z5s had been replaced by SS diodes (we can even see one in the picture, thru the hole left by the tubes sockets removal). The filtering cap(s), however, are not the normal production one. Parts replacement ? Seems to show 5 - 1000VDC on the one that can be "read". On the opposite corner, the C103 is an electrolytic, instead of the "normal" oil-filled 10uF, 300V GE part.
The AF/regulator deck looks like a "normal" one, despite that one tube is missing in the provided picture (have to be one of the two 5651).
But the three 10K to 600 ohms transformers are there, so what happened to the LINE Output controls, meter/range switch and connections ?
The most puzzling for the end: despite that the "bottom" picture did not have a good resolution, the serial number on the 70H-2 PTO can be read. Are you seeing the same as I do that this number is only a 5 ?
So.... A basement hacking job, or a real pre-production item ? Whoever will buy this one will have a chance to provide definitive answers...

Date: Sat, 25 Apr 2020 15:15:57 +0000

From: Bob Young <bobyoung53@hotmail.com>
Subject: Re: [R-390] Unfamiliar R-390 variant on ebay overnight

Yes, serial number 5, that is strange.

Date: Sat, 25 Apr 2020 14:06:27 -0400
From: Bill Cotter <n4lg@qx.net>
Subject: [R-390] Unfamiliar R-390 variant on ebay overnight

This is not a CIA or NSA variant, but rather a Frankenradio from a basement retrieval from a SK estate. The panel is homemade, knobs and meter from another source, and many modifications to the basic receiver. As you can see from the lightweight front panel, it took quite a bend from a serious drop in its rack. I suspect it happened the same time as the SP-600 suffered its rear chassis ding. Best used as a parts donor, but expect surprises. Both R390 and SP600 in the same auction group.

Date: Sun, 26 Apr 2020 09:47:16 -0500
From: "Richard (Skip) Green" <k7yoo@yahoo.com>
Subject: Re: [R-390] R-390 Digest, Vol 192, Issue 5

My guess is that this is a “Johnny Cash” R390 (like his Cadillac).
A few years back there was a 75A4 that appeared and it was a similar concoction. At one time the Collins surplus store had a lot of neat stuff show up. Perhaps that was the origin. Not enough to build a complete radio, but enough to start a good project. Military scrap depots were also a good source for a lot of project starts. I acquired an R 391 that was minus the IF and a few other items and homebrewed it into a Frankenradio....it was, after all, free
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Date: Thu, 28 May 2020 08:43:49 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: [R-390] ARC-5 Command Set restoration parts and demonstration video

A bit off topic but I hope of interest. I have recently put some adaptors and parts for restoration of ARC-5 Command Sets. Here is a link to a youtube video with a demonstration of a restored AM broadcast command set and an explanation of the restoration process ... tom, N3LLL
https://www.youtube.com/watch?v=mCPXjvLzNZs

Date: Wed, 24 Jun 2020 14:46:27 -0400
From: Roy Morgan <k1lky68@gmail.com>
Subject: [R-390] PING!

No messages received since late May.
Is anyone out there?

Date: Wed, 24 Jun 2020 18:49:22 +0000
From: Bob Young <bobyoung53@hotmail.com>
Subject: Re: [R-390] PING!

I'm here although I very rarely post,

Date: Wed, 24 Jun 2020 14:51:43 -0400
From: Tom Bridgers <tarheel6@msn.com> <k1lky68@gmail.com>
Subject: Re: [R-390] PING!

I'm here, but rarely post these days. Tom KE4RHH

Date: Wed, 24 Jun 2020 14:03:03 -0500
From: "William J. Neill" <wjneill@consolidated.net>
Subject: Re: [R-390] PING!

I'm here, in Conroe, Texas, with several R-390As and other variants that I'm going to need to sell soon because I can no longer move them, let alone use them. Have had all of them for 35 years or more.

Date: Wed, 24 Jun 2020 12:04:36 -0700
From: David Rogers <wa7zyq@gmail.com>
Subject: Re: [R-390] PING!

I am here, but am too ignorant to post. David, WA7ZYQ

Date: Wed, 24 Jun 2020 14:10:07 -0500
From: "Les Locklear" <leslocklear@hotmail.com>
Subject: Re: [R-390] PING!

Still above ground down here! Les

Date: Wed, 24 Jun 2020 15:10:08 -0400
From: Nick England <navy.radio@gmail.com>
Subject: Re: [R-390] PING!

Sunspot minimum and propagation on the R-390 band is poor.

Date: Wed, 24 Jun 2020 19:15:38 +0000 (UTC)
From: james1787@aol.com
Subject: Re: [R-390] PING!

I'm here but work and family has been keeping me busy.. especially during

all that's going on these past several months (trying to balance 2 working parents with 7 and 2 year old daughters with no outside help has been tricky). Been slowly trying to clean the station up and rearrange a few things and put my R-390A in a better spot. Hope everyone is doing well!

Date: Wed, 24 Jun 2020 15:20:14 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] PING!

I'm here too. Interestingly, I saw this just now on eBay:
https://www.ebay.com/itm/264772723687
Not mine, etc., etc., etc, but found it very interesting.

Date: Wed, 24 Jun 2020 19:24:14 +0000
From: Bob Young <bobyoung53@hotmail.com>
Subject: Re: [R-390] PING!

Didn't those cost something like $35,000.00 each to build?

Date: Wed, 24 Jun 2020 19:38:22 +0000 (UTC)
From: Adam Vaughn <adamant316@verizon.net>
Subject: Re: [R-390] PING!

I'm still lurking here. Haven't used my R-390A in far too long, though I'm hoping to rectify that at some point. Haven't used my R-392 much either, though I did find a T-195 transmitter to go with it, and I'm hoping it can be brought back to life without being too much of a headache. Main fun with that will be finding a proper way to power it; I have a PP-4763 (meant for the GRC-106) which puts out 28V@50A, which would be enough to power the GRC-19 once the dynamotors (if both are present) have come up to speed, though it probably won't be able to handle the ~250A start-up current needed if, again, both dynamotors are present. Need to open the T-195 and see whether or not both of said dynamotors are there, or if one or both have been replaced with solid-state versions.

Date: Wed, 24 Jun 2020 17:30:34 -0400
From: Roy Morgan <k1lky68@gmail.com>
Subject: Re: [R-390] PING!

Thanks to all for ping replies. Seems that a number of folks do watch the list quietly. Sorry I am not in Texas to help Bill Neil de-access. I also have one or two radios I will no longer use (or fix or align or whatever).

Date: Wed, 24 Jun 2020 17:53:56 -0400
From: Roy Morgan <k1lky68@gmail.com>
Subject: [R-390] Wow! Fowler R-390A

(I'm not sure how this auction got up in my browser.)
https://www.ebay.com/itm/264772723687

"Fowler 390 A Ham Radio Communication receiver No.1 of 5 Restored and Documented. I'm not sure I will bid, since I already have three of the other four. HAH!

Date: Wed, 24 Jun 2020 18:20:10 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Wow! Fowler R-390A

!WOW! Thanks,

Date: Wed, 24 Jun 2020 18:25:50 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] PING!

Ignernt...I doubt it..Huhu!

Date: Thu, 25 Jun 2020 00:04:05 +0000 (UTC)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] PING! (Tisha Hayes, AA4HA)

Here as well - still unpacking after the move from WA state to MT. Most of the gear is still in boxes including the R390A's. Only have an Icom 756III unpacked and the antenna is just a low altitude dipole. Interesting Notes: in WA the house was surrounded by 150ft+ evergreens - great antenna supports! Here in south central MT it's all 30-40 ft max ponderosa pines around the house which is at 4200ft. I took the evergreens for granted. Looking at getting creative with antenna ideas. Also the grounding capability was much better. Here the ground is literally all sand and rock.
- Steve W7SJT

Date: Wed, 24 Jun 2020 21:07:14 -0500
From: "Joe Koester" <jwkoest@charter.net>
Subject: Re: [R-390] PING!

W4NSA alive and well in Crossville, TN

Date: Thu, 25 Jun 2020 03:05:36 +0000 (UTC)
From: wli <wli98122@yahoo.com>
Subject: Re: [R-390] PING!

Still reading everything, collating for "Pearls"

Date: Wed, 24 Jun 2020 22:10:34 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] PING!

Thanks for your service sir!

Date: Wed, 24 Jun 2020 23:16:53 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] PING!

VE2JFE in Montreal is still here.
Restoring my R-390 (yes, a non-A) when time permits !

Date: Thu, 25 Jun 2020 05:53:09 +0200
From: fdigio1 <fdigio1@gmail.com>
Subject: Re: [R-390] PING!

Hi,I am here. 73Francesco

> Date: Thu, 25 Jun 2020 06:06:28 +0200
> From: fdigio1 <fdigio1@gmail.com>
> Subject: Re: [R-390] PING!

Hi, me too. They run flawlessy without a problem since about 2 years.Very happy, excellent products.

Date: Thu, 25 Jun 2020 06:03:39 +0000
From: Tom Bridgers <tarheel6@msn.com>
Subject: Re: [R-390] Wow! Fowler R-390A

Oops, I misread Don's email. This radio has been restored and is on Ebay. The bad news? The opening bid is $9,995. The good news Shipping is free.. Well 2 things I know for sure. First, I would really like to hear this radio play in person. Gotta be a once in a lifetime experience... Second, It's rare, for sure. But $10,000? Sorry not for me. Not in my budget.
I hope whoever buys it gets $10,000 worth of enjoyment out of it! No question. To the right collector or enthusiast, or ham, it's worth it.

https://www.ebay.com/itm/Fowler-390-A-Ham-Radio-Communication-receiver-No-1-of-5-Restored-and-Documented/264772723687?hash=item3da5af23e7:g:uw4AAOSwFghe8U61

[https://i.ebayimg.com/images/g/uw4AAOSwFghe8U61/s-l400.jpg]<https://www.ebay.com/itm/Fowler-390-A-Ham-Radio-Communication-receiver-No-1-of-5-Restored-and-

Documented/264772723687?hash=item3da5af23e7:g:uw4AAOSwFghe8U
61>
Fowler 390 A Ham Radio Communication receiver No.1 of 5 Restored and
Documented | eBay<https://www.ebay.com/itm/Fowler-390-A-Ham-Radio-
Communication-receiver-No-1-of-5-Restored-and-
Documented/264772723687?hash=item3da5af23e7:g:uw4AAOSwFghe8U
61>
Fowler 390 A Ham Radio Communication receiver No.1 of 5 Restored and
Documented .This is the true Holy Grail of R390As serial number 1 of 5 by
Fowler Industries in 1985.
www.ebay.com

_____

From: r-390-bounces@mailman.qth.net <r-390-bounces@mailman.qth.net>
on behalf of Don Reaves <donreaves@gmail.com>
Sent: Thursday, June 25, 2020 12:56 AM
Subject: Re: [R-390] Wow! Fowler R-390A

This receiver gets out and about. I remember seeing and admiring it back in 2001 in Dallas, when it was a basket case.

Date: Thu, 25 Jun 2020 01:28:18 -0700
From: Don R <organlists1@sonic.net>
Subject: Re: [R-390] Wow! Fowler R-390A

I think the seller should knock at least $100.00 as the ground pin of the AC plug is bent!

Date: Thu, 25 Jun 2020 11:28:31 +0200
From: fdigio1 <fdigio1@gmail.com>
Subject: Re: [R-390] Wow! Fowler R-390A

Absurd price

Date: Thu, 25 Jun 2020 06:30:18 -0400
From: Mister Mike <w1rc@near-fest.com>
Subject: [R-390] Fowler R-390A on ePay

Hope everyone is staying well. I haven't posted here for several years but I am still lurking so behave yourselves. Some of you folks still need to learn how to edit your posts. I know the history of this Fowler S/N 1. It was at one time here in Massachusetts then was sold to W5MC in Texas. Mac sent it to Rick Mish in Toledo OH who worked on it. Then it ended up at the "Radiograveyard" (who I know personally) in Ottsville PA and that gentleman is now offering it on ePay for 10 Grand. It is certainly a "holy grail" to be sure. Worth 10 Grand? Maybe, but not to me. There were only five Fowlers made so that makes it what it is. Personally, my favourite

contractor is EAC, hands down. I believe they had 2 or 3 contracts and they are all good. “You pays your money and you takes your choice”. Y’all stay well now, y’hear! Michael, W1RC Co-founder,R-390 List.

Date: Thu, 25 Jun 2020 12:07:51 +0000
From: Dave Faria <d1976jb@hotmail.com>
Subject: [R-390] Have 6 of them

All still working!!

Date: Thu, 25 Jun 2020 05:12:23 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Fowler R-390A on ePay

As you all know, I really like the R-390As. But, is the 'Fowler Factor' that much of a benefit. I already have 2 390As in very good condition, and of course I always need another, but even if I had tons of money I don't think I'd spring for it. Even so, I hope it sells for it. I'm getting tired of being restricted but will endure till the crisis is over with. Thank goodness for the internet and package delivery. Please wear a face mask when going out and stay safe.

Date: Thu, 25 Jun 2020 08:33:58 -0400 (EDT)
From: ROSS HOCHSTRASSER <bavarianradio@comcast.net>
Subject: Re: [R-390] PING!

Hello all, I'm still here! I use my 390 almost every weekend on the carrier net and the PM/AM net with the obligatory T-368. The 390A is not feeling well recently, so it's out of the rack to be serviced. 73 from W1EKG!!

Date: Thu, 25 Jun 2020 12:36:17 +0000 (UTC)
From: james1787@aol.com
Subject: Re: [R-390] Fowler R-390A on ePay

Other than the bragging rights of having a 1 out of 5 (and the first one of those 5), it's just another R390A with perhaps the benefit of having slightly newer components. If there is a collector willing to pay the asking price, then I guess it's worth what it is. I'm in a few different collecting circles for different types of things. There are items that are common and run-of-the-mill that are pretty easy to find and there are items which there are very few.. do the same thing as the run-of-the-mill item.. everyone would really like to have.. and when sold on on sites such as ebay often go for a lot of money. I don't know how many collectors there are out there who are searching for a 1 in 5 r390a.. but I'm sure there are plenty that would like to have it in their collection. I do hope the seller sells it, it's an interesting piece for sure.

Date: Thu, 25 Jun 2020 13:20:40 +0000 (UTC)
From: w1nzr@cs.com
Subject: Re: [R-390] Have 6 of them

That is clearly an insufficient number but glad they are all working.
Cheers to all, BB Brown Beezer / w1nzr

Date: Thu, 25 Jun 2020 08:58:36 -0500
From: Cecil <chacuff@cableone.net>
Subject: Re: [R-390] Fowler R-390A on ePay

Actually if you've ever seen #2 it's the only one I've seen that qualifies as the holy grail. It's complete as built and leaves little question. Thanks to Mish there are two #1's in existence. Both built from parts to make them complete and too many questions about both. If #3 and #5 ever show up we'll know more. Just my opinion of course...

Date: Thu, 25 Jun 2020 14:47:20 +0000 (UTC)
From: John Flood <kb1fqg@yahoo.com>
Subject: Re: [R-390] PING! (Tisha Hayes, AA4HA)

Not Dead Yet... but there is always next week. Only one R-390 family member running here right now.? The R-725 pre-production /prototype unit I found up here many years ago. Most of the others I had were delivered to other people here in New England who had more time than I do! My son calls these "Oh God" radios 'cause that's what he says when he helps me lift them into the rack!. He coined that phrase when helping me take a TCS RX from a friend. He is a 6'1" 17 year old football player so I laughed and asked him if I should carry it. He said no but wondered why something so small could be so heavy. All BA gear are now "Oh God" radios. I have a friend in Maine looking for a complete R-390A that he can bring back to life or even better if it's working. He is a retired Navy guy so can't pay E-Bay prices. Anyone here in the northeast that can help me find him a radio?

Date: Thu, 25 Jun 2020 10:05:29 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: [R-390] PING!

Still kicking here in Kemah TX, been busy building some replacement parts kits for old command sets that I have accumulated over the years. I put a small you-tube video about the mods. Also been busy learning to use my Prusa 3D printer, once you have one it is amazing how many things you find that can be done!

Here is a link to the youtube
https://www.youtube.com/watch?v=mCPXjvLzNZs

Best Regards ... tom, N3LLL

Date: Thu, 25 Jun 2020 11:37:13 -0400
From: dog <agfa@hughes.net>
Subject: Re: [R-390] PING!

Still here but sorta lost interest in the 2 390A's I have. One of these days..... There's not much wrong with them, but need a bit of work, especially around the oscillators. I guess since I don't want to use them on the air it's not that important. If there were a replacement IF strip and decent demod I'd be more interested. I tried the 455 osc downconverted to a sdr, but wasn't impressed.

There's a lot to do around the 55 acres to do here to keep me busy anyhow, between repairing the tractor and painting the patio furniture. But at approaching 77, I wear out easy and my feet hurt all the time I stand on them, so I find any excuse to sit down.

Work some FT8 on 80 through 6 with a smidgen of 2M. I've got some nice 70' dipoles 80-10 and some H DoubleBay antennas 17 through 6. But I've been finding a lot of DX on 20M lately especially with 750W, Asiatic Russia and south Pacific. Even 12 and 10M have been working lately. 15 is usually my fav.

Date: Thu, 25 Jun 2020 15:47:31 +0000 (UTC)
From: Steve Toth <stoth47@yahoo.com>
Subject: [R-390] Parts request - off topic

Please excuse the off topic post but with everybody checking in I wanted to float the request: I just picked up several ARC-5 receivers. Three had the tubes scavenged out of them.? I have located the 12SK7's but I still need the following: 3 ea. - 12K83 ea. - 12SR73 ea. - 12A6
Any junk box sourcing or being pointed in the right search direction is appreciated.

Date: Thu, 25 Jun 2020 11:59:36 -0400 (EDT)
From: GRIECO <tgrieco@optonline.net>
Subject: [R-390] R1051B

Off topic - sorry, but if anyone knows you guys would
I am looking to find someone to service an r1051b

Date: Fri, 26 Jun 2020 18:50:35 +1200
From: Ken <kenharpur@startmail.com>
Subject: Re: [R-390] PING!

Good evening all, I am still here, I have been sitting on a R-390 for a few years now. I had meant it to be a project for winter but as usual other things/projects get in the way. Really glad the list is still going (I had wondered if it faded away). I am starting to develop fresh enthusiasm to start the restoration. Have a great weekend everyone!

Date: Fri, 26 Jun 2020 09:12:24 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] PING!

I've been "sitting" on my R390 for several years as well. I do look forward to the time when I can tear it down and give it a proper tuneup. I have a CY-979A for it as well that I need to repaint, etc.

Date: Fri, 26 Jun 2020 13:43:24 +0000
From: Gordon Hayward <ghayward@uoguelph.ca>
Subject: [R-390] Ping

Hi All, I'm still here. Most of my listening these days is on the R392 but the 390A is still going strong. Be safe and have a good field day.
Cheers, Gord VE3EOS

Date: Tue, 14 Jul 2020 21:52:12 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] New docs in Tutorial section of our R-390 disk, 1

Hi Folks. I asked Al to put two new documents in the Tutorial section of our R-390 disk for all to see. The 1st one is information that all newcomers to R-390 disk and forum will want to know. It contains important posts that are only found in the List Archives and information about R-39x documentation on numerous disks. It can be viewed directly with this link:
http://r-390a.net/Haney_R390_Newbie_Support_Info.pdf

The 2nd document is about why there is a dropping resistor in the noise limiter filament string in the R-39x and many other receivers. David Wise posted some information about it in 2009, but I missed it. So, here is the complete story:
http://r-390a.net/Haney_R390A_Limiter_
Filament_Dropping_Resistor.pdf

If you'd rather go to the Tutorials section first, here's the direct link

to it: http://r-390a.net/faq-refs.htm#Tutorials

Enjoy. And, as always, feel free to send me your comments. Especially, if you'd like something added to them.

Date: Wed, 15 Jul 2020 00:08:35 -0500
From: Jim Shorney <jshorney@inebraska.com>
Subject: Re: [R-390] New docs in Tutorial section of our R-390 disk, 1

Drake solved the same issue in the 2-A/B receivers by using a 8BN8 tube instead of a 6BN8. More than one way to skin a cat.

Date: Wed, 15 Jul 2020 15:22:37 -0500
From: John Shidler <ns5z@icloud.com>
Subject: [R-390] What to do with a Garage sale find R390a.

I need to know what to do with my R390a that I bought at a garage sale. It appears all intact. The power cord is in very good condition. A friend said that the case it is in is valuable. I have not tried plugging it in. Sale it, is my first thought, but the weight is a real problem. Would there be a market for parts from the radio. So any ideas would be appreciated.

Date: Wed, 15 Jul 2020 20:27:39 +0000 (UTC)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] What to do with a Garage sale find R390a.

How about some pics?

Date: Wed, 15 Jul 2020 20:35:36 +0000 (UTC)
From: John Flood <kb1fqg@yahoo.com>
Subject: Re: [R-390] What to do with a Garage sale find R390a.

If it is in the military case, that cabinet can bring perhaps $200 or so in a local cash sale depending on condition? Up here near Boston? a complete radio in unknown operating condition can bring $150 - $200 in a local cash sale to someone who is going to get it up and running again.

Date: Wed, 15 Jul 2020 18:41:18 -0400
From: dog <agfa@hughes.net>
Subject: Re: [R-390] What to do with a Garage sale find R390a.

I'd like to see a few people that would offer me $200 each for my 2 390a's. They'd be gone in a heart beat and they work.

Date: Wed, 15 Jul 2020 23:21:23 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>

Subject: Re: [R-390] What to do with a Garage sale find R390a.

If you see an R390 or R390A setting for under $300.00 for the receiver then buy it to flip at $300 for sale at a new location. You have to consider the rest of the bundle (case) and the price difference over $300.00 to see if a sale makes sense on the offered bundle. What condition and type of meters are in the front panel. $50.00 each. Until you know what condition the Plate Blocking Capacitor (for the Mechanical Filters) - When replacing the Plate Blocking capacitor C-553, remember you are replacing a 300wvdc Vitamin-Q type capacitor that, in the 1950s, was one of the best capacitors available. Don't replace this vintage quality capacitor with a Malaysian-made, less-than-one cent total-cost capacitor. If I was really worrying (like loosing sleep over it,) I'd use two .022uf caps in series for the .01uf C-553. This redundancy is pretty much fool proof for any future problems. Normally though, I use a .01uf 600wvdc 715P type SBE Orange Drop. The "double the working voltage of original" is usually enough precaution on this controversial component. Do not plug this receiver in and apply power you can destroy all of the mechanical filters in the flip of a bandwidth switch. The audio deck plug in electrolytic filter capacitors may be a haz mat location. The audio deck may have an acid leak.
Is the power supply on 26Z5's or diodes?

There is no reason to part the receiver out.The whole is worth way more than the sum of the parts.What ever it is repairable.You have a good chance to put it on eBay and sell it come and get it price just like you acquired it. Front panel picture (tag no tag) (meters) Spook knob paint wear.Back panel jumpers, screws, power cord cover plate. navy mods. BNC connector. Antenna conectorsBottom 25Z5 tubes beat up tube shields, electrolytic caps on audio deck. Comos VFO or Collins VFOTop with out Utah plate J535 jumper to IF deck.Box cover off the mechanical filters and caps.IF deck end of the receiver looking for four holes and the bottom end caps for the filters. 455 crystal inside T501.?Six photos so far. We have no reason to apply power to this receiver $100 tops. Spline wrench and remove the IF deck. Depending on the caps $25 to $300 Photo 7 is the bottom of the IF deck Photo 8 is the bottom of the audio deck Photo 9 is the circuit board on front panel over the dial counter their is a Navy mod that soldersa pair of jumpers between pins on this board and the 100 MW 0 VU line audio output becomes 1/2 watt Photo 10 is the sorry spot in the dial counter. On the bench with a cal tone on every 100 K $300.00 less cost of missing parts and time to repair. A receiver ready for RTTY roundup this week end $500

It was setting there, you paid for it and took it home all by yourself. We need pictures on a case, we do not know what a case is. Yes we do from $25 to more than the receiver. The world knows what an R390A and all the parts and all the conditions are worth. All the parts are here on this

reflector. See the R390A parts manuals on line and ask for what you need. Off “reflector direct” those who have parts will make you an offer. Pick your best response. Fair Radio in Lima Ohio has parts at counter prices.S urplus Sales in Nebraska has some parts. Front paint not #47 gray is post military. Funny spook BFO knob, colored dial lights, thermal tube shields, dial covers are “after market” but approved military add-on.
A good working receiver after a semi annual maintenance procedure $500.00 Cost to do the semi annual maintence procedure is $200.00 and the receiver needs one every 4380 operating hours. You will need a spline wrench and a 10 inch long #1 Philips screw driver to reach the green screws. You can purchase a signal generator and two voltmeters and do this yourself over a week-end. You do not need a tube tester. The receiver will test the tubes for you. Part of the design. A $100 frequency counter is a useful item but was never needed. Most R390A owners are Amature radio enthusiast and know how to service their own equipment.
Filament life to on time suggest if you turn it on for more than two hours each time the receiveris powered on the tubes will give it up in old age before you pop a tube filament open on power up or power down.
Parts ?
Transportation ?

In 2010, I was buying them for under $300 doing the deep clean refurbish wash and tune up.and selling them for $500.00 in the rack on the antenna. Take it home with you today from Westminster South Carolina. In 68 - 75 I was expected to do two a day every working day (6 -2) for over four years on the bench. Then I taught new technicians how to do it for a couple years and supervised a shop shift with 15 guys doing their two each a day for a couple more years. I was picking up receivers as tail gates at swap meets pre arranged. Now I am in Michigan and it is all packed up. If I show up I will have my spline wrench and screw driver in hand and be opening up the hood and checking the engine and brakes.
I know what is needed for part C-533 and where to find it. If decks have needed recapping for years. A poorly recapped deck is more trouble than an original deck to get operating at peak circuit ability. A good recapped deck will outperform the original production. (better component parts)
The RF deck needs some caps. The weight is a problem.Take the pictures. Post the receiver on eBay for auction and give it two weeks. Subtract $50 for each problem you can not exclude as possible from a $300 power and play and you have a price floor. The R390 operators who want to own one read these pages. These readers follow all the auction sites. We will see the eBay sale. We will tell the world to look. Anyone close enough to pick it up will look at the eBay and make you an offer. This 25 year old community reflector stuff is so amazing. It has more than one moving part and looks complex. Had you put a QTH in your post you may have already sold the receiver. Roger AI4NI

Date: Wed, 15 Jul 2020 23:25:37 +0000 (UTC)
From: Roger Ruszkowski <flowertime01@wmconnect.com>
Subject: Re: [R-390] What to do with a Garage sale find R390a.

How far do I have to drive from Flint Michigan to the receivers?

Date: Wed, 15 Jul 2020 21:00:24 -0400
From: dog <agfa@hughes.net>
Subject: Re: [R-390] What to do with a Garage sale find R390a.

Well, I've never seen such interest in my 390a's. One of them has good filters in it, the other not so much, repaired, work but not great. There are some issues with the conversion oscillators, but nothing that can't be fixed fairly simply maybe just tubes. One missing one of the 2nd conversion crystals, They both have been worked over and one IF strip has OD caps in it, the other has modern small caps in them, I can get the make from mouser, small blue Panasonics. Both RF decks work fine have been cleaned, tune fine, both PTO's are fine and very stable last time they were on. There may be some agc issues, but not extreme. Meters have been replaced. One has both, other has one and a good replacement for the other. Location is 50 miles west of DC. Hume, VA. I have most of the covers for one of them. Both regulator tubes still work, all tubes, no SS. Wired for original tube rectifiers. Front panels are not great, but not blue stripers. I did work on them for a few years.

Someone talk to me, I don't need them anymore. I'm not shipping. I'll entertain offers. Address is good in QRZ. email me if really interested. I'll be gone until Sunday eve, the 19th July 2020.

Date: Thu, 16 Jul 2020 14:42:56 +0000
From: David Wise <David_Wise@Phoenix.com>
Subject: Re: [R-390] What to do with a Garage sale find R390a.

I kept the original C553 and inserted a current limiter in series. Microchip (nee Supertex) makes a 500V N-channel depletion-mode MOSFET, the LND150, that's perfect for this. Just connect gate to source, and current cannot rise above Idss, a couple mA. The rest of the time it's invisible and under no stress - it should last forever. Drain toward B+, source toward filter. It's cheap and abundant at the major distributors.

Date: Tue, 21 Jul 2020 18:57:10 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] HHI Email Reflector Search Tool working again

Hi all. The HHI Email Reflector Search Tool that we can use to search the R-390, Hallicrafters, Hammarlund, Collins, etc product forum posts in the

archives is working again. Thank you Jim. Here's the link I use:

http://www.w9wze.net/ReflectorSearch/SearchReflectorForm.php

Date: Thu, 30 Jul 2020 15:40:59 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Updated 'Newbie Support' document

Hi all, I updated my 'Newbie Support' document and Al has put it on our R-390 disk and replaced the previous one. The reason for updating it so soon is the new info I thought was beneficial. I added the following: 1. More info about the 'Pearls'. 2. Two methods to find posts in the archive. 3. Info about Nick England's http://navyradio.com/ web site and Henry Rogers Western Historic Radio Museum:
http://www.radioblvd.com
(includes info on the history of the R-725). 4. Where to buy NTC (Negative Temperature Compensating) capacitors (including the flat type used in Collins designed VFOs and BFOs). Each revision is annotated with 'Revision 1x' where x = A - D. You can search the doc for them. Here's a link to it: http://www.r-390a.net/Haney_R390_Newbie_Support_Info.pdf
Hope the info is helpful to many.

Date: Mon, 22 Feb 2021 22:35:31 -0500
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: [R-390] R-390 First Manual

I just found that I had made another copy of the Collins first manual for the R-390 receiver in 1983. A pre-issue of the TM11-856 if you prefer. This copy is not bounded / assembled, so it will be easier to scan. There will be any interest that I make a copy of it in .pdf format. Once done, I do not know where I can post it for retrieval, however.

Date: Mon, 22 Feb 2021 22:54:05 -0500
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] R-390 First Manual

There are several R390A sites that also host R390 files, which would be good places, as well. I'm sure others will post those addresses.

Date: Mon, 22 Feb 2021 20:24:07 -0800
From: "Manfred Antar (KN6KBS)" <manfredantar@gmail.com>
Subject: Re: [R-390] R-390 First Manual

If I can get a copy from you, I will post it on my website - www.pozo.com At the address http://www.pozo.com/Radio-Stuff/R-390 there is already some R-390 stuff there Let me know, I can give you a temporary guest ftp

account to get it to pozo.com, and I?ll take it from there

Date: Mon, 22 Feb 2021 20:32:47 -0800
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] R-390 First Manual

Hi Jacques, There are a few public places where free manuals are stored. The Boat Anchor Manual Archive Bama Manual Archive (edebris.com) <http://bama.edebris.com/manuals/> is one of them. It currently does not have any 390 manuals (it does have 390A and 392). The submission info is at the start of their web site. Thank you for doing this.

Date: Tue, 23 Feb 2021 13:13:31 +0000 (UTC)
From: Thomas Hoyer <thoyer1@verizon.net>
Subject: Re: [R-390] R-390 First Manual

BAMA does have several R390 docs posted
https://bama.edebris.com/manuals/military/r390/
BAMA is a good site for posting - I have uploaded a few manuals over the years there. Jacques, if you need assistance scanning, I have access to a good high volume scanner at the office.

Date: Tue, 23 Feb 2021 15:09:47 -0500
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] R-390 First Manual

W1RC wrote me that he had found a .pdf of it, but it turned out to be just another scan of the TM11-856 (Jan. 1955). So I will begin to scan the 260 pages of the 1953 manual, and this will take some time... I will tell you when it will be ready to be downloaded. Be prepared to perform some pages "reassembly" however. The double size pages of the original were photocopied in "overlapping" mode, so nothing can be missing. However, please remember that what I have is an old photocopy, not the original, and this photocopy shows some artefacts of the copier I used at school where I was teaching at the time. Apart some visible loss of definition, the image drum surface of this Nashua copier had a scar that looks like a teardrop which appears randomly in the pages...

On the manuals "wrong sentence" issue now: As I am even older than the 1953 manual publication date, I forgot some details, here and there... including this one: the "error" was corrected in the Change #4 (22 December 1958) for the TM11-856. See the C4 on p.13 for the p.116 of the main manual: it modifies the text to be correct instead of removing it, but that cannot explain why the "wrong" form made it's way to the TM11-5820-357-35 (9 March 1962). For the ones that not yet have the Changes applicable to the TM11-856, they can be found here:

http://www.jamminpower.org/PDF/R-390%20R-390A/TM%2011-856.C1.C2.C4.pdf

Stay safe and well. 73, Jacques, VE2JFE in Montreal

Date: Wed, 24 Feb 2021 10:35:15 -0500
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: [R-390] R-390 First Manual

A scan of the manual (pdf @ 300dpi - 253 pages, 64MB) have been uploaded into the BAMA uploads folder last night. Now waiting for the site owner approval/management to have it put in the R390 downloads folder. I will let you know when it will be available.

Date: Wed, 24 Feb 2021 11:59:23 -0500
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: [R-390] R-390 First Manual

The manual is now available for download HERE:
http://bama.edebris.com/download/military/r390/Collins_R390_1953.pdf

Do not expect a perfect result, however. But it is better than nothing...
I do not own the proper software(s) to "restore" such documents, but I know from experience that this is possible. If ever anyone else can provide a better copy (from an original, say...) it will be welcome. Some people asked me why I did not scanned only the sections that were different from the TM11-856. My answer is that the Collins First Manual, despite being less extensive than the more recent R-390/URR manual versions, nevertheless have an historical value. Some information within cannot be found in the following versions, like the original Collins Parts List, for example.

Date: Wed, 24 Feb 2021 09:48:32 -0800
From: mdmerz <mdmerz@frontier.com>
Subject: Re: [R-390] R-390 First Manual

Jacques, thank you for post. I was struck by use of “alinement” versus “alignment”. I think I’ve never seen that spelling. There must have been a good discussion of that at some point because “alignment” seems to be prevalent later in the manuals. Evidently either spelling is correct to my surprise. I appreciate being able to look at that early version and see better treatment of the issue that started this thread. Best regards, Dan
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Date: Wed, 24 Feb 2021 17:52:53 +0000 (UTC)
From: Thomas Hoyer <thoyer1@verizon.net>

Subject: Re: [R-390] R-390 First Manual

Thanks Jacques! The effort is appreciated!

Date: Wed, 24 Feb 2021 20:21:20 -0500
From: "thoyer" <thoyer1@verizon.net>
Subject: [R-390] R390 Number Stamp Under ID Plate

Working on R390 S/N 334. Tonight's project was to clean up the front panel. It is in pretty good shape except where it looks like someone used a sharp object to scrape off a label under the ID Plate so there are several scratches there. Maybe one day I'll repaint the panel, but not right now. Question for tonight is.... When I removed the ID plate stamped under it in black ink is 347. What, if any, significance is this stamped number?

Date: Wed, 24 Feb 2021 20:02:48 -0600
From: "William J. Neill" <wjneill@consolidated.net>
Subject: Re: [R-390] Diversity with an A and a non-A?

Well, here at home, I'm currently running dual and frequency diversity with my Collins R-390A and Collins 51J4 and have been doing so since at least 1970 and am still going full business but there sure isn't much traffic to copy as everything has gone to SATCOMS or subsea cables.

Date: Wed, 24 Feb 2021 22:07:04 -0500
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] R390 Number Stamp Under ID Plate

I believe that the significance of those numbers is relative: every sub-assembly in those radios bears a serial number, including the front panel, and those numbers did not necessarily match each other.
I do not believe that it was initially a manufacture intent to produce the whole radio with sub-modules serial numbers matched to the "top" one.
My own R-390 have a ID plate with the serial 2074 but the number stamped under it, in black, is 2090.

Date: Thu, 25 Feb 2021 13:01:30 +0000 (UTC)
From: Thomas Hoyer <thoyer1@verizon.net>
Subject: Re: [R-390] R390 Number Stamp Under ID Plate

Thanks for the reply. I was surprised to see it there as none of the five (yes five - don't ask how or why - they find me....) Collins R390A's I have do not have this marking. My "other hobby" is working on old Corvettes and I know on them there is usually a job number written in odd places to keep track of the car as it went down the line - figured this could be something similar.

Date: Thu, 25 Feb 2021 07:18:52 -0600
From: "Les Locklear" <leslocklear@hotmail.com>
Subject: Re: [R-390] R390 Number Stamp Under ID Plate

Many years ago I had a R-390A/URR from the 1962 Amelco build. The nomenclature tag was stamped 2444. When the tag was removed, the same number 2444 was lightly stamped with metal stamping tools. Out of all the 390A's I had pass through my hands it was the best performing one. Only one module had the same matching serial number, the power supply transformer.

When they were being manufactured, there was always going to be a few that didn't meet specs and were pulled for repairs and that would throw the serial number sequence off. It could be any of the modules which were swapped quickly and repaired later. As to the front panel, when they ended up at an overhaul depot (Tobyhanna for example), they were completely dismantled, cleaned, repaired and put back together with what ever modules, panels, etc. were in the repaired stack.

Date: Wed, 14 Jul 2021 12:27:27 -0400
From: Mack McCormick <w4ax.mack@gmail.com>
Subject: [R-390] R-390a Solid State Conversion

This list has helped me immensely over many years and I?d like to share my latest project to covert a R-390a to Solid State. First, this design belongs completely to Charles Smith, KV4JT. I saw his conversion video on YouTube and it looked like a fun project. Charles and I correspond frequently with my lessons learned during the conversion and his continue improvements. There have been two major revisions after the original video. Also, I tend to be a purist with vintage restoration and never make permanent modifications to the original designs. I have seven R-390a's, R-390, and R-391 in the shack. All loving restored to original design. The changes made to this solid state conversion are all reversible if desired. This rig started with a basket case parts radio that I paid $25 for. I took parts/modules from other parts radios I own. It was a fun project and I took a different approach by designing Tubelet boards and tube bases as replacements.

It works exceptionally well in A/B swaps with a blueprinted R-390a. The test equipment specs are great. Anyway, sorry for the long introduction but here are some photos of my conversion for you to review. https://photos.app.goo.gl/11AjyNCi2zV3T8LaA You may also want to watch Charles' videos on YouTube. The conversion documents he sells for a very modest price are superior.

Date: Fri, 16 Jul 2021 22:35:40 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] R-390a Solid State Conversion

Nice work, Mack. I like the plug in circuit board approach that you took. Great pictures.

Date: Mon, 16 Aug 2021 22:27:20 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Welcome new members

Welcome newcomers to the list. There is a lot of information available about the 390s in various places. Because there is so much, I wrote a document to identify what is where. I hope I got it all. If not, please let me know. Here's a link to it:

Haney_R390_Newbie_Support_Info.pdf (r-390a.net)
<https://www.r-390a.net/Haney_R390_Newbie_Support_Info.pdf>

And, if you're starting work on a 390A, don't forget the filter killer cap, c553, before your next power up. I hope you enjoy the 390s as much as I do.

Date: Sun, 5 Sep 2021 21:47:01 -0400
From: Charles Steinmetz <csteinmetz@yandex.com>
Subject: Re: [R-390] Phillips screws and drivers [WAS: bracket]

Be very careful about identifying Phillips screws as to size. There are precious few #1 Phillips screws in anything the size of a 390. Almost all of the screws are #2. And even "being careful," using a #1 driver is doing damage to them every time you use it. There are even some #3 screws in a 390 (the green module retainer screws come to mind).

This is a mistake North Americans are *VERY* prone to making. Note that the shaft of a #2 driver is considerably larger (50% to 100%) than the heads of many (most) #2 screws.

Always try the #2 driver first, and only break out the #1 driver if the #2 driver just doesn't fit.

The "JIS B 1012" (Japanese) standard drivers are the most compatible with the three most common standards of Phillips-head screws (Phillips, Pozidrive, and JIS B 1012). From Wiki:

"The JIS B 1012 is commonly found in Japanese made equipment * * * Superficially it looks like a Phillips screw with narrower and more

vertical slots, to give less tendency to cam out. The bottom of the recess is flat, and the point of the driver has to be blunt. * * * A correctly sized JIS driver will engage at full depth into a Phillips or Pozidriv head screw slightly loosely, but without damage. JIS heads are often identified by a single dot or an "X" to one side of the cross slot."

Note also that both hardware and driver manufacturers have made non-standard screws and drivers that to not conform to the international standards, in which case all bets are off. This is besides a whole raft of *other* (non-Phillips) cross-point screw standards (Reed & Prince/Frearson, Phillips II, Supadriv, etc., etc., etc.).

No doubt more than many wanted to know, but there are two take-home points:

[1] When shopping for Phillips drivers, look for tools conforming to the JIS B 1012 standard ("JIS drivers," for short).

[2] Always try the #2 driver first. Looks are deceiving.

Date: Mon, 6 Sep 2021 13:23:46 -0500
From: Bill Guyger <bguyger@yahoo.com>
Subject: [R-390] Phillips screws

Charles is very correct about screw heads. The Solid State Logic company who makes very high end recording studio consoles was so serious on this subject that they supplied metric Phillips screw drivers with their consoles which cost $250,000 + in 1985 (ish) money.

When the television post production house I was working for back then sent me to England to go to the factory school SSL even presented all the attendees with their own sets of Phillips and Allen drivers.

Date: Sun, 3 Oct 2021 12:05:38 -0600
From: "Jordan Arndt" <Outposter30@shaw.ca>
Subject: [R-390] Any advice for removing sheared machine screws...?

I'm trying to figure out the best way to try and remove 2 of the 4 machine screws that hold the frequency readout "cover" on a 390A. They were sheared off at some point and there is not enough metal left to get any kind of grip with any kind of tool that I have. I can see that one "stub" has a central divot from a drill bit, and the other is just a mangled down to where it exits the front panel. I will likely try to cut a slot in what's left of the metal with my Dremel tool, and see if I can get enough grip with a small screwdriver to unscrew the remnants, but I have my doubts because I expect they were badly overtorqued and likely held tight in the threads...

I have to pull the front panel anyway, so I'll get a look at things from the rear of the front panel when I do that...Any tips or pointers out there...??

Date: Sun, 03 Oct 2021 18:20:33 +0000
From: "B. A. Stephens" <bryanste@protonmail.com>
Subject: Re: [R-390] Any advice for removing sheared machine screws...?

-Soak in penetrating solvent
-When ready to twist apply some heat (e.g., butane microtorch)
-Last resort before more destructive measures: apply tightening torque then reverse to loosen
---
Date: Sun, 03 Oct 2021 18:29:54 +0000
From: "B. A. Stephens" <bryanste@protonmail.com>
Subject: Re: [R-390] Any advice for removing sheared machine screws...?

One more: After your notch is cut, give it a sharp whack with an old screwdriver and mallet. The impact may help to crack whatever is bonding the threads in place.

Date: Sun, 03 Oct 2021 22:06:11 +0000
From: Kevin Schuchmann <kschuchmann@protonmail.com>
Subject: Re: [R-390] Any advice for removing sheared machine screws...?

At least on mine the screws are long enough that they protrude out the backside so if you are taking the panel off you should be able to grab them.

From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Any advice for removing sheared machine screws...?

Hi Jordan, I had 3 I had to do. One I was able to remove by using a small screwdriver and taping on a burr on the end of the screw shaft at a 90 degree angle to get it to rotate the direction I wanted. It was slow, but worked because it was not tight in the panel. The other two, I had to drill a small hole in the screw shaft and then use a jewelers screwdriver (that fit tightly in the hole) to remove it. Worked great.

Date: Sun, 3 Oct 2021 20:35:50 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Any advice for removing sheared machine screws...?

Ooops, I meant 'tapping' and not 'taping'.

Date: Wed, 6 Oct 2021 08:01:19 -0600
From: "Jordan Arndt" <Outposter30@shaw.ca>
Subject: Re: [R-390] Any advice for removing sheared machine screws...?

I received a lot of e-mails with tips and advice, and I thank you all for them. I managed to remove one of the screws because it went far enough through the panel that I was able to grip it and thread it back out the front. On the other hand, I have been unable to remove what's left of the remaining screw. I was able to Dremel clean slots in both ends, but could not get any rotation or any kind of movement at all. For now, I'm going to grind it off flush with the panel and take a further look at it before I re-mount the front panel... Thanks again and 73...Jordan VE6ZT

Date: Thu, 7 Oct 2021 13:21:12 -0400
From: Nick England <navy.radio@gmail.com>
Subject: [R-390] Online 1970 US Navy R-390A manual ??

Is this online somewhere and I just haven't been able to find it?
This is the April 1970 NAVSHIPS 0967-063-2010 manual with the blue plastic cover which was written under contract by Philco-Ford and is not just a reprint of the Army manual. It covers through Field Change 8
If it isn't already on line them I'll scan mine and post it, but there's no sense in duplicating effort.

Date: Thu, 7 Oct 2021 17:05:12 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Andy Moorer's 'jamminpower' web site structure change

In my document 'R-390 Newbie Support Information' on our r-390a.net web site Tutorials section, I reference Andy Moorer's 'jamminpower' web site as having some R-390 documentation on it. Andy changed his 'jamminpower' web site structure and now the correct address for the R-390 info is: r390 page (jamminpower.org) <http://www.jamminpower.org/r390.html>.

I will update my document asap.

Date: Thu, 7 Oct 2021 17:18:26 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Online 1970 US Navy R-390A manual ??

Hi Nick, I don't see that doc anywhere, either. That would be a great addition to the R-390A documentation on the internet. I appreciate all

the fine work you have done for the boat anchor community. Thank you.

Date: Fri, 8 Oct 2021 02:09:19 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] Online 1970 US Navy R-390A manual ??

We need everything we can get. Same for the early R-390 manual that I scanned (from a photocopy) which pre-dates the TM11-856.
And which is available at :
https://bama.edebris.com/manuals/military/r390/
The related file is Collins_R390_1953.pdf

Date: Fri, 8 Oct 2021 21:23:59 -0400
From: Nick England <navy.radio@gmail.com>
Subject: Re: [R-390] Online 1970 US Navy R-390A manual ??

OK - By popular demand, I have now scanned and posted the 1970 Navy R-390A manual at
https://www.navy-radio.com/manuals/r390a-063-2010-7004.pdf
Some of the foldouts are longer than 34" so I had to break them in two parts. Feel free to copy and post on the r-390a.net web site or wherever.
I also put a copy of all the foldouts in a separate file in case you want to get them printed full size at FedEx or wherever...
https://www.navy-radio.com/manuals/r390a-long-7004.pdf
BTW, I also have a Navy R-390A training course document here -
https://www.navy-radio.com/manuals/r390a-maint-ct-school.pdf
Links to US Navy receiver manuals are here
https://www.navy-radio.com/manuals-rcvr.htm

Date: Fri, 8 Oct 2021 22:41:37 -0500
From: Jim Shorney <jshorney@inebraska.com>
Subject: Re: [R-390] Online 1970 US Navy R-390A manual ??

FYI for anyone so inclined, the free photo stitching program Hugin can do a very good job of stitching schematics that are scanned in sections into a full image. I have used it and would challenge anyone to find where the originals were split. Available for Windows, Mac, and Linux.
http://hugin.sourceforge.net/
The tutorial on how to stitch flat scanned documents can be found here:
http://hugin.sourceforge.net/tutorials/scans/en.shtml

Date: Sat, 9 Oct 2021 21:07:36 +0000
From: Tom Bridgers <tarheel6@msn.com>
Subject: Re: [R-390] Online 1970 US Navy R-390A manual ??

What a superb copy. Big question: how in the world does your scanner

handle so seamlessly the oversize charts and schematics? They appear seamless... Tough in real life, they are usually 11x17 or bigger... But the oversize pages displayed without difficulty on my computer. Wow! Terrific Many thanks, -Tom

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Date: Sat, 9 Oct 2021 18:07:03 -0400
From: Nick England <navy.radio@gmail.com>
Subject: Re: [R-390] Online 1970 US Navy R-390A manual ??

A couple of years ago I went looking for a scanner that would work for schematic foldouts. I found a Fujitsu “pass-through” rather than flatbed scanner. It will feed continuous lengths of paper up to 11” wide. For some maddeningly stupid software reason it only does up to 11x34 – mechanically it ought to handle 11x(any-length). New, it sells for around $2500 but I got a nice reconditioned one on eBay for $100. Works great. Has an automatic feeder and does simultaneous front/back scanning so I can put in a stack of regular 8.5x11 pages and it just sucks them through at about one double-sided page per second. The foldouts are so long and floppy that I have to do them one at a time, but it takes longer to unfold/fold one than it does to scan. Without this gem I certainly wouldn’t have scanned the 400-500 manuals I’ve posted on my site. Glad I could help out my fellow radio crazies. FYI-
http://www.fujitsu.com/us/Images/Fujitsu_fi-5530c2_datasheet_v2.pdf

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Date: Sat, 16 Oct 2021 18:44:57 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] New Online 1970 US Navy R-390A manual

Hi All, I've reviewed the 1970 Navy tech ref for the R-390A that Nick has so kindly scanned and recently put out on his website. This is a high quality scan. You can view the manual at
https://www.navy-radio.com/manuals/r390a-063-2010-7004.pdf .
Nick said some of the foldouts are longer than 34" so he had to break them into two parts. This is not a problem that I can tell. All the pictures and drawings are very readable and it has a parts list, too.

The benefits for viewing it *online* are: 1. the large and clear schematics, and 2. it is *searchable*. This makes finding a specific subject very easy. The reasons for *not* printing it are: it has a lot of pages wider than 8.5 x 11, and 2. It does *not* have an index. It does have a very nice improved contents, but specific items of interest are hard or not possible to find in it because it is in the order of the material, and not in alphabetical order (as an index is).

This is certainly a great file to use online, which I do a lot.
Thanks again, Nick. I'm going to get a lot of use out of it.

If you really want to print an R-390A tech ref, I recommend the TM-11-856A from 1/20/1956 on the r-390a.net website, 1st in the 'Army manuals' section of the 'References' section. It is overall the most correct and complete tech ref, has an index, the best schematics for 8.5 x 11 printing, and only very few pages slightly too wide for 8.5 x 11 pages.

He also extracted the wide fold out pages and put them into a separate file. They are here:
https://www.navy-radio.com/manuals/r390a-long-7004.pdf .
This makes it easy to take them to a printer and have them printed on wide paper. Or, if you want a quick look at these nice schematics online, this makes it very easy. The actual schematic starts on page 8, part 2 is on page 11, part 3 on page 15, part 4 on page 14, part 5 on page 17, and part 6 on page 16. I just want to say again, *these schematics are fantastic.* Thank you Nick!

Date: Sun, 17 Oct 2021 12:26:23 +0000 (UTC)
From: James Brannigan <jbrannig@verizon.net>
Subject: Re: [R-390] New Online 1970 US Navy R-390A manual

A tip on printing large schematics: I print the item on a standard printer and join the pages using paper cement.The slow dry time of the paper cement allows you to align the pages.I then "squegee" the excess cement and let it dry. Any excess cement can easily be rubbed off with your fingers. Finally, Scotch tape the back of the seams for extra strength.

Date: Mon, 18 Oct 2021 21:04:43 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] 1970 US Navy R-390A manual evluation

Hi Alan, Thanks for your good questions. When I reviewed it, I did not look for those answers, specifically. So, let me start with what I do know and get to those a little later.

1. The sensitivity (s/n) measurement is missing a valuable section of hardware by measuring from the unbalanced input. At that input, the low impedance input (balanced), antenna relay, and bandswitch contacts are not tested. These 3 items are very important for users that connect coax or a real balanced line to their rx, which is a very high percentage of connections. And they are therefore susceptible to being damaged by lightning or transmitting. The only time it is correct to use the unbalanced input (high impedance) is when it is connected to a whip with a short coax, or to a random length wire with a very short or no coax, also. Connecting a coax to the unbalanced input longer than 15 or 20 feet applies too much capacitance to the circuit. This impairs the 'Q' of the

circuit and seriously impairs its filtering effect. The TM-11-856A gets it right. But, on the other hand, the 1970 Navy manual procedure does a very good thing and uses the line level meter for part of the measuring procedure instead of an external meter. This is a good improvement.

2. There is no procedure for adjusting or testing the balanced antenna input ratio adjustment, The TM-11-856A has it. But, this does not need to be done unless you are using a balanced line input.

3. The carrier level meter test says to set the sig gen output for 20 db and increase its output in 20 db steps until you get to 100 db (some of us may know that this is equal to a 10x increase in signal strength each step, but some may not). Each step should be within +/- 2 db, or repair is needed. Most sig gens only measure in uv. The doc should make a note of the 10x relation. Because the db unit is a relative measurement, it should say what it's based on, but it does not. Further, it should state that it's based on 1uv and that each 20 db increment is 10x the previous, so the sig gen increase should be 10uv, 100uv, 1,000uv, 10,000uv and finally 100,000uv for 100 db, but it does not say that. The TM-11-856A does.7

I haven't had time to go into more details, but will when I have time.

Date: Fri, 29 Oct 2021 21:45:46 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] SS conversions for R390A, SP 600 and other BA receivers

A long term project in my mind was if it would be possible and practical to SS BA receivers. I found two R390A conversions on Utube by Charles Smith KV4JT (charlessmil@gmail.com. The two videos show him demonstrating two R390A receivers one tube and the other SS side by side. He notes that IIRC there still is a problem getting the meter circuit properly. He sells a 20 or so page manual with 5 11 X 17 detailed schematics. They are excellent and he probably made 10 cents an hour for his work I'm very interested in the SP 600 conversion as it removes 12 pounds of weight from the receiver and one can get at most of the innards easily. There may be things that can be improved.

BUT before some list demented cretin nit-picks and complains remember he made the circuits for the tube substitutions, made it work and most important of all MADE IT AVAILABLE FOR ALL at a most modest cost.
If you're interested in going this route check out his Utube videos.
I bought ski's for the "A", SP 600, and SX100

Date: Sat, 30 Oct 2021 06:55:31 -0400

From: Mack McCormick <w4ax.mack@gmail.com>
Subject: [R-390] R-390a SS Conversion

Charles provides an excellent template to SS your R-390a. He is a wonderful gentleman and we collaborated often. I am the only other known person to complete the project. Charles and I went through four design changes as I SS's a R-390a. It is a rock solid design now. Without knowing your technical/construction skills let me caution this is not a trivial project and requires at least intermediate level skills. I posted about my SS conversion on this list within the past three months. You can search for the thread if interested. Here are pictures of some of my work. Please note: The PC boards I made for the SS tube replacements are no longer the current design. I will provide you with the version 1 files but you will need to update them to the latest design using KiCad (free on DigiKey). Good luck and I'll be interested in your results if you undertake this project. https://photos.app.goo.gl/l1AjyNCi2zV3T8LaA

Date: Sat, 30 Oct 2021 08:41:52 -0400
From: David Olean <k1whs@metrocast.net>
Subject: Re: [R-390] Solid Stating & an R-392 story

All these comments about solid state conversions has prompted me to report on my latest "project". I am just finishing up an overhaul of a Stewart Warner R-392/URR receiver. I really like these sets, mainly because they were in use while I was in the Signal Corps back in the late 60's. At one point I ran a commo shop and saw all sorts of classic gear come thru the doors. We had T-368s, R-390As, and of course the R-392 and the T-195 transmitter. I don't think I ever saw an R-392 that needed repair. The (T-195 was another story.) We were swimming in RT-524s.

Anyway, I picked up this R-392 radio and it had a severe oscillation problem on a few bands. Broadband noise would wipe out reception. Also, the dial accuracy was way off by about 10 kHz. I jumped right in and discovered that the oscillations were a function of a dirty bandswitch. They would come and go depending on movement of the MHz dial. I removed the PTO and rigged it up in my test fixture that has a nice vernier dial on it. Indeed, the PTO has a 10 KHz error, and I was able to compensate by just tweaking the small series trimmer coil inside the unit. I got the error down to about 350 Hz anywhere in the range. I was happy with that, and put the PTO back in the receiver.

I knew that this unit needed an alignment as switching to the 2 kHz bandwidth position dropped the signal level drastically. I went through the entire alignment process and saw the radio getting hotter and hotter. The sensitivity was coming way up. I was impressed. I had to

replace a broken ferrite slug in the RF section. When I was finished, this thing was hotter than a 2 dollar pistol. The first evening, I listened to the AM broadcast band and was horrified to find that all the signals would overload the radio. Even the lower HF bands were being overdriven and suffering from overload. The radio had way too much gain! As an example, a 1 microvolt signal would drive the tuning meter up about one quarter of the needle range! It was then that I got looking closely at the set and noticed that there were no tubes in the two 26C6 mixers. The tube shields were in place but if you looked closely, you saw a black plastic disk with a small screw head in the middle inside the tube shield. I took one of them out and saw an inverted 7 pin tube socket, with three pins stuck in the socket. On the back side there was a 2N3819 FET mounted and connected to those three pins. I figured that this may have been the reason for the oscillations and also the excessive amount of gain available. I purchased a pair of 26C6s and plugged them in. What a difference! Now the radio acts normally and does not overload.

I gave the radio a new coat of glossy olive drab spray paint and it looks like it is almost brand new! It looks like solid stating a radio is a time consuming process, as you must match the gain function in each stage or troubles will appear fast! I am sure the 2N3819s are great, but just dropping them in is not the way to go.

Date: Sat, 30 Oct 2021 12:31:29 -0400
From: Alan Victor <amvictor@ncsu.edu>
Subject: Re: [R-390] R-390a SS Conversion

Curious if you and Charles mapped out the various impedance levels and required gain from stage to stage? Did you convert every stage to SS or targeted specific ones? Apologize if this question is answered in one of your posts. Thanks for the info!

Date: Sat, 30 Oct 2021 18:41:39 -0400
From: Mack McCormick <w4ax.mack@gmail.com>
Subject: Re: [R-390] R-390a SS Conversion

I did not map out the impedance levels, perhaps Charles did. All stages are solid state. MPF102 JFETs. The original power supply is removed and the radio electronics are run on 24VDC. I did take several gain measurements. There was a real problem with getting the gain of the 1st IF correct. Coupling between stages is pretty critical.

Date: Sat, 30 Oct 2021 23:29:34 +0000
From: David Wise <David_Wise@Phoenix.com>
Subject: Re: [R-390] R-390a SS Conversion

How's the cross modulation?

Date: Sat, 30 Oct 2021 19:32:49 -0400
From: Bob kb8tq <kb8tq@n1k.org>
Subject: Re: [R-390] R-390a SS Conversion

The risk in doing this is that (even with a JFET cascode) the output impedance of the solid state stage is much lower than tube it replaces. At the same time the Gm of the JFET stage is (potentially) much higher than the Gm of the tube. You can get the gain worked out and have the Q of the input or output tanks very different than in the original design.

Does any of that apply to this attempt? No idea ?.Back in the day, one could get HF compatible small signal MOSFET?s. Not so much these days. The JFET cascode is how it;s done.

Date: Sat, 30 Oct 2021 20:29:06 -0400
From: Alan Victor <amvictor@ncsu.edu>
Subject: Re: [R-390] R-390a SS Conversion

Thanks all for the replies. This topic... conversion of some of the top of the line BA's to solid state would make a great special interest users group! Taking on a unit like the R390 or the A certainly makes sense in that the mechanical and the tunable selectivity is so brilliant, it's hard to duplicate today. However, of course today we skin the cat in a different manner. Try to emulate as much of that capability with sophisticated devices and I suppose today it is done quite well. I have designed and built from the ground up several receivers and they all play quite well. But, I keep dabbling cause they are NOT anywhere perfect! That said, I consider what Mack and Charles and whomever takes on this task, a tip of the hat. Consider your starting off with a pretty extraordinary radio, you could wind up with the best of the best!

Date: Sun, 31 Oct 2021 06:46:52 -0400
From: Mack McCormick <w4ax.mack@gmail.com>
Subject: Re: [R-390] R-390a SS Conversion

My use case for this radio is primarily AM on 80 and 40M plus the local AM broadcast band. I have not noticed intermod in these use cases but I have not measured.

Date: Tue, 2 Nov 2021 23:28:55 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Nick's awesome 1970 Navy tech ref pdf

I liked the schematic scans that Nick did so well, that I extracted the 6 schematic pages and 4 other extra wide pages and put them in a 10 page pdf. The content is as follows: pages 1 to 6 are the complete wide schematics (in the correct order), 7 and 8 are the filament and heater wiring and the chassis harness, and 9 and 10 are the tuning system and gear train. I've not seen these pages so clear when you zoom in on them. Try it on the schematics and the gear train (so easy to see). You'll love it.

I corrected the schematic on page 3, the 2nd crystal oscillator. It was missing the input to the oscillator grid from the crystal selection switch. I added about a half inch of schematic to page 5 on the far right end to complete the circuitry for the AGC function. Sorry, it could be aligned a little better. I reordered 2 of the pages in the schematic section. They are now in the right order.

I don't have a public place to put them at the moment, so if you'd like a copy, let me know. It's under 4 MB in size. It's really nice for viewing online, and I think for printing but have not tried that yet.

Date: Sat, 6 Nov 2021 14:44:03 +0000 (UTC)
From: Jim Whartenby <old_radio@aol.com>
Subject: Re: [R-390] Meter Gaskets

I wondered what happened to Hank Arney's large collection of R-390A bits and pieces, glad to hear that they weren't "recycled." The only time I saw him at his home, he was barely able to get around and was not a "happy camper."? Deteriorating health is not for for the faint of heart.

Date: Sat, 06 Nov 2021 05:11:20 +0000
From: Kevin Schuchmann <kschuchmann@protonmail.com>
Subject: Re: [R-390] Meter Gaskets

Yeah I kinda figured it was a strong possibility that he is a SK :(
I was just hoping with him having made a 1000 of them that maybe someone else had bought a bunch and might have extras. I tried making some and they just do not come out as clean as I would like, I really need to make a template to hold the rubber sheet I have and keep it from slipping and moving around while cutting. Guess I'm a little too picky about some things lol

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Date: Sat, 6 Nov 2021 07:26:01 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] Meter Gaskets

Hank has been a Silent Key for quite some time now. I bought the the

remaining 390 parts from his estate. I do not recall seeing any meter gaskets ... tom, N3LLL

Date: Sat, 6 Nov 2021 07:34:26 -0500
From: "Les Locklear" <leslocklear@hotmail.com>
Subject: Re: [R-390] Meter Gaskets

I seem to recall that when Hank was making the move from California to Texas, his brother-in-law took a load of stuff to the dump. He was mad as hell about that. Not sure what was included in that infamous escapade.

Date: Sat, 6 Nov 2021 16:45:15 +0000 (UTC)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] Meter Gaskets - off topic thoughts about Hank

I remember when Hank was selling all his radios. I ended up with a "blue Striper" R390A parts radio that I still have to get to. He also was able to furnish those great double walled shipping boxes for the R390A's that he had made by a local charitable organization. i still have one that has been back and forth across the US of A a number of times when I lived in Seattle and shipped and received R390A's to and from Chuck Rippel. BTW: Did he ever get that 80-100 foot tower up that he was planning on?

Date: Tue, 9 Nov 2021 21:11:54 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] The future of our website: r-390a.net

Our website is where a lot of R-390x doc is kept for us to access. Some of it is the Pearls, y2k r3 tech ref, many Army and Navy tech refs and other documents, Collins, the Tutorials documents and more. Al Tirevold was taking care of it, but unexpectedly passed away a few months ago and there is no backup person.

I'm now in a position to take ownership of it, but the 'Boss' says I need to get financial support from the group in order to do it. It is not a lot of money, about $101 this year. Since there are a lot of R-390x enthusiasts, it won't be much per person. Let's start with a $ per person. If you'd like me to administer the website, send a $ to my paypal: larry41gm 'at' gmail 'dot' com. Thank you.

Date: Wed, 10 Nov 2021 09:26:02 -0600
From: Don Reaves <donreaves@gmail.com>
Subject: Re: [R-390] The future of our website: r-390a.net

I should note Larry has been working diligently behind the scenes to take responsibility for Al's R-390 site. I'm sure Larry has learned more than

he wanted about domains, hosting companies, name servers, DNS records, and all that good stuff that glues the internet together. I'll be sending Larry an Alexander Hamilton donation - R-390A.net is well worth preserving and updating. There is always something new to share about the R-390 series receivers.

Date: Wed, 10 Nov 2021 16:32:32 -0800
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] The future of our website: r-390a.net

Thank you Don for the very kind words. AND, Thank you contributors for your generosity. You have sent me enough donations to support our website for 2 years. THANKS!!!! I'm very gratified with the number and amount of donations. I will initiate the transfer of our website to me today. You have saved all the great info on it, and most importantly, easy access to it.

Date: Thu, 11 Nov 2021 05:58:02 -0600
From: "Les Locklear" <leslocklear@hotmail.com>
Subject: Re: [R-390] The future of our website: r-390a.net

That is great news indeed!

Date: Mon, 22 Nov 2021 17:56:43 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Updated Pearls on our website

The 'Pearls' of wisdom on our website have been updated. If you don't see the new pages, you will need to 'refresh' your browser's display (circular arrow in upper left corner). This will cause the browser to refresh its cache. To access them, go to our website at r-390a.net and follow the menu to 'references' then the 'Pearls of Wisdom' about in the middle (at the top of the 'tutorials'). I give a big thanks to Wei Li for taking the time to do this and send me the files. The Pearls are very important to us all, especially since they are searchable. Thanks again, Wei. Regards, Larry
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Date: Tue, 23 Nov 2021 05:25:48 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Pete Wokoun's schematics from Y2K R3 Tech Ref

I have thought about having printed schematics that were designed for regular letter size paper without foldouts for years, but I just kept on using with the ones that folded out that came in the book I got with my first R-390A back in 1991. They were not organized very well for this size paper, but were ok. However, after seeing the nice quality schematics that Nick just scanned, I decided to find or make some good ones for

letter paper that were not foldouts.

I have known about the ones in the Y2K R3 Tech Ref for a very long time, but the printing was too small, there were a lot of typo errors and the IF unit was put all on one page (this made it way to compact and disorganized for me), it should be on three pages (as the RF unit is). In this condition, it was not worth it to me to print them out. But, I decided to use them as a basis for what I'd like to see.

Pete did a very nice job of redrawing the schematics for the R-390A so they would fit onto 8.5" x 11" paper for the Y2K R3 Tech Ref (and for the most part, were nicely organized into logical units). I used all of Pete's schematics as a starting point except for the IF unit. I corrected all the many typos, and enlarged the schematic diagrams so they take up the whole page (thus enlarging the lettering to a point where it's barely large enough for easy reading).

For the IF unit, I used the IF schematic from Nick's doc that I updated and divided it into three logical segments, one per page.

They are on our website in the 'reference' section just below the Y2K tech ref and you can see them here:
390A Y2K R3 schematics upd ljh.pdf (r-390a.net) <https://www.r390a.net/R390A%20Y2K%20R3%20schematics%20upd%20ljh.pdf>.

To make them easily viewable online, I rotated them, so if you print them, remember to print them in landscape mode. Regards, Larry
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Date: Tue, 23 Nov 2021 10:50:31 -0500
From: jbrannig <jbrannig@verizon.net>
Subject: Re: [R-390] Pete Wokoun's schematics from Y2K R3 Tech Ref

When printing schematics across several pages, I use Rubber Cement.This allows for careful alignment, then I squeegee the excess cement with a ruler and let dry.When dry, any excess cement is easily rubbed off.The back of the seams is scotch taped for good measure .Jim
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Date: Tue, 23 Nov 2021 18:17:20 +0000 (UTC)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] Pete Wokoun's schematics from Y2K R3 Tech Ref

Larry nicely done! I just printed out all nine pages and made a mini-binder with comb binding for quick reference. Thanks for putting this together.

Date: Sun, 28 Nov 2021 20:13:35 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Our website's Reference page 'Web Pages' section update

At the bottom of our website's 'Reference' page are some links to other websites in its 'Web Pages' section. I removed the one to Miltronics because it does not exist any more. I added 3 new ones that have R-390 info in them: Navy-Radio, Radio Boulevard, and Jammin Power. If there are others that make sense to add there, let me know.

Date: Tue, 30 Nov 2021 20:31:07 -0800
From: Larry H <larry41gm@gmail.com>
To: R-390 Forum <r-390@mailman.qth.net>
Subject: [R-390] R-390 series Refurbishing Services list on our website

There is an entry at the very bottom of our website's first page that was a placeholder for a R-390 series Refurbishing Services list. I've created a list for that entry, but there is only one person there at this time. If anyone would like to be listed there, let me know.

Date: Fri, 3 Dec 2021 16:50:02 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] 'contract numbers' link in 'manufacturers' page undated

The link to the 'contract numbers' table at the start of the 'manufacturers' page on our website r-390a.net has been corrected. The 'contract numbers' page is a table with manufacturer's name, contract or order number and probable quantity made.

Date: Tue, 7 Dec 2021 12:30:29 -0600
From: "Ron.K3PID" <ron.k3pid@sbcglobal.net>
Subject: [R-390] Interesting Problem

So I was shutting down the rig last night and noticed that the R-390 didn't go dark as it usually does! in fact the OFF position on the function switch didn't have any affect on the radio. A quick check with an Ohm meter showed that the contacts P118-11 to P118-2 was closed for all positions of the switch. OK! Removed the front panel and observed that the cam was indeed pushing the microswitch in when in the OFF position. Looking around for an easy way to get the microswitch out I just happened to notice that the solder blob on the center pin on the switch was just barley touching the unused (assume Normally Open) pin. It was pretty easy to carefully bend the unused pin away from the center pin and

Viola! Problem solved!!! Just to be sure I put a piece of heat shrink tubing over the unused pin. Now I have never had the front panel off before but I have only owned the rig for about 20 of its 65 or so years so I don't know what any previous owners had done. It's pretty hard to imagine how the wiring harness could have been pulled down enough to get those two contact pins to touch but that must be what happened. Why it happened now is a mystery of course but all is well that ends well I guess... While I have the front panel off I think I'll use a little contact cleaner on the rest of the switches etc. They don't look "dirty" but should I clean and lube the gear train before replacing the front panel? Recommendations?

Date: Tue, 7 Dec 2021 13:34:33 -0500
From: "Robert P. Meadows" <rpmeadow@bellsouth.net>
Subject: Re: [R-390] Interesting Problem

Before you start cleaning and lubricating things, read the appropriate manual carefully. Your radio might just stop working after such "servicing" not in accord with the proper procedures.

Date: Tue, 7 Dec 2021 13:03:04 -0600
From: "Ron.K3PID" <ron.k3pid@sbcglobal.net>
Subject: Re: [R-390] Interesting Problem

Thank you Robert! I was not proposing to dissemble the gear train although Chapter three in TM 11-5820-357-35 gives a pretty concise step by step procedure for doing so. I was simply inquiring if there was an appropriate cleaning/lubing procedure that could be done while the front panel is removed.

Date: Tue, 7 Dec 2021 21:10:19 +0000 (UTC)
From: Norman Ryan <nnryann@yahoo.com>
Subject: Re: [R-390] Interesting Problem

If you want to lube the gear train without dismantling it, plan on wiping any old grease off the gears, then apply minimal amounts of oil on the gear teeth. A good lubricant is Mobil 1 Synthetic SAE75W-90. I find it tends to stay put and is chemically very stable. Just be sure to lubricate sparingly. Best result are obtained by taking the gear train apart, cleaning the parts thoroughly with suitable solvent like paint thinner, then lubing and reassembling. I've done a few gear trains this way, but find one needs to take extreme care getting them back together properly. It helps to have another RF deck on hand as a guide. There is some guidance available on the internet. Take time to check it out before deciding to go all in. Best of luck,Norman

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Date: Tue, 7 Dec 2021 15:05:25 -0700

From: "Jordan Arndt" <Outposter30@shaw.ca>
Subject: Re: [R-390] Interesting Problem

There are instructions in the manual for periodic maintenance which describe an interim lubrication procedure... I've never had to take the gear train etc. apart, but I've become pretty adept at pulling the RF deck out...But you can always use a less intrusive method...! While it may conflict with what I've always heard, one thing I've found is that the Zero Adj. mechanism usually requires a good flush with M.G. Chemicals penetrating oil or similar. I've found that it's best to leave the panel on, as I needed to use the Zero Adj. control so I could flush the mechanism at both ends of it's travel and really free up the locking pins. Now, the Zero Adj. lockes and releases very easily within about 300 degrees of rotation and is smooth like butter...!

Date: Wed, 8 Dec 2021 04:54:07 +0000 (UTC)
From: Jim Whartenby <old_radio@aol.com>
Subject: Re: [R-390] Interesting Problem

I don't know how the rest of the group feels but for me most of the R-390A receivers I have seen are over lubricated. Grease on gear teeth is a magnet for dust and dirt.? One R-390A I got in a lot of four was so bound up that both frequency knobs could only move a few degrees then freeze up. Lots of cleaning using WD-40, Krud Kutter. water and then alcohol repeatedly applied with an acid brush on a wood dowel eventually cut the grease. Use the alcohol as the last rinse to get the water out of the gear-works. Once clean, everything turned as it should. I figured that the clock collectors and restorers would know pretty much everything about the care and feeding of the gear-works. Their recommendation was to only lubricate pivot points.? Anything put on the gear teeth only attracted grit which would eventually bind or damage the gears. It is amazing how easy it is to turn the megahertz and kilohertz knobs, especially if you re-center the two bushings that the two shafts use to go through the front panel. I use Tufoil applied using a strait wire flattened at the end to put a drop at a time to the pivot points. Others use Mobile One or similar synthetic oils to lubricate.? Don't forger the rollers and such that drive the slug racks. Nothing I have done mechanically is rocket science but it does take time and patients. Regards,Jim
---
Date: Wed, 8 Dec 2021 13:07:27 +0000 (UTC)
From: Thomas Hoyer <thoyer1@verizon.net>
Subject: Re: [R-390] Interesting Problem

I have found that to be the case with my 309x radios. Once treated to a WD-40 cleaning bath / rinse, dried off and pivot points lubricated, the tuning and band changing is nice and smooth.

Date: Wed, 8 Dec 2021 13:11:01 +0000 (UTC)
From: Thomas Hoyer <thoyer1@verizon.net>
Subject: Re: [R-390] Interesting Problem

I meant 390x radios..... Early morning typing.....

Date: Wed, 8 Dec 2021 05:29:22 -0800
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Interesting Problem - Lubrication

No doubt that the Mobil 1 Synthetic is a very good lubricant, but it does have a 'machine shop' aroma. There are good synthetics that have much less aroma, such as Super Lube.

Date: Wed, 8 Dec 2021 13:28:04 -0500
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] Interesting Problem

Agree with Jim 100%...

Date: Wed, 8 Dec 2021 19:00:47 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] The 'Parts Sources' list is added to website

I've added the 'Parts Sources' list to our r-390a.net website at the very bottom of the first page (where an empty placeholder was). I started with the list that was in the Y2K R3 tech ref and updated it the best I could remember at this time. I know from memory that there are some more to be added to the list, so if you could send me some suggestions, I'll include them. And, also, if I should remove an entry, let me know that too. You can tell that I haven't spent much time on the list, but will in the future. Looking forward to your comments.

Date: Fri, 24 Dec 2021 23:53:33 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Updates to our website's (r-390a.net) 'references' page

I have updated our website's (r-390a.net) 'references' page. I added a link to the Navy's R-390As tech ref of Apr, 1970 on Nick England's website. The link is at the bottom of the 'US Navy Manuals' section in our 'references' page.

I have also added meter face files, a TIF file for the VU meter face and a Visio file containing 'white' faces for the VU and C/L meters. All

these can be found on the 'references' page on our website in the 'drawings' section. They also have matching PDF files for viewing as the Visio and TIF files are only downloadable (oooops, I forgot the PDF file for the TIF file - I'll add it in soon).

Date: Sun, 30 Jan 2022 19:27:11 +0000
From: W2HX <w2hx@w2hx.com>
Subject: [R-390] Mason Labs R-390A?

I came across a guys about 30 minutes from me who is selling an EAC R-390A radio. I haven't asked what he wants for it but I thought it was interesting. It has some mods by Mason Labs. He said when he bought it (ages ago) the seller told him it was used at NASA. Here are some pix of some of the mods. https://w2hx.com/?prefix=x/R-390A/Mason%20Labs/ Is this a well-known set of mods or a rarity? Anything about them that improves the R-390A? Or are they just some specialized use case.

Date: Sun, 30 Jan 2022 14:40:36 -0500
From: Bob kb8tq <kb8tq@n1k.org>
Subject: Re: [R-390] Mason Labs R-390A?

Your dose of trivia for the decade: Manson Labs did indeed modify a group of R-390's back in the 1960's. The target audience was indeed the NASA flight recovery folks. Manson was acquired by Halicrafters a bit after the contract was completed. The Halicrafters folks decided to move the Manson stuff from CT to Chicago. That didn?t sit very well with the bulk of the folks at Manson. They went off and started a crystal oscillator company - Vectron Labs.

Date: Sun, 30 Jan 2022 21:41:01 +0000 (UTC)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] Manson Labs R-390A?

I have one version of these - basically an R390A modified by Manson Labs to accommodate precision external oscillators.? Mine was field modified and called an R-1247. Operation of the R390A without the external oscillators is per normal R390A spec. Attached is the info I have gathered over the years through the R390A forum. Way more trivia than you probably wanted to know - word docs below - but interesting:

Date: Sun, 30 Jan 2022 16:49:23 -0500
From: John Vendely <jvendely@cfl.rr.com>
Subject: Re: [R-390] Mason Labs R-390A?

In the mid-1960s, Manson Laboratories had a contract with the Air Force to upgrade a number of AN/FRR-41 diversity receiving systems (two

R-390As and two CV-157s) to frequency synthesis, by addition of what was referred to as "Stabilization Kit SBM-1102".? This receiver was from one of these systems. These upgrades were done for the Air Force, not for NASA. The Army also had a few. The HF systems in the NASA ground network and on the tracking ships were all made by TMC: TSTE-10K and TSTE-40K transmitters, and DDR-506 receivers.

The R-390As and CV-157s of the FRR-41 upgrade were stock units modified by the addition of adaptors which plugged into the local oscillator tube sockets and contained control relays and coupling transformers which permitted switching out the internal oscillators and feeding in external synthesized L.O. injection frequencies to rear-panel connector brackets.? The external signals were provided by two associated frequency synthesizers produced by Manson. One synthesizer (Manson Model 372) provided phase locked injection frequencies replacing the crystal L.O.s of the R-390As and a phase locked 555 kc and 100 kc for the two CV-157s. The other synthesizer (Manson Model 299) provided the 3.455-2.455 Mc injection, in 100 cps steps, for the two R-390s. The receivers and converters could thus be operated on their internal oscillators in the usual fashion (typically with pilot-carrier AFC to eliminate frequency drift), or from the synthesizers, with high frequency stability and accuracy. The whole system was designed for easy installation.

Years ago, a fair number of these receivers were floating around, but hams simply yanked the adaptors and threw them out, returning the receivers to stock configuration. I have one of these complete systems in operation, and it works well, though the Manson synthesizers are, like all frequency synthesizers of the era, rather cranky and require periodic TLC.

Manson Laboratories did a very similar system, AN/GRC-129, which was a frequency synthesized SSB upgrade for the Air Force's AN/GRC-26D RATT vans. In this case, however, the R-390As didn't have the plug-in adaptors, but were modified internally by Manson, and redesignated R-1247/GRC-129. The T-368 transmitters were modified by removing the RF and modulator decks and replacing the RF deck with a 1 kW linear amplifier. A Manson Laboratories sideband exciter and synthesizer was mounted on top of the transmitter. The receive synthesizers in the GRC-129 were similar to those of the FRR-41 upgrade, but tuned in 1 kc steps.

Manson also did a synthesized SSB upgrade to the Air Force AN/FRT-24 transmitters.

Regrettably, ham operators had no appreciation for any of this

equipment, with the result than virtually all of it was hacked up and scrapped out over the years...

Date: Sun, 30 Jan 2022 21:29:38 -0600
From: Tisha Hayes <tisha.hayes@gmail.com>
Subject: [R-390] Mason Labs R-390A?

Some people romanticize the idea that the R-390A was used to listen to Apollo moon landings but the reality was different; the Apollo missions primarily operated in the S-Band (around 2.1 GHz) with some backup capability at 296.9 MHz. If you dig in the references you will see that the Gemini capsules did have HF capability at 15.016 MHz but it is not documented if it was ever used. By Apollo the references to the 15.016 MHz system was dropped but maybe it was something available as a post-splashdown SAR/recovery unit in addition to the 296.9 (and maybe 243.0) aviation-type radios.

In the S-Band the system operated off of a PM (like FM) carrier with sub-carriers for voice and telemetry. Some of the sub-carriers could be turned off and the main carrier was also used for position/ velocity tracking with a pretty high degree of accuracy. At one time I thought that the capability of putting an external oscillator on an R-390A might have something to do with compensating for doppler shift (from spacecraft motion) but it makes more sense that it would be used for high-stability operations with HF RTTY/Data on fixed or maybe even shipboard operations. During Apollo, NASA had lots of tracking stations on land and at sea.

Date: Sun, 30 Jan 2022 22:09:26 -0600
From: Bill Guyger <bguyger@yahoo.com>
Subject: Re: [R-390] Mason Labs R-390A?

Go to YouTube and search “Apollo Comms” There’s a team of guys who are restoring / resurrecting actual Apollo S band radios and the telemetry and voice modules. They’re getting them fully functional, and they have a ridiculous collection of RF test gear to play with. The radio gear has been in storage since Apollo days, and the hermetically sealed aluminum boxes were still pressurized with Nitrogen. NASA didn’t spare any money on making these things environmentally resistant.

Date: Mon, 31 Jan 2022 08:12:50 -0500
From: Alan Victor <amvictor@ncsu.edu>
Subject: Re: [R-390] Mason Labs R-390A?

I was a co-op at the Univ of FL during Apollo 12 and 13. Worked in the VAB and ran around the AS vehicles when they were in the VAB. I built a

P Band down converter in my spare time and would listen into the LCC comm between the Sat V and the LCC. We dragged a small P band helical antenna across Titusville Beach and listened in REAL time to the comms. The converter played into a Drake 2B operating on 30 MHz as a tunable IF. I recall trying to keep audio from the Apollo CSM centered up in the receiver IF during overhead passes of the spacecraft before they broke away from earth orbit! The doppler shift was amazing. Wish I knew about building PLL tracking LO's at the time. What a thrill! There were several guys who lived around the Cape. Some of them had spare parts of the entire tracking station scattered around their ENTIRE house. One fellow had the entire spare INSTRUMENT UNIT from the Sat V in his backyard. None of the going ons now, would surprise me!

Date: Mon, 31 Jan 2022 08:52:22 -0500 (EST)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Mason Labs R-390A?

Whatever they used, it certainly wasn't HiFi. It's almost surprising how narrow and plastic sounding the audio was from the Apollo days and it hasn't really gotten that much better - at least not what's broadcast on TV from the Space Station, etc.

Date: Mon, 31 Jan 2022 18:42:18 -0500
From: John Vendely <jvendely@cfl.rr.com>
Subject: Re: [R-390] Mason Labs R-390A?

Now that is IMPRESSIVE!

Date: Tue, 1 Feb 2022 15:42:27 +0000 (UTC)
From: Jim Whartenby <old_radio@aol.com>
Subject: Re: [R-390] Mason Labs R-390A

Nice discussion on why but is there any information on how? I've searched for any documentation but have found nothing. It would be nice to see how Mason Labs solved the frequency lock problem. By this time, the KWT-6 was available and would lock every 1kc on the higher three bands, 500 kc on Band 1. Multiple KWT-6s could be stacked and use only one SMO for setting frequency.

Date: Wed, 9 Mar 2022 18:18:33 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Added 2 items to history page on our website

Hi All, I've added 2 items to our history page on our website, r-390a.net. They are: 'Repair Depots and Dogs' and 'VFO (PTO) by Collins Info' close to the bottom. Enjoy.

Date: Thu, 10 Mar 2022 22:24:46 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Finished EAC history doc

Hi all, I've finished the EAC history doc on our website, r-390a.net.

Date: Fri, 11 Mar 2022 15:44:46 +0000 (UTC)
From: "Tom M." <courir26@yahoo.com>
Subject: Re: [R-390] Finished EAC history doc

Larry, can you attach the link?

Date: Fri, 11 Mar 2022 18:07:30 -0800
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Finished EAC history doc

Sure thing, Tom.
Here's the direct link: R390A EAC mfg.pdf (r-390a.net)
<https://www.r-390a.net/R390A%20EAC%20mfg.pdf>.
The usual way to get to the file is to go to our website's 1st page by entering r-390a.net in the url on an internet window. Once there, scroll down a little to the 'history' entry and click on the 1st entry of 3 on the right side. That takes you to the history page with different subjects to select. Here's a direct link to this page: https://www.r-390a.net/R390A History.htm. Enjoy.

Date: Sun, 13 Mar 2022 17:52:55 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Updated history info on our website

Hi all, I have added the ad in CQ and 73 to sell R-390A's to the 'EAC' doc and added a new subject to the history page called 'Secret or Not' . This new doc should leave you with the conclusion that the *R-390A was never classified*, but the 'Final Engineering Report' was 'Restricted' for a while. Here's a direct link to the history subject selection page: https://www.r-390a.net/R390A History.htm. Enjoy.

Date: Sun, 23 Jan 2022 15:10:22 +0000 (UTC)
From: <ka9dzr@aol.com>
Subject: [R-390] info

Does Rich Mish still works on the r-392 if not any one else works on them?

Date: Tue, 15 Mar 2022 02:56:03 +0000 (UTC)

From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] info

Personally, based on experience with an R390A I sent to Rick, I would contact Howard Mills and see if he does R-392's.

Date: Mon, 14 Mar 2022 20:55:29 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Two recent changes to our website

Hi all, I've made two recent changes to our website, r-390a.net.

1. Changed the link to the 'contract numbers' file by Tom Marcotte to a new updated file linked to on our *'**Manufacturers' *page.
2. Here's a direct link to the new file: R390a R390 R391 Production Notes.pdf (r-390a.net) <https://www.r390a.net/R390a%20R390%20R391%20Production%20Notes.pdf>

2. Added a link to Jim Miller's A JOURNEY THROUGH THE COSMOS (PTO) <http://www.r-390.com/cosmos.htm> on our 'Reference' page in the 'Tutorials' section.

Date: Tue, 15 Mar 2022 18:55:45 +0000
From: joldenburg2@new.rr.com
Subject: Re: [R-390] info

I was considering the same thing but held off on it. The Miltronics webpage had disappeared and searches on both Miltronics and Rick Mish finds hits on Better Buneiss Bureau and other complaint sites. He does still show an active phone line in Toledo.

Date: Tue, 15 Mar 2022 19:04:11 +0000
From: "Fisch, Michael" <mfisch@kent.edu>
Subject: Re: [R-390] EXT: Re: info

They are old, but phone # 419 255 6220, and web address radiomon@buckeye-access.com used to work for Rick.

Date: Tue, 15 Mar 2022 14:11:13 -0500
From: Tom Frobase <tfrobase@gmail.com>
Subject: Re: [R-390] EXT: Re: info

That is the number I have! ... tom, N3LLL

Date: Mon, 21 Mar 2022 21:20:50 -0700

From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Signal to Noise Ratio Test and Fld Chg 5

Hi all, I just finished writing a small doc that explains why the R-390A Navy Tech Refs and the Y2K R3 Tech Ref specify the input to the R-390A in the Signal to Noise Ratio Test procedure to use the 'Unbalanced' input. I also explain why Navy Field Change 5 was necessary. And, I documented my recommended Signal to Noise Ratio Test procedure. It's at the end of the References section. Here's a direct link to it: R390A Measuring Sig to Noise Ratio.pdf (r-390a.net) <https://www.r390a.net/R390A%20Measuring%20Sig%20to%20Noise%20Ratio.pdf>.

Date: Tue, 3 May 2022 19:41:53 +0200
From: GIOVANNI BECATTINI <giovanni.becattini@icloud.com>
Subject: [R-390] A booklet about surplus (and 390)

Hi to everybody and thanks for your kindness!
I released a new improbed version of the booklet (still here: http://www.k100.biz/parade.htm <http://www.k100.biz/parade.htm>)

I will be grate to whom could help me to spread it around.

Date: Tue, 3 May 2022 15:33:34 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] A booklet about surplus (and 390)

Thank you for this new edition of your "Surplus Parade" booklet.
I have just a comment about the WS #19, however: In the page 11, you mention: set A, an RTX from 2.5 to 6.25 Mhz This is true for the MkI units, but with the MkII and MkIII, the range was extended from 2.0 to 8.0MHz. Your own RCA Victor MkIII (made in Montreal in April 1944 , btw) have been added to the "World Inventory" lists at:

https://www.royalsignals.org.uk/ws19historical-documentation/

Keep up the good work !

Date: Thu, 26 May 2022 17:36:46 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Updated R-390x Newbie Support document

Hi all, I just added a 'contents' and info about the Navy field change 5 to the subject document on our r-390a.net website. Here's a direct link: R390 Newbie Support Info.pdf (r-390a.net) <https://www.r-390a.net/R390%20Newbie%20Support%20Info.pdf>

Date: Sat, 16 Jul 2022 00:52:45 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Added link to '73 magazine' and 'Hollow State Newsletter' on our website

Hi all, I just added a link to '73 magazine' PDF's and 'Hollow State Newsletter' PDF's on our website, r-390a.net in the 'Magazine' section of the 'Reference' page. Here's a direct link to it: The R-390A Frequently Asked Questions Page <https://www.r-390a.net/faq-refs.htm#Magazines> Are there other magazines or newsletters that are available on the web you would like to see listed here.

Date: Sun, 17 Jul 2022 21:29:44 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Updated 'Magazine' section with 'CQ' link

Hi all, I've updated the 'Magazine' section of the 'Reference' page with a 'CQ' magazine link. Note that there are limits on what you can view or download. Here's a direct link to the CQ files: CQ Magazine Archives (hamcall.net) <https://hamcall.net/cq>. Enjoy>

Date: Wed, 20 Jul 2022 18:24:09 -0700
From: Jay Simmons <jaysimmons@chasingrainbows.com>
Subject: [R-390] obsolete transistor list

Would whom ever posted the web site for the Obsolete
Transistors, please re post it to the List.?
Thank you so much...Jay

Date: Sun, 24 Jul 2022 23:56:43 +0000 (UTC)
From: Perry Sandeen <sandeenpa@yahoo.com>
Subject: [R-390] R388 editor needed

Several ..well actually more years ago I and another list member started replicating a R388 service manual.? Well stuff happened....
All the illustrations were copied as well as the text, parts lists,etc
What is needed is for someone to re-assemble it who can use something like Photoshop Elements. Any version would work and I might have an used older version that would be useful in the re-assembly process.
In previous manuals I created I used an older version of MS word, which was bit easier for me to use than Libre Office. It is not hard to do. Tedious yes, but there are no time constraints. If one or more list members don't step up and complete it will never happen. Attached is an article that some might find useful.

Date: Mon, 25 Jul 2022 16:30:53 +0000 (UTC)
From: Jim Whartenby <old_radio@aol.com>
Subject: Re: [R-390] obsolete transistor list

I'm not sure what you are looking for. Do you just want lists of transistor part numbers, device data, or substitutes. A 1960 era Lafayette Transistor catalog is available here:
https://worldradiohistory.com/Archive-Catalogs/Lafayette-Catalogs/Lafayette-Radio-BK-1300-1960.pdf
A pdf of the D.A.T.A Book of Discontinued Transistors, 5th Edition, Summer 1969 (12.4 megabytes !) is available here:
https://ia600304.us.archive.org/13/items/DATABookOfDiscontinuedTransistors19695thEdition/DATA%20Book%20of%20Discontinued%20Transistors%201969%205th%20Edition.pdf

AFAIK, Germanium transistors have much higher leakage current and this leakage current becomes part of the bias circuitry. Silicon has orders of magnitude less leakage so voltage divider bias and collector to base bias techniques are used to properly bias the transistor. For any device, as long as breakdown voltage, current, power rating and upper frequency limit of the substitute exceed that of the original device, the circuit should work. I work on the Cold War era KWT-6 which was developed as silicon transistors first went into volume production in the late 1950's.? This transceiver uses just about an equal number of 7 & 9 pin button based and wire leaded subminiature vacuum tubes along with just about equal numbers of? Germanium and silicon transistors. It is an interesting radio. Germanium transistors used in the Reference Oscillator module during the KWT-6 productionlife include?2N128, 2N499, 2N1753 and 2N3325. These later transistors were used with no required changes to the Reference Oscillator circuitry. The main problem with the RO is that the earlier Germanium transistors are failing as the un-passivated transistors give up the ghost to metal migration due to the interaction of aluminum bond wires with the semiconductor?substrate, or so I have been told. Eventually, someone will have to figure out what needs to be done to the RO so that silicon PNP transistors can be used to replace the failing PNP Germanium transistors. This is assuming that leaded silicon transistors don't also go the way of the dinosaur!

Date: Wed, 22 Feb 2023 04:51:32 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Confusing 'Technical' section on first page of our website

A couple years ago, Al Tirevold (the previous R-390A website administrator), asked my opinion about the confusing situation on our website, where some technical documents are listed on the bottom of the

first page displayed in the Technical section on our website and very similar technical documents are listed in the 'Tutorials' section of the 'References' page. I agreed with him and suggested the information in the ' Technical' section on the first page be integrated into the 'References' page. He agreed.

I've started the process by removing the non-technical items from the 'Technical' section and putting them in a new section ('Non-Technical') on the first page at the bottom. I have also copied the technical items from the 'Technical' section to a new 'Technical' section on the 'References' page. I plan to delete the old 'Technical' section on the bottom of the first page in a few months. What do you think?

Date: Fri, 24 Feb 2023 19:23:28 -0800
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Confusing 'Technical' section on first page of our website

Thanks for the positive comments on this. I will proceed as planned.

Date: Fri, 24 Feb 2023 19:40:20 -0800
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Added link to Radionerds.com in our website

Radionerds.com has an immense amount of US Military Radio Related Documentation that is in Public Domain. The link is in our 'Web Pages' section of the 'References' page, shown here: The R-390A 'Web Pages' section <https://www.r-390a.net/faq-refs.htm#Web%20Pages>.
Here's a link to: Radio Nerds <https://www.radionerds.com/>.

Date: Thu, 13 Apr 2023 10:49:26 -0700
From: Mike McAuley <mmcauley@cox.net>
Subject: [R-390] Brighter Illumination

First post here. I?m sure this issue has been discussed in the past, but I haven?t figured out how to do a search on this list yet. Anyway, looking for substitute bulbs for the -390A to give a brighter illumination of the dial. Any help appreciated.

Date: Thu, 13 Apr 2023 19:00:31 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Brighter Illumination

Welcome to the list, Mike. For info on the brighter readout lighting, try this 'Pearls' section: Mods & FC's (r-390a.net) <https://www.r-390a.net/Pearls/mods-fcs.pdf>.

For info on searching the list archives, see section 1 of my doc for newbies here: R390 Newbie Support Info.pdf (r-390a.net) <https://www.r-390a.net/R390%20Newbie%20Support%20Info.pdf>.

Date: Mon, 17 Apr 2023 20:44:35 -0700
From: Mike McAuley <mmcauley@cox.net>
Subject: [R-390] Was there a companion TX to the R-390A?

I know about the T-195 which was the companion transmitter to the R-392, but was wondering if there was an equivalent transmitter designed for the R-390(A) series.

Date: Tue, 18 Apr 2023 00:48:29 -0700
From: Larry H <larry41gm@gmail.com>
Subject: Re: [R-390] Was there a companion TX to the R-390A?

Hi Mike, There's about a dozen posts in the list archive from early January 2013 on this subject. Also, if you look in our The R-390A Systems <https://www.r-390a.net/faq-systems.htm> page on our website, it shows the T-368 used in the *Communications **System, *AN/GRC-26, AN/GRC-41 and the AN/MRT-9.

Date: Mon, 1 May 2023 08:39:22 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: [R-390] Looking for Knob Clamp Screw

One of the clamp screws for the KC/MC knobs in my R390 is a hex-drive and the other is the standard Bristol spline drive screw. Anyone know where I might find a Bristol screw (5/8" shaft length) I realize this is quite a long shot and this list is one of the very few places that might know where something like this might be had. Hex drive isn't a killer but would really like for both of the screws to have the original Bristol drive if possible.

Date: Mon, 1 May 2023 12:55:58 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Looking for Knob Clamp Screw

A list member found one and can send it to me; however, I may have found one within a few miles from my house. Either way, I think I'm covered.

Date: Mon, 1 May 2023 22:06:31 +0000 (UTC)
From: Steve Toth <stoth47@yahoo.com>
Subject: Re: [R-390] Looking for Knob Clamp Screw

Barry: As a backup to your backup - I think I have some around also that I bought as spares so if everything else fails, send me an email and i can put a couple in the mail to you.

Date: Mon, 1 May 2023 18:13:30 -0400 (EDT)
From: Barry <n4buq@knology.net>
Subject: Re: [R-390] Looking for Knob Clamp Screw

Nice to have so many fall-back options!

Date: Sat, 4 Nov 2023 06:42:55 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] R-390 Restored R-390/URR Tech Ref TM 856, 10/23/1953

Hi All, I've added a link in the 'References' page on our website to an automatic download of this document. It's not for viewing, just downloading. It's the 1st one in the 'Army' section. Here's a link to the: R-390A References Page
<https://www.r-390a.net/faq-refs.htm#US%20Army>.
Jacques Fortin restored this document and arranged with the website owner to setup this download link. It's a very large file, 138 MB, so it takes a little while to get it, but it's worth it. The quality is very good. This manual is the predecessor to TM 11-856, 1956-Jan-20. Thanks Jacques. Regards, Larry
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Date: Sat, 4 Nov 2023 07:15:42 -0700
From: Larry H <larry41gm@gmail.com>
Subject: [R-390] Many documents on the Royal Signals website, UK

Jacques Fortin mentioned this website to me because it contains thousands of restored manuals and other related military communications information. Here's a link to it: Royal Signals website in UK <https://www.royalsignals.org.uk/> - Site is copyrighted and files are password protected (for very good reason). Includes a large list of 'US Technical Manuals'. I've added the link to it in our 'References' page in the 'Web Pages' section on our website. Thanks Jacques.

Date: Sat, 4 Nov 2023 13:53:14 -0400
From: "Jacques Fortin" <jacques.f@videotron.ca>
Subject: Re: [R-390] R-390 Restored R-390/URR Tech Ref TM 856, 10/23/1953

Let me provide some comments. I had an original of this Collins R-390 manual (23 October 1953) in hands in 1984, and I photocopied every page, including the big size schematics that came with. I did not restored

it myself: the .pdf you can download now is totally due to the document restoration expertise of Keith Watt, the owner of the Royal Signals UK website. You can see what my original photocopies looked like if you download this file:
https://bama.edebris.com/download/military/r390/Collins_R390_1953.pdf
Why the restored document is so large is because it is watermarked and protected to prevent piracy. I should also mention that, because it is the first ever published manual for the R-390/URR, it does not contains all the engineering changes/modifications that appeared in the TM11-856 and TM11-5820-357. Enjoy ! 73, Jacques, VE2JFE in Montreal
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