R-390 Reflector April ‘05 Edited

From cfandt at netsync. net Fri Apr 1 10:38:33 2005
Subject: [R-390] Looking for George Rancourt

Anybody have George's email address? He had an O-152/URA-13 and manual that I need to ask some questions about (reference an article in ER #86, June 1996).

I have had one of those units for ~30 years and want to find a PTO that may fit (gone when I got it). He and I emailed back around '96/'97 on the thing but have no address today. Thanks, 73s, Chris F.

From n4buq at aol. com Fri Apr 1 10:41:29 2005
Subject: [R-390] Looking for George Rancourt

You might try here: http://www. listserve. com/archives/collins/2004-07/msg00159. html Barry(III) - N4BUQ

From n4buq at aol. com Fri Apr 1 10:50:37 2005
Subject: [R-390] Looking for George Rancourt

Looked some more and found k1anx@mindspring. com. Not sure if it's current. Barry(III) - N4BUQ

From tetrode at comcast. net Fri Apr 1 12:24:39 2005
Subject: [R-390] New R-390 Anti-Static Headphones from Helena Rubinstein

Just in off the Telex.....

Helena Rubinstein Inc, in a second bold attempt to diversify into the electronic communications market, has accepted a government contract to manufacture specialized anti-static headphones for the R-390 and other receiving equipment in use by the US armed forces.

The headphones are of ultra-efficient design using high flux Samarium Cobalt magnets and 600 ohm transducer coils. The frame consists of a light weight titanium web integrated into a Kevlar body, to which are attached up to 12 metallized-Kevlar conducting "spikes" per earpiece which intercept any strong E-fields in the receiving environment quietly diverting them to ground via the connecting cable before they can reach static discharge potentials. The new headphones are currently undergoing acceptance tests in Iraq, where the frequent sandstorms and low humidity cause havoc with sensitive receiving equipment.
Helena Rubinstein Marketing V. P. Mark Q. Hendersquelch, an avid SWL listener, is given credit for the invention of the new headphones. According to Mr. Hendersquelch "Well, one cold dry winter morning I was listening to the boys on 3885 KC with my Motorola SN1 R-390A when I noticed a squirrel gnawing on the feedline entering the shack window. Enraged, I grabbed a piece of 2x4 that was handy, pounded a few spikes through one end, and ran out the door to dispatch the destructive critter to its maker. Well, unfortunately it got away, but when I got back into the shack I noticed that in flailing the spikes through the air the local QRN level had decreased dramatically, and so I began experimenting and finally came up with the design we have today. I've also noticed that for some reason the wife doesn't bother me at all when I'm listening to the radio with the new headphones on. "

Also under development and shown with the headphones is an optional bear pendant auxiliary counterpoise ground and good luck charm. Shown here is Helvetica Rubinstein, the grand daughter of the company founder, wearing the new headphones: http://img103. exs. cx/img103/4066/headphones7ur. jpg 73, John KA1XC

From wd8kdg at worldnet. att. net Fri Apr 1 13:35:52 2005
Subject: [R-390] Help getting unstuck!

Good Morning to All,

Just finished putting a Motorola R-390A back together. Had to replace many evil out-of-spec and leaky capacitors. The good news is no magic smoke escaped while plugging the receiver into a source of electrons. Thought it might be a good idea to realign the receiver, it was receiving slightly before my attempts at restoration.

Now the sticky question. Can't seem to get the top slug in T501 to move. All of the other slugs will move. This transformer has a cover with a hole punched in the top center. Looks like a little rust between the slug and coil form. I doubt I'm to first to tackle this sort of challenge. Anyone been here before? What sort of fixes for a stuck tuning slug? Of course, if it never moves again or I break it, does anyone have a spare?
Seem to remember hearing in the Navy, "If its tight, its right". This one is real tight, need to make it wrong. Tnx,Craig

From roy. morgan at nist. gov Fri Apr 1 16:30:52 2005
Subject: [R-390] New R-390 Anti-Static Headphones from Helena Rubinstein

wrote: >Just in off the Telex.....
>
>Helena Rubinstein Inc, in a second bold attempt to diversify into the electronic communications market,...Shown here is Helvetica Rubinstein, the grand daughter of the company founder, wearing the new headphones: <http://img103. exs. cx/img103/4066/headphones7ur. jpg>

GOODness! Holy Spikes, Batman, That chick's got Points!

heheh Hey, I notice a resemblance between the earphones in the picture and a pair of Koss Pro-4A's I've had for some 30 years and still use with my R-390A's. Hmm, maybe I could ....Nawww....

On a sad note, I must report that the illustrated earphones bear a certain reminiscence to "objects of art" I have seen in the Hirshhorn Museum of Modern Art, in nearby Washington DC. http://hirshhorn. si. edu/ Roy

From chacuff at cableone. net Fri Apr 1 17:37:50 2005
Subject: [R-390] Help getting unstuck!

Craig I don't have any magic answers on the stuck slug but I am curious about the caps. Black Beauties? Brown Beauties? Split, leaky or out of spec in some way? Was it a Saint Julians Creek special?

Others experiences are important info in this area.

Common wisdom ranges from "Leave em alone it's not necessary" to "Change em all their evil"....and even "Only change em if they came from the SJC". (not so common a wisdom I guess)

You might try removing the can cover on the stuck slug and gently heating the form with a blow dryer or the slug with the tip of a soldering iron then trying to break it loose. In another product with the same problem I have actually drilled out the center of the slug progressively....like a root canal and eventually reduced it to pieces to fully remove it and replaced it with a similar slug....I wouldn't think it would be too critical. My couple pennies worth. Cecil...

From chacuff at cableone. net Fri Apr 1 17:55:19 2005
Subject: [R-390] New R-390 Anti-Static Headphones from Helena Rubinstein

That's hilarious! Shades of the days of Nolan Lee!

Probably would have field stripped that squirrel and thrown him in on top of the pair of 3-500Z's for a while. Would have made a nice snack for the end of an AM QSO on 75m. Receiving, of course on the Intelligence-agency-black R-390A for such a covert op. Cecil....(still laughing!)

From ham at cq. nu Fri Apr 1 18:32:33 2005
Subject: [R-390] Help getting unstuck!

Hi

Well a large pipe wrench attached to the appropriate allen wrench, maybe combined with a five pound sledge probably would get i moving.

The obvious problem is that almost anything past normal pressure with a standard tuning tool is likely to shred the coil rather than moving the core. There is almost no reason to believe that moving the core is worth damaging the coil. Even if things are a bit out of alignment the radio probably will work perfectly well as it's set.

Often the problem is that the coil form has shrunk over the years and now it's simply to small for the core to move in. In that case it may need *more* not less humidity to be fixed. I have never had any success at "steam treating" in this situation but it's been recommended in the past.

Another idea is that you have crud in the threads. In order to get things moving you need lubrication. The punch line here is to use a light weight oil to free up the core. To me that sounds like an excellent way to destroy the core and or the coil. I would not try it on one of my radios. Another recommendation is to use spray on contact cleaner. I have tried that one and it didn't work on my coils. I realize none of that is much help at all. The main point is that this may be one where simply leaving it as is makes the most sense. Take Care! Bob Camp KB8TQ

From redmenaced at yahoo. com Fri Apr 1 20:11:16 2005
Subject: [R-390] Help getting unstuck!

Try some freeze spray on it, but take the cover off first to you can watch to see that you don't turn the

coil instead, that may pull the wires off. Try just blowing some air from the compressor in it first, maybe it will dislodge some of the crud. Joe

From Flowertime01 at wmconnect. com Fri Apr 1 23:37:52 2005
Subject: [R-390] Help getting unstuck!

Can't seem to get the top slug in T501 to move.

Sounds like a chance to stop and test.

Run the 455 into the IF deck and do a signal to noise test. If you can get a 28 to 1 signal to noise the coil is close enough and effort to adjust the stuck slug will exceed return on investment. If its close just leave it alone. If its not close then maybe you will be loosing some fidelity in the 16K band width.

Use the Adjustment of Gain Adj Potentiometer. Paragraph 73 in TM 11-5820-358-35. you want to run 150 uv of 455 into the IF deck. set the gain adjust for -7 volts on the diode load. With 30 percent modulation you should get about . 5 watt of audio across the 600 ohm output. We metered the headphone output with a test lead that ended in a phone plug. You can meter dB with most analog AC volt meters and the instruction book (page of paper) for the meter.

Turn the signal generator modulation off. Now you have just a 455 carrier signal. The audio output should have dropped 30 dB and there should still be -7 volts on the diode load.

If you cannot get 30 dB signal to noise here, start swapping tubes around and trying to do some alignment. Trouble is there is no easy way to determine if your IF deck was stager tuned or aligned at 455.

So try to perform the stager alignment procedure as detailed in the TM first. If you are loosing gain, go for the straight alignment.

Just leave the stuck slug for the very end. Get all the other bugs out of the way first. Get good tubes in and do the best alignment you can get other wise.

If you get up to about 28 to 1 just leave that stuck slug alone. Only after you get every thing else as best you can and you know by measurement that the IF deck is not up to minimum then get worried about that slug.

Get the cover off the can so you can see what's moving. The hot air hair dryer is the least offensive way in. Most of the time it will melt down some of the wax. Heat and soften the gunk.

You can get an IF deck from Fair Radio less crystal filters and tubes, and BFO and ballast tube. It will have a T501. The IF cans (T501, T502, T503) are all the same.

Push comes to shove and you conduct a destructive test, ask here on the reflector, someone likely has the part stuck on some of there collected spare parts and would make you an offer your not likely to refuse. Good luck and be gentle. Roger KC6TRU

From wa6knw at sbcglobal. net Sat Apr 2 02:25:03 2005

Subject: [R-390] New R-390 Anti-Static Headphones from Helena Rubinstein

Yes, I have several pair here in the shack. I ordered mine with the mink fur liners. The natural oil in the mink fur allows extra conductivity for the uneventful egress of electrostatic discharges, thereby preserving your listening pleasure. They work especially well with my Collins preproduction prototype SN:007 51J-6.

The tight, but yet comfortable, fit of the Helena Rubinstein headsets makes for many hours of comfortable radio listening. It's really interesting how the XYL's screams are completely blocked out and I can copy that QRP BV1 station 599.

I had a similar problem with a family of squirrels here. I found that my Barret M-82 works quite well at totally eliminating the pest with out any clean up necessary. I even found that it keeps all the neighbors from wandering into the antenna field also.

Ahh, but that's another story.

Nice headsets, I would certainly recommend them. The price isn't what the casual listener would want to pay. SO, if you're a cheap uhh,...So if you can't afford the coins for a really great set, stick with the Radio Shack $9. 99 set. RICH WA6KNW

From wc4g at knology. net Sat Apr 2 14:03:35 2005
Subject: [R-390] R390 Tube Puller Brackets

Hi Guys, I am in need of a set of subject brackets for the back of one of my receivers. These were present on the picture of the radio prior to purchase, but probably got lost at the UPS Store where the elderly (like me) seller took the radio for shipment. If you have an extra set, I can use them. Yes it's an R390 not an R390A. I thought the mention of tube pullers may confuse some, I can see you all looking behind your A models looking for tube pullers. . There just opposite of the pin straighteners, but that's another story. HI HI 73 Don WC4G

From wd8kdg at worldnet. att. net Sat Apr 2 16:50:31 2005
Subject: [R-390] Help getting unstuck!

Hello Roger,

Taking a real close look at the top slug, cleaning the top, it does have a crack. So its not going to move as one piece. Cecil's idea of a root canal might be the best option if the receiver will not come up to specs. I'll use this as an excuse to put out a general call for parts n' pieces! If someone has a spare slug, T501, or a IF sub-chassis please drop me a line. The Motorola will never be a museum piece, but it would be nice if everything would work as designed.

In the coming days, I plan to go through the entire receiver and at some point will be able to try the signal to noise test. Took the IF sub-chassis out last night and looked at what it would take to replace T501, lots of work. Root canal would save time vs the soldering iron to replace the entire transformer. Tnx,Craig

From wd8kdg at worldnet. att. net Sat Apr 2 16:54:57 2005
Subject: [R-390] Help getting unstuck!

Hello to All,

The worst of the caps were the Brown Beauties! Using a Sprague TO-6A, couldn't get any of these to provide a reading as to value. As far as insulation resistance, most were close to nil. Some of these had something that looked like dried brown snot on them. Good stuff to auction as Rare vintage Collins equipment on that E place.

The Vitamin Qs were for the most part fine business, good values and IR. Since I had them out for inspection, it was easy to replace these while the iron was still hot.

C603, all three 30uF sections read about 60uF and somewhat leaky. C606, both 47uF sections read about 75uF and leaky. Not bad for 1956 vintage, they served their country well. C103, a Pyramid from 1957 was a dead short. Stuffed that can with a new 50uF 50Vdc electrolitic cap. Last, C551 that oil bath 2uF can, it read 2. 25uF and no IR. I cut that bad boy open with a dremel tool and put a NTE-MLR205K630 (Mylar 2uF) inside. Never tested an oil paper cap before, maybe didn't need to replace C551, but didn't like the zero insulation resistance.

Was this Motorola a Saint Julians Creek special? I don't know, its a Order NO 14-PM-56-A1-51, if that adds to the conversation. All the sub-chassis have the same Order NO and are Motorola.

I've been trying a little WD-40 applied with a tooth-pick and a hair drier to free the slug. Gots lots of time to free that pesky critter up. Could leave it alone and do the best I can with the others. But I do like the idea of a root canal. Need some spare parts before surgery! ! Either a good T501 or a slug will do the trick. Tnx,Craig

From r390a at rcn. com Sat Apr 2 18:18:10 2005
Subject: [R-390] Fair Radio Substitute Meters

http://www. fairradio. com/r390a1. htm >From the looks of this, they are using PRC-47 meters which are 50 ua. It would be interesting to see what circuitry they install or if they just mount the meters and don't hook them up.

Anybody purchase a 'CHECKED with substitute meters' unit recently?

From djmerz at 3-cities. com Sat Apr 2 19:13:29 2005
Subject: [R-390] Help getting unstuck!

Hi Craig, you use the term "insulation resistance" or "IR". What does this refer to or what are you measuring? It's probably obvious to most of the guys but I don't know what you're referring to so pardon my lack of familiarity with the term with respect to the capacitors you're checking. thanks, Dan.

From ham at cq. nu Sat Apr 2 19:33:21 2005
Subject: [R-390] Help getting unstuck! - Call for Mr. ATC

Hi
I think the king of the American Trans Coil parts pile is still lurking around here. If so he may have some IF strips for sale. I'm not sure if they have the IF coils on them or not though. Other than that Fair

radio may be a good bet for an IF strip. Hope you can find a coil! Take Care Bob CampKB8TQ

From chacuff at cableone. net Sat Apr 2 21:05:27 2005
Subject: [R-390] Help getting unstuck! - Call for Mr. ATC

Barry Hauser has all his stuff....He'd be the man to talk to....I'm sure he is copying this...Cecil...

From ham at cq. nu Sat Apr 2 21:23:39 2005
Subject: [R-390] Help getting unstuck!

Hi,

An ideal capacitor would pass no current at DC once it had been charged. In fact it passes no DC current at all, it just stores it up. That's another issue though.

Back to insulation resistance ....

So we put a DC voltage on a real capacitor and *suprise* it has leakage current. It passes some current at DC even though an ideal capacitor should not. This is simply because we can't make an ideal part.

In order to decide just how good a real capacitor is we need to have a measure of how much it leaks. The leakage behaves like a resistor the easy way to describe it is as a resistor across a an ideal capacitor. The bigger this resistor the better the capacitor.

So far so good ...

Unfortunately there are two ways to describe a resistor. One is in ohms (zero is bad in this case) the other is in 1/ohms (conductance or Siemens). In the case of conductance zero is good. You have to be careful to be sure which your machine is calibrated in ...

Just to make things even more complex ....

The specification on capacitors is normally written in terms of megaohm microfarads. The bigger the capacitor the more it leaks. The more it leaks the lower the insulation resistance.

The capacitors in question all should have insulation resistances in the hundreds of megaohms if they are working right. Anything below about 50 megaohms is likely to be a defective part. This of course only applies to the parts that are not electrolytic.

The electrolytic parts often are rated in leakage current. In an R-390 anything below a few miliamps is fine. A miliamp at 300 volts gives you a third of a watt in heat in the capacitor. At ten mils you are up to three watts and the capacitor can get a bit warm.

The problem with leakage measurements is that they do not totally represent the situation with the capacitors. On the black beauty caps the leakage does not entirely behave like a resistance. It goes up and down in bursts. The fancy term for this is popcorn noise. When you get a burst of noise (or current) the voltage on the capacitor drops fairly quickly in a typical R-390 circuit. This gives you an intermittent snap crackle pop noise in the background on an otherwise quiet signal. Since atmospheric noise can do the same thing it may take a while to figure out what's going on.

None of this is to suggest that you should replace otherwise good capacitors. The issue is that bad capacitors can, but don't always do cause real problems in a radio.

About the only other point to make is that you do not want to replace the paper or plastic insulated capacitors with electrolytic capacitors. The leakage levels on all of the electrolytics are *much* higher than the leakage of the plastic or paper parts. Hope that helps some. Take Care! Bob Camp KB8TQ

From djmerz at 3-cities. com Sun Apr 3 01:33:23 2005
Subject: [R-390] Help getting unstuck!

Bob/Craig,I assume the simple answer to my question would have been that insulation resistance refers to the measurement of dc resistance across the terminals of the capacitor, or inversely the dc leakage current - what confused me was that with "nil" insulation resistance, why would one even consider not replacing a capacitor such as the 2 ufd oil-filled cap mentioned - that's essentially a short. Maybe Craig meant nil leakage, which would make more sense considering he was able to measure the capacitance. Or maybe he was measuring resistance on a scale where "nil" was still a pretty high resistance. I also wondered if the insulation resistance Craig was talking about had to do with the "snot" on the leads that might be bridging the leads, in which case I might learn something by asking what he meant. So I'm still in the dark on that, hope this helps clarify what I was after. Dan.

From wd8kdg at worldnet. att. net Sun Apr 3 03:51:22 2005
Subject: [R-390] Help getting unstuck!

Dan/All,

Ok, here goes nothing, I'll do my best, and remember this is not my forte'. I bought the Sprague just for this type of fun so I'll condense the manual.

First there are two groups of caps; group ONE are electrolytic caps, then group TWO are all the others (ceramics, micas, paper, film, air, etc.). The Sprague TO-6A runs three basic test: checks the capacitance(both groups), leakage current of electrolytics, and insulation resistance of the others.

I like to remove the cap and connect its leads direct to the tester, don't have to figure in the capacitance of the leads that way. Run the capacitance value test first, just about every Brown Beauty in the Motorola failed here. The tester could not determine their value.

If it is an electrolytic, the tester can apply the same dc voltage (up to 600V) the capacitor is rated at. Looking at the manual there is a nice table showing what the leakage current (uA) of a new electrolytic MIGHT be (uF vs DC working voltage). In general lower leakage is better.

Group TWO:all the others: The TO-6A tests them as two groups 50V to 200V, 200V and higher. Here, the high the insulation value the better the cap (in general). Connect them to the post, push a few buttons, and read the meter. Most of the Brown Beauties had very low insulation resistance or none (nil).

It was sort of fun connecting the old caps, testing them, and then comparing them to a new electrolytic or orange drop. Big difference, but since most of the old caps were 1956-57 vintage, someone got there money's worth. Nothing last forever.

The object of this exercise is to end up with a receiver that I might not have to put on the repair bench for several years.

As to my use of nil in the first post, I've never tested an oil filled cap before and didn't have an exact replacement to see how it would test. I don't think C551, the 2uF oil-filled cap when new would have zero insulation resistance. Back to paragraph one, this is not my forte'. Just having fun and will keep it that way. Craig,

From wd8kdg at worldnet. att. net Sun Apr 3 04:09:05 2005
Subject: [R-390] Help getting unstuck!

Roger/All,

Had the opportunity to play radio this evening. Connected the signal generator and started having fun. With a short test lead connected to either antenna input WWV at 10Mhz and some foreign broadcast made its way to the speaker. All four mechanical filters are working, BFO is good, Crystal calibrator is close, but nothing below 8MHz. So there are a few bugs to work out.

Think I've read some of the threads on the 8MHz problems. Going to fix it next. later.....and Tnx, Craig

From ka4prf at peoplepc. com Sun Apr 3 05:37:05 2005
Subject: [R-390] Help getting unstuck!

Craig, Let us know what it is when you fix it. Tnx Chuck

From barry at hausernet. com Sun Apr 3 07:55:17 2005
Subject: [R-390] Help getting unstuck! - Call for Mr. ATC

Hi gang ...

Unfortunately -- no IF coils/transformers. Those were harvested and sold off a long time ago, well, before I got involved. The IF decks have all four filters, but no IF cans. Most of what's there is still on the ATC site (http://www. atc-us. com). Click on the cascading drop-down menus to look around.

I'd suggest contacting Phil at Fair Radio. They often sell individual parts which they pull off parts modules as needed and which are not necessarily listed in the catalog or website. Further suggest waiting until you have a replacement in hand before getting any more aggressive with that stuck core. As someone pointed out (maybe Bob), it's broad-tuned and may well be fine set the way it's stuck. Barry

From wa9vrh at mtco. com Sun Apr 3 08:16:17 2005
Subject: [R-390] CCA First Wednesday AM Night April 6th!

! ! ! Please note NEW TIMES for the Eastern and Central Time Zones! ! !

FIRST WEDNESDAY AM NIGHT! ! ! Sponsored by the Collins Collectors Association.

Wednesday April 6th on 3880 kcs at 7:00 PM local East Coast time marks the start of the latest chapter

of First Wednesday AM Night, drawing hundreds of vintage stations from across the country.

The event is anchored by a "tall ship" AM station in each time zone. The East Coast and Central sections will now run for 90 minutes in response to the tremendous participation in those time zones. The remaining time zones will be an hour. We encourage stations to check-in on AM using Collins and other AM transmitters, new and old. It's an opportunity to revel in this nostalgic mode, enjoy giving vintage equipment a "run," and sharing some storytelling about classic vacuum tube homebrew and commercial designs. Typically more than a hundred stations take part in the evening's coast-to-coast AM event; by the time it concludes at 10:00 PM Local PST.

LISTEN for the following anchors and stop by to say hello, won't you? You don't have to be running Collins or vintage gear to be welcomed into the group.
7:00 PM-8:30 PM Local East Coast Time Anchor: Bob W0YVA ! ! ! Starts 30 minutes earlier for 90 minutes
7:30 PM-9:00 PM Local Central Time Anchor: Jim W0NKL! ! ! Starts 30 minutes earlier for 90 minutes
8:00 PM-9:00 PM Local Mountain Time Anchor: Jim WA0LSB
8:00 PM-9:00 PM Local West Coast Time Anchor: Bill N6PY comments please to wa9vrh@mtco. com

From mahlonhaunschild at cox. net Sun Apr 3 08:53:02 2005
Subject: [R-390] Speaking of TO-6As...

Hello list,

Was given a Sprague Tel-Ohmike TO-6A yesterday. Free was a good price in this case, since all of the paper capacitors in the unit need to be replaced, and also because the meter is blown and needs to be replaced. Not unlike what I went through with my Heathkit capacitor tester a while back (the two "standard" paper capacitors in it were so leaky the bridge never balanced; same thing is going on with the TO-6A).

Has anyone ever run across a calibration procedure for these? regards, Mahlon - K4OQ

From ham at cq. nu Sun Apr 3 10:39:04 2005
Subject: [R-390] Speaking of TO-6As...

Hi

I'm sure the marketing departments at each of the companies that made them had long lists of exactly why theirs was the best on the market. From what I have seen they basically are all balanced bridge instruments. If you replace the "standard" capacitor in one of the arms the main issue is to hit the value correctly.

A reasonable way to do a quick check on any of these gizmos is to have a metal package tubular teflon dielectric precision capacitor sitting around. Value is not real critical as long as it's in roughly the same range as the R390 capacitors. Teflon caps have a very high insulation resistance. Metal can parts generally last a long time. You should be able to trust the markings on the part, even 20 years later. If the meter reads the indicated value and a very high insulation resistance (say > 50 gigaohms) the meter probably is working just fine for R390 purposes. There's nothing in an R390 that needs anything close to that kind of insulation resistance. Take CareBob CampKB8TQ

From wd8kdg at worldnet. att. net Sun Apr 3 11:47:00 2005
Subject: [R-390] Speaking of TO-6As...

Mahlon,Just looked at the manual downloaded from BAMA's website. Nothing in it on calibration or repairs, but it does have a parts list and schematic. Craig

From wd8kdg at worldnet. att. net Sun Apr 3 12:07:20 2005
Subject: [R-390] Help getting unstuck! - Call for Mr. ATC

Barry,

Thanks for the effort and tip. I need to add the website to my favorites. The calibrator hopefully with a good 17MHz crystal might be necessary. The Motorola is dead below 8MHz. Again Tnx, Craig

From ham at cq. nu Sun Apr 3 12:14:26 2005
Subject: [R-390] Help getting unstuck! - Call for Mr. ATC

Hi

The 17 MHz crystal is still available from the normal crystal supply guys. You probably can get them at a better price from Fair though. Take Care! Bob CampKB8TQ

From pulsarxp at earthlink. net Sun Apr 3 14:22:57 2005
Subject: [R-390] Cap Leakage

Nice post, Bob! I enjoyed reading it a lot. Lee, w0vt

From w9ran at oneradio. net Sun Apr 3 14:37:19 2005
Subject: [R-390] R390 leftovers

Passed along without comment: http://www. qrz. com/ib-bin/ikonboard.
cgi?s=3b5b04da3486fa9ef538232c096f9bad;act=ST;f=1;t=88124
73, Bob W9RAN

From richey2 at mindspring. com Sun Apr 3 15:50:32 2005
Subject: [R-390] Cap leakage

The real fact-of-the matter- is capacitors made today are so much better the the ones made in the 50's-60's and 70's that they approach the ideal cap, and when people argue that there is no reason to replace a cap unless its bad is foolish, when I rebuild a unit I, as a matter of fact replace every cap, the ESR, etc is way superior. To not replace a wax, Paper, black bueaty or brown beauty just becaus you think it isn't bad is penny wise and dollar foolish. Quality caps are cheap and when ckts were designed with perfect caps why not provided them with em. Thats my 2 cents. . Joe W2DBO

From wd8kdg at worldnet. att. net Sun Apr 3 15:55:17 2005
Subject: [R-390] Cap leakage

Afternoon Joe,

Guess there are different sides of the fence in which to stand, or sit upon! If the piece of equipment is a real beauty, museum quality. I can see trying to keep it all original down to the last screw, washer, and nut.
The one and only R-390A that I have is not museum quality and hasn't been kept in the best of conditions. All the big pieces are there and with my limited knowledge, I think all of sub-chassis are original. Just want a dependable receiver that I shouldn't have to work on for a while when I'm finished. In what was my line of work we called it, "on stream time". Kind of use to seeing numbers better than 99. 5% on stream.
So I guess I'm on the capacitor replacers side of the fence. Rather spend the pennys on caps and not have to search for hard to find big dollar pieces later. Regards, Craig

From DJED1 at aol. com Sun Apr 3 16:21:58 2005
Subject: [R-390] Cap leakage

I've opted on the side of not touching the radio unless necessary. It's had an easy life- I bought it in very good condition in 1973, and it has seen only light use since then. I don't run it 24/7 and for quite a few years didn't run it at all. I've done only necessary maintenance, which has comprised changing out a couple of tubes, the microswitch, and the original Progressitron PTO (it developed a warble). It has the metal jacketed vitamin Q capacitors, and those have lasted better than most, from what I've heard on the board, so I'm not too concerned that I've got a bunch of leaky caps. So I'd rather stick with what I've got than to go mucking around the insides changing components. To each his own...Ed

From DJED1 at aol. com Sun Apr 3 16:44:20 2005
Subject: [R-390] High-priced R-390As on eBay

I've been watching two radios offered for sale by radiomart Marty. Both are alleged to be collector quality, and both are now going for over $1000 with a couple of hours left. Maybe there IS a narket for $3000 radios. Incidentally, I paid $700 for mine in 1973 and, accounting for inflation, that is about $3K in today's dollars. So maybe I've broken even after 30 years- hmmm. Ed

From djmerz at 3-cities. com Sun Apr 3 17:27:06 2005
Subject: [R-390] Cap Leakage

Hi Bob, Dave, Lee et al. , once again fine coverage here. I was thinking BAMA when someone mentioned T0-6a was used and that "insulation resistance" was a standard measurement, at least for the TO-6a instrument. I didn't realize that - the only vintage capacitor checker I ever had left my hands pretty quickly; it was a cheaper variety and the only plus I could see for keeping it was that it actually put high voltage on the cap when checking. My interest was renewed by the discussion. So I had to take a look, which was a 2 hour download of the BAMA TO-6a 8 meg file on 56k modem but it was worth it. It looks like insulation resistance with the TO-6a is measured by matching instrument grid current to the capacitor leakage, with some appropriate resistances to scale the resultant current measurment in the plate circuit of the instrument tube. I would guess "nil" here is still a pretty high resistance, maybe in the 100 kohm range judging from the resistors in the circuit. The manual indicates 100 Megohm to

100KMegohm ranges so maybe the lower limit is even above 1 megohm. Maybe someone else knows the answer. I can't see the meter scale in the downloaded pic clearly enough to tell. Thanks for the clarification (only downside is I'll look twice at a T0-6a at some future swapmeet and be tempted), Dan.

From jmiller1706 at cfl. rr. com Sun Apr 3 17:48:43 2005
Subject: [R-390] EV664 and 419 Base FS

Perfect complement to your Collins rig. EV-664 microphone in very clean and in good condition, performs as new. Base paint is scuffed some on one side, but no gouges or gashes, could use repainting. Sorry no plug or cord. $220 obo, shipping extra. Thanks. Jim N4BE (Melbourne, Fla.).

Here are pictures: http://xs. to/xs. php?h=xs22&d=05130&f=EV6641. JPG http://xs. to/xs. php?h=xs22&d=05130&f=EV6642. JPG http://xs. to/xs. php?h=xs22&d=05130&f=EV6643. JPG

From ham at cq. nu Sun Apr 3 18:25:38 2005
Subject: [R-390] R390 leftovers

Hi

Well I'm glad that both the tubes *and* the shields are guaranteed. I'dhate to see a tube shield fail after 30 days of intensive service in aR390 Enjoy! Bob Camp KB8TQ

From ham at cq. nu Sun Apr 3 18:30:43 2005
Subject: [R-390] Cap leakage

Hi

As far as I can see the metal jacket and the yellow jacket capacitors you see in the R390 are not in the same class as the "good old" black beauty capacitors. I have not seen a consistent problem with either one. The only thing I have ever seen a problem with are the black or brown body epoxy coated paper dielectric capacitors. The exception of course are those yellow jacketed capacitors that have been hit with a soldering iron. They don't survive that kind of treatment as well as the other parts ...Take Care! Bob Camp KB8TQ

From ham at cq. nu Sun Apr 3 18:32:15 2005
Subject: [R-390] High-priced R-390As on eBay

Hi

Anybody who wants to pay $3000 for a R390 please give me a call. I'll hand deliver it in person.... Take Care! Bob Camp KB8TQ

From ham at cq. nu Sun Apr 3 18:38:32 2005
Subject: [R-390] Cap Leakage

Hi

There are a number of posts here in the archives on insulation resistance. Some of them relate to the fact that in order to fully know what is going on with the capacitors you need to put the full rated voltage (or close to it) on the caps. A megger (high voltage giga ohm meter) is often mentioned as the instrument of choice here.

Not to ignite a replay of previous debates on capacitors but I have never had a paper / black (or brown) beauty capacitor pass at any voltage ...

It should be noted that others apparently have had *very* different experiences with these capacitors. Take Care! Bob CampKB8TQ

From ham at cq. nu Sun Apr 3 18:42:20 2005
Subject: [R-390] EV664 and 419 Base FS

Hi

So, umm, errr ...exactly how do I use said microphone with my R390 ?

Not that it's a bad microphone mind you. I have always liked the way the vintage EV's sounded on the air. Owned a couple and never had a bad thing to say about any of them. Somehow I always have used them with *transmitters* rather than receivers. Must be my limited imagination Bob Camp KB8TQ

From ToddRoberts2001 at aol. com Sun Apr 3 18:51:18 2005
Subject: [R-390] High-priced R-390As on eBay

writes: Anybody who wants to pay $3000 for a R390 please give me a call. I'll hand deliver it in person....
One thing I have learned from all this is the next time anyone is planning to sell an R-390A on eBay be sure to take pictures of it with red velvet curtains in the background and mention the words "museum quality" or "the finest ever offered". Don't mention the words "Intelligence Agency Black" or you will never hear the end of it though! Seriously though if someone like Rick Mish has thoroughly gone thru an R-390A and put maybe 30-40 hours into it, completely disassembling it and cleaning all the moving parts in the Rf Deck, reassembling it, repainting/re-silkscreening the front panel and knobs, testing, retubing I think it would be fair to charge $1000+ for all the work and effort put into it. The way many repair shops charge $40-$50 an hour these days for sometimes shabby work I think it would be reasonable to pay $1000+ to have a radio like this that was done right. 73 Todd WD4NGG

From DJED1 at aol. com Sun Apr 3 19:08:55 2005
Subject: [R-390] High-priced R-390As on eBay

To be fair to Martin, he says one of the radios was redone by Rick Mish, which indeed is about $1000 for a "remanufacture", so Martin has about $1500 already invested in the radio. The other one is not remanufactured, so I don't know what is driving the price. It again points up the value of a good sales spiel. I see so many eBay offerings which say "I don't know anything about this, buy it as is and good luck". You never know if the item was untested or the seller doesn't want to admit it was tested and failed, so the item often goes unsold. Overall though, I'm happy with the auction system-I've only had a

couple of problems, and have gotten a refund on both. Ed

From ham at cq. nu Sun Apr 3 19:11:27 2005
Subject: [R-390] High-priced R-390As on eBay

Hi

I have absolutely no problem at all with a properly documented radio from a "name" restorer selling for one or even two kilo-bucks. That makes sense in today's market. Lots of good pictures, lots of precise detail, and lots of verifiable claims mean big bucks at auction.

For a no documentation / no pictures / no name radio to sell for three kilo-bucks is a bit of a stretch.

This mailing list has always been known for beating very dead horses until they are far more than just simply dead ...Keeping With Tradition Bob Camp KB8TQ

From ham at cq. nu Sun Apr 3 19:20:10 2005
Subject: [R-390] High-priced R-390As on eBay

Hi

We tend to really beat the heck out of the online auction system. I certainly agree with the observation that it can vastly overprice individual items. Of course I have to admit that by now a significant number of radios are going up for auction rather than into the local dump. Like it or not that's a good thing. Take Care Bob Camp KB8TQ

From ToddRoberts2001 at aol. com Sun Apr 3 19:32:25 2005
Subject: [R-390] High-priced R-390As on eBay

writes:by now a significant number of radios are going up for auction rather than into the local dump. Like it or not that's a good thing.

I sure do agree that eBay is a wonderful way for people to bring items up for auction that might have been discarded or tossed into the local dump a few years ago. As we have all seen, many people will list items they know nothing about which can sometimes be a mixed blessing. It is good that they can bring these unusual items up for auction but sometimes bad because then the buyer doesn't know if what he is getting works or not. On the most part it is a pretty good system. I have found several radios and parts on eBay that I would probably never have found in a lifetime of hunting through hamfests and classified ads so that is a very GOOD thing! 73 Todd WD4NGG

From jmiller1706 at cfl. rr. com Sun Apr 3 19:40:26 2005
Subject: [R-390] EV664 and 419 Base FS

Hey I said it would "complement" your Collins, that is it would look nice next to a real Collins 390a/non-a. Actually, I sent it to this list thinking there might be some non-simplex folks, those with transmitters to match their 390s.

From r390a at bellsouth. net Sun Apr 3 22:22:19 2005
Subject: [R-390] When Capacitors Go Bad

No leather jackets, no switchblades, no pack of Luckies rolled up in their shirt sleeves.

They just go to pieces --

The first pic is one side of a normal looking BBOD -- http://www. fernblatt. net/miscpics/bb1. jpg

The other side tells the true story -- http://www. fernblatt. net/miscpics/bb2. jpg

I forget what I removed this from, or if I'd even posted it before. Tom NU4G

From w5kp at direcway. com Sun Apr 3 22:05:11 2005
Subject: [R-390] High-priced R-390As on eBay

Right on the money, Todd. Anybody who thinks $1K is too much for a properly overhauled and repainted 390A hasn't done one. Or, you can pay $600 for one with fake meters that was "checked" at Fair Radio and start in on it yourself. I had a ham tell me the other day that the "checked" units at Fair were now guaranteed to meet all original government specs on all bands. No disrespect to Fair, they are great guys, but I'm not buying that story! 73, Jerry W5KP

From N4BUQ at aol. com Sun Apr 3 22:13:16 2005
Subject: [R-390] When Capacitors Go Bad

I do hope you gave it a proper burial with a salute from an appropriate number of guns. It appears to have given its life in service. Barry(III) - N4BUQ

From Llgpt at aol. com Sun Apr 3 22:20:08 2005
Subject: [R-390] Cap leakage

writes: the original Progressitron PTO (it developed a warble).

There is an easy fix for that. The tiny caps (10 picofarads I think) inside the can break loose from the solder connection, just reflow it and it will be fine. Seen it on 7 different Progressitrons. Les

From r390a at bellsouth. net Sun Apr 3 23:25:58 2005
Subject: [R-390] Cap sizes, Old vs New FWIW

Here is one example of old versus new. These are both 10 mf at 25 volts. The size comparison is similar between higher voltage electrolytics I have in my parts boxes. http://www. fernblatt. net/miscpics/10mfcaps. jpg Tom

From N4BUQ at aol. com Sun Apr 3 23:18:18 2005
Subject: [R-390] Cap leakage

Isn't a dirty ground strap also one cause of PTO warble? Barry(III) - N4BUQ

From N4BUQ at aol. com Sun Apr 3 23:21:04 2005
Subject: [R-390] Adjusting Z702

Is there a tool made to adjust the slug on Z702 (the can on the PTO)? The nut appears to have a round OD with only two flats. Is a small wrench about as good as anything or is there cylindrical tool made for this? Adjusting with a wrench doesn't exactly make it easy to find a peak. Thanks, Barry(III) - N4BUQ

From Llgpt at aol. com Sun Apr 3 23:25:12 2005
Subject: [R-390] Cap leakage

writes:Isn't a dirty ground strap also one cause of PTO warble?

Yes. But in the Progressitron's case, I believe it was a quality control problem. I've owned R-390A's with 8 Progressitron PTO's, 7 of them had the badsolder joint on the caps. And, they all warbeled. Les

From r390a at bellsouth. net Mon Apr 4 03:05:52 2005
Subject: [R-390] Remember the $5 "Collins" terminal jumpers?

Looks like the price is going up on these things...http://cgi. ebay. com/ws/eBayISAPI. dll?ViewItem&item=5764486847

The $5 set was just sneezed on by Art Collins, these must have been touched by him somewhere during the QA process. I used to have a coffee can full of these, if I knew that the market would turn this "bullish" (emphasis on "bull") I'd have made sure I kept them. Tom NU4G

From n4buq at aol. com Mon Apr 4 10:15:47 2005
Subject: [R-390] PTO extender cables

Anyone have a source for connectors to make some extension cables for the PTO? I want to do some linearity checks and would like to do it outside the frame on the bench. I realize I can get a set of connectors from Fair Radio, but they include a lot of connectors I don't really need. The harnesses from ATC might work, but I'd still need the male connector. Any ideas? Thanks, Barry - N4BUQ

From DJED1 at aol. com Mon Apr 4 10:26:55 2005
Subject: [R-390] Cap leakage

writes: > Isn't a dirty ground strap also one cause of PTO warble?

Yes it is, but I tried removing and cleaning the strap without solving the problem. Always a good thing to try before disassembling the PTO. Ed

From tetrode at comcast. net Mon Apr 4 11:12:03 2005

Subject: [R-390] PTO warble

writes: > > Isn't a dirty ground strap also one cause of PTO warble? > > Yes it is, but I tried removing and cleaning the strap without solving the > problem. Always a good thing to try before disassembling the PTO.

Hmmm, if it's not the strap, I wonder what else might be doing it? I have a PTO with the same symptom, don't recall the manufacturer at the moment but I think it is the original design. John

From wewilsonjr at gmail. com Mon Apr 4 12:43:07 2005
Subject: [R-390] PTO extender cables

Baryy,

If you flip the R-390A up on it's side and get a small box about 10 inches or so high, you remove the PTO from the R-390A and set it right there on the box. Works for me, without extender cables. Walter -- KK4DF

From Flowertime01 at wmconnect. com Mon Apr 4 13:09:07 2005
Subject: [R-390] Adjusting Z702 Tools

writes: Is there a tool made to adjust the slug on Z702 (the can on the PTO)?

Barry, All the tools I have seen for Z702 were from the teletype side of the shop.

We had a round soft iron rod that had a slot sawed into the end of it. The slot was wide enough to fit the flats. Most guys had a wrap of tape (heat shrink sleeve) around the end of the rod over the slot to keep the tool from slipping off it nut. The best one I seen was an El Cheepo screwdriver shaft cut off and slotted. I had been slotted with a Demerol tool grinding wheel because even cheep screwdriver shafts are fairly hard to saw. Roger KC6TRU

From Flowertime01 at wmconnect. com Mon Apr 4 13:35:02 2005
Subject: [R-390] PTO extender cable

writes:Anyone have a source for connectors to make some extension cables for the PTO? I want to do some linearity checks and would like to do it outside the frame on the bench.

Barry

Thousands of old ASA 33's worked on these R390 and R390/A for years all over the world for years and never even seen an extender cable. Not one Nota. Old school knowledge was the extender cables introduced more problems in feedback, loss of shielding, flaky connections than was gained by the extra working space.

Stand the receiver on it end. Use a 2x4 to level the back of the receiver with its front panel. Pull the PTO connector bracket loose from the chassis so you have some wire harness freedom. It is still a short leash. Set the PTO on a small cardboard box so it does not have to hang on its wire harness.

This setup was used to set the 10 turn end point adjustment.

If you just need to run the liner deviation, pull the Standard BNC to Mini BNC adapter off the 455 output on the rear panel and use it on the end of the R390/A PTO. The R390 is a bit more creative as it has the B+ on the coax. You need to isolate the frequency counter from the B+ on the R390. Leave the PTO in place and use the dial read out to count PTO shaft turns. Set one end at 455 and zero the dial. Start rolling off turns. At each 100 on the dial counter record the frequency counter reading.

Just hanging the PTO out the up ended receiver and using a pencil mark to index to, we would get the end points to within 10 cycles or so. Considering the counters and power company (Viet Nam, Korea, 69-75) we knew we were kidding out selves with those numbers. But you can do it.

If you were really going to go into a PTO and try to adjust the bank of little shins all stacked up along the PTO guide assembly, spring for the connectors from Fair for the PTO harness. You likely have the coax BNC adapter and can extend that cable to the counter with no problem.

I have seen PTO that would not make end point spread and needed work. I have not seen one that was considered so non linear as to warrant an adjustment of the shin stack.

However, these items are much older now and who knows what would do them some good. Good Luck with this Roger KC6TRU

From Flowertime01 at wmconnect. com Mon Apr 4 13:45:13 2005
Subject: [R-390] PTO warble

writes: Hmmm, if it's not the strap, I wonder what else might be doing it? I have a PTO with the same symptom, don't recall the manufacturer at the moment but I think it is the original design.

Fellows,
Chances are good your not running a ballast tube. So consider the BFO and PTO tubes. The filaments may be doing this to you. Just a hopeful idea. Like Les said there are those little caps inside that come loose. Not wanting to upset you with scary feeling I will not go into the subject of PTO that have all the caps waxed together into a block like Zenith did in TV sets.

Clean the strap, swap the tubes, stock the beer, clear the calendar, clear the bench.

Prepare to enjoy you hobby to the fullest extent. Life has dealt you a real puzzle and you need to savor solving it to the fullest extent possible. Roger KC6TRU

From n4buq at aol. com Mon Apr 4 14:14:27 2005
Subject: [R-390] PTO extender cable

Thanks for all the suggestions. Yesterday, I took my working R390A, turned it upside-down, and was able to confirm the "new" PTO is working. I was able to do the endpoint adjustment with this setup, but I'm figuring if I want to tear into it to do linearity adjustments, I'd probably need a bit more flexibility in the cable.

If the 100kc points are close, I won't have to mess with it. I know my Motorola isn't completely linear, but not more than 3 or 4 kc over the entire range. Maybe one day I'll get up the gumption to do it too.

As for the Z702 tool, I guess I'll just "roll my own. " Thanks, Barry - N4BUQ

From eldim at att. net Mon Apr 4 15:49:06 2005
Subject: [R-390] Adjusting Z702 Tools for R-390 PTO'S

Hello All,

I'll have to dig into and check all my alignment tools to see if I still have a tool that fits this description. I vaguely remember a tool approximately 5-6 inches long that was made of dark brown fiber with a small metal slotted slit. Since I have not worked on a 390 in detail for over forty years, and don't recall if I ever did any PTO re-work, I'm wondering if there is a list of "Required Tools" for FIELD or DEPOT rework listed in any of the service manuals for the R-389, R-390, R-390A, and R-391. Better yet, is there a picture of this tool, Part Number, Stock Number available? Perhaps, one of the group members has fabricated a similiar tool that passes the test. Personally, I think that inserting any metallic object into the innerds of the PTO may possibly upset the reactance of the circuit. 73, Glen Galati, KA7BOJ

From DJED1 at aol. com Mon Apr 4 16:12:59 2005
Subject: [R-390] PTO extender cable

Just out of curiosity, Roger, what was considered acceptable linearity for working radios, considering that the factory spec was 300 cycles?I've tweaked my Cosmos to be within 300 cycles at each 25 Kc point, but I expect worst case errors are probably 500 or 600 cycles. And I can't imagine doing adjustments on a corrector stack. At least the Cosmos is a screwdriver adjustment. Ed

From n4buq at aol. com Mon Apr 4 16:28:20 2005
Subject: [R-390] PTO Rebuild?

I seem to recall there being a website with pictures of a PTO that was taken apart for the purposes of removing a turn from the adjuster coil. Does anyone know where these pictures are? I don't need to do the loop removal, but was wondering if it had any pointers as to how to take the can apart, and possibly some pictures of the linearity adjustment process. Thanks, Barry - N4BUQ

From jmiller1706 at cfl. rr. com Mon Apr 4 20:46:06 2005
Subject: [R-390] R-390a Video Tapes FS

I am selling my set of original R-390A video tapes purchased from Hi-Res Jan. 2001. Includes tapes 1-4 (basic R-390a tapes) and the two addendum tapes (six total). All original in their red boxes with table of contents sheets. Probably played only 2-3 times, if that. Cost $150 new, selling the whole lot (no individual tapes, sorry) for $110, shipping extra (stateside only). Jim N4BE

From jmiller1706 at cfl. rr. com Mon Apr 4 20:56:36 2005
Subject: [R-390] PTO Rebuild?

Jim, I would like to complement you on the best photography I have ever seen on any ham radio site. Good for you! 73, Bill N2WL

From N4BUQ at aol. com Mon Apr 4 22:03:00 2005
Subject: [R-390] PTO Rebuild?

Thanks to all for the PTO links. Apparently mine is not a Cosmos. In fact, it's a "no-name". It does not have the extra opening for the corrector stack screws, so I assume I'm looking at one that will require shimming.

I'll have to check the linearity, and if it's off far enough, then it will be "stand back, Jim, I'm goin' in! " Barry - N4BUQ

From redmenaced at yahoo. com Mon Apr 4 22:01:21 2005
Subject: [R-390] PTO warble

What? Do you think this is simple? Or something??? Mine is stable when going UP, but warbles going DOWN! I intend to leave it that way! Joe

From Llgpt at aol. com Mon Apr 4 23:23:17 2005
Subject: [R-390] PTO Rebuild?

If the decal is missing, chances are it is a Progressitron, good pto's baddecals. Look on the back cover, if it has an Amelco stamp, it is aProgressitron. Les

From jpl15 at panix. com Tue Apr 5 00:20:51 2005
Subject: [R-390] WTB Cardmatic cards

Looking for a set of cards for the Hickok Cardmatic / KS 1587 or AN/USM-118. Would like the 'full' set including test and cal cards, in the accompanying case, but 'any' is better than 'none'.

Got the tester cheap (obviously!) now need to find the 'software'. Please reply off-list, thanks! Cheers John KB6SCO PS: Yes - I have a 390A, and yes, it'll be used for that...;}

From ka4prf at peoplepc. com Tue Apr 5 05:21:36 2005
Subject: [R-390] Filter Info

Hi all,

Sorry off topic. Can someone tell me the URL of a site where I can find the specs for a Crystal Filter I have by using the stock number on the filter? I have tryed searching, using Google, but nothing works there? Thank you Chuck ka4prf@peoplepc. com

From drewmaster813 at hotmail. com Tue Apr 5 12:36:52 2005
Subject: [R-390] PTO Decals

wrote: >If the decal is missing, chances are it is a Progressitron, good pto's bad >decals. Look on the back cover, if it has an Amelco stamp, it is a >Progressitron.

Repro Progressitron decals: an idea whose time has come . Hank Arney, are
you listening? Drew

From r390a at rcn. com Tue Apr 5 12:54:47 2005
Subject: [R-390] PTO Decals

>Repro Progressitron decals: an idea whose time has come . Hank Arney, are >you listening? >Drew

Are there any that have not crumbled away from which to make a copy? Hopefully any repros would be more durable.

From n4buq at aol. com Tue Apr 5 13:43:03 2005
Subject: [R-390] PTO Rebuild?

I don't recall any manufacturer markings anywhere on it. Any way to ID it other than pulling the can (and then I'd have to have some help to ID it). Thanks, Barry - N4BUQ

From Llgpt at aol. com Tue Apr 5 13:45:07 2005
Subject: [R-390] PTO Rebuild?

Barry and group,

Inside, it would look the same as a Collins, Motorola or Dubrow. AFAIK, theProgressitrons were used in the 1962 Amelco contract, whether or not TeledyneSystems continued to use them for the remainder of the 1962 contract or not. . Perhaps someone who owns a Teledyne R-390A with the 35064-PC-62 contract could tell me/us? The ones I have seen had bits and pieces of a blue decal left on the can and an Amelco stamp on the rear of the pto can. Trying to gather the history on the different contracts was a challenge aswas the information on the different suffix numbers on the Hammarlund SP-600series. Whenever I think I have "ALL" the information, I am provenwrong..... and continue to learn, even though my grown children have officially declared I am an "old fart. " Les Locklear

From r390a at bellsouth. net Tue Apr 5 14:57:57 2005
Subject: [R-390] Hank Arney Wish List

I'm with Drew on the Progressitron decals, maybe water decals for all brands. If not Hank, then whomever is good with water transfers.

I have a wish list item of my own. Repro "comsec" covers for the freq readout on the '390*. Might be a neat thing to have, not sure if enough folks would want them to make a short run feasible. Tom NU4G

From odyslim at comcast. net Tue Apr 5 14:01:52 2005
Subject: [R-390] WTB

Hi,

I would like to buy 1 each. Antenna relay, Carrier Meter, Line Level Meter for an R390-A. I have already asked Fair Radio. No luck. Thanks, Scott W3CV

From Llgpt at aol. com Tue Apr 5 14:06:05 2005
Subject: [R-390] Hank Arney Wish List

<Belly Laughing>
Contact Rick Mish on the "Intelligence Agency Black" covers, he removedbunches of them.....I threw away probably 2 dozen over the years, along withthose bogus micrometer bfo dials. Damn, I could have sold them on the E Placeand retired! ! ! ! ! ! ! ! <Still Laughing>Les Locklear

47. 2% of statistics are made up on the spot. Steven Wright

In a message dated 4/5/2005 12:59:12 PM Central Daylight Time,
r390a@bellsouth. net writes:

I'm with Drew on the Progressitron decals, maybe water decals for all brands. If not Hank, then whomever is good with water transfers.

I have a wish list item of my own. Repro "comsec" covers for the freq readout on the '390*. Might be a neat thing to have, not sure if enough folks would want them to make a short run feasible. Tom NU4G

From mtallent at highstream. net Tue Apr 5 14:21:00 2005
Subject: [R-390] PTO Rebuild?

I have a R390A with a Teledyne plate #3776 of that contract. I have owned it for about 12 years, it has a Cosmos PTO, a Capehart power supply and a Teledyne IF unit. I have removed the IF unit to replace the bad "brown beauties" , used a spare EAC IF unit. Works great and has original meters with "International" name on them.

Also have a Capehart with meters and Cosmos PTO and Amelco power supply, traded it from a friend that had it for about 20 years. Mike W6MXV

From Llgpt at aol. com Tue Apr 5 14:24:22 2005
Subject: [R-390] PTO Rebuild?

Thanks for the information Mike! Sounds as though you have one that wentthrough a depot overhaul. Nothing wrong with that though! Les

From w5kp at direcway. com Tue Apr 5 16:17:04 2005
Subject: [R-390] WTB

ATC has the relays, Scott. As for the meters, good luck. Jerry W5KP

From odyslim at comcast. net Tue Apr 5 20:39:34 2005
Subject: [R-390] WTB Still need meters & early Collins IF

OK, I have found the antenna relays. Thanks Barry.

I am sure there is one kind soul that will part with a couple of meters. I sure could use them. Also looking for an early Collins made IF for an R390-A The radio is number 43 to come off the line. Regards, Scott W3CV

From DJED1 at aol. com Tue Apr 5 20:44:42 2005
Subject: [R-390] PTO Rebuild?

Yep, my Progressitron is out of an Amelco from the '62 contract. Still has most of the label, but its starting to flake off. And the interior is similar to what I've seen on the net of other units using the corrector stack. Ed

From hankarn at pacbell. net Tue Apr 5 21:11:08 2005
Subject: [R-390] Hank Arney Wish List

A bunch of guys wanted Collins PTO labels for 390A. So I made them up for $10. 00 sharp looking adhesive backing peel and stick. How many stood up to the plate and paid for one. Jim Smith VK9NS and I furnished one to Pete William's in OZ because he bought a PTO from me.

You can not believe the cheap shots I get about making all of this money Lets see some one step up and get 20 orders prepaid up front in the amount of $17. 50 each mailed. You get the orders, the money, answer all of emails bitching about etc. etc. etc.

We can do any label that you want it just takes money for time, effort, materials. WE ALL KNOW MONEY TALKS AND WHAT WALKS.

One of my employees took 6 items to the PO one to IT and one to AU and Priority mail with DC. Gone nearly 2 hours. standing in line. He is on the payroll full time, still costs me over $15. 00 hour.

SO HERE I GO LAUGHING ALL THE WAY TO THE BANK. sure hold your breath. Sure I will do it just step to the plate and bite the bullet and quit bitching. Here I go sliding off of my soap box. Hank KN6DI PUT UP or SHUT UP HiHi

From Flowertime01 at wmconnect. com Tue Apr 5 22:21:17 2005
Subject: [R-390] PTO Linearity

Just out of curiosity, Roger, what was considered acceptable linearity for working radios, considering that the factory spec was 300 cycles? Ed,
----------I
Ed,

We would not even try to tweek the end points if it was off less than 3 Khz. As far as linearity went, if

you could get a cal tone to zero on the 100 KC within reach of the zero adjust it was good enough. Hay we were fighting a war abet a cold one.

We only checked the total spread end to end. If we could not get a fair end point adjustment, we sent the critter to depot exchange. We never tried to get inside one. You could still get brand new units from the depot, who would ever want to fix one?

Most of them were pretty good within the 300 Hertz factory spec. We just expected them to be linear and that was that nothing to inspect or test. The flip side was every shop did have a budget. We were putting hours on tubes 24 7 and needed lots of them. The teletype guys were also eating motor brushes, printer ribbons and paper. We would not go looking for items to change. We had a fairly loose 10 : 1 signal to noise ratio and did not work over time eking the extra out of receiver. We hated to give the operators real great receivers, they expected them to all work that well. We could spend time doing cleaning and alignment, theses were just time consuming and did not cost extra for parts. We were going to be on the bench for the hours so we did what we could with the time and tools to give the best we could for the operators. PTO were pretty linear and not worth the effort and cost over head to swap out.

You just were not going to tell the Warrant Officer you were dead lining a R390/A and wanted a PTO because the operator would have to zero it every 200 kHz. Roger KC6TRU

From Flowertime01 at wmconnect. com Tue Apr 5 23:08:12 2005
Subject: [R-390] PTO Tenny Bolts and war strories

Seen a dozen examples of how to adjust the linearity ring, none tell the wrench size for that tiny screw that I've been able to find. Most likely I missed that part of the instructions.

Tom, this is another one of the do it your self tool making adventures. A small slot in the end of a shaft.

Personally, I think that inserting any metallic object into the innards of the PTO may possibly upset the reactance of the circuit. 73,Glen Galati, KA7BOJ

Glen, the PTO assembly has a transformer on it. The can has an adjustable slug like the one on the top of the Crystal Osc deck. Some of the models have a round "nut" on the shaft with two flats. You need a slotted tool to fit the flats, or you turn the shaft with a pair of pliers. A good home made slotted tool is better. So you are not really going into the PTO to do an adjustment.

Strange but some times running the PTO for maximum signal will not give the best signal to noise. Mostly some where in the alignment process, you peaked the PTO transformer for maximum signal through the receiver. Usually some where above 8 MHz so the first mixer was not in the signal path mix. Do it this way until you have a week or so and want to play with your receiver. You can then try varying the coil adjustments and checking the signal to noise. Tweak and measure and tweak and measure and find the real good settings.

I don't have any B+ on the output cables of any of the 390's I currently have on the bench.

Once upon a time in Nam I had an R390 on the bench. I though I had an adapter cube from an AN/URM 25 that had a cap inside it. It in fact had been rewired straight through as a barrel connector. I did not know this and it was the only reason I was not shot. Plugged that critter in between the receiver and the only frequency counter in the whole shop. Smoked the front end resistors out of the frequency counter. It was dead lined for almost 60 days until the parts come in. That shop had no counter and there were

200 plus 33's that knew just who it was that killed the important item of test equipment. We ran the PTO cabled up in circuit with a Tee and cap. We had no idea how the load changed and just did it that way. It was so much nicer to use the frequency counter and not count cycles on the oscilloscope display. Sorry I do not have an R390 schematic to detail the exact reason the frequency counter will go up in smoke if not isolated. But I sure as hell barely lived through one experience with an R390 PTO that did smoke a frequency counter. Roger. KC6TRU

From pwokoun at hotmail. com Tue Apr 5 23:35:56 2005
Subject: [R-390] WTB Still need meters & early Collins IF

I have a project on the back burner to offer a very limited number of reproduction meters that will be offer to the list. Since original carrier meters are impossible to find, I'm using others that need a small DC amp to perform just like the originals. My prototype works perfectly. I planed on a tiny pc board mounted on the rear of the carrier meter to hold the dc amp. However my first batch of boards came out really crappy. Anyone on the list that can make some small pc boards from artwork? The VU meter and carrier will be matching with original style meter faces. This is a low priority project so don't hold your breaths! pete KH6GRT

From N4BUQ at aol. com Wed Apr 6 00:05:27 2005
Subject: [R-390] WTB Still need meters & early Collins IF

Pete,

There is a place I found on the web that will do small quantities of PC boards (even a qty = 1). I think I have the link at work. I'd be interested in one of the boards. I have some meters I'm planning on modding in the same way. The only thing I need is a way to reproduce the artwork onto the old meter faces.
If this works, I may just part with my original meters. I can't figure out how to get one of them apart to have it powder coated to match the rest of the front panel hardware and it doesn't physically match the original Line Level meter either. I'm holding onto them, though, until I can get these replacements working. 73, Barry - N4BUQ

From N4BUQ at aol. com Wed Apr 6 00:16:55 2005
Subject: [R-390] PTO Rebuild?

This PTO is out of a radio that is mostly Amelco (RF, OSC, P/S) with an EAC audio deck, a Stewart Warner IF deck, and a Teledyne tag. Definitely a depot dog. The PTO has no markings on it to indicate a manufacturer. Hopefully it will track okay. Barry - N4BUQ

From w6wy at citlink. net Wed Apr 6 01:08:34 2005
Subject: [R-390] Yosemite Sam on 3700 KC

I just heard this. Very weird. Just above the noise here. One of them pirates fooling around again.....

From r390a at bellsouth. net Wed Apr 6 10:32:15 2005
Subject: [R-390] Hank Arney Wish List

I don't think I've ever griped about you making too much money. The label and dial cover post was a comment on things I personally would like. I was hoping you would comment on that post with a cost or a minimum number or something. I sure as heck wasn't trying to pick a fight. 73 Tom NU4G

From w9wis at yahoo. com Wed Apr 6 09:44:39 2005
Subject: [R-390] Yosemite Sam on 3700 KC

"Sam" originated at the MATIC Contract Test Center on the Laguna Pueblo Reservation. (where military radios are tested over varying terrain). They may be running additional sites....and since late December they have also been running test data bursts...some in an unknown format ! Who said nothing interesting ever pops up on HF anymore ? Mike

From roy. morgan at nist. gov Wed Apr 6 10:46:17 2005
Subject: [R-390] PTO Rebuild?

wrote: >Thanks to all for the PTO links. Apparently mine is not a Cosmos. In fact, it's a "no-name". It does not have the extra opening for the corrector stack screws, so I assume I'm looking at one that will require shimming.

May I clarify a bit?

The Cosmos PTO uses a flexible disk with a series of adjustment screws to make the frequency correction. These screws are adjusted from the outside of the PTO case.

The other, "standard" design uses a stack of corrector plates and a corrector follower bearing to make the frequency correction. These plates are adjusted inside the PTO case by loosening the clamp screw and moving the plate "up or down" with respect to the frame. The clamp screw holds all the plates in position. Provision is made so that adjustments to one plate do not move the ones on either side of it.

>I'll have to check the linearity, and if it's off far enough, then it will be "stand back, Jim, I'm goin' in! "

Congratulations on having a stout heart. No doubt you'll have a success. As I understand it, adjusting the linearity a normal-design, corrector stack PTO involves the following points:

- The PTO cover must be removed, either once being replaced by a cover with an access slit cut in it, and a hole to get at the locking screw, or removed and replaced each time a correction or series of corrections is made to a plate or plates.

- a jig is very useful so the PTO does not need to be re-installed in a radio each time adjustments are made. The jig would allow setting the shaft to close rotational tolerances, supply power to the PTO, and perhaps provide a proper load for the oscillator output.

- A frequency meter is extremely useful

- mechanical means of moving each plate, and only one plate, a known amount is very useful.

- likely a computer spreadsheet or paper table would be most useful to correlate changes in set point frequencies with the mechanical movement made to each plate, in thousandths of an inch or millimeters

or whatever.

Likely, all this was done at the factory with the PTO brought up to oven temperature. Roy

From roy. morgan at nist. gov Wed Apr 6 11:08:18 2005
Subject: [R-390] WTB Still need meters & early Collins IF

wrote: >I have a project on the back burner to offer a very limited number of reproduction meters that will be offer to the list.

Pete, HOORAY. We Need this.

>...a tiny pc board mounted on the rear of the carrier meter to hold the >dc amp. However my first batch of boards came out really crappy. Anyone >on the list that can make some small pc boards from artwork?
I know of one company that makes lots and lots of boards in very small lots:

http://www. farcircuits. net/ They say: "...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...."

In addition, one fellow on the Greenkeys (teletype) list has made small runs of simple to complicated circuit boards for ham projects. He is: gil smith <gil@vauxelectronics. com>

There is a very lively industry segment supplying one-off or small runs of prototype or production circuit boards, although I don't know other companies. Some of them operate with all digital exchanges: you send a board layout file, they ship the boards back to you the next day, and you pay online.

> The VU meter and carrier will be matching with original style meter > faces. This is a low priority project so don't hold your breaths!

If we cooperate on this, we can accelerate the project. I'm willing to do part of what's needed. Roy

From JMILLER1706 at cfl. rr. com Wed Apr 6 11:10:23 2005
Subject: [R-390] PTO Tenny Bolts and war strories

I had to make my own tool by filing away on a small allen wrench until it worked more or less, but it was still a hassle to use. I seem to recall a post from someone last year I think that did identify the tool size and mfgr. , but I can't remember for certain. If you got a PTO with the slotted screws on the ring, you are lucky...some were made that way. Anyway maybe search the posts last couple of years for the topic.

From LairdThomasN at JohnDeere. com Wed Apr 6 11:33:51 2005
Subject: [R-390] RE: COSMOS PTO

>From the WC9M archives: Hope this helps, Tom Laird WC9M

The following is an old post from JB Harvie.....

Let me start by saying that the alignment of A COSMOS was for me a tough difficult and stress producing procedure. More than likely there are experts out in the group who will take exception to this "simple" posting.

Candidly speaking I suggest that anybody who is considering this closely assesses the performance of your PTO PRIOR to any opening up and set-screw adjusting, even though the performance might be off and you might be tempted to do so the as-is performance might just be as good or better than the following intervention you can likely make.

For a learning experience, on a spare unit, or if you are bold GO FOR IT!

I "tuned up" both a Collins and a COSMOS PTO on one of my R-390A receivers about 9 years ago. This is what would be along the line of what I did for the COSMOS unit.

It was a real pain in the rear and took me a lot of time but in the end, (no pun intended) performance was significantly improved. Today the receiver still operates no more than one tick (200 Hz) on all the calibration points.

With enough time and some care and some special tools you can work on the COSMOS PTO, results are dependent on your overall setup, equipment, time and finesse.

You must have a good stable and accurate frequency counter or some other means of measuring the PTO output to say 10Hz precision.

Some tips:

I found I could obtain better results by slightly loading the output of the PTO under alignment into a non inductive load.

Raise and maintain (for 4 hours minimum prior to any sensitive work) the PTO to a warm temperature by placing it under a 75 watt light bulb, mounted overhead, adjust the distance from the bulb to the PTO so that the unit runs at about the (indoor) receiver in-use operating temperature. Try to keep the temperature stable while you are working on the unit. If you must stop mid-stream you may have to back track and do it again, keep the light (heat) on at all times while you are working on it. If you keep the door closed on an inner work room I found the temperature variations are within a couple of degrees.

As you start to get into the PTO guts diagram everything you see as this is what will become your owner / operators and recovery manual for your PTO.

TAKE YOUR TIME

Mcmaster Carr sells adequate precision 6" and 8" diameter dial face plates with reasonable precision index marks for around $10.

Mount this dial to an Aluminum backing plate which has been drilled for the shaft diameter (0. 185 inches) and secured (epoxy is OK) to some sort of a shaft clamp, mounting close to center (0. 005") is somewhat important. Once your happy tighten up the clamp onto the PTO shaft, this gives you a good dial reference for making repeatable angular displacement measurements.

The 8 inch diameter dial, though bigger does a little better job to resolve, measure and enable a better than 400hz shaft angular result. If desired a 10 turn counter (with lock) can be added to the alignment

mechanism (such as the 400 series from Kilo International - Digi-Key page 376 in catalogue Q983 for $15. 75 part number 412KL-ND)

PTO basics
PTO provides range of 3. 455 to 2. 455 mHz span

therefor:
10 shaft rotation = 3,600 degrees = 1,000 kHz
1 shaft rotation = 360 degrees= 100 kHz

1/2 turn = 180 degrees= 50 kHz
1/4 turn = 90 degrees= 25 kHz
1/8 turn = 45 degrees= 12. 5 kHz
1/16 turn= 22. 5 degrees = 6. 25 kHz
1/32 turn= 11. 25 degrees = 3. 125 kHz

1/64 turn= 5. 625 degrees = 1,562. 50 Hz
1/128 turn= 2. 813 degrees =781. 25 Hz
1/256 turn= 1. 406 degrees =390. 625 Hz
1/512 turn= 0. 703 degrees =195. 31 Hz

* Operational Limit = 1. 79 degrees= 500 Hz
* (Reasonable) = 1 degree = 277. 78 Hz
* (Obtainable) = 1/2 degree= 138. 89 Hz

Per TM 11-856A paragraph #150:
. . Total End Point error on PTO not to exceed 500 Hz....(or about 2 degrees of shaft rotation)

To proceed:

Remove and open up the PTO

Remove the outer PTO can, heater and insulation (without trashing the thermal insulation)

Unsolder where necessary

Be gentle

Once it is opened up examine the PTO closely, look for damage or excessive lead screw wear. Lubricate the lead screw if absolutely necessary with an acceptable lubricant.

Mount the PTO to a suitable stable test fixture, mount and insure that the dial face is securely mounted and rotates perpendicular to the PTO shaft. Verify the turn counter works (if used) Insure you can gain access to and rotate the set screws. I had to make my own set screw driver as the set screws are real small! One option is to obtain the smallest possible driver and stone it down.

Mount and check that the reference pointer is secure and that the dial clears the sharp pointer by giving the dial a full turn.

You can place a fixed magnifier lens and lamp to assist you in seeing the lines as needed but with a 8 inches dial a 1/2 degree spacing is quite readable.

Connect up the power to the PTO,

Connect the PTO output to a load resistor and the frequency counter.

Bring up and maintain the (exposed) PTO to a "warm to the touch" condition with the lamp.

Turn on the PTO

Look for a frequency output.

Check the output vs. shaft rotation and move the shaft to get to the high end

Double check the output range (its still not to late to turn back :)

As you rotate the PTO you will see how the 40 or so adjustment screws are mounted in an perimeter array and what they do. These screws act to set into a precise position a metal ring on which rotates a coil plunger. The plunger depth is "modulated", by the degree to which the set screws deflect the metal ring. These plungers are what "trims" the precise PTO output frequency. As you rotate the PTO shaft the 40 or so set screws are need to be "adjusted" to precisely establish and define the mechanical plunger depth (position) so that the desired precise frequency output is achieved.

Keep track of which and how much you turn the set screws - make a diagram and keep good notes.

If you mess up take a break and start over.
Always check the end to end (10 turns) as well as the 1 turn performance.
After you are completed, turn the PTO off, let it cool off overnight, maintain the lamp in position, turn the PTO back on, let it heat soak for another 4 hours and (re) measure the results.

Settle for a reasonable performance level and call it good enough

Reassemble with care

Bottom line is: You will need to have a lot of time and patience however you can obtain extremely good performance with the COSMOS PTO.

From roy. morgan at nist. gov Wed Apr 6 11:33:59 2005
Subject: [R-390] Yosemite Sam on 3700 KC

wrote: >"Sam" originated at the MATIC Contract Test Center on the Laguna Pueblo Reservation.

There has been a report that the transmissions ceased at about the time a small group of avid HF listeners were near the front gate of the above mentioned site. It appeared to them that the unauthorized transmissions were being made by an employee at the site and that some official attention to the events caused him to quit.

My google search:
<http://www. google. com/search?hl=en&q=Yosemite+Sam&btnG=Google+>
finds 208,000 hits, but on the first page I find: http://www. spynumbers. com/YosemiteSam. html at which you can find a fairly authoritative history of the transmissions.

By the way, the transmission of the sound clip from a cartoon provided the name for these transmissions: "Yosemite Sam is an animated cartoon character in the Warner Brothers Looney Tunes series of cartoons. " Roy

From dathegene at hotmail. com Wed Apr 6 14:15:30 2005
Subject: [R-390] HP 8640B

Wee bit off topic, but if you guys don't know...

Looking for a HP 8640B; not worried about finding one because they come up on Ebay all the time, of course if you want to get rid of your spare...The real question is, where is a good place to get it serviced? (If I get one that needs a little work I'd like to know where to go in advance.) Let me say in advance THANKS for your help as always. 73 de NA0G Gene

From LairdThomasN at JohnDeere. com Wed Apr 6 14:21:07 2005
Subject: [R-390] RE: HP 8640B

Gene, If you can fix and align a R-390A, you can service a HP 8640B. Ebay has service manuals on CD for $12. They are modular in design with mostly plug-in boards. Some boards even have idiot lights on them to tell you something is wrong. All boards are color coded for their sockets. I love mine! Tom Laird WC9M Moline, IL.

From David_Wise at Phoenix. com Wed Apr 6 14:34:23 2005
Subject: [R-390] WTB Still need meters & early Collins IF

> > I have a project on the back burner to offer a very limited number of [snip] >However my first batch of boards came out really crappy.

A guy here at work recommends www. 4pcb. com . Check out the "bare bones" special, $0. 55 per square inch. You do the layout and send them Gerber and Excellon files. I will try them when I get finished with the 3DW7D. Regards, Dave Wise (SWL in Portland OR)

From David_Wise at Phoenix. com Wed Apr 6 15:04:08 2005
Subject: [R-390] RE: HP 8640B

> Gene, If you can fix and align a R-390A, you can service a HP 8640B. > Ebay has service manuals on CD for $12. They are modular in > design with > mostly plug-in boards. Some boards even have idiot lights on them to > tell you something is wrong. All boards are color coded for their > sockets. > I love mine!

That CD probably contains the same manual you can download for free from LOGSA. I'm not criticizing the CD, but you should know it may be redundant. That manual is also for a fairly early serial number. I sprung for a later paper one which cost a lot more but was worth it to me. Note that models equipped with Option 004 require a different manual, also available on LOGSA. Option 004 models can be distinguished by the appearance of the output control. Standard units have a single step attenuator; 004's have two. Dave Wise

From chacuff at cableone. net Wed Apr 6 15:57:44 2005
Subject: [R-390] HP 8640B

Well I have worked on mine myself. There is a local test equipment Cal Lab that has done of the equipment at work from time to time but I contacted them recently about running it through the lab to be calibrated and just about choked when he told me what it would cost. Wanted $800. 00. That exceeds the current market value of the generator. Mine works fine and has been compared to a couple of recently calibrated devices so it will have to stay that way.

They wanted $300 to cal my HP-3400 RMS voltmeter. It checks close as well. Not happening! Cecil. .

From chacuff at cableone. net Wed Apr 6 16:02:35 2005
Subject: [R-390] RE: HP 8640B

I agree with Tom...it's not hard to get around in.

The Calibration is a different story....requires some stuff most of us don't have...Your sensitivity measurements are useless if the output metering is uncalibrated....Cecil...

From jpl15 at panix. com Wed Apr 6 16:54:39 2005
Subject: [R-390] HP 8640B

wrote:> choked when he told me what it would cost. Wanted $800. 00. That exceeds the > current market value of the generator. Mine works fine and has been compared

Since I have a couple of labs worth of gear to keep cal'ed and spiffy for the Gummint and the ISO9000 Inspektors - I know, all too well, your pain.

However - it is possible that the cal lab might offer a "limited cal" or a "reference only" cal - I have this done to those instruments we use, but which are not directly in the audit-trail. Much, much cheaper - especially for home-bench use. Then you know your machine ain't lying to you all that much, but you get to keep your cash for critical things - like more boatanchor radio toys!

Ask 'em if they offer "verification only", "reference only", or "restricted use" services. Might bring it in within capture distance of your budget. Just my 200 millidollar...Cheers John KB6SCO

From r390a at bellsouth. net Thu Apr 7 00:00:20 2005
Subject: [R-390] Display covers wanted

The last "Hank Arney Wish List" thing I posted got a couple replies from folks rolling in the floor laughing 'cuz I actually want a readout cover flap, (or several of them.) I already have one, I just want one for each radio in the rack. (Or on the floor, eventually headed for the rack, whatever)

Seems many folks just tossed them in the trash years ago and didn't think much of them.

At risk of folks hurting themselves because they fell out of their chairs from laughing too hard, *does

anyone on the list* have one (or three) of these covers?

I don't see them as *RARE* *COLLECTABLE* etc enough to pay out the wazoo on ebay, I just want some because they look neat. Yea, I'm odd. I'm not going to sell them on Ebay, I just want them for my shack. thanks all Tom NU4G

From brumac at juno. com Wed Apr 6 23:18:21 2005
Subject: [R-390] R-390A: Xtal Osc Band Number Strip

Hi All,

Several years ago I seem to remember that someone had replacement band number strips that replaced the worn and/or missing numbers on the drum on the Xtal osc shaft. Does anyone remember who that was and if they are still available? Maybe someone has a program to print one out? Thanks, Bruce MacLellan

From chacuff at cableone. net Wed Apr 6 23:42:45 2005
Subject: [R-390] Display covers wanted

I don't think it odd Tom....I would like to find one myself to go on the one keeper radio I am building for myself. Would like to find the BFO vernier as well...They make great conversation pieces to have them on the radio when visitors see the equipment and ask "What's that gizmo for". The don't get in the way so why not...Cecil...

From chacuff at cableone. net Wed Apr 6 23:43:34 2005
Subject: [R-390] R-390A: Xtal Osc Band Number Strip

I think it was Chuck Rippel...Cecil. .

From barry at hausernet. com Thu Apr 7 00:36:50 2005
Subject: [R-390] Display covers wanted

Hi Tom & list ...

I have one of those, but need it for certain unspecified purposes, so not for sale.

However, I can offer you the official NSA replacement solution which made those flip up jobbies obsolete.

It's called R-390/R-390A/R-391/R-392 High Security Blackout Barrier and supplied in rolls 3/4" inch by various yardages. It's made of special high opacity black polymer vinyl with a self adhesive backing and is tamper resistant. You simply cut the proper length and apply to the counter window.

Oh, when you take delivery, you may notice printing on the inside of the spool that says "3M", "Scotch", "Tuck Tape", or something like "Yangtse Electrical Tape", or maybe even "Walgreens" or "Walmart's Own Brand". Ignore that -- diversionary countermeasure, y'know. You can hide it in plain sight.

How many rolls do you want? heh heh

OK, maybe that's some just ol' plain tomfoolery, oops -- sorry -- in this case, barryfoolery. But here's the real deal:

I've decided to put together several kits to upgrade R-390's to R-390H(S). H is for "hidden", S is for "secret".

Depending on level of the kit, this simply disguises your R-390(A) to look like a modern Sharp brand microwave oven, or provides full digital control through the modified microwave control panel. Rack mount or full cabinet models. Prices range from $799 to $4,999, excluding the R-390(A) which is user-supplied.

You can get a preview look at http://www. sharp. co. za/products/microwaves/brochures/R-390H. pdf#search='sharp%20r390%20microwave%20oven'

The full autotune model lets you just tap in the frequency on what look like oven controls. Mating motor drives turn the MC & KC shafts and the unit continously OCR scans the Veeder Root counter until the frequency matches the desired one. You can store up to 4000 frequencies and there is full timer control. Security? The glass in the front is very dark and a secret key press combination blanks the digital readout. No kiddin' Barry

From ham at cq. nu Thu Apr 7 07:00:19 2005
Subject: [R-390] R-390A: Xtal Osc Band Number Strip

Hi

David Medley had them a while back. Unfortunately he has moved out of the R390 stuff. Take CareBob Camp KB8TQ

From hankarn at pacbell. net Thu Apr 7 09:55:32 2005
Subject: [R-390] R-390A: Xtal Osc Band Number Strip

I have some, just have to find them. Hank KN6DI

From brumac at juno. com Thu Apr 7 10:00:24 2005
Subject: [R-390] R-390A: Xtal Osc Band Number Strip

Thanks Matt, please let me know when you have two that you can send me. Thanks to all who replied. Bruce

From n4buq at aol. com Thu Apr 7 10:07:23 2005
Subject: [R-390] R-390A: Xtal Osc Band Number Strip

Hank,

I think you put them next to those Cosmos PTO stickers. :-) Barry (duckin' and runnin' (to quote Nolan))

From chacuff at cableone. net Thu Apr 7 10:34:02 2005
Subject: [R-390] R-390A: Xtal Osc Band Number Strip

I need to find a few of those myself....

If whomever finds them would drop me a note off list as to the cost for a stick on strip I would appreciate it...I have several 390A's waiting in line for bench time. Cecil...

From roy. morgan at nist. gov Thu Apr 7 10:43:42 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

wrote: wrote: > >>choked when he told me what it (calibration) would cost. Wanted $800. 00. >However - it is possible that the cal lab might offer a "limited cal" > or a "reference only" cal - John, Cecil, and others,

(From the great cal lab in the sky...err...Gaithersburg - NIST, though I don't do anything of that sort in my job here....)

Here are some ramblings about the topic of calibration:

On "Accuracy of Measurements":
The expensive cal labs have three or four things we normally don't: 1) Fancy, specialized equipment to do the calibrations with 2) Reference standards "traceable to NIST" which costs them to keep current 3) Well worked out, "accepted" and proven procedures 4) Trained, experienced people to do the work

For example, in the measurement of frequency, as done in the calibration of a signal generator, the lab might well have a satellite-connected local frequency standard that is continuously monitored for drift and error. This thing is part of a system that does the monitoring, allows for periodic higher-level calibration, reports it's condition, and provides suitable output frequencies for use in calibrating other equipment. Nowadays it's unlikely that such a frequency standard it actually sent to NIST for calibration because satellite transfer methods exist. This establishes the "traceable" nature of that measurement. The procedures used in frequency measurements are probably not too complicated, but if you were to get a signal generator calibrated, you will be paying them to have a trained, experienced technician carry out the measurements according to the established procedures.

Measurement of frequency is easy out to 10^-12 or so, but that kind of accuracy in voltage and power measurement is not feasible. A check of the manual specs on the HP 8640 will show that the accuracy for output level is far lower than for the frequency.

On "Why do we do this?"
Some folks like John, KB6SCO, are responsible in an organization to make sure things are correctly calibrated. The organization's goals and customers require it and he has a full time job making that happen. Few Amateur radio stations need such calibration. Some Amateur radio folks WANT to know that their equipment is calibrated correctly. If a frequency counter is a little bit off, they won't like it, but a customer's crucial communications links won't degrade or fail. Some of us just like to mess with measurements and enjoy knowing our equipment is working right. For example, a while ago I got a General Radio Precision Capacitance Bridge that joins a similar inductance bridge here. I don't yet know if they are working right, but I expect to check them whenever I can. I have no earthly reason to measure inductors or capacitors to 0. 05 percent!

On "What can we do about all this?"
For many of us, doing it at home is a fine thing. Getting an instrument and an invoice for a big amount back from a Cal Lab is likely not in our future.

At home we can check frequency counters and generators with very small errors. Receiving the WWVB signals at 60 kc is the start of a system that gets you well within the specifications of most oscillators found in frequency counters and generators. For a couple hundred dollars you can buy a standard oscillator (surplus from the cell phone industry, as I understand it) that is extremely accurate.

Measuring resistance, inductance, and capacitance is a bit more complicated, but you can find reference standards at hamfests or on the web that will make a start at a set of known values. As you dig into the methods of measuring these values you will begin to understand the value of the setup and the methods you use and how they affect the results. It takes a small table full of inductance standards to calibrate a high accuracy inductance bridge, and these things have sold at fests and auction sites for $300 apiece and more.

Measuring voltage is even tougher at home. Systems to measure voltage to high accuracies is very complicated, often involving shielded rooms, calorimetric methods, quantum physics based references, and so on. Voltage reference instruments can be had on the used market the would be quite useful to check our DMM's however.

Careful web searching will reveal a lot of good information about electronics calibration. The Agilent web site has interesting reading. For example, I recently found a publication on Tips for Making Accurate Measurements or some such title. Any one of the setup diagrams in that one included at least $50,000 worth of their equipment, so it wasn't all that useful.

The NIST website, www. nist. gov, has lots of papers and reports but you have do dig for them (the search engine is terrible!) and you'll read about methods and techniques impossible anywhere but a national calibration laboratory in many cases. (How many of us have a cryogenic system capable of cooling a Josephson junction array to four degrees Kelvin?)

I think there are many things we can do in our basement workshops to both check the accuracy of our equipment, and give us many happy hours of time at the bench. If you want to know whether your R-390A is hearing 1 microvolt or nothing lower than 50, you have a shot at it. If you need to know that your signal generator is giving you one half microvolt to three decimal places, you probably have a ways to go. In the meantime, do have fun, and tell the rest of us about what you are up to. Roy

From roy. morgan at nist. gov Thu Apr 7 10:47:33 2005
Subject: [R-390] R-390A: Xtal Osc Band Number Strip

wrote: > Several years ago I seem to remember that someone had replacement >band number strips that replaced the worn and/or missing numbers on the >drum on the Xtal osc shaft.

It's a Word file, which I have emailed to Bruce.

Here's the header at the time the fellow posted about it here on the list:

From: K2CBY@aol. com Date: Thu, 8 Jan 2004 16:15:10 EST
Subject: Re: [R-390] Crystal osc. dial drum transplant Roy

From mbalaw at optonline. net Wed Apr 6 21:20:16 2005
Subject: [R-390] PTO Rebuild

I'd like to caution against jumping to the conclusion that the corrector stack needs adjustment whenever the PTO can't be made to track at the intermediate points. I tried once to adjust the corrector stack on a Collins PTO and made such a hash of it that the whole assembly wound up in my junk box.

I later discovered that the real problem is often much easier to solve. The problem in my case was that one or more of the little unencapsulated mica capacitors went west.

There is no way to adjust the shunt capacitance of a Collins PTO. All you can do is adjust the start point of the tuning slug and the little series inductor that is used to trim the end point. This means that there is a unique shunt capacitance which will make the tuning equation come out right at both ends and the middle. If that shunt capacitance changes because of aged components, no amount of fiddling the inductances will make the tuning linear anywhere except at the end points.

The procedure I followed was to adjust the start point and the end point as per the manual. Then tune the PTO to the midpoint (500). If the oscillator is high at the midpoint, add more shunt capacitance. If it is low, remove shunt capacitance.

Adjust both end points again per the manual and check the error at the middle. If it is still off, repeat the process.

We are only talking about 10 to 30 pf difference, but that small capacitance difference can knock the daylights out of the linearity by putting an "error bulge" in the middle.

When you think you have the middle and both endpoints "spot on," check the tuning error every 100 kHz. If there are two "error bumps" (at, say, 300 and 700) these can be washed out by simply over-compensating the middle so the error runs in the other direction.

By the way, I replaced the inner shield cover before each measurement.

The main thing to bear in mind is that the corrector stack was set properly at the factory. The main coil is heavily doped and is not likely to move or change. What IS likely to happen is a change in the shunt capacitance.

The shunt capacitors are intended to be temperature compensating, but this never bothered me much. Ordinary NPO ceramics seem to work fine. Miles Anderson, K2CBY

From n4buq at aol. com Thu Apr 7 11:35:20 2005
Subject: [R-390] PTO Rebuild

Hmmm. I'm familiar with setting the endpoint, but don't remember anything about setting the start point. I simply crank the shaft until I get the lower frequency, crank it 10 turns and adjust the endpoint to get 1Mc. Rethinking this, I may have been doing this backwards as well. Perhaps I'm supposed to be setting the endpoint at the lower end, not the upper end. Maybe it doesn't make any difference?

At any rate, I'd like to read more about setting the start point. Can someone point me to the document for

this? Thanks! Barry - N4BUQ

From wd8kdg at worldnet. att. net Thu Apr 7 11:42:37 2005
Subject: [R-390] T-207 T-401 (R-390A)

Good Morning to All,

Well I've been through the archives and didn't find much there and searched the Y2K manual. How does one adjust the two coils labeled T-207 T-401. There is one on the crystal oscillator sub-chassis and one on the rf sub-chassis. Beat me with a wet noodle if I've missed the procedure printed in the Y2K manual. They are in a Motorola, if it makes a difference.

Do I turn them clockwise to watch fire belch from chosen locations or counter clockwise just for magic smoke? Tnx,Craig

From JMILLER1706 at cfl. rr. com Thu Apr 7 11:46:29 2005
Subject: [R-390] PTO Rebuild

I went through a corrector stack adjustment last year and it took an entire weekend and some. It had to be changed quite a bit from factory setting. I suspect you have described the real cause of the change in linearity here. My corrector stack now looks like a "sine wave" almost, big hump near one end. Does anyone have an idea of what an ideal stack should "look like", or is it too hard to predict?

From brumac at juno. com Thu Apr 7 12:14:58 2005
Subject: [R-390] R-390A: Xtal Osc Band Number Strip

Roy, Thanks for the comeback and the file. Several others have expressed an intrest in this also. Thank you and all who have offered help. Bruce

From Lester. Veenstra at intelsatgeneral. com Thu Apr 7 14:30:50 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

By the way Roy, since my Rb standard dropped out of internal sync (one of many items on the "soon" to be fixed list, I find that the Selective Level meter, counter mode in 20 hZ bw, does a very nice job of keeping track of my local standard vs WWV at 20 mhz (propagation willing) to within better than 0. 5 Hz. Still not as good by a long shot from those GPS disciplined sources surplused from the Cellular industry, but it keeps me "glowing" Les

From chacuff at cableone. net Thu Apr 7 15:04:15 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

Les,

What are you doing reading the beat note with the levelmeter? I have a dedicated WWV receiver just haven't figured out how to use it as a reference. It receives WWV selectable from 2. 5 through 20 or 25 Mhz...whatever the top is.

I noticed my WWVB clock stopped sync'ing here a couple months ago after 2 years of flawless service. Put a new refrigerator in and changed the washer and dryer...that's all that has changed around here. I figured I have disturbed the signal somehow. I have tried several other locations in the house and no joy. Put it outside overnight and it works fine...bring it back in and it won't sync. Cecil...

From Lester. Veenstra at intelsatgeneral. com Thu Apr 7 15:10:54 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

Yes that is the process. It does it to 0. 1 Hz and does the calculations internally to display the Rx frequency. Not as nice as a phase lock system, but on a long haul HF path, not a bad process. I am using the HP 3586.

From Lester. Veenstra at intelsatgeneral. com Thu Apr 7 15:23:34 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

By the way, there is another similar process, that can give significant accuracy, that I have used, particularly for setting internal ref of a synth receiver. On a good day, on a good freq, at the right time, set up the R-390 (of course) in AM detection mode, on WWV with audio to scope.

Set up SSB receiver under test to same WWV carrier freq, with audio also to scope. (Dual trace sync to one trace, or XY, what ever you prefer)

When the 600 Hz tone is broadcast, adjust frequency standard for no drift or 1:1 ellipse.

From DJED1 at aol. com Thu Apr 7 15:29:46 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

Boy, you guys put me to shame. I was going along, setting the R-390A to WWV, and thought 100 HZ was close enough. Then I got the 8660 signal generator and figured out how to measure the beat note so I could read frequency to 1 or 2 Hz. Now you tell me that 0. 1 Hz is only OK accuracy! And frequency was the one thing I was doing good on- accurate to 1 part in 10^7. On my voltmeters, I was going by the consensus method: if two of them read the same then it must be correct. The trouble was that the two that agreed were a precision power supply that I got from a garage sale for $5, and a Radio Shack digital VOM from a similar source. I finally borrowed a calibrated Fluke (0. 025% accuracy on DC) from my son's shop and verified the the power supply and VOM were indeed correct to 0. 1%. Also verified that my H-P 400E was still good to 1% on AC volts. Fortunately, I calibrated my scope to the power supply, so it's good. And I used the scope to set up the URM-25, so it's good. Now if I could only get some precision caps and resistors to calibrate the rest of the VOM I'd be all set. Ed

From Llgpt at aol. com Thu Apr 7 15:30:36 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

writes: By the way, there is another similar process, that can give significant accuracy,

Geeeez, just tune to wwv (your choice of frequencies) and watch the linelevel meter adjust it so you can

read "each tick"..... we have equipmentto align "our" receivers that is waaaaaaaay more accurate than the receiverswill ever be. Just my 4. 5 cents (adjusted for inflation)Les Locklear

From mikea at mikea. ath. cx Thu Apr 7 15:34:46 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

wrote: > By the way, there is another similar process, that can give significant > accuracy,

Which reminds me: my WWV receiver has a scope built in, with provision for doing precisely that procedure using audio from its own internal audio and audio from another RX. Cool -- and glowbug -- device. I thought I had the manufacturer and model in my PDA, but I don't, and I'm at work right now. *sigh* Mike Andrews, W5EGO

From r390a at bellsouth. net Thu Apr 7 16:35:14 2005
Subject: [R-390] Cosmos PTO's R-390 non-A

Half the time the listserver kicks my email back as spam. The foolish posts get through though....Lets try this again

How common are Cosmos PTOs in R-390 non-A? I've only dealt with R390A's so figured I'd ask. The Cosmos appears to belong there, no evidence of mods, stamped crimped tag is marked P-723, etc. Tom

From Llgpt at aol. com Thu Apr 7 15:40:44 2005
Subject: [R-390] Cosmos PTO's R-390 non-A

writes: Half the time the listserver kicks my email back as spam. The foolish posts get through though....Lets try this again

How common are Cosmos PTOs in R-390 non-A? I've only dealt with R390A's so figured I'd ask. The Cosmos appears to belong there, no evidence of mods, stamped crimped tag is marked P-723, etc. Tom

I have seen some modified along with the other R-390A pto's for use in aR-390.

I'll never stoop low enough to call the R-390/URR a "Non -A".....:-) Les Locklear

From JMILLER1706 at cfl. rr. com Thu Apr 7 16:14:26 2005
Subject: [R-390] Identifying Collins 390a

Was watching the 390a videos yesterday and it was suggested that you could identify a true Collins 390a from the real panel (Collin has only one fuse), or from the front panel (the number "6" on all the control lettering is a slightly different font, and silkscreened letters), and by the COL serial number stamped on the modules.

I have what is supposed to be a Collins, but the front panel is engraved (letters punched in) and the funny looking 6 doesn't exist. I sent the panel out for repainting couple years ago, it was yellowed with cigarette stains, etc. Is it really true that Collins front panels are silk screened and all have this funny looking "6"?

From fosterp at wizard. com Thu Apr 7 17:41:01 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

Howdy, Me too - mine is traceable to Radio Shack Foster W4HCX

From ham at cq. nu Thu Apr 7 17:48:22 2005
Subject: [R-390] Identifying Collins 390a

Hi

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. Take CareBob CampKB8TQ

From tetrode at comcast. net Thu Apr 7 17:56:46 2005
Subject: [R-390] PTO Rebuild - and Core Disaccommodation and other effects

Hi Miles and group,
that's very interesting about what you have found about the PTO caps and corrector adjustments. No doubt the handful of old caps that are in that circuit contribute to many PTO problems but there are also another couple of ageing mechanisms at work, one of which can easily mimic the symptoms you describe and may be the "core" of some problems.

I've got a friend who is an old time Bell Labs engineer and fellow R-390 aficionado. Having worked there for a couple years well after it became Lucent I learned how long ago the facility used to be a place of expert manufacturing of *all* the parts used to build the telecom equipment; they did their own metal work, cut their own crystals, grew their own quartz, wound their own coils and transformers, silicon wafer processed to make their own transistors and ICs, and mixed and fired their own powdered iron and ferrite magnetic materials. They literally had train loads of raw materials unloading at one end of the factory while finished equipment was trucked out the other end; they were true masters of engineering and materials science. Well, that was then and this is now and most everything that one needs to build anything is available from a catalog but some of the knowledge remains.

Anyway, he was very familiar with the magnetics part of the operation and told me of the effect of magnetic core material disaccommodation which simply put is a naturally occurring decrease in the permeability of all core materials over time. The permeability change follows a log curve - it is rapid starting with the manufacture of the part but its rate of change sharply falls after a relatively short period of time but it does continue forever. In very critical designs the effects of disaccommodation are considered into the design and are translated into a typical lifespan for the part where it will stay in "spec". These PTO cores (as well as most other parts) are now 30, 40, and 50+ years old so it's safe to assume they are well out of their intended lifespan and can cause havoc and hair pulling when attempting precision measurements and adjustments of such things as linearity corrector stacks. It is his opinion that the R-390 PTO cores are affected by this effect and I also concur.

What the actual composition mix of the PTO core material consists of is anyone's guess but it's probably safe to presume it's some type of iron powder mix since its characteristics provide the best stability for LC resonant circuits, however the industry literature states that its disaccommodation factor is much higher than ferrite core materials and thus has more long term drift. What this means is that as the PTO

core ages its permeability decreases, so the PTO coil inductance decreases and the oscillator frequency increases. This is also the same symptom of an oscillator trimmer cap decreasing in value, so it makes sense that it could be compensated for by adjusting the value of the trimmer capacitance upward as Miles described.

There is also a second and perhaps even larger factor in considering PTO inductor value drift and according to the literature it involves the mechanical stability of the coil winding as it ages over time. Coil forms and even the binder material used to anchor the windings to the form do go through small dimensional changes over long periods of time. My *guess* is that the coil form shrinks which would mean a tightening of the windings and/or a decrease in the coil diameter thus a probable increase in the inductance. This is *counter* to the effects of disaccommodation but may explain why some PTO's tune "long" in span and why turns or partial turns have to be removed from the series-connected endpoint adjusting coil in order for it to get back in range. (BTW this endpoint adjustment coil is also susceptible to all the various long term drifts as well.) In this case a downward adjustment of the PTO trimmer capacitance might bring things back in the right direction.

High temperatures accelerate the effects of disaccommodation and coil dimensional drift, so maybe even whether a PTO was run with its ovens ON for a period of years had an effect on the various internal parts as well. Hopefully these various aging drift effects (and counter effects) and unknowns about the operating environment may shed some light on the all the crazy PTO symptoms seen and make them appear to be a little more science and a little less voodoo :^)

Lastly, one of the interesting things about disaccommodation which sets it apart from a pure aging process is that it is a resettable and repeatable effect. If the core material is raised above its Curie temperature (or even severely mechanically shocked) the core will reset to its *original* permeability value which will then start to decrease again at a logarithmic rate. If someone wants to win the R-390 Scientist of the Year Award a very interesting experiment would be to take an old PTO core and measure its permeability, and then bake it until it hits its Curie temperature (possibly a few hundred deg. C) and let it cool. Then let it age undisturbed for a period of a few months until it reaches the slow moving part of the disaccommodation log curve and measure it again. What you should now have is a PTO core which has been restored to its original factory permeability!

For the technical definition of Disaccommodation Factor see #12 of : http://www. elnamagnetics. com/library/catalogs/TGL/TermsDefinitions. pdf 73, John KA1XC

From w5or at comcast. net Thu Apr 7 18:00:26 2005
Subject: [R-390] Blue Striper Example

While looking for info on a Crosley Fiver AM/SW consumer radio I stumbled across this Stewart Warner picture and description. Kudos to whomever did the work. Looks good!

http://antiqueradios. com/gallery/view_photo. php?set_albumName=paul_shinn&id= R390A Don

From chacuff at cableone. net Thu Apr 7 18:13:18 2005
Subject: [R-390] Ramblings on Calibration - was: HP 8640B

Sounds Traceable to me...Cecil. .

From chacuff at cableone. net Thu Apr 7 18:20:37 2005
Subject: [R-390] PTO Rebuild - and Core Disaccommodation and other effects

So now we need to take into consideration the "Half Life" of the PTO cores as well as the meters and mechanical filters....Interesting. . Cecil. .

From odyslim at comcast. net Thu Apr 7 18:47:22 2005
Subject: [R-390] WTB update

OK,

Thanks to Barry, I have my antenna relay and thanks to Jim Miller, I have my meters.

I still need to buy an older Collins made IF. It is needed to complete the 43rd R390-A to come of the line. It is all Collins but the IF was changed at one time or another.

I will pay a good price for the IF and any condition is OK as long as it has not been hacked out. This is not for an eBay sale. It is for my personal use. Thanks, Scott W3CV

From ham at cq. nu Thu Apr 7 18:57:02 2005
Subject: [R-390] PTO Rebuild - and Core Disaccommodation and other effects

Hi,

There is a documented issue with the original Collins PTO design for the 390 and 390A. There is an article in one of the mag's about it. The dominant issue is mechanical with the coil form, but the material gets into the act as well.

At the insistence of Collins engineering I have run more long term drift tests on iron core coils than I care to remember. I have never found an issue that traces back to core materials in parts made of modern powdered iron compositions. Ferrites are a different animal entirely. When they are used as a core material there are long term issues.

Collins figured this out fairly quickly after the first 390A's came out. There are engineering documents somewhere on the topic. I once worked for one of the guys who was on the team that fixed the problem. They did get it right, the fix went into the R392. There are 392's that are significantly older than most 390A's, they run every bit as hot. They don't have the PTO problems. The 390A's have been "eating" PTO's since the mid 60's. There are documented stories of mountains of dead PTO's piling up out behind various depot locations.

The biggest mystery is this - If Collins figured out the problem and fixed in time for the R392 - Why did the world keep making the PTO's "wrong" for years and years after that? Nobody has ever come up with an answer to that one. The government certainly owned the rights to both designs. The R390A contractors followed the old formula to the letter, and the 392 contractors followed the new formula. It's not like they didn't redesign the 390A PTO a couple of times ...Strange Bob CampKB8TQ

From wewilsonjr at gmail. com Thu Apr 7 20:41:53 2005
Subject: [R-390] Blue Striper Example

Here's another example of what you can do with a blue striper: http://www. r-390a. us/SW_5157. htmWalter - KK4DF http://www. r-390a. us

From DJED1 at aol. com Thu Apr 7 21:23:24 2005
Subject: [R-390] Blue Striper Example

writes: > http://www. r-390a. us/SW_5157. htm Really nice work there Walt.

From mbalaw at optonline. net Thu Apr 7 20:31:11 2005
Subject: [R-390] PTO Rebuild

A couple of clarifications:

The PTO "tunes backward. " That is, the PTO frequency is lowest (2. 455 MHz) at the high end of the counter dial (999 or +000) and highest (3. 455 MHz) at the low end of the counter dial (001 or -000).

I used the terms "startpoint" and "endpoint" in my original post with reference to the alignment procedure in Paragraph 81 of TM 11-5820-358-35.

You can tweak the "startpoint" at 07+000 by slipping the Oldham coupler with respect to the PTO shaft. This sets the low frequency end to 2. 455 MHz with the slug pushed most of the way into the main tuning coil L702.

As you tune lower in frequency (per the counter dial), the slug is gradually withdrawn from L702; and the PTO frequency increases.

You adjust the "endpoint" at 07-000 by tweaking L701 so that the PTO frequency is 3. 455 MHz. L701 is in series with L702. Since the tuning slug is most of the way out of L702 at the "low end" of the dial, its inductance is smaller and L701 has a proportionally greater effect on the frequency.

To use a mechanical analogy, the "startpoint" (how far into L702 the slug starts its travel)is the point where you put the end of your "ruler. " The "endpoint" (the setting of L701) establishes the "length of the ruler. "

The shunt capacitors C701 (370 pF), C702 and C703 (10 pF each) affect the frequency at all points. The little 10 pF capacitors are naked mica squares with silver plates deposited on each side and very thin wire leads. They corrode easily and in my case they failed. The result was to create an "error bulge" midway down the dial after both 07+000 and 07-000 were set dead on. Miles, K2CBY

From djmerz at 3-cities. com Thu Apr 7 22:53:44 2005
Subject: [R-390] Blue Striper Example

Walt, it's a pleasure to see a good piece of "junk" restored to its previous beauty, especially when it's a radio, thanks, Dan.

From mikea at mikea. ath. cx Thu Apr 7 23:25:53 2005

Subject: [R-390] Ramblings on Calibration - was: HP 8640B

wrote: > Mike, > That WWV receiver with built in scope wouldn't happen to be a General > Microwave Model 550 WWV receiver would it? I have one and have been > searching for years for info and schematic on it.

It's a Specific Products (Los Angeles California) Model WWVC, with the following front-panel controls, display, and connectors:

X gain pot
X short pushbutton
X-input binding post (3-way: Hi/Lo-Z, ground)
Freq switch (2. 5/5/10/15/20 MHz)
Power toggle
RF gain pot
Limiter On/Off toggle
Intensity pot
Vertical pot
Vertical input binding posts (2)
mode switch (ticks/440/600/voice/compare)
focus pot
horiz pot
horiz input binding posts(2)
BFO on/off toggle
BFO freq pot
Tick level pot
Spkr vol pot
output pot
output binding post (3-2ay: hi/lo-Z, gnd)

The 3" (guesstimated) CRT sits dead center, Freq switch on the left, mode switch below the CRT, speaker symmetrically placed on the R to balance the Freq switch, which has a big aluminum skirt with the data silk-screened on.

I suppose I need to get an image on my website.

I think it's 4U high, rack-mount. Mike Andrews, W5EGO

From ghayward at uoguelph. ca Fri Apr 8 09:16:52 2005
Subject: [R-390] Ramblings on Calibration

High level calibration for the 390a is certainly worth while. Last week I was debugging a crystal oscillator and used the 390a as the monitor. It was as stable as my crystal for several hours and the frequency was dead on. The problem with the crystal was mode hopping as the water on the gold electrode surface evaporated. I know this sounds strange, but I use the crystals as bio- sensors. This series of oscillators is to measure blood clot busting drugs such as t-PA by growing a clot on the crystal and watching the frequency shift and series resistance change as the drug eats the clot. Gordon

From barry at hausernet. com Fri Apr 8 09:38:03 2005

Subject: [R-390] Ramblings on Calibration

Wow Gord ...

Does this mean the venerable R-390A will be "instrumental" in saving a lot of us from clots of doom? For the heck of it, try a small dose of DeOxit on some sample clots. Probably work better. If Caig could develop a non-toxic formula the added advantage is that the D5-V (vascular) would leave behind a protective coating to prevent further buildup. Side benefits -- possibly improved synaptic connections between neurons in the nervous system and cerebral cortex. Not to mention that DeOxit is, uh, an anti-oxidant - of sorts. Also, it's red, so won't clash color-wise.

Only one fly in the ointment - how to cure the patient without poisoning him to death -- but that's a classic drug development problem. And then, even after approval . . well you all know about that. Of course, blood tests would be needed to monitor liver function -- as with all of the meds these days. However, DeOxit may well clean the crud out of those too.

Interesting application -- yours -- though. Barry

From n4buq at aol. com Fri Apr 8 09:55:10 2005
Subject: [R-390] Ramblings on Calibration

Of course, as with so many other drugs they advertise these days, the side-affects might be nausea, projectile vomiting, projectile diarrhea, hair-loss, sweating, weight-gain, blurry vision, outer-body experiences, visions of sugar plums, and other things, but this might just be worth looking into. Barry - N4BUQ

From d. mcrae at telus. net Fri Apr 8 14:23:54 2005
Subject: [R-390] r-1230/flr slightly OT

Hi,

I had a couple of National R-1230/FLR counter measures receivers given to me last weekend, does anyone know what they are good for and how to power them up? They are ex-Canadian military, from a listening post on the Queen Charlotte Islands. From what I was told, they are a portion of a multipart system used for DF work. They are way to nice to take apart, the meters are R-390 size and many of the tubes are common. Any help would be appreciated . Thanks and regards, Doug

From w5kp at direcway. com Fri Apr 8 16:34:10 2005
Subject: [R-390] Ramblings on Calibration

On the contrary, that's a very cool application, Gord. Nice to know guys like you are working on stuff to replace this damned Coumadin (which is a brand name of Warfarin, which is actually common old rat poison) that I have to take every day. Thanks! Jerry W5KP

From Flowertime01 at wmconnect. com Fri Apr 8 18:38:04 2005
Subject: [R-390] PTO Rebuild

Does anyone have an idea of what an ideal stack should "look like", or is it too hard to predict?

The ones I looked at were fairly straight. Mostly even. The whole blog on setting the end spread, (Hi to low of Low to Hi depends on which way you want to spin the shaft first) and adjusting the caps to get the mid point correct is the way to go. Then you can try to adjust the stack to get closer at the other points. You would expect the stack to take on a sine shape. You are just looking to get every thing else as close to expectations and then get real close with the stack adjustment. The stack is the last thing to adjust not the first. Roger KC6TRU

From Flowertime01 at wmconnect. com Fri Apr 8 20:09:56 2005
Subject: [R-390] PTO Massive Deaths

The 390A's have been "eating" PTO's since the mid 60's. There are documented stories of mountains of dead PTO's piling up out behind various depot locations. Strange Bob CampKB8TQ

Yup,

The PTO was an exchange item not fixed at the organization level. New ones were to be had for exchange. So we just shipped one in and got a brand new one back if it even looked dusty.

Prior to the 70's most units did not have a frequency counter. So the unit had no way to do an end point adjustment. If the spread got to far off, (300 Hertz) the tech just did the paper work for a replacement. The PTO wound up in a stack at some Depot. Get a thousand stacked up and you consider a contract to refurbish. Until they went out of production, why bother just build me a new one please.

Until the late 60's did not under stand how the crystal ovens were cooking the receivers. It was common practice to run the receivers with the ovens on thinking it added something useful to crystal stability. Buy 1972 even sites on the DMZ in Korea were well heated enough that the receivers were run with the ovens off. If you had a Van full of receivers you just turned every thing on and let the shelter heat up until it was warm enough to work in. We had a MLQ24 van in Korea. It was a 3/4 ton truck and shelter. Some nights the Van was the warmest place on the site and all the off duty guys would sleep on the floor. Yup it was warmer in a Van full of tubes than in a block building with space heater glowing as red as the filaments in the vacuum tubes. I digress, back to PTO's.

PTO's were going to depot for all kinds of reasons. Lack of counters to adjust them. Killed from ovens being on in summer heat. Bounced down roads in Vans until something broke. Pulled coax connectors. The fair number of cold solder joints that would not be explored because the unit was an exchange item. You just trouble shot your problem down to the PTO and exchanged it. If a tube swap did not cure a PTO problem, it went to the big pile at the depot.

Once the depot sent big bunches off to a contractor to refurbish because new ones were not coming off the assembly line any more, the problems found were a variety of simple problems. Lucky for us so many got swapped out, there are lots spare units around today. Do you have any idea how many PTO's have been built into home brew VFO's? The contractor bitched that more problems were from the poor handling than actual problems with the PTO's. The issue became a good hour lecture on the handling of PTOs in the R390/A class room buy 1968.

Most were just needing end point adjustment. The little wiper was dirty and PTOs warbled. Some were

cooked from their own oven heaters. A few had broke cores from bad G's. Some had broken pins on the wire harness. There were a number of cold solder joints. The upshot was, tech started to inspect PTOs when problems occurred and frequency counters were added to the R390 service bench. Roger KC6TRU

From ham at cq. nu Sat Apr 9 09:01:30 2005
Subject: [R-390] PTO Massive Deaths

Hi

Actually yes I do know that quite a few PTO's wound up in strange places. Back when I was in High School I bought part of one of those piles of PTO's and spent a couple years selling them at the local hamfest ...Take CareBob CampKB8TQ

From w5or at comcast. net Sat Apr 9 11:09:09 2005
Subject: [R-390] Re: PTO Massive Deaths

Hmmm, Can you recall any published construction articles in the ham literature using these PTOs. I can't. Don

From wd8kdg at worldnet. att. net Sat Apr 9 12:19:53 2005
Subject: [R-390] Help getting unstuck!

Craig, Let us know what it is when you fix it. Tnx Chuck

Chuck/All:

Tried the usual fixes: Checked C327 & C286, they were both fine according to the TO-6A. Decided to read some of the older archives and found a post in April of 2000 with a solution worth an attempt.

Seems another Motorola owner had the same low sensitivity symptoms below 8MHz and noticed an open connection on pin 7 of V207. He installed a jumper between pins 2 & 7, to fix his dilemma. Looking at a pin-out of that tube it has an internal connection between 2 and 7, I couldn't see where adding a jumper on the tube socket would make a difference. My Motorola was the same and had some flakey readings on pins 5 and 6 also. What the heck, it would only take a few minutes to try. Well it worked! Now have all bands working fine. Could of been a bad solder joint on pins 2 or 7??

By the way, while going through the RF coil alignment per Y2K R1, I thought the sensitivity of the lower bands were still below those above 8MHz. So I went back to section 4 and ran the sensitivity test as per 4. 3. 1. 750kHz and 3. 25MHz were lower than the rest. Peaking T207 on the RF deck brought those two up to spec. So now, with a URM-25D with no sticker traceable to NIST, the sensitivity is 3uV or just below.
Next step is to put up an antenna better than a test lead.
Tnx for all the help, those who wrote the Y2K manual and post information on this reflector are a great asset! 73's Craig

From ham at cq. nu Sat Apr 9 12:58:38 2005
Subject: [R-390] Re: PTO Massive Deaths

Hi

About all I can directly swear to is that there are a couple hundred hams out there who were $3 to $5 poorer in 1968-69. Most all of them said they were going to take them home and make a VFO out of them. The main idea was that the Collins PTO was more stable than what you might find in other radios of the era. Of course I have no idea what happened after I got my $5 ....Take CareBob pKB8TQ

From r390a at bellsouth. net Sat Apr 9 14:35:48 2005
Subject: [R-390] Need 4 pin "GRC" input connector

Am looking for a chassis mount 4 pin input connector, old style (pre-VRC-12) Attached filter does not matter as I only need the connector (and mounting nut) Thanks Tom NU4G

From Flowertime01 at wmconnect. com Sat Apr 9 21:37:45 2005
Subject: [R-390] PTO Massive Deaths

The question was "has anyone seen an article to use PTOs as VFOs. "

Sorry, it ain't going to happen. 1970 was to far after W. W. II. In the 50's it was cool to rework and home brew radio. So there were lots of stuff to do.

A couple thousand PTOs is not enough market for a magazine article. Two small of an audience. In 73 Wayne Green turned down my R390 alignemnt and tube substitution story. Good stuff, but audience is to small for subject matter.

By the 70's every one was into rice boxes and the magazines were/are pushing appliance operation. Novices were stuck with crystal control transmitters. No one wanted any one except a FCC compliant manufacture building a VFO. Just because some folks are leading edge engineers that does not mean most of the radio community is. It is far more important to knuckle under to less than savvy cheep TV owners than require them to get their education up to snuff and get a life or at least a TV that can deal with the real radio world.

Look at the Radio Amateur Hand Book since it went to the large format. Build things? I do no think so. As soon as someone finds a way to UPS you an antenna tower for $299. 95 even the antenna building articles will be gone. Long live the NorCal guys, at least they are trying. Roger KC6TRU

From r390a at bellsouth. net Sun Apr 10 00:50:56 2005
Subject: [R-390] Restoration Candidates or Organ Donors

On the site that shall not be named. Item 5766571300 is an R-390A that doesn't look bad if you discount the green tube shields, "shock-o-matic" power cord and Radio Shack knobs. Same seller also has an R-390 that looks as if it it missing the antenna relay. No bottom shots of either but if all the innards are there, these look at first glance to be in better shape than the Saint Julien's Creek radios.

Just a heads up. Looks like one of us (?) has already started the bidding. Tom NU4G

From ham at cq. nu Sun Apr 10 07:47:05 2005
Subject: [R-390] Restoration Candidates or Organ Donors

Hi

Other than his reference to Collins in both auctions he seems to be representing what he is selling fairly accurately. From that point on it's just what ever a bunch of crazies are going to bid it up to. I would guess the first radio will sell for at least the value of the meters. Take CareBob CampKB8TQ

From g4gjl at btopenworld. com Sun Apr 10 09:15:46 2005
Subject: [R-390] PTO Massive Deaths

What is Nor Cal? Pete G4GJL

From w5or at comcast. net Sun Apr 10 12:13:03 2005
Subject: [R-390] PTO Massive Deaths

You are likely right about the small audience in the seventies, Roger, but dig up that article, blow the dust off, and put it right here on the list. Or send it to wordsmith Barry Hauser for the new improved HSN coming on line soon. Don

From N4BUQ at aol. com Sun Apr 10 15:00:48 2005
Subject: [R-390] 1. 0 and 0. 1 filter settings

Can someone give me the "Reader's Digest" version of how these two settings work in an R390A? I'm working on restoring the modules for my newest project. After replacing C553 (just to be safe), I plugged it in place of the IF deck in my working R390A.

It seems all four filters are working; however, when I switch to 1. 0 or 0. 1, the signal disappears almost completely, no matter how closely I tune to the frequency. I can see that the crystal and its parallel adjustable capacitor are always in the circuit, but going to 1. 0 switches out the extra cap and switching to the 0. 1 position adds some extra circuitry into the mix.

I don't quite understand how these other two settings do their job. If someone could elaborate, I'd appreciate it. Thanks, Barry - N4BUQ

From N4BUQ at aol. com Sun Apr 10 15:02:42 2005
Subject: [R-390] PTO Massive Deaths

I think he is referring to a kit manufacturer. I have one of their kits that I've never assembled. I don't think they offer it anymore. Hmmm, maybe I have one of those R@RE unbuilt kits! ? Barry - N4BUQ

From djmerz at 3-cities. com Sun Apr 10 15:57:08 2005

Subject: [R-390] 1. 0 and 0. 1 filter settings

Barry, the crystal may appear to always be in the circuit but it is bypassed by C501 when the switch is in the 2,4,8,16 positions. The crystal filter is effective only in the 1 and . 1 positions. Apparently something is not adjusted correctly in the crystal filter or the crystal is defective, which is causing the filter to reduce the gain considerably. I don't recall messing with the crystal filter neutralizing in my 390a which is covered in the Y2K manual; others may have words of wisdom about problems that arise in the crystal filter circuit, Dan.

From paul at pdq. com Sun Apr 10 20:37:13 2005
Subject: [R-390] Restoration Candidates or Organ Donors

wrote: > On the site that shall not be named. Item 5766571300 > is an R-390A that doesn't look bad if you discount the green > tube shields, "shock-o-matic" power cord and Radio Shack knobs.

Beware on the R-390 (non-A) - it has a cosmos from an R-390A hacked into the wiring - hard to tell how much of a mess was made. Otherwise looks fairly complete, but clearly needs restoration. I'd say a reasonably nice candidate, since the VFO and relay are fairly obtainable. A new picture was posted of the bottom of the R-390...Paul

From ka0ofp at yahoo. com Sun Apr 10 21:12:03 2005
Subject: [R-390] 5814A Tube

Hello All,

I have a question for the group about the 5814A tube used in the R-390A's. What I am wondering, has anyone used the 6189W in place of the 5814A? Will it work as well as the 5814A? I beleive it is a 12AU7A. Guess mybe I should just find some spec sheets on the tubes but thought I would run it past the group.

I have a large number of the 6189W tubes and a couple R-390A' that I need to keep glowing! ! ! Thank you in advance. Jon KAØOFP

From Radiograveyard at aol. com Sun Apr 10 21:41:42 2005
Subject: [R-390] 5814A Tube

My "Rider H A Middleton Tube Sub Guide" Give the following;
6189 = 12AU7 Good
6189= 12AU7WA Excellent
5814= 12AU7 Good
5814= 5814WA Excellent
5814= 6067 Excellent
No mention of 5814 = 6189 go figure Hope this helps it seems it will work. Regards Pete

From r390a at bellsouth. net Sun Apr 10 22:57:34 2005
Subject: [R-390] 5814A Tube

Jon --

I've used the 6189* as a sub for the 12AU7* in various things with little problem. They seem to be a good sub for the 5814A/12AU7A in the '390/390A, at least I've had good luck with them. If you've got 'em use 'em. Tom NU4G

From r390a at bellsouth. net Sun Apr 10 23:14:16 2005
Subject: [R-390] Restoration Candidates or Organ Donors

Luckily I have a roomful of R-390A's and R-390's.

Guys, look closely at the audio deck. Is that a test adaptor where V-602 (12AT7) should be? V-606 (6082) appears to be a non-vacuum tube. Yea, yea, little teenie small things, but as Paul points out, the PTO is hacked in and as I mentioned the antenna relay is missing. While none of these things are really "bad" who knows what has been done underneath the various chassis. On top of all that, it's a Motorola and not a true sacred Collins (PBUA)* relic. Tom NU4G *Peace be unto Art.

From youngbob53 at msn. com Sun Apr 10 23:54:47 2005
Subject: [R-390] What is the difference between 390 and 390A

Hi,

I'm new here, I'm a BCB dx'er and plan on buying a Collins within the next year and was recommended to come here for help by a fellow member of the NRC. I'll probably have a lot of questions and my first one is what is the difference between the 390 and the 390A? Which would be better for BCB DXing? Also I use a nice HQ-180 right now, can anyone compare the two for me? thanks, Bob Young

From jmiller1706 at cfl. rr. com Mon Apr 11 03:21:53 2005
Subject: Fw: [R-390] Identifying Collins 390a

Thanks Randy for your info. I am forwarding to the list for info.

Well it looks like I managed to buy (several years ago) what was advertised as a Collins 390a on e-Rip, but somewhere along the way it lost its original front panel, either during depot work or later restoration. The chassis is definitely Collins (by your criteria) as well as the modules, except for the IF which is Motorola (a nice performer however). A word of caution to the wise: before buying an advertised "Collins" 390a, first assume that it is not....check the criteria Randy lists below, eyball it. A word to sellers: if you falsely advertise a radio as Collins, using fake tags, non-Collins replacement modules/panels, etc. , do us all a favor and go crawl under a rock. Thanks....Jim N4BE

From djmerz at 3-cities. com Mon Apr 11 04:54:10 2005
Subject: [R-390] What is the difference between 390 and 390A

Bob, first, I think all of these are excellent radios. I've owned one of each but don't have the 390 operating yet. My impression so far: the HQ 180 is excellent for am and ssb as built and has very good agc for both of these modes. In that sense, it is easier to operate over a wider range of signal strengths and takes less manual tweaking of the rf gain. It is an easier radio to surf bands with because the tuning

knob covers the ground easier. Of course, the digital readout on the 390's is inherently more accurate though I considered the HQ 180 to be good enough. There is a very simple mod for either the 390 or 390a that improves the agc characteristic but it still isn't as good as the HQ 180 for ssb. The HQ 180 has pretty good audio, as I recall. The R390a and R390 have perfunctory audio amplifiers and a lot of users want to make improvements. There are a couple of obvious ways to do that involving either modifications of the audio circuits or using an external amplifier, easily connected to terminals on the back of the set. The R390a uses mechanical filters and the audio suffers somewhat from that. The 390 uses LC i. f. tranformers to attain selectivity and has a more pleasing sound than the 390a as a result. I believe the 390a is considered easier to maintain, one reason being that there seem to be more spare parts and chasses available for the 390a. One modification of the 390a is to stick the 390 i. f. chassis in it(requires modification) to give it a more pleasing sound. I did this with my 390a and I modified the audio chassis to improve the audio. The audio chassis mod was the bigger improvement of the two. The nice thing about these mod's is that they are completely reversible by sticking the original i. f. and audio chasses back in the radio. Of course this means that you purchase the extra chasses. There are other differences between the 390a and 390; the 390 has a more elaborate power supply (more heat) and an extra front end rf tube/tuning circuit. I believe the 390 and 390a are capable of better sensitivity and resistance to overload than the HQ 180 but I can't recall if this is documented as a direct comparison. I think from a practical point of view, resistance of the 390 and 390a to overload from nearby strong stations is more important than the differences in sensitivity. The biggest difference in receiver quality is obvious upon examinination of the guts of the 390 and 390a radios compared to the HQ180; the tuning of various stages as co-ordinated by the gear train is unbelieveably elaborate. Once you've seen it, all the other considerations take a back seat and other radios have a hard time competing even if they hear every signal that the 390 picks up. Watching the gears is almost as good as listening to signals. Currently it is my radio of choice and I doubt it will be replaced. When I'm in a hurry and the 390a is not on, I'll fall back to the NRD-525 but the audio of that set always disappoints me compared to the 390a with the 390 i. f. and modified audio chassis. I think the 390a had better audio than the 525 even before I made those two mods.

It took me about 10 years of serious radio tinkering before I owned a 390a, mostly because I was more interested in older radios. The thought of not owning one (and now two with the 390 recently acquired)now seems unacceptable. I think some of the guys in this group feel that the 390 is the radio of choice, a "real radio" and one owns a 390a because the 390's aren't as available. When I bought my 390a about 5 years ago, it seemed that a lot more 390a's were being offered for sale than 390's. I suspect the popularity of the 390a is simply related to the fact that more of them were made and it's a darn good radio. I finally bought a 390 as well - to restore it and see if I could appreciate the difference firsthand. Surprisingly, I paid less for the 390 than the 390a but the 390a worked with little fuss and the 390 so far has unknown problems causing weak reception but sold as an operating set. I'm sure I'll be back here asking more questions once the power connector arrives and I bring it to life.

Which one is better for BCB dxing? I would venture that the extra rf stage in the 390 adds something, namely better protection from off-frequency strong stations. And considering the i. f. 's, at narrow selectivity, the 390 LC i. f. should sound better than the mechanical filters in the 390a. I have to think that the 390 would be better than the 390a in light of these two aspects. But at this point realize that I'm inexperienced with the 390 and slightly biased - I have to think my 390 is going to have some pluses over the 390a other than my being able to look at another set of gears go around in a different fashion. Dan

From ham at cq. nu Mon Apr 11 07:23:59 2005
Subject: [R-390] What is the difference between 390 and 390A

Hi

Quick score card:

R390 not an A = IF filters are easier on the ears for AM
R390A = Narrow band settings are best for congested bands on AM, especially below 8 MHz.
R390, 390A = better for stability, set them on channel and they don't drift ever.
HQ180 = easier for band cruising. Especially true of bands that lap over a MC boundary.
HQ180 = better on SSB (without any mods)

Obviously the answer is that you need several of all three. Take Care! Bob CampKB8TQ

From odyslim at comcast. net Mon Apr 11 08:09:43 2005
Subject: [R-390] R390 on eBay

Take a closer look at the R390 on eBay. The one with the missing antenna relay. The harness by the PTO has been cut or maybe chewed off by mice. Since there are little mouse droppings in the radio, I am guessing it was mice. Scott

From chacuff at cableone. net Mon Apr 11 09:15:42 2005
Subject: [R-390] Identifying Collins 390a

Well the "Collins" radio's may not have had the MFP coating applied when new but many acquired the coating after delivery at some point.

Folks are way too hung up on the "Collins" built radios which are the oldest of the entire series and I have not personally seen nor heard from this group that they are any better built radio's than the others. The fact that they seem to bring more at auction is a false economy....but one that will continue to be exploited I'm sure. There is no basis for it. As mentioned the 67 contract EAC is not only the newest of the series that is commonly available but also has incorporated some more modern touches in it's manufacture that does add value. One of the ugliest radio's to pass through my shop was a 67 EAC and one of the cleanest is my 56 Motorola. (all Mot. modules) I am going through a Stewart Warner (all SW modules) that is an SJC survivor and it is amazing how well it held up to the weather and how it has cleaned up. So don't feel like a second rate citizen if you own either one of those two makes of the 390A series. They are great radio's too! Cecil...WB5VCE

From chacuff at cableone. net Mon Apr 11 09:19:00 2005
Subject: [R-390] What is the difference between 390 and 390A

The king for years was the Hammarlund SP-600....Cecil. .

From r390a at bellsouth. net Mon Apr 11 09:34:37 2005
Subject: [R-390] What is the difference between 390 and 390A

And don't forget the SP-210 and it's cousins. Nice push-pull audio out, continuously variable bandwidth, etc. Age wise, it's the grandaddy of the SP-600, but still a good rx nonetheless. Tom

From dmetz at ntelos. net Mon Apr 11 09:46:11 2005
Subject: [R-390] r-1230/flr slightly OT

Doug et al:

Good luck. I used to have several of them with a PS no less and finally sold it. Here is a brief problem description. It is only the front end! No IF and beyond. It outputs a signal at roughly 60 khz that went into something else for getting the signal out. So, I once thought of taking a HQ170 and interrupting the signal path to inject the signal there provided I would be able to move the expected signal of the 170 by 5 khz. Then the PS also needs to output a 5Mhz signal standard in addition to the filament and B+. Lastly, and the best of course is this radio was from the spook world. It was part of the FLR9 system and they still think it is classified so probably of obtaining info is zilch. However, someone told me once that Fair Radio had a partial copy of the manual. Very impressible receiver , just not very useable. Supposedly they were used in this system with 16 radios plus a few for backup for DF work with the Wullenwebber array antennas. I'm sure everyone has dreams about putting that one together. 73's dave

From hankarn at pacbell. net Mon Apr 11 09:53:41 2005
Subject: [R-390] What is the difference between 390 and 390A

The R&S EK-07 still wins hands down PERIOD. Hank KN6DI

From n4buq at aol. com Mon Apr 11 10:23:22 2005
Subject: [R-390] 1. 0 and 0. 1 filter settings

Dan,
Thanks for the reply. I see what you're talking about now. I didn't realize the cap's job is to "bypass" the crystal, but okay on that.

The problem seems to have fixed itself somewhat. I'm in the process of recapping the IF deck. I'm replacing a few caps at a time and testing between each "session" to make sure I haven't toasted anything. If it stops working, I'll be able to narrow down where I may have botched something. I replaced the two cathode bypass caps last night and DeOxited the bandwidth switch contacts. The last test seemed to be a lot better than the first one. The signal doesn't drop nearly as much as before.

I washed the deck thoroughly Saturday afternoon and thought I had it dried out pretty good, but perhaps there was still a bit of moisture hiding in critical places and that may have dried out better overnight. Perhaps the cathode bypass caps in the first IF amp were leaky. Not sure what improved it, but it appears to be working now.

Six paper caps down in the IF deck and nine more to go. I'm sure glad this is my hobby! Some of these are a real pain to replace! Thanks, Barry - N4BUQ

From roy. morgan at nist. gov Mon Apr 11 10:35:05 2005
Subject: [R-390] PTO Massive Deaths

wrote: >What is Nor Cal?

QRP Club of Northern California http://www. norcalqrp. org/

Here is a mini-diary of my search for them: I think it's the http://www. norcalqrp. com. But it's not, see below...

I find a kit offered at:
http://www. amqrp. org/kits/blt/blt. htm
But the two links at the bottom of that page do not work:

http://www. norcalqrp. com/blt/n8ieblt. htm
http://www. norcalqrp. com

At another place
http://members. fortunecity. com/xe1bef/qrp-clubs. htm
I find a listing for them:
"<http://www. norcalqrp. com/>Northern California QRP Club (NorCal) -
Worldwide membership group offering kits and a quarterly magazine for members. Includes articles, contests, kit details, and software. " but it goes to the second link above.

At another site,
http://repairfaq. ece. drexel. edu/REPAIR/F_Mail_Order5. html#MAILORDER_020
I find: " 10. 5) QRP Club of Northern California QRP Club of Northern California Jim Cates, WA6GER 3241 Eastwood Road Sacramento, CA 95821

Name:NorCal (Northern California) QRP Club
Date Founded:1993
Number of Members:200
Cost to Join:$10
Annual Dues: $10
Publication Name and Frequency: QRPp - quarterly
Net(s): None

This is the club that has had a succession of incredibly popular kits, ranging from the Norcal 40 (and now its successor, the 40a), the Sierra, and soon a QRP SSB kit. "

FINALLY, I found them at: http://www. norcalqrp. org/ Where they say:

" NorCal was founded in May of 1993 by Jim Cates, WA6GER and Doug Hendricks, KI6DS. Its purpose was to promote QRP. The club has grown beyond all expectations, and now has members all over the world.

Membership in NorCal is free. All that you need to do is say that you would like to be a member and you are one. We don't have a journal, we don't have regular business meetings, but we do have regular social meetings every month. The reason to be for NorCal is to have fun with radio. There are no dues, no membership requirements, no treasurer's reports, no secretary's minutes at our social meetings, just good old QRP fun! !

The club is probably best known for its many kits, which started with the NorCal 40, designed by Wayne Burdick, N6KR, that is credited with giving the club a huge boost when we were getting started. Wayne later designed a couple of other famous kits for us, including the 49er and the Sierra. We have kitted antennas, antenna tuners, transmitters, swl receivers, ssb transceivers, simple receivers, QRP amplifiers, paddles etc. The club has broken new ground by establishing benchmarks for quality

manuals and kits. The club will continue doing kits, with the profits made from them all being used to promote qrp as we give back to the hobby...." Roy

From David_Wise at Phoenix. com Mon Apr 11 11:14:35 2005
Subject: [R-390] 5814A Tube

The 5814 uses more heater current than the 12AU7, 225mA vs 150mA per section. Thus it's not always possible to swap; it depends on the circuit, hence the "good" vs "excellent" rating in the chart below. There's no way to divine the 6189's current, gotta see a data sheet.

In the R-390A this is irrelevant since all the 12AU7 heaters are operated in parallel. R-390 owners, I don't have the schematic handy but I bet they're in series; look before you leap. 73, Dave Wise (SWL in Portland OR)

From tetrode at comcast. net Mon Apr 11 11:33:14 2005
Subject: [R-390] 1. 0 and 0. 1 filter settings

Barry,

I'd recommend removing the cover from the L503 coil, and pull the 455 KC crystal out of its socket and give the pins a cleaning and De-oxit treatment. John

From tetrode at comcast. net Mon Apr 11 11:34:59 2005
Subject: [R-390] EK-07 Appreciation Tour

> The R&S EK-07 still wins hands down PERIOD.

Hi Hank,

you know I believe you, but the problem is that those receivers are so darn rare I've never ever seen one except on Ebay and in the article published in Electric Radio a while ago. So outside of yourself and a handful of hardcore tube radio collectors nobody understands how good they are. And the multi-Kbuck price tag is another thing; for that kind of loot I'm thinking I'd have more fun putting down a payment on an old motorcycle instead of yet *another* boatanchor radio.

So here's what I propose..... . The EK-07 Appreciation Tour! , it works like this.....

You ship one of those bad boys over to a list member (I'll start), and we each get a week to listen around on it and find out how deficient and physically puny our beloved R-39x's are in comparison. And during that time we each promise to take meticulous notes on its superiority and post the results here, and also to everyday at sunrise give a snappy heel-click in the direction of Munich (location of Rohde & Schwarz world HQ).

Finally after our week is up we then take care of shipping it to the next guy on the appreciation tour list and include an extra $5 towards a kitty to reimburse you for the original shipping cost. At the end of the tour, about a year, the result will be a small horde of EK-07 fans who will then acquire one at any cost and before long we'll create our own EK-07 mailing list. Sound cool or what! ;^) John

From n4buq at aol. com Mon Apr 11 11:50:34 2005
Subject: [R-390] 1. 0 and 0. 1 filter settings

John,

Yes, I'll need to do that. I wasn't sure if the crystal was soldered or plugin. I'm guessing it still had a considerable amount of humidity in that area when I first tried it which could have had an adverse affect on the crystal's performance. Thanks, Barry - N4BUQ

From Lester. Veenstra at intelsatgeneral. com Mon Apr 11 11:54:42 2005
Subject: [R-390] EK-07 Appreciation Tour

Or more to the point, prior to the appreciation tour, what performance areas does the R&S EK-07 stand out from the "390"'s. And, are any of the standout performances measurable in a defined test procedure. ThanksLes K1YCM/3 (R-390, R-391, R-390A, FRR-59, R-9000)

From wa1qhq at yahoo. com Mon Apr 11 11:59:11 2005
Subject: [R-390] EK-07 Appreciation Tour

I would think that an added benefit would be to make the shipping company very wealthy and of course the poor EK07 worse for the ware from all those drops off the back of the UPS truck, come to think of it those things were built like Panzer tanks they probably could take the drop off the UPS truck with no damage.

If you want to find one at a reasonable price check the EBay UK and Germany sights they are on there and are not anywhere near the price you will see them for domestically of course shipping costs have to be considered. Mark WA1QHQ

From Llgpt at aol. com Mon Apr 11 12:32:19 2005
Subject: [R-390] Identifying Collins 390a

My sentiments exactly! The Stewart Warner's and Amelco's have the heaviestcoating of alodining I have seen, the 67 EAC's must have skimped on thatprocess, just a light spritz of water/cleaner and the modules are "silver".

With a few exceptions, the Collins are worst looking of the manufacturers,due mainly to there age. Cecil and I had a few Collins R-390A's a while back and they were the cleanest Collins 390A's I've witnessed in many, many years. Of course ymmv.

One thing that is certain, they "ALL" had to meet the same specifications in the end. 'nuff said.
Les Locklear

In a message dated 4/11/2005 8:16:31 AM Central Daylight Time,
chacuff@cableone. net writes:

Folks are way too hung up on the "Collins" built radios which are the oldest of the entire series and I

have not personally seen nor heard from this group that they are any better built radio's than the others. The fact thatthey seem to bring more at auction is a false economy....but one that willcontinue to be exploited I'm sure. There is no basis for it. As mentioned the 67 contract EAC is not only the newest of the series that is commonly available but also has incorporated some more modern touches in it's manufacture that does add value. One of the ugliest radio's to pass through my shop was a 67 EAC and one of the cleanest is my 56 Motorola. (all Mot. modules) I am going through a Stewart Warner (all SW modules) that is an SJC survivor and it is amazing how well it held up to the weather and how it has cleaned up. So don't feel like a second rate citizen if you own either one of those two makes of the 390A series. They are great radio's too! Cecil...WB5VCE

From jamminpower at earthlink. net Mon Apr 11 12:45:21 2005
Subject: [R-390] EK-07 Appreciation Tour

> ...and before long we'll create our own EK-07 mailing list. > Sound cool or what!

I moderate an EK-07 mailing list. You can subscribe at: http://groups. yahoo. com/group/ek07/

To date, it's been a bit quiet. Wouldn't hurt to liven it up a bit. James A. (Andy) Moorer

From djmerz at 3-cities. com Mon Apr 11 13:18:09 2005
Subject: [R-390] What is the difference between 390 and 390A

Hi Bob/Cecil, that's the reason I let the HQ 180 go - I have an SP-600 - though considering the product detector and better agc of the HQ-180, the SP-600 isn't superior in all respects. But it's more my kind of radio and those "deficiencies" could be fixed if it really mattered. I like it as-is. The only satisfactory solution is to have enough space and to fill it up with more radios. Dan

Date: Mon Apr 11 13:52:12 2005
Subject: [R-390] Real Old Collins 390a

This is a pic of my all Collins, the oldest one I've seen. http://www. geocities. com/courir26/390Asn7. jpg
By dumb luck this is the first one I ever got and it was very clean. May be the exception and not the rule. I've seen more clean all-EAC's than anything. Tom

From liber. fab at iol. it Mon Apr 11 14:16:06 2005
Subject: [R-390] 390A Brands + EK07...

Hello all,
as about last messages, several years ago I decided to trade my EAC for an all-Motorola...A friend of mine convinced me to do it, being sure of Motorola excellent mfg, and I'm still grateful for his advice ! !

R&S EK-O7 is fairly common here in Italy, if someone is so interested to afford shipping costs I will help him to buy. In any case, it seems an old, medical machine...:-) 73, Fabio, I0LBE

From hankarn at pacbell. net Mon Apr 11 14:29:49 2005
Subject: [R-390] EK-07 Appreciation Tour

First this unit crated ships at 215 pounds so to heavy for UPS.

Someone must be smoking funny stuff to think we are going to send out a $3000. 00 radio for a year and let every one and their brother get hold of it and try to re-engineer it. Maybe if the panel was WELDED shut.

Better yet why not get a group of guys together to buy it and then pass it around to the next guy in the chain, say 3 to 500 miles apart and drive and pick it up. use for the agreed time and pass it on. I would still be inclined to weld the panel closed for the tour.

It is modular in construction but not for the weak hearted to work on. It is not a 39XX type for field work. They are built like a tank.

There are few available in Europe at different prices and condition. From 300 to 1000 Euro's. Then they have to be crated, taken to an airport and shipped. Airfreight for personal cost will run 6 to 1000 bux depending on location.

And if you go to Germany to look at it and check it out add $1500. 00 at least. Now you want to go and the XYL says not without me and now you are down another $4000. 00 because she has to see this or that and go on her shopping spree, add another $2000. 00 now the EK-07 is at 10K or so. Hank KN6DI

From w7md at comcast. net Mon Apr 11 15:08:54 2005
Subject: [R-390] What is the difference between 390 and 390A

Hello Bob,

I use a HQ-180, R390 and R390a.

The 390 radios have more accurate frequency readout, to start. This is not surprising since they cost a fortune in 1950s and 1960s dollars when they were manufactured. They have the best freq readout of probably any non digital radio ever made.

The 390 and 390a have the ability to listen to "wider" signals which means better audio fidelity when you want to listen to broadcast music. What the HQ-180 has, that the 390s don't, is a tunable notch filter. I use the Hammarlund mainly for SWL and the 390s for ham radio. The mechanical filters in the 390a are more effective for rejecting interference than the LC filters in the 390, but may give somewhat poorer quality audio fidelity at the same bandpass width. The R390 may be a little more sensitive than the 390a. It has an extra stage of RF amplification but this probably doen't really make much difference as both radio are very sensitive; otherwise, the Collins engineers wouldn't have removed the extra stage in the redesign to make the 390a.

If you get a 390 or 390a, then you will have a considerable expense in getting it restored to its original operating specifications. There are only a few people who know enough about these radios to properly restore them. Hope thmis helps, Damon Raphael, W7MD Tucson, AZ

From levyfiles at att. net Mon Apr 11 15:26:19 2005

Subject: [R-390] EK-07 Appreciation Tour

Better yet lets all buy a Winradio 313i and pass that around. A couple of ounces..... Easy on the back! wglevy@att. net

From wa1qhq at yahoo. com Mon Apr 11 15:27:22 2005
Subject: [R-390] EK-07 Appreciation Tour

I wonder if you flew to Germany to get it, if the airline would mind if you took it back with you as checked on baggage...ohhhh my back.

Seriously, I have been in the international terminal at LAX waiting for a flight to Asia and saw people with carts stacked with televisions, VCRs, microwaves, kitchen sinks etc. waiting to check this through as baggage. Has anybody ever tried transporting a boat anchor this way and was it worth it, assuming you had to be in the country anyway for other reasons.

From tetrode at comcast. net Mon Apr 11 15:42:08 2005
Subject: [R-390] What is the difference between 390 and 390A

Bob,

in addition to what's already been said, for *your* particular BCB DXing application I would rate the R-390A preferable to the R-390, but not overwhelmingly so.

The 1st mixer is the first weak link in the RF chain, and the R-390 has two stages of gain ahead of it which put a much hotter signal into the mixer thus decreasing its intermod performance. The reason for 2 RF stages was image rejection, not sensitivity, and as you know when listening to the BC band it is full of power house signals that need to be dealt with.

The A's are also much easier to find, fix, and maintain, and it doesn't need to be a Collins manufacture unless you seek bragging rights.

The sharp mechanical IF filters in the "A" are also excellent for filtering away adjacent channel signals. John

From ba. williams at charter. net Mon Apr 11 15:51:55 2005
Subject: [R-390] Identifying Collins 390a

I have both the PH-56 and 67 EAC radios.

Through personal experiences, I have found that most women can identify the R390A over the non-A by the odor alone. The A has infinitely more testosterone over the non-A. Women react to this. They report that the non-A is too wimpy for them. They get weak in the knees along with a dreamy, far away look in their eyes in the presence of the R390A. I Joe Foley

From bill at iaxs. net Mon Apr 11 16:16:23 2005
Subject: [R-390] Identifying Collins 390a

Joe Foley said,

"Through personal experiences, I have found that most women can identify the R390A over the non-A by the odor alone. The A has infinitely more testosterone over the non-A. Women react to this. They report that the non-A is too wimpy for them. They get weak in the knees along with a dreamy, far away look in their eyes in the presence of the R390A. "

Ah, yet another person confuses perception with reality. :-) Women don't like either one. They don't fit their color scheme. Regards, Bill Hawkins

From Llgpt at aol. com Mon Apr 11 16:31:15 2005
Subject: [R-390] Identifying Collins 390a

A Joe Foley Pretender said..... .

But, everyone who is even a tiny bit knowledgeable about the two receivers,knows that the truth is:The R-390/URR is a "MANS" radio, whereas the R-390A/URR is a "BOYS" radio. " Neil Clyne G8LIU said that! And, he was correct. Les Locklear

From youngbob53 at msn. com Mon Apr 11 16:34:06 2005
Subject: [R-390] What is the difference between 390 and 390A

I'd like to thank all of you for taking the time to answer my questions of which I'm sure I'll have plenty more in the next months. You've helped me to decide which one to buy:

1. 390
2. 390A
3. SP-600
4. keep my HQ-180
5. many others. haha! Bob Young

From wa6knw at sbcglobal. net Mon Apr 11 16:41:01 2005
Subject: [R-390] Re: EK-07 Appreciation Tour

My EK-07D only cost me about a week of work repairing a pile of them for the German Consulate in Dallas TX about 25 years ago. They had about 15 radios with only 5 working but in need of alignment. So I got them 10 working radios, one for a test fixture, and three complete sets of spare parts. My charge was one working radio from the batch. I was in Oklahoma at the time still in the Army. They delivered and picked-up. I spent about three and a half weeks over all going thru the radios in my spare time. RICH WA6KNW

From tetrode at comcast. net Mon Apr 11 17:06:14 2005
Subject: [R-390] What is the difference between 390 and 390A

Hi,

I just browsed both Collins engineering reports in the Reference section of the R-390 FAQ page http://www. r-390a. net/ and they didn't say anything about that. However Final Engineering reports listed the reasons for the double RF as image rejection and minimization of "spurious responses". Their methodology involved putting both RF amplifiers under AGC control which then kept the signals to the 1st mixer low enough. Later during the cost reduction redesign they found that using a single RF stage with the newly available 6DC6 tube provided just as good AGC control. It's a good read.

I have heard of some WWII receivers that were specially built to minimize the osc leakage through the antenna input for the reasons you mentioned, the National brand comes to mind but I could be mistaken. John

From brumac at juno. com Mon Apr 11 17:22:21 2005
Subject: [R-390] What is the difference between 390 and 390A

Hi Bob, I say AMEN to that! My 180AX and SP 600 will never part company with me and my R-390As'. I keep the Kenwood R-1000 for the grand kids to play with. Bruce

From wjneill at lcc. net Mon Apr 11 17:46:27 2005
Subject: [R-390] Identifying Collins 390a

Given the evident scientific basis for this commentary, where, on the testosterone scale, would the R-389 and 51J4 be found? I have had more than one personal experience of an esoteric nature where running my 51J4 in dual-diversity with one of my EAC R-390A's was quite memorable, running radio-teletypewriter traffic. Going from 60wpm traffic to 100wpm traffic was particularly rewarding. For me. Bill Neill Conroe, Texas

From tetrode at comcast. net Mon Apr 11 18:04:24 2005
Subject: [R-390] Identifying Collins 390a

Ha!

Joe I bet you sprayed your R-390A with Axe Body Spray when nobody was lookin'. Women will even rub frying pans on their butt if it's been in remote contact with that stuff. http://www. chron. com/cs/CDA/ssistory. mpl/features/sewing/2972676 John

From chacuff at cableone. net Mon Apr 11 18:15:54 2005
Subject: [R-390] Identifying Collins 390a

He thought that's what they meant when they said to destroy the radio with an Axe if faced with the possibility of it falling into enemy hands....Gives it a little shot everyday to protect against that...

Of course everybody know what women really find sexy is a mans..... . Tractor! Cecil...

From barry at hausernet. com Mon Apr 11 18:28:45 2005
Subject: [R-390] Flying with boatanchors

I don't recommend flying with a boatanchor as checked (or unchecked) baggage. The airlines are tightening restrictions -- or more firmly applying existing ones -- regarding number and weight of bags -- individual and overall.

We go to trade shows with a check-able display packed into two 4 ft high by 1 ft square cases with handles and wheels. They weight about 55-65 lbs each. Last time they were about to give us some trouble with them or try to charge us extra. Next time -- in a few weeks, who knows?

Coming back from a vacation via Heathrow some years ago, British Airways told us we were overweight (yeah, put on a few lbs. too.) -- we bought a lot of stuff, adding up to nearly 90 lbs for the three of us. Charged us air freight to the tune of something like $2 and change per pound. Stuff wasn't much of a bargain with that included.

Another problem -- radiation and chemical detectors. They open up those display cases and swab all the surfaces with some kind of cloth swatch thing and put it in an analyzer. The concoction of chemicals in the typical boatanchor would probably shut the air terminal down and abort all flights ;-)

Then, I read somewhere that in some countries, they get concerned about the word "receiver". The writer warned travelers and shippers to call the thing a "radio". (So take the tags off.)

Sound paranoid -- I just overheard a few mins ago on CNN something about a "man in black" with two suitcases at the Capitol building. They dragged him away and blew up one of his suitcases as a precaution. The x-ray showed what appeared to be wires and a battery. It was his CD player. If I didn't know many boatanchors inside and out -- particularly the R-390's -- I might suspect a portable nuclear device. Two meters, with some trace radiation, lots of round knob things, gears, cylinders -- including a big one in the meter, and yes ...a coundown timer -- doesn't look like a radio dial.

If you want to risk it, call the airlines first -- all the ones you're taking. Also, take out the power supply and maybe another module and pack separately to keep the individual weight down. Carry one change of clothes in a carry on bag -- or ship your clothes back.

They're nailing things down on weight to conserve fuel -- even talking about surcharges for overweight passengers. Also -- if everyone packed max allowable weight and then some, the planes wouldn't get off the ground. That's another thing -- they may refuse to put it on board if the flight is full and "heavy". They might offer to put it on a following flight -- for the freight charge - or direct you to a freight company which might be difficult to arrange and still make your original flight.

Parting thought -- how about those baggage handling systems and, uh methods? Barry

From bipi at comcast. net Mon Apr 11 19:09:43 2005
Subject: [R-390] Identifying Collins 390a

Orgasmic! 73 de Mike K7PI

From redmenaced at yahoo. com Mon Apr 11 19:23:43 2005
Subject: [R-390] Identifying Collins 390a

wrote: > > I have both the PH-56 and 67 EAC radios. > > Through personal experiences, I have found

that most > women can identify the > R390A over the non-A by the odor alone. The A has > infinitely more > testosterone over the non-A. Women react to this. > They report that the non-A > is too wimpy for them. They get weak in the knees > along with a dreamy, far > away look in their eyes in the presence of the > R390A.
++++++++
By way of reply to this cheap solid-state imposter-ior:

Most women I've witnessed in view of either receiver OR the T-368 had NO clue what they were looking at and had no desire to learn, much less allow such things anywhere near their habitation as the challenge of decorating around them poses too much stress. Joe

From redmenaced at yahoo. com Mon Apr 11 20:28:02 2005
Subject: [R-390] What is the difference between 390 and 390A

wrote: > The king for years was the Hammarlund SP-600....
+++++++++
But you havent' tried the Howard 435A Joe

From chacuff at cableone. net Mon Apr 11 20:54:56 2005
Subject: [R-390] What is the difference between 390 and 390A

You are right...they are pretty cool to look at as well.

I like my SX-28A now that it's electrically restored...nice audio and tuning system. (gears) Will look nice in it's cabinet with matching speaker up next to the R-390A in it's cabinet..... Cecil...

From Flowertime01 at wmconnect. com Mon Apr 11 21:06:16 2005
Subject: [R-390] What Nor Cal

Nor cal,
Oh a fat fingered name for a group of hams. Did stuff like tuna tin and some QRP direct conversion receivers. Mostly tried to get some folks to at least solder their own together. Roger KC6TRy

From Flowertime01 at wmconnect. com Mon Apr 11 21:13:35 2005
Subject: [R-390] 1. 0 and 0. 1 filter settings

OOPS, Have you pulled the cover off Z501 and observed that there is a crystal in the location?

Just one step in the trouble shooting process. The crystal is 455Khz and they get garbed for other projects. Roger KC6TRU

From ba. williams at charter. net Mon Apr 11 21:17:16 2005
Subject: [R-390] Identifying Collins 390a

> Most women I've witnessed in view of either receiver > OR the T-368 had NO clue what they were looking at and > had no desire to learn, much less allow such things > anywhere near their habitation as

the challenge of > decorating around them poses too much stress. > > Joe

My first R-390A, the Motorola PH-56, stayed on my night table for a month when I first got it in a SP-600 cabinet. The wife didn't mind at all. Later, it went in a stereo rack, still in the bedroom. (g)

This is the honest to goodness truth, and I think I've told the story on the list before. I knew a guy who lived up the street and routed the Army MARS traffic from Ft. Rucker to his house as a remote station. His master bedroom, where he and his wife slept, had over 30 radios in it. Some were boat anchors. There was more test equipment than I could look at, and 3 computers for running packet. He had it all on 2 long, folding tables. It was stacked 4 deep in some places and on the floor under the tables. She put up with it and she was a honey to look at. She didn't seem to mind at all. The real Barry

From ham at cq. nu Mon Apr 11 21:21:10 2005
Subject: [R-390] Flying with boatanchors

Hi

It's not just the airlines. I went down to UPS today with a "few" boxes to ship. This is the way it went:

Haul up the 400 pounds of boxes to the counter, print out the stick on labels. Begin the interrogation process from the counter person:

Question: Anything electrical in the boxes?

Answer: (stupid me, they are not electrical, they are electronic) ...yes, radios.

Question: Radios?

(several inane questions and answers back and forth - communication obviously is not taking place)

problem is bucked up to higher authority.

Supervisor: Radios?

Answer: Tube type military radios

Supervisor: What kind?

Answer: SP-600's and R-390's

(Heavens open up, bright light begins to shine, trumpets sound in the distance ...)

Supervisor: PRC-77's were what I used to work on, R390's were pretty much gone by my time. You pack them good?

Answer: Yup, pink construction foam on all sides ...
Supervisor: If they survived the military for 30 years that should work fine....

Ok, so how many UPS sites are run by ex-military radio technicians? It might be a good idea to phone ahead and check before you go down to ship anything in the future. The only alternative if he had not

shown up probably would have been to haul the 400 pounds of boxes back to the car and drive down the street to Fed Ex. Enjoy! Bob CampKB8TQ

From Flowertime01 at wmconnect. com Mon Apr 11 21:41:41 2005
Subject: [R-390] What is the difference between 390 and 390A

Bob, >From 68 through 75 I was an Army Tech (33C) and made a living servicing R390 and R390/A for literally thousands of Ops (05H) who made their living lessening to them.

>From the listen point of view, there were no signals either receiver could not hear. Would an Op copy the signal was a different subject?

The R390 IF does not ring like the mechanical filters in an R390/A a ditty OP did not care about the IF deck ring. Us SSB and AM listeners do notice the difference.

The R390 and R390/A are both bad mouthed for the AM audio quality. There are easy work around.

The R390 uses a pair of 6082 series voltage regulators that you can cook on (at least heat rations). With today power line voltages in the states the power supply regulation is over kill.

Sensitive wise the receivers are pretty equal and better than any thing else. The Army tried a lot of other receivers and the R390 R390/A were the intelligence intercept receivers of choice. When you need to roll up and down the bands chasing RTTY, and Dits on a demanding schedule The R390 and R390/A would get it on frequency and out of the atmospherics day in and day out.

Now if you just want to listen to a little AM radio on Saturday afternoon, there are some other options.

Either model any manufacture. There all above average. Once you get it working again you will keep it working and wonder why you were ever without one. Roger. KC6TRU

From mjmurphy45 at comcast. net Mon Apr 11 21:48:35 2005
Subject: [R-390] What is the difference between 390 and 390A

That's right Bob. We like all of them. What we need is a radio performance scale. Let's call a command set receiver a 2 and an R-390 a 9. This ought to bring out the natives. . Here is the scale:

1. Knight Space Spanner
2. ARC-5 Command Set
3. Heath HR-10
4. BC-348
5. Hallicrafters SX-28
6. National HRO
7. Hammarlund HQ-180
8. Drake R4B
9. R390A
10. Murphy MB-40

Mike MurphyWB2UID

From Flowertime01 at wmconnect. com Mon Apr 11 21:52:20 2005
Subject: [R-390] 1. 0 and 0. 1 filter settings

I wasn't sure if the crystal was soldered or plugin. Thanks, Barry - N4BUQ

_____
Say what? This is a 1950 Military radio design. Its repairable. Solder a crystal in 1950? That would be alien technology. Roger KC6TRU

From r390a at bellsouth. net Mon Apr 11 21:53:07 2005
Subject: [R-390] Identifying Collins 390a

Actually my wife thinks our house full of tube radios is "cute. " While I agree with her on the R-390(*)s, the WRR-2 and T-368 in pieces in the living room are far from cute. Maybe if I drank heavily enough..... hehe Tom NU4G (Who's a teetotaler these days)

From Flowertime01 at wmconnect. com Mon Apr 11 22:06:11 2005
Subject: [R-390] Air freight

I wonder if you flew to Germany to get it, if the airline would mind if you took it back with you as checked on baggage...ohhhh my back.

Folks,

The question was baggage. You can do air freight. You drive the rental car and anchor to the air freight terminal point and pay some bucks to get the crate loaded on the same flight you will fly. Check in the rental car and checkin for your flight. On the other end you pick up the car and drop by the air freight terminal and pick up your anchor.

Worked for Hughes and Raytheon until I retired. This was standard procedure. Here state side we would pack a 200 - 250 pound two man lift crate. (Please do no tell OSHA we did a two man lift on 250 pounds on and off a tail gate.) You could have that crate go alone for just under $100. 00 about 45 - 50 cents a pound. Roger KC6TRU

From Flowertime01 at wmconnect. com Mon Apr 11 22:10:24 2005
Subject: [R-390] Identifying Collins 390a

Women don't like either one. They don't fit their color scheme. Regards, Bill Hawkins
---
Didn't we fix that on the bay with the multi colored front panels?

From gwmoore at moorefelines. com Mon Apr 11 22:12:18 2005
Subject: [R-390] Flying with boatanchors

Hi, Bob, and the R390 List,

While we are on the subject of flying with boatanchors, let us not forget the dastardly OA2 and its equally sinister cousins which are filled (gasp, get the moon suits and evacuate 18 square miles) Radioactive Material (shudder, abject fear, call the swat team, the anti-terrorist squad, arrest that man,) And, at the same time,. lets not ever forget the indicia, the switch markings and the meter dials which contain (holy contaminants, Batman, that's Radium! !), Security staff: Yo Bubba, we got ourselves a GEN -YOU-WINE TERRORIST HERE,THIS STUFF HAS RADIUM, DON'T THEY USE THAT TO MAKE NOOK-LEAR BOMBS, BUBBA?????? WE BETTER STRIP SEARCH AND INTERROGATE THIS GUY, AND WE GOTTA EVACUATE A 25 MILE RADIUS, LOCK DOWN ALLA SCHOOLS, AND BRING IN A SWAT TEAM AND THE MIB TO "INTERROGATE THIS OBVIOUS MISCREANT. : (Leers as they anticipate hours of sadistic torture, which is the only activity they have had in 32 weeks:....BUBBA WE GOT THE PATRIOT ACT ON OUR SIDE, BETTER PUT MORE CHAINS ON THIS DUDE AND GET THE GUYS IN MOON SUITS IN.....

Well, maybe things aren't that bad yet, but they could be, with the drones they have working security at airports today, and the relatively random and illogical method of what becomes "confiscated contraband" and what doesn';t..... When I fly nowadays, I make darn sure I have nothing on my whatsoever that looks liike anything that could possilbly scare anyone, including my commemorative :NRA Silver Bullet", wich, as any doofus can see is a solid object and has a hole and keychain thru it...that stays at home, I carry no electronics in my briefcase, for I don';t feel like being given the "lights and rubber hoses" for hours convincing someone that an RF Amp or a digital controller is a humble piece of electronics...I carry no test equipment in my carry on for the same reason...the idjits on the scanners get spooked very easily, and once picked out, your whole day is ruined.

It doesn;t matter that I am actually a part (a small one, admittedly, of Homeland Security) the drones are monkey see-monjkey do, and to their credit, they do err on the side of airline safety, which, in the post 9. 11 mindset at least makes the passengers happy.

It's a really far cry from my halcyon days of the 1960;s when I occasionally acted as courier for various bits and pieces of HIGHLY SENSITVE data and bits of equipment, and was treated like a king, allowed to be armed (actually a requirement, along with the briefcase which was connected to a figure 8 harness, so someone would have had to dismember me to remove same,,,,,,a scenario I tried never to think about. ..got VIP boarding priveleges, and was treated like James Bond by all the flight attendants (very enjoyable) I never paid for a drink..... Oh for those Navy days again, but that was a far more innocent age...
Today, I kind of think the pendulum has swung too far the other way, because although we have all the bells and whistles in place, we don;t really have the trained scanners, and of course (gasp) we can't profile potential terrorists...this could be done without, IMHO violating anyone's civil rights, just that more surveillance would be given and movements would be tracked discreetly....There is, in existance, a master list of suspicious and personas suspected of nefarious activity, and they should be carefully watched...ut unfourtunately in todays PC wourld we can't do it..... . We confiscate a woman's knitting needles, but guys with shoe bombs get aboad aircraft...This tells one something...

But flying with boatanchors, I wonder if it would be cheaper to buy the boatanchor a seat, instead of shipping as cargo, it jjst might be cheaper....Freight rates have gotten unbelievable, and it simply is not worth shipping euipment cross country, and that is too bad, because there is always that one Teletype, or Reciever, or Tranmitter, or any Milspec stuff that is always on the other side of the country from where you happen to live, and the price is right but the shipping, well, you may as well get in line for a second morgage...--hi--. the last R392 I was shipped simply floored me with what was charged for the shipping, and a teletupe machine gave me sticker shock LOL...but if you want it bad enough, you keep your complaints to your self and pay the piper, I guess, but it is good to vent once in a while....

I feel sorry about the whole thing, because, unfortunately, I feel a lot of BA equipment is going to wind up in landfills because of just this very thing, the shipping dilemma...This is my opinion only, your comments are invited and welcomed. 73 de Greg WA3IVX/NNN0BVN.

From youngbob53 at msn. com Mon Apr 11 22:18:33 2005
Subject: [R-390] What is the difference between 390 and 390A

I have heard that the 390A was better than the 390 for BCB DX'ing because of the mechanical filters. I mostly DX for foreign DX on the BCB frequencies and most are very weak against very strong domestic stations sometimes 1 khz away. Will the mech. filters perform better for this purpose? I can put up with lousy ringing audio if I have to to to hear a station that would otherwise be obliterated by QRM from a 50KW local 2 kHz away. Actually my motto is you can never have enough radios anyway, Bob

From ham at cq. nu Mon Apr 11 22:23:44 2005
Subject: [R-390] What is the difference between 390 and 390A

Hi

Well here it goes:

190KC to 490KC BC-453? ARC-5 Command set is an 8
The 390A is a 9.
The 390 not an A is a 9. 1 +/- 0. 5
Harris RF-550 w/551 is at least 7.
Gotta get the R&S in there, maybe a 8. 99976 +/-3. 13742 (it's German - we need to be precise)
There's the Racal RA-17, give it a -17 with all the original cooked to oblivion by now resistors still in place.
Need to put the Heath SB-301 in there somewhere above a 5 or so.
I would put the R250M2 in at least in the 6's from what I have heard.
Be nice to see one.
SP-600-JX-any at least an 8

On the other end of the scale:

AM section of your car radio -2
Stations received by the FM section of your car radio -9
Anything satellite radio -10

Optional points (may be additive):

Radio's painted *very* bright colors (including stripes) -3
Radio's named after American Presidents -5
Radios designed to cover 2 to 22 MHz in one band 3/4 inch wide -12
Any radio made before 1920 +10
Radios with "massacre" in their name -3
Radios with LED's built into the antenna -12
Any radio that saved a life while turned off +5 (Motorola MX-300 in bludgeon mode comes to mind)
Any radio that saved a life while turned on +12
Any radio with more than 35 tubes in it +6

Computer driven black box radio (including those with 35 tubes) -9

Of course this is only the abbreviated list ....Enjoy! Bob CampKB8TQ

From Flowertime01 at wmconnect. com Mon Apr 11 22:25:22 2005
Subject: [R-390] What is the difference between 390 and 390A

I have heard of some WWII receivers that were specially built to minimize the osc leakage through the antenna input for the reasons you mentioned, the National brand comes to mind but I could be mistaken. John

---

Folks,

The Army Security Agency was happy to couple bunches of R390 and R390/A receivers to the same antenna. The favorite antenna was a rhombic. The favorite antenna coupler to spread the signal around was a CU872. Local oscillators radiating grief to other receivers was a real nono. The R390 and R390/A will work and play well with any other thing that glows in the dark. Some solid stuff is a bit uppity but its the solid stuff not the warm and glowing items fault. The Ops ran rooms full of the receivers and you would never know there was another oscillator any where except that single signal you were working. R390 and R390/A just do not leak. Roger KC6TRU

From ham at cq. nu Mon Apr 11 22:30:43 2005
Subject: [R-390] Flying with boatanchors

Hi

Well back in the 1960's I flew with a Teletype Model 15 as checked baggage. Didn't box it up or anything. Just put a sticker on it and checked it through. Came out fine. I can't imagine what would happen these days.

For most of the 1990's I flew into all sorts of places with both luggage and briefcase full of odd bits of electronic stuff. No matter where it was drugs were their only focus. US, Russia, China, where ever as long as it wasn't drugs it went right on through. Not so today ...Take Care Bob CampKB8TQ

From ham at cq. nu Mon Apr 11 22:33:57 2005
Subject: [R-390] What is the difference between 390 and 390A

Hi

The mechanical filters in the R390A are not bad at all. The ringing is not a major issue. The main point is that if you have a good enough situation the R390 not an A will sound a little bit better.

If you are fighting for the last couple of db with a strong signal just up band the 4 KC mechanical filter on the R390A will do a very nice job in AM mode. With an outboard gizmo like the Sherwood box you can do some odd stuff with the 2 KC filter as well. Enjoy! Bob CampKB8TQ

From levyfiles at att. net Mon Apr 11 22:34:05 2005

Subject: [R-390] What is the difference between 390 and 390A

Wrong
Satellite Radio Brilliant Radio for grown ups! Where else can you hear " The flying purple people eater " ????

Computer and Software driven radio. Fascinating. All the Vacuum Tube Boat Anchors Magnificent ! ! ! !
Leave room in your hearts and minds for any radio. IF they hear what you want to listen to they are brilliant radios! 73, Bill N2WL

From Flowertime01 at wmconnect. com Mon Apr 11 22:48:56 2005
Subject: [R-390] What is the difference between 390 and 390A

I have heard that the 390A was better than the 390 for BCB DX'ing because of the mechanical filters. I mostly DX for foreign DX on the BCB frequencies and most are very weak against very strong domestic stations sometimes 1 khz away. Will the mech. filters perform better for this purpose? I can put up with lousy ringing audio if I have to to to hear a station that would otherwise be obliterated by QRM from a 50KW local 2 kHz away. Actually my motto is you can never have enough radios anyway, Bob

---
Bob,

Most 05H guys liked the R390/A over the R390 when it was time to pick one out of the mud. The 2Hkz mechanical filter will let you get a bit more separation.

On any day given any two adjacent signals one wanted one not, Its going to be a subjective opinion what one receiver works best. I watched 5 or 6 ops roll up on a ditty with two radios each and all the Opts said every R390/A of the 10 or 12 sounded different. They would send the worst receiver to the shop for PM. But their choice was still the R39/A over the R390 to pick crude from mud. Roger KC6TRU

From Flowertime01 at wmconnect. com Mon Apr 11 23:00:22 2005
Subject: [R-390] What is the difference between 390 and 390A

For just AM short-wave I like my Grunow 7NB. I do cheat and use a 6 volt power supply instead of the lead acid battery. Once a year you need to get it out of the wood cabinet and change the two bias batteries under the chassis. The original batteries for the bias are no longer available, but you can get some good stuff from radio shack that almost fits right in. Of course its been recapped. re tubed. cabinet refinished. Chassis refinished. Love the slop and lash in the tuning dial.

It almost glows in the dark. Early 6 volt tube filaments just do not glow like a good 6082 series regulator tube. Roger KC6TRU

From Radiograveyard at aol. com Mon Apr 11 23:06:51 2005
Subject: [R-390] EK-07 and shipping across ponds

Have had EK-07 shipped by boat don't go there! ! Best and cheapest across ponds BAX GLOBAL airport to airport ONLY. Ask them to pick up or deliver and it gets real pricey.

From jmiller1706 at cfl. rr. com Mon Apr 11 23:19:30 2005
Subject: [R-390] Need Circlip (Snapring) for Xtal Osc Band Shaft

Servicing my crystal oscillator subchassis today I had to remove the shaft to repair a trimmer and broke the circlip (spring washer) that fits into the groove in front of the band display disc inside the subchassis. It's a little spring washer with two little eyelets where that special tool (which I didn't have unfortunately) opens up the ring so it can be removed. Well it broke, so I need another if anyone has any. It's a 3/16 inch shaft approximately. Thanks, Jim N4BE

From jpl15 at panix. com Tue Apr 12 00:22:24 2005
Subject: [R-390] EK-07 and shipping across ponds

wrote: > Have had EK-07 shipped by boat don't go there! ! Best and cheapest across ponds BAX GLOBAL airport to airport ONLY. Ask them to pick up or deliver and it gets real pricey.

BAX gets my vote as well - I have used them for years - plus very few Int'l carriers will accept goods from/to private parties anymore, at any price. Cheers John KB6SCO

From jlkolb at jlkolb. cts. com Tue Apr 12 00:46:32 2005
Subject: [R-390] What is the difference between 390 and 390A

Adding a digital display to my HQ-180 made it much more enjoyable to use as an SWL receiver - for BCB use, the dial should have enough resolution as is.

The HQ-180 is a real knob twittler's delight. The 180 is a real pleasure to use when you are fighting hetrodyne or steady carrier QRM. Being able to use the notch filter on the QRM, then use the fine tune control to move the receiver passband around without affecting the notch is really convient. Unfortunately, the various selectivities of the 180 don't have a very good shape factor.

The better shape factor of the 390's, particularly the 390A with it's mechanical filters, makes it usually the winner when fighting adjacent channel crud.

There's been an article or two on adding mechanical filters to the 180. Available, I believe, from the National Radio Club reprint service. John <http://jlkolb. cts. com>

From K4HCA at alltel. net Tue Apr 12 06:54:51 2005
Subject: [R-390] BOAT ANCHOR DATA

I think that I botched this on first attempt. I left it in HTML. So, try this link. Then click on "Cool Links" then "Boat Anchors". More Boat Anchor data than most of us have ever seen in one place. http://www. qsl. net/arcs/ Harold

From wa4jqs at mikrotec. com Tue Apr 12 07:01:51 2005
Subject: [R-390] Flying with boatanchors

In 1992 i flew to heathrow then to the Falklands with two ts 850sat's in my carry on bag had to put it under by feet as the alpha amp in the back pack took up all the overhead. on the way back from South Sandwich Islands they stopped me and took my mk1 knife that was in the checked baggage had to open it up and gave to cockpit crew till we arrived in states. did not say anything about the radios.

1n 1994 on the way back from Peter 1 we had the alpha 89 amps inspected and sealed by airport guards in Chile. they walked them from gate to gate. still carrying the old 850sat's this time also. hit the old Miami airport and the customs agents kept wanting to know if we had been in Argentina ? no we were coming from Antarctica via chile. you sure you have not been in Argentina ? yep. ok . called the sky cap that was on the other side of the fence with out 3 amps to bring them over to be opened. sky cap told them they were inspected and sealed by customs in Chile. He still wanted to open them. Ok I said you can open them but you are going to repack them ! he did not like that ideal so he let us go. 73 Tony WA4JQS

From roy. morgan at nist. gov Tue Apr 12 09:41:21 2005
Subject: [R-390] What is the difference between 390 and 390A

wrote: >...I like my SX-28A now that it's electrically restored...nice audio and >tuning system. (gears)

Cecil, et. al. ,

Topic category: "Why on earth do you have all those radios?"

For years I'd heard about the SX-28 but never really wanted one. I had an SP-200, an SP-600, and later on R-390's of different sorts. Then on a whim, I bought a QST for the month I was born (Oct, '44) and found an article about the flight following radio stations in Alaska and the Aleutian Islands. We had a lot of aircraft flying over that way during the war. Pictured are the Adcock directional antennas and racks of SX-28's. That changed my mind about wanting one of these radios.

Now I have two, an A and an earlier one. Both await overhaul, but I do look forward to having one around and running well. Then the radio an I can grow older gracefully together. Roy

From ghayward at uoguelph. ca Tue Apr 12 10:11:37 2005
Subject: [R-390] Re: 390A and SX28

You'll really like the combination. I use both the 390a and the SX28. The former for really good selective single station reception and the latter for scanning and hopping around. It avoids the '390 wrist syndrome'. Often I'll find a station with the SX28 and then switch to the 390 to listen. Of course with 6V6's in push-pull the SX28 audio is superb. Cheers, Gord (VE3EOS)

From roy. morgan at nist. gov Tue Apr 12 10:17:33 2005
Subject: [R-390] What is the difference between 390 and 390A

wrote: >There's been an article or two on adding mechanical filters to the 180. >Available, I believe, from the National Radio Club reprint service. John,

I can't remember the low IF frequency in the 180 - is it 60 kc?. I have an HQ-170A on the bench right now. I'm reminded of the filters used in telephone/teletype mulitplex systems since the 1930's. I have a couple of the filters used, one is at 80 kc I think (the ARC-5 low band receiver uses 80 kc IF, I think.)

In any case, finding such a band filter for the right frequency might well get you a voice band width filter of superb performance.

At the NRC publications-reprints page, http://www. nrcdxas. org/ I find the following:

"R2 SINGLE SIDEBAND RECEPTION ON THE BCB WITH MECHANICAL FILTERS. G. P. Nelson. Few commercial receivers covering the MW band have adequate selectivity to cope with MW interference--particularly in the presence of powerful local stations. Explains how to add mechanical filters to an existing receiver for the ultimate in adjacent channel rejection. (21) "

"R31 THE SUPER HQ-180. Dallas Lankford. Add a Collins mechanical filter to your "180". While not a "how-to" article, problems and results are discussed. (4)

"R43 CERAMIC FILTERS. Marc Bergman. A listing and description of the most commonly available ceramic filters, with data from tests. (9) "

"R46 SURPLUS MECHANICAL FILTERS. Marc Bergman. Test results of several reasonably-priced and available mechanical filters. (3) "

"R67 R390A KHZ FILTERS FOR THE HQ-180. Dallas Lankford. How to use Collins DB filters in your HQ-180 receiver. (2) " Roy

From kgordon at moscow. com Tue Apr 12 11:05:00 2005
Subject: [R-390] What is the difference between 390 and 390A

> filters used, one is at 80 kc I think (the ARC-5 low band receiver uses 80 kc > IF, I think.)

85 Khz. Ken W7EKB

From kgordon at moscow. com Tue Apr 12 11:12:52 2005
Subject: [R-390] What is the difference between 390 and 390A

wrote: > lot of aircraft flying over that way during the war. Pictured are the Adcock directional antennas and racks of SX-28's. That changed my mind about wanting one of these radios.

I've wanted one since I first used one in highschool. It belonged to our highschool physics department.

> Now I have two, an A and an earlier one. Both await overhaul, but I do look forward to having one around and running well. Then the radio an I can grow older gracefully together.

Electric Radio magazine just had a really superb two-part article on restoring and enhancing the SX-28 and 28A. When I get mine, that article will be my main resource. It is very well written. Ken W7EKB

From r390a at bellsouth. net Tue Apr 12 13:41:22 2005
Subject: [R-390] What is the difference between 390 and 390A

Any bonus points for a receiver with 65 tubes 5 meters (just on the front panel, there are 2 behind a lift

up panel in front) AND that weighs around 300 pounds? Has a cooling fan too. Tom NU4G

From Lester. Veenstra at intelsatgeneral. com Tue Apr 12 13:57:06 2005
Subject: [R-390] What is the difference between 390 and 390A

FRR-59A

From ghayward at uoguelph. ca Tue Apr 12 14:01:25 2005
Subject: [R-390] What is the difference between 390 and 390A

The National WRR 1. Neat machine but I passed one up a while ago. Just too big for my shack. Bonus points just for transporting the beast! By air, perhaps?:-) Cheers, Gord.

From rbethman at comcast. net Tue Apr 12 14:04:45 2005
Subject: [R-390] What is the difference between 390 and 390A

Well, this has become VERY like many other threads WE have done over the past. It has become worn out.

As to the differences between the R-390 and the R-390A, I have serious doubts as to our abilities to SIGNIFICANTLY quantify them.

Both work extremely well. Both pull in signals that other radios aren't capable of - even today. They stand up to use, abuse, and abhorrent conditions that will kill most anything else.

I have owned 2 R-390As, one '51 Collins, with all Collins modules EXCEPT for a Cosmos PTO. Module S/Ns ran from 35 to 200. The other one was a '67 EAC. Both worked equally well.

I traded off the '67 EAC for a Northern Radio modified SP-600. I DO like the 600's audio better, it IS easier to cruise the bands without having to jump ever MC. BUT - I don't think it receives as well. Bob - N0DGN

From sdaitch at ibb. gov Tue Apr 12 14:37:09 2005
Subject: [R-390] Flying with boatanchors

I recently went to Tokyo from the US and return, and I had in my briefcase a Garmin GPS, a Bearcat scanner and a Sony portable SW receiver. In the back pack that was also carry-on, I had the Icom HT and charger, plus a camera and external flash unit. Airport inspections at Washington National (leaving) and Tokyo Narita and Detroit (coming back) for the carry on items was basically cursory, if it worked, it was fine.

The domestic free baggage allowances are normally two pieces up to 50 pounds each, while most international flights in and out of the US are two pieces, 70 pounds each. The domestic limit was reduced about two years ago, from the same 70 pounds as international flights, probably to help pay for fuel, with the charges for over weight. . (By the way, most of the rest of the world has much smaller free baggage limits, ranging from 44 to 66 pounds, depending on the class of the ticket.) One of my checked bags was overweight by four pounds, leaving Narita, but the check-in agent didn't notice it. I guess she

figured if I could pick it up, it wasn't overweight.

On the return leg headed home, neither of my checked bags were bothered, other than x-ray, at Narita, but one case was re-inspected at Detroit (DTW). Apparently some of the Japanese chocolate looks like a plastique item, per the TSA inspector.

When I requested my film to be hand inspected, at DTW, they looked at the film canisters and did the swap test. By the way, that swab test is "looking" for nitrogen compounds, the basic item in explosives. We have some of the same machines at our locations overseas, and one in particular gets false positives all the time, from the nitrogen compounds released from fertilizers used by the neighboring farmers.

Of course, your mileage may vary.

Agree on the baggage on the Asian flights. The first few times I flew into Manila, I realized how much the baggage pickup area looked more like the UPS shipping dock than an airline carousel. 73 Sheldon WA4MZZ

From levyfiles at att. net Tue Apr 12 14:55:18 2005
Subject: [R-390] Flying with boatanchors

First
ALL CHOCOLATE LOOKS LIKE PLASTIQUE. ALL OF IT. ALL THE TIME. PUT IT IN HAND BAGGAGE. ITS NO LONGER POSSIBLE TO ORDER CHOCOLATE FROM OVERSEAS ON THE WEB.

Since the thieves now employed by the TSA will use any excuse to go thru baggage we can put nothing but dirty underwear in our checked stuff. I carry radios, cameras, all my electronics in hand baggage. Better leave the 390's at home. n2wl William G. Levy

From hankarn at pacbell. net Tue Apr 12 14:57:19 2005
Subject: [R-390] What is the difference between 390 and 390A

Well my WRR-2 is in a rack on casters with all cables, manuals and extender boards. Plus I have the Granddaddy of all a Russian R-155U on casters at 6990 pounds . 5Kc to 60 MC, Hybrid SS & Tubes, 9 autotune channels, seven modules all mode plug and play after you learn Russian. Have a complete set of Russian manuals plus had translation done for all of the normal operating procedures. Have checklist procedure to turn it on/off.

The only receiver that I know of that is bigger was the full 2 rack model by National. Do not of one any where in the world.

Still have my R&S EK-07 with NZ-10 SSB converter and NZ-07 RTTY Demod unit. Which are no light weights either. Hank KN6DI

From gregorymengell at comcast. net Tue Apr 12 17:17:41 2005
Subject: [R-390] What is the difference between 390 and 390A

wrote: > The only receiver that I know of that is bigger was the full 2 rack > model by National. Do not

of one any where in the world.

Hello to the list. As most of you know I have several R 390A recievers and also have acquired about 10 FRR 59A/B recievers in varying states of repair. I have two runnibg well and am looking to ressurect a couple more. And in a month or so offer spare modules. What I am looking for is any info besides the TM. I would like assistance in determining how many were made ,how they were deployed and general info on how long they remained in service. Any first hand experience from Operators, Techs or Listmembers would be deeply appreciated. Some years ago a member posted a Navy Photo of a Ships Radio central using the R 390+CV 591 as well as the WRR 2 -FRR-59A. Would that person pls contact me. Please reply off list. I would be glad to share all info I get with the list

From wd8kdg at worldnet. att. net Tue Apr 12 18:15:41 2005
Subject: [R-390] What is the difference between 390 and 390A

Another dead horse; But I add $0. 02. I have a R-390A, don't have a R-390 non A. later..... craig,

From mjmurphy45 at comcast. net Tue Apr 12 20:29:30 2005
Subject: [R-390] What is the difference between 390 and 390A

I love the 453 and the R-11 for that matter. Back in the 1980's I stuck a good product detector in an R-11A and it really performed. Used it to Q-5 everything - my TCS, ARR-15 and even an ARC-2 which is as broad as a barn. Mike WB2UID

From mjmurphy45 at comcast. net Tue Apr 12 20:51:01 2005
Subject: [R-390] HR-10 Brilliant! ! !

Richard - You know what? - I think you are right.
My friend Bill had one of those when I just got my novice in high school and it sure looked cool next to his DX-40. I was jealous. I just assumed it was better than my command station. . My other buddy had a BC-348 and an Apache. I was the poor duck stuck with the ARC-5's on 80. Most examples of the HR-10 were probably never built right in the first place and were handed down from novice to novice. Has anybody ever tamed an HR-10? Who knows, maybe it's a 10! http://www. radioranch. biz/Heathkit%20HR-10-B%20%20HRA-10-1. jpg Mike WB2UID

From ham at cq. nu Tue Apr 12 21:37:56 2005
Subject: [R-390] What is the difference between 390 and 390A

Hi
Well the points are cumulative. If you had made it to 70 tubes then you could have claimed the 6 point 35 tube bonus a second time. I suppose that any radio with more than 4 *analog* meters on it should be worth at least another 6 bonus points. Negative bonus points for *digital* meters unless they are purely mechanical of course. Take Care! Bob CampKB8TQ

From ham at cq. nu Tue Apr 12 21:45:57 2005
Subject: [R-390] What is the difference between 390 and 390A

Hi
Ummm, errrr. 6990 pounds, as in > 3 tons ? I sincerely hope an extra digit crept in there ....Enjoy! Bob Camp KB8TQ

From tetrode at comcast. net Wed Apr 13 10:12:40 2005
Subject: [R-390] Russian R-155 RX

Arggg, I just had to change the subject line; you guys don't wear your underwear for a week too do ya? :^) Bob, that's what I was wondering as well. I did a quick Google search and was surprised to find a link..... .
http://www. armyradio. com/arsc/customer/pages.
php?pageurl=/publish/Articles/William_Howard_Russian/73-Present_Base_Fixed_Station_Radios. htm

Check out the 6th pic down from the top. It shows the front panel minus one of the "modules", and it's made of a casting that's about 1/2 inch thick! Now I'm wondering if it's aluminum or cast iron. John

From tbryan at nova. org Wed Apr 13 18:15:27 2005
Subject: [R-390] Russian R-155 RX

> Ummm, errrr. 6990 pounds, as in > 3 tons ? I sincerely hope an extra digit crept in there ....

Something is not right about it. The R-155P only weighs 210kg. The R-155U can't be much more. Tom Bryan

From rbethman at comcast. net Wed Apr 13 18:21:47 2005
Subject: [R-390] Russian R-155 RX

Perhaps that includes the truck? Hank isn't THAT crazy - taking 3 tons of rack into the shack - or is he? Bob - N0DGN

From Flowertime01 at wmconnect. com Wed Apr 13 19:04:27 2005
Subject: [R-390] good product detector

I stuck a good product detector in an R-11A and it really performed. Mike WB2UID

Mike,

Do you have a schematic of the product detector circuit you used? If it worked good and you liked the performance I would like to give the circuit a try. Roger KC6TRU

From Flowertime01 at wmconnect. com Wed Apr 13 19:18:49 2005
Subject: [R-390] Russian R-155 RX

At least the rack will likely still be setting there after a tornado. Roger KC6TRU

From ham at cq. nu Wed Apr 13 20:27:00 2005
Subject: [R-390] Russian R-155 RX

Hi

Now don't get this thread confused with the "Hank is Crazy" thread. That one has a life all it's own. It is only eclipsed by the "all R390 nuts in South Western CT are crazy" thread.

I'm not sure I would want to see a rack capable of supporting a ton or two. It alone would be a work of industrial engineering. From what I have seen of Russian engineering I would not put a 6K pound radio past them. If they decided that was what they needed they would have done it. Cost to design and cost to produce were not limiting factors if there was a need. Take CareBob Camp KB8TQ

From hankarn at pacbell. net Wed Apr 13 20:55:09 2005
Subject: [R-390] [Fwd: failure delivery]

Bob,

I guess some one must have cut me off on the R-390 list. Hank KN6DI

Hi Gang the 6990 is a product of a fat finger and 4 fingers of Scotch with water HiHi. But it does weigh 690 pounds. When I bought it I had it by airfreight from Frankfurt for 850 pounds on American airline. They hid it for 3 1/2 hours trying to decide if they wanted to write it off as the crate was totally demolished. They gave me 30 days to check it and make a decision as to file the claim for $4500. 00 or accept it. I took a bunch of pictures and so did American.

By hook and crook and a bunch of phone calls, fired it up and got lots of signal and no smoke. So the thinks built like the proverbial Brick S*** House as they say. Works like a charm makes clunk clunk sounds as it changes channels. Not smooth like a ART-13.

Need R155/U Class 101 to operate it. Hank KN6DI

From ham at cq. nu Wed Apr 13 21:06:07 2005
Subject: Fwd: [R-390] Russian R-155 RX

Hi,

The great and all mighty spam filter on the master server has decreed that you NOT read the following information.

Repeat - do not under any circumstances read the following post. The spam filter will be very upset if you do. We all know what happens if the spam filter gets upset with your posts ....

Let's see spam mentioned > 3 times, capital letters, should trip the content filter ....Enjoy! Bob CampKB8TQ Begin forwarded message:

From wa6knw at sbcglobal. net Wed Apr 13 21:49:18 2005
Subject: [R-390] EK-07 Appreciation Tour

I guess I'll put my 2-cents in this list of receivers.

For band cruising and just plain signal hunting I will say the R/S EK-o7 is my Number 1 followed by an SP-600 with the Nuvistor Plug RF Amplifier Field Modification at Number 2.

Pure listening pleasure would be the SP-600 with the audio output connected to a large bass reflex enclosure with a 15" woofer, a 6" mid-range and a horn tweeter. Even the earlier SP-100, 200, 400 series of receivers are great SW listeners. Especially if all of the up grades and modifications pertaining to frequency stability have been applied to them.

For SERIOUS signal hunting I would go with the R-390 at Number 1, the R-725 at Number 2, the R-390A at Number 3. These three also sound pretty good when the diode load audio is feed into a decent audio and speaker system. The R-392, when properly aligned, hand picked tubes are selected, (get rid of the transistor audio amp and replace the tube) and a decent audio set up as above provided is a real surprising performer. But in the easy listening category they are still behind the R/S and SP-600.

My ideal set up with the above receivers for Surveillance/Intercept operation; I would want an R/S EK-07 as a hunter/scanner to hand off to a pair of R-390's set up to operate in diversity with at least a vertical and a horizontal antenna. For easy listening give a pair of 6V6's into a large bass reflex speaker box. RICH WA6KNW

From chacuff at cableone. net Wed Apr 13 21:50:49 2005
Subject: [R-390] [Fwd: failure delivery]

I'm copying you 5x9+60db now! Cecil...

From mjmurphy45 at comcast. net Wed Apr 13 22:51:31 2005
Subject: [R-390] good product detector

Hi Roger

The R-11A does not have a BFO at all, so I built the whole product detector, BFO and Audio outboard. I pulled V605 and V606 which have series heaters.

V-605 is a 14A7 which is a dual triode (wired as a dual diode) one side as the AM detector and the other some kind of ANL clipper. V-606 is the 12A6 audio output stage. Now if I were a purist, I could have turned V-605A into a triode product detector and the other section into a BFO and used a solid state diode as an AM detector (with some clever switching for AM/CW) and retained the 12A6 audio output stage. That would have been pretty nice. Of course I would have had to shoehorn in a 85 kHz BFO coil somewhere.

Instead, I pulled the tubes and did everything on a solid state board running on 28 VDC regulated down to 12 VDC. The board contained a simple dual gate mosfet product detector right out of the Handbook, a diode AM detector, a bipolar BFO with a home made 85 KHz hartley coil and an LM380 1 Watt Audio Amp. Not super but pretty good for the Q-5er. I could not find my schematic- maybe there never was one.

More R-11A weirdness...The AVC is actually derived not in the (now missing) detector, but in V-604,

the last IF tube. This is a 14R7 which is a pentode with two diodes stuck inside, probably meant just for AGC. I do remember fooling with the AGC, but I can not remember what I did. I do remember that the IF transformer had both a High Z and a diode tapped output on the final transformer which was a deluxe setup for feeding the AM and CW detectors separately.

By the way, you use the rig with all of the IF coupling rods pushed most of the way in for AM (which really slices AM giving wonderfully steep skirts); partially out for SSB, and all the way out for CW. It is not as hard as it sounds. I hope this helps. Mike Murphy WB2UID

From wf2u at starband. net Wed Apr 13 23:18:56 2005
Subject: [R-390] EK-07 Appreciation Tour

And I'll put another 2 cents in this kitty...

For band cruising and serious weak signal hunting the EK-07 is my preference, but it shares first place with its competitor, the Telefunken E104KW (mine is a /4 model, ex German Post Office...). It's even a bit larger in volume than the R&S EK-07, but it's a few pounds lighter due to the difference in the enclosure construction. It's sensitivity spec is 0. 12 microvolt (CW) and input noise figure is 8. 5 dB, very similar to those of the EK-07. IF rejection is rated at -100 dB. It also has a built-in, in-circuit tube checker, and similar selectivity selections. The dial arrangement, resolution, and smooth action are also similar to those of the EK-07.

The third in this class is the Receiver Type 1340. 21, manufactured by VEB Kopenick, East Germany (GDR) in the 60's, after their purchase via a third party of several EK-07 receivers was stopped by the West German authorities so the East German intelligence services needed a good intercept receiver...It's a sophisticated receiver with a phase locked loop stabilized local oscillator. The dial arrangement in conjunction with a deviation meter enables the receiver to measure the received frequency to within 500 Hz! All this in a package somewhat smaller than the EK-07 and considerably lighter!

For band cruising, listening pleasure I concur with the SP-600 choice. I also enjoy my R-366/TRR-5 receiver with its original 12" Jensen reproducer for great SWL'ing.

For net operations but not weak signal hunting I like the R-390A's. Immediately behind the R-390A's is the Russian R-250M. It's the best octal-tubed (23 tubes) receiver I ever used. It's just as sensitive as a good, properly aligned SP-600, but more stable, better frequency resolution, more selectivity options. It's also larger and heavier than the R-390A and uses a variable IF with crystal controlled conversion for all the bands, similar to the Collins method. It was originally designed in 1947! Mine is a late -M series, before the -M2 model which used miniature tubes.

Then there is the British Navy Murphy B-40 receiver which is also a great band cruiser, sensitive and great sounding - besides being very cool looking.

There are a good number of other great boatanchor receivers I like to use as well - the Marconi Atalanta, the GEC BRT-400, the Siemens E-305, E-309, E-310 and E-311 and the Eddystone 730/4 to mention a few...Enjoy! 73, Meir WF2U / NNN0AAF Landrum, SC

From djmerz at 3-cities. com Thu Apr 14 00:22:42 2005
Subject: [R-390] R390 knob set screw

Hi, I ran into a minor problem. The set screw in one of the larger knobs (on the ant trim on R390) doesn't want to tighten against the shaft and I see that the threads in the knob are damaged in the area near the shaft and the screw likes to just ratchet back at the critical point of tightening. It's the knob not the set screw that's the problem. I think a longer set screw of 3/8 length would solve the problem. What is the thread size/pitch on these set screws? I make it to be 8-36, an unusual size these days. Are there some screws longer than the standard 1/4 inch length in somebody's pile? The other alternative is to drill and tap it for the next larger size set screw but who wants one knob to have a different size wrench, hi? I guess I could shove a piece of solder or piece of plastic in front of the short one and hope for the best. The trimmer shaft looks like phenolic so I'd like to treat it nicely. Any advice on fix appreciated, more later, Dan.

From RLucch2098 at aol. com Thu Apr 14 11:21:49 2005
Subject: [R-390] Anyone know what this is, Probably NOT R-390A related!

Hi All;
Can someone here either direct me to a site or knows what this device is used for or associated with. It is made by Lionel, C-114-A, Coil, loading. I know what the model is, hi, but would be nice to know what actual military unit it was used with. Many WWW searches really found nothing. Any help will be appreciated.
Pics:
http://www. myradioroom. com/lionel1. jpg
http://www. myradioroom. com/lionel2. jpg
http://www. myradioroom. com/lionel3. jpg
http://www. myradioroom. com/lionel4. jpg
Tnx & 73. . Rich WA2RQY

From Lester. Veenstra at intelsatgeneral. com Thu Apr 14 11:25:35 2005
Subject: [R-390] Anyone know what this is, Probably NOT R-390A related!

Land line loading coil, such as we old RTTY types know and revere as the 88 mH coil.

From tetrode at comcast. net Thu Apr 14 12:21:29 2005
Subject: [R-390] R390 knob set screw

Dan,

my notes say it's 8-36 UNF thread, yet another oddity of the 39x's. If you had the tap you could epoxy the hole and drill and retap it but a replacement knob can be gotten cheaper.

Sometimes you can smear some JB Weld across just the damaged area, let it firm up a bit, and then use the setscrew itself as a tap, then remove it and let the JB cure. If your lucky it can give the setscrew the little extra bite it needs to do the job.

That phenolic insulating shaft on the 390 is pretty tough, I wouldn't worry too much about hurting it.
John

From n4buq at aol. com Thu Apr 14 12:43:02 2005
Subject: [R-390] R390 knob set screw

I wonder if anyone makes #8-36 helicoil thread repair inserts. Barry - N4BUQ

From JMILLER1706 at cfl. rr. com Thu Apr 14 12:51:01 2005
Subject: [R-390] R390 knob set screw

Maybe you can just buy a new knob from someone here. I have done that, usually a few bucks each.

From tetrode at comcast. net Thu Apr 14 12:51:02 2005
Subject: [R-390] R390 knob set screw

Just remembered another quick fix..... .
Try wrapping a layer or so of plumbers Teflon pipe thread tape tightly over the setscrew, it'll build up its diameter and make it fit tighter. John

From barry at hausernet. com Thu Apr 14 12:52:19 2005
Subject: [R-390] R390 knob set screw

Hi John,

Coincidentally, I have a question about JB Weld. I just used it to repair a small folding table which was inadequately glued to start with.

I'm more accustomed to regular and quick-cure epoxy which is clear. Had some small tube sets of JB weld somewhere, but lost track of it. I picked up some at Pep Boys -- big box "J-B Industro Weld, Cold Weld Shop Size"

This stuff when mixed is medium to light gray. Are all of the J-B Welds that color? I also picked up the small tubes of the quick set version.

That grey looks very similar in shade to the "right" shade for R-390 front panels. Anyone try it to detail out a chip? Might not even need touch-up.

I used to assume J-B was the same basically as regular epoxy glue, but possibly better quality. Must be something very different as it doesn't have that characteristic annoying aroma. It also cleans up a heck of a lot easier. Barry

From n4buq at aol. com Thu Apr 14 12:58:43 2005
Subject: [R-390] R390 knob set screw

Apparently they do make #8-36 helicoil inserts. I found the helicoil taps for them but haven't found the coils. It would make for some good threads if you could find them (and have the knack for drilling, tapping, and inserting them). Barry - N4BUQ

From n4buq at aol. com Thu Apr 14 13:02:34 2005
Subject: [R-390] R390 knob set screw

I was looking for some JB Weld last night at a local AutoZone store. They didn't have the usual stuff, but they did have the Quick Set version. I didn't get it because it appeared to be more of an epoxy rather than a filler. The package didn't mention it was machinable like the regular JB Weld is. Anyone know? Barry - N4BUQ

From tetrode at comcast. net Thu Apr 14 13:48:09 2005
Subject: [R-390] R390 knob set screw - JB Weld

Barry,

I didn't know there was a quick set version, all I've used so far is the regular stuff which is dark grey after mixing. The next time I'm out shopping I'll look for the quickie stuff out of curiosity.

Check out http://jbweld. net/index. php especially the FAQ and technical section, it has some of the info you seek.

Yes, I've also noticed that it is a pretty good match for the front panel and its shade can also be altered depending on the resin/hardener mix ratio. It also can be thinned with the usual paint solvents.

They call it a "steel" epoxy. The MSDS info didn't say anything about steel but the two components do contain calcium carbonate, iron powder, and barium sulfate in large parts which probably account for it's hardness and machinability.

They also said in the FAQ section that the quick set version is only half the strength of the original JB, which agrees with my thinking that the longer set time epoxies are inherently stronger. I'll use quick set epoxy on tiny parts and things that don't require a lot of strength but use the longer cure time stuff elsewhere.

I just epoxied part of a hair dryer power switch back together where the switch contactor broke away from the finger slide part of the switch. It was an easy fix but I couldn't believe how freakin' weakly they designed the broken joint; for lack of a bean sized amount of additional plastic they created a very weak link. So besides gluing the original break I also filled in the entire hollow end of the joint and now it's strong as a rock. 73, John

From brookbank at triad. rr. com Thu Apr 14 14:05:01 2005
Subject: [R-390] R390 knob set screw - JB Weld

Three years ago I epoxied the side cover of the electric starter for my 18HP lawn tractor that came apart in several pieces, so far working perfect. It is a great product. Pat

From BILLBOBOW at cs. com Thu Apr 14 16:04:16 2005
Subject: [R-390] R-390 For Sale Muskegon Michigan

I have been a receipient of the e-mail on this list for some time. Have not had any problems or anything to contribute so I have been silent. It has been a good read though. For several different reasons my 390 must go to a good home. I would rather not do e-bay. So here are the specifics.

R-390 Motorola version.

Individual shock mount case.
600 ohm speaker with on/off switch (I wire it into the back binding posts so I can use a headset if I want and switch it off but it does have the plug for the front headset jack)
Several spare tubes (If I can find them since I have moved twice since I saw them last) Including a NOS 3TF7.

Radio works on all bands, really needs nothing except maybe a little lubeing. Lights work, agc may not, all functioning well. I have had the radio since about 1983 or so. Asking $500 pick-up in Muskegon, Michigan or will meet within 100 miles for $20 more. Think this is fair. Can e-mail digital pics if wanted. Reply to list or Billbobow@cs. com direct. Thsnks Bill - KF8QT

From tangerame at earthlink. net Thu Apr 14 16:16:50 2005
Subject: [R-390] Re: R-390 Digest, Vol 12, Issue 38

Rich, It's the loading coil for a Lionel train. Santa Fe if I remember correctly. Tony

From dathegene at hotmail. com Thu Apr 14 19:59:44 2005
Subject: [R-390] Cosmos PTO

I missed the reply to the recent question: What is the size of the Bristol screws on the Cosmos PTO linearity corrector stack? 73 de NA0G Gene

From wa6knw at sbcglobal. net Thu Apr 14 20:00:29 2005
Subject: [R-390] Anyone know what this is, Probably NOT R-390A

Loading Coil C-114
An 88 millihenry loading coil, with DC resistance of 8. 4 Ohms, weight approx. 3l bs, having a waterproof phenol plastic case. Coil C-114 is used at 1-mile interval on wire W-110-B and at 5/8 mile intervals on wire W-143 to extend talking range. RICH WA6KNW

From r390a at bellsouth. net Thu Apr 14 22:44:05 2005
Subject: [R-390] R-390A Rear PTO bracket needed

Am looking for the chassis mounted bracket that supports the rear of the PTO. Anyone have an empty chassis just lying around that might have this thing? Anyone have the 390A mechanical drawings set and could copy the page where that is included? Thanks Tom (It's late, I'm lazy...)

From ezeran at ezeran. cnc. net Fri Apr 15 10:23:18 2005
Subject: [R-390] Flying with boatanchors

> Well back in the 1960's I flew with a Teletype Model 15 as checked baggage. >

I fly a lot, 100K++ a year, with communications gear, test equipment, parts, etc. and generally have no problem. Carry-on is a different trip all together. TSA didn't know what to think of a pattern generator/bit error rate tester because it wasn't a computer. They asked what it did and I finally told them it counted mistakes and I made so many I couldn't keep track without 'this box'. Another stopper was my

SpeedX in my carry-on bag going through National Airport in DC. The kid put on plastic gloves then picked the key up by the cable, like a dead rat by the tail, and asked "What it be" (Yep, that is a quote) One time I was flying from SEATAC to San Diego after a job finished and I'd bought an NOS TCS-12 receiver from Electronic Dimensions. The security folks(kids) did not know what the tubes were and pulled me into 'secondary' because they did not believe what I had was only a radio. EdZ

From Llgpt at aol. com Fri Apr 15 10:55:32 2005
Subject: [R-390] Flying with boatanchors

That is part of the dumbing down of America. … "what itbe"…. still laughing! ! ! Les Locklear

From hankarn at pacbell. net Fri Apr 15 11:34:41 2005
Subject: [R-390] Flying with boatanchors

Ed, Most of the screener s I have seen and most of the backup jeffes would have an extremely hard time qualifying for HEAD START 101. I think most have to get a drivers license out to look at the name o they can find the time card to punch in. Hank KN6DI

From chacuff at cableone. net Fri Apr 15 13:03:06 2005
Subject: [R-390] Flying with boatanchors

Sounds like TSA recruits from Radio Shack! Cecil...

From jonklinkhamer at comcast. net Fri Apr 15 23:30:53 2005
Subject: [R-390] Mech Filters/Ohm Reading

Hello,

I'm wondering if anyone can answer a question for me. I'm basically going over the IF Deck, which is out of the radio and at this point. I'm taking some ohm readings at J512 and everything checks out. Great. Now I took the cover off the Mech filters and looking across the terminals expected about 40ohms according to the book. However I'm reading 0ohms across 3 out of the 4 filters. I'm getting nervous at this point. The 4th filter (4K) does actually read 41 ohms. Another data point is that I lifted the cap off one terminal of a filter that reads 0ohms and also took the wire off it. It turns out that with the wire off I'm reading about 58 ohms with or without the cap. I'm going to bed now and saying a little pray. I guess I'm looking for some help from the group. I'm preparing myself for the worst. Thanks in advance, Jon, KB1DC

From tetrode at comcast. net Sat Apr 16 01:52:00 2005
Subject: [R-390] Mech Filters/Ohm Reading

You can sleep easy Jon, it's supposed to be like that.

Two sections of bandwidth switches S502/S503 select the filter used while the other two sections short out the 3 filters not in use to prevent unwanted signal leakage through them. The IF bandwidth was in the 4 KC position when you took your measurements. 73, John

From jonklinkhamer at comcast. net Sat Apr 16 08:06:24 2005
Subject: [R-390] Mech Filer/Ohm reading

Thank you! !

Believe it or not - you may find this kinda crazy but I actually woke up about 3:00am and remembered the switch. Then I debated for about another 30minutes rolling in bed whether to get out of bed or go down in the ham shack and simply rotate the switch and take a reading. Yep you guessed it. Thank you very much for the quick response, I panicked and stopped thinking. Thanks again I feel much better for the weekend! ! Jon,KB1DC

From jmiller1706 at cfl. rr. com Sat Apr 16 09:02:50 2005
Subject: [R-390] Mech Filer/Ohm reading

It's official. You now have a full blown case of "390 OCD". The 3:00 AM awakening is proof. Unfortunately, there is no cure.

From chacuff at cableone. net Sat Apr 16 10:15:00 2005
Subject: [R-390] Mech Filters/Ohm Reading

Jon, I've not heard that a failure mode of the filters is shorted but more commonly open. I haven't looked at the schematic for that area so I'm not sure what they do there but it's possible the unselected filters are shorted by the selectivity switch....just a guess though. I'll try to find some time to take a look at the schematic and see if there is an explanation for what you are measuring. Cecil....

From chacuff at cableone. net Sat Apr 16 10:15:44 2005
Subject: [R-390] Mech Filters/Ohm Reading

Should have read on down....I hate it when that happens...Good news though! Cecil...

From ka6tya at arrl. net Sat Apr 16 11:46:21 2005
Subject: [R-390] R390A for sale

For Sale no reasonable offer refused.

R-390A/URR RECEIVER famous military set covers 0. 5 to 32 MHz AM-CW-MCW in 31 one MHz bands read directly on mechanical digital counter. 455 KHz final IF; has four Collins mechanical filters allowing 2-4-8-16 KHz selectable bandwidth. Calibration points every 100 KHz; also BFO, AGC, dial locks, 600 ohm audio out. Line and Carrier Level meters. Rackmount; no covers. Requires 115/230 VAC 60 Hz. Available for pickup only in Walnut CA

From jonklinkhamer at comcast. net Sat Apr 16 22:04:35 2005
Subject: [R-390] IF bandwidth switch

Hello all,

I was wondering if anybody would like to sell me a bandwidth switch. It's the switch (S501 I believe) found attached to the inside of the IF deck. Note all I'm after is the switch, not the shaft(s) or couplings. My switch seems to have some free play in it before the ball bearing switches position. I took it out of the deck and greased it, but does not seem to help matters. I'll surely break it if I open the mechanical part of it. Any Help? Thanks, Jon,KB1DC

From Flowertime01 at wmconnect. com Sat Apr 16 22:23:20 2005
Subject: [R-390] Mech Filer/Ohm reading

Jon, You own an R390/A, you need a copy of the "Hitchhiker Guild To The Galaxy" Remember "Don't Panic"

Yesterday (every day for the last 40 years) it worked.
Today it does not work.
It only has one thing wrong with it.
That's the way we were taught to approach this monster in school.
Keep your working and its one bad part at a time to find and fix.
More than 1 bad mechanical filter at a time is illogical (as Spock would say) Roger KC6TRU

From w5kp at direcway. com Sat Apr 16 22:30:48 2005
Subject: [R-390] Mech Filer/Ohm reading

Unless, of course, one has not yet replaced that B+ blocking cap. :-) Jerry W5KP

From w9ya at arrl. net Sun Apr 17 10:32:47 2005
Subject: [R-390] What Nor Cal

Actually Roger, their Sierra and Norcal 40 transceivers are some of the best radios for under $1000 you can get performance wise (read superhets, NOT direct conversion).

In fact these two radios were designed by the same fella that immediately went on to design all of Elecraft's radios. And those offerings are also not to be sniffed at as some "tuna-tin" (or) "direct conversion receivers".

All in all Norcal has offered up around 20 kits or so in the past dozen years. Only one of which was a direct conversion receiver (if I recall correctly). Vy 73; Bob w9ya

From djmerz at 3-cities. com Sun Apr 17 20:17:42 2005
Subject: [R-390] 390 ant balanced connector

Hi, I'm looking for the 82-5589-rfx connector and a short piece of approprite coax twinax cable to use with my 390. Mouser, Newark, Surplus Sales and Wallco have the connector with Wallco lowest at $4. But I still need to come up with the cable. Someone sold me a made up item for under $10 a few years back when I was getting the 390a up and running - I thought maybe someone here might know or be a source for such a combo, so I don't have to buy some large quantity of coax, thanks for help, Dan.

From ham at cq. nu Sun Apr 17 20:33:27 2005
Subject: [R-390] 390 ant balanced connector

Hi,

The cable is used for IBM token ring network installations. This isn't exactly a common thing to be putting in these days, but it once was. Your local electrical supply company may have a spool sitting in the back room under about six inches of dust. Once they find it they may sell you the entire spool cheap. Take Care! Bob CampKB8TQ

From jmiller1706 at cfl. rr. com Sun Apr 17 21:52:22 2005
Subject: [R-390] Hickok 547A Tube Tester FA

I'm auctioning off my Hickok 547A Tube tester. Item number 7509230763. Thanks for the bandwidth - Jim N4BE

From N4BUQ at aol. com Sun Apr 17 22:20:36 2005
Subject: [R-390] Rats - There goes a pair of 26Z5W's

I had my working R390A on its back this afternoon with my project's PTO connected to it. I wanted to do some linearity checks on the PTO. I checked the endpoint settings and it needed a slight nudge to make it right. As I was sticking the screwdriver into the PTO to adjust it, I heard the sound like something was drawing excessive current. I didn't see anything amiss and tried again. Another sound and the PTO stopped oscillating. Checked and all filaments and lamps are still lit except for the 26Z5W's. Both of them were completely blown.

I don't know if I shorted something to the full-wave rectifier mounted on the back (I had the PTO sitting on top of the power supply), if I shorted something in the PTO (I don't think this is the case as I've done this before with a metal screwdriver without ill effects), or if it may have simply been the tube's time to go. I had inadvertently left the radio in STDBY for about an hour and a half while the PTO was warming up for the test (meant to switch to AGC but forgot). Perhaps this placed some sort of odd strain on the rectifiers. I don't know.

At any rate, I now am two 26Z5W's short of a full supply. Anyone have a line on any? I know there are available on eBay, but I thought this group might have a source too. Thanks, Barry - N4BUQ

From ka6uup at pacbell. net Mon Apr 18 15:20:25 2005
Subject: [R-390] CU168 Multicoupler Question

Somewhere, I remember reading that it is possible to bypass the high pass filter in this unit so it covers the AMBC band. . Can any one help me with the details? TIA, Chuck

From Lester. Veenstra at intelsatgeneral. com Mon Apr 18 15:32:19 2005
Subject: [R-390] CU168 Multicoupler Question

Yes but then you run the risk of overloading the amp with excessive signal levels.

From roy. morgan at nist. gov Mon Apr 18 15:36:59 2005
Subject: [R-390] CU168 Multicoupler Question

wrote: >Yes but then you run the risk of overloading the amp with excessive >signal levels.

That sounds like good advice, depending on your location. I think Les has a medium power AM antenna at the end of his street, and there's one about 4 miles from my place. A tuned suck-out circuit (series tuned resonant circuit) across the input might reduce any troubles you find. Roy

From David_Wise at Phoenix. com Mon Apr 18 19:59:58 2005
Subject: [R-390] Rats - There goes a pair of 26Z5W's

Probably blew up the filter caps. B+ rises in Standby because the load is smaller. If the caps were old and used to the nominal B+, they would conduct greatly increased leakage current when it was high. As they warm up due to the increased power dissipation they leak more. Hotter, hotter,...SHORT! Better check them before you replace the rectifiers. 73, Dave Wise

From N4BUQ at aol. com Tue Apr 19 00:00:31 2005
Subject: [R-390] Rats - There goes a pair of 26Z5W's

I suppose that wasn't the case. I popped in my other set of 26Z5W's and it seemed to be okay. The filter caps are rebuilt so I suppose they withstand the increased B+ and they don't leak quite as much as the originals did. I still think I shorted the PTO can to something - probably the rectified 25V on the selenium rectifier, but I don't see how that would have blown the 26Z5W's. Oh well. It gives me something else to buy...Thanks, Barry - N4BUQ

From ham at cq. nu Tue Apr 19 09:19:00 2005
Subject: [R-390] Rats - There goes a pair of 26Z5W's

Hi,

Often when you loose the filter caps in that way (fast runaway to detonation) you get some side effects. The most pleasant of the batch is the wonderful odor of cooking MFP varnish. Next up the list is the marvelous puff of smoke as the electrolyte boils off, that one general will clear the area while high capacity exhaust fans are brought in for a couple of days. Finally there is the actual for real and for certain indication of a problem when the capacitor relief / over pressure function fails totally and the capacitor detonates. Pieces of aluminum shrapnel flying past one's face are a good sign this has happened.
You don't notice this stuff happening normally because the capacitors take years to degrade. You do not get much of a pressure build up in that case. I certainly have seen all three cases though not all in R390's. With a modern electrolytic the top simply opens up and there isn't as much drama as with the good old parts. With some of the older parts you can do a good job of ripping open the aluminum can. That's a *lot* of pressure.

The main thing that you have to watch is when you rebuild capacitors in the old housing. If you pack the

housing nice and full of stuff and then seal it very well you do not have an vent path for any gas that is evolved. If you do a *very* good job you increase the probability of a detonation. I have never seen or heard of this happening with rebuilt capacitors so it's just a theory at this point. It would be very nice to keep it in the theory category. I have no need to destroy a statistically significant number of rebuilt capacitors simply to measure the over-pressure wave. Take CareBob CampKB8TQ

From kgordon at moscow. com Tue Apr 19 11:55:46 2005
Subject: [R-390] Another R-390.

Check out 6525386784. It might be useful. Ken W7EKB

From R390rcvr at aol. com Tue Apr 19 13:04:01 2005
Subject: [R-390] Another R-390

Good afternoon: The R-390 Ken mentioned (6525386784) has some issues. I asked the seller to send me photos of it, and the power supply has been seriously hacked. This is not the usual diode conversion. The voltage selector switch is gone too.

He is selling it for a friend, and doesn't know much about it. Just a word to the wise. I would assume it represents parts only, not a working radio. It may still be worth a look in, but it would be a major project! Randy

From RLucch2098 at aol. com Tue Apr 19 13:08:50 2005
Subject: [R-390] Another R-390

Heck guys, the knobs & meters alone are worth the bidding especially if you are only a few states away to keep the ship costs down! 73. . Rich WA2RQY

From ku4yp at verizon. net Tue Apr 19 13:24:41 2005
Subject: [R-390] Another R-390

i bid a couple of times, too much for the work that is there, IMHO. if i could go pick it up, it would probably be a different story. Michael Prevatt

From ham at cq. nu Tue Apr 19 13:27:25 2005
Subject: [R-390] Another R-390

Hi, The real question is weather it's been under water and if so for how many weeks … Good source of parts though. Take CareBob CampKB8TQ

From David_Wise at Phoenix. com Tue Apr 19 13:43:11 2005
Subject: [R-390] Rats - There goes a pair of 26Z5W's

If one tube decided to short cathode to heater (for whatever reason), this would ground the other cathode at the same time, and in seconds both would fuse open at the thin metal ribbon connecting the cathode

sleeve to the pin. This will be pretty obvious if you examine them. I hope you're keeping a close eye on your radio! 73, Dave Wise

From tetrode at comcast. net Tue Apr 19 14:00:05 2005
Subject: [R-390] CU168 Multicoupler Question

Chuck,

I believe you're thinking about the CU-872 multicoupler, it has a high-pass filter module fitted with BNC connectors under the chassis which is very easy to bypass. The CU-168 does not have this, it's simply transformer and choke coupled all the way through. It is flat down to 2 MC, so it'll probably work on the top end of the broadcast band. 73, John

From ross at hypertools. com Tue Apr 19 14:20:49 2005
Subject: [R-390] CU168 Multicoupler Question

I had a couple of CU-168s, tried 'em both on the AM broadcast band. Compared to their output at 10 MCs, response on both units was real close to 3db down at 2 MCs.

I fussed with them a little and could not come up with a good way to lower that bottom 3db point. Whatever high-pass filter there is in the CU-168 seems to be built in the balanced line signal distribution scheme in the unit - it is certainly not as simple as bypassing a single filter module.

The CU-168 high-pass filter is not a brickwall filter - if I remember, response at 500 KCs was only like 20db down from that at 10 MCs. Good luck with it, please post details of any success you have getting the CU-168 to work well down to 500 KCs. 73 Dave RossN7EPI

From rbethman at comcast. net Tue Apr 19 14:57:41 2005
Subject: [R-390] Another R-390

Except both meters are NOT identical! Lord only knows what is BEHIND the front panel - Then shipping to the RIGHT coast....Bob - N0DGN

From richardlo at admin. athabascau. ca Tue Apr 19 16:17:29 2005
Subject: [R-390] Another R-390

wrote> Except both meters are NOT identical!

The meters on my R390 aren't identical eiter but they are the genuine article. Richard Loken VE6BSV

From n4buq at aol. com Tue Apr 19 15:23:01 2005
Subject: [R-390] The total capacitance of capacitors in parallel is equal to the sum of each capacitors

Okay, pretty much everyone on this list knows this; however, I have a question. I would like to try Chuck's modification where the coupling capacitors in the audio deck are increased from 0. 01uF to 0. 022uF, 0. 033uF, or more to yield better low frequency response. I assume the theory here is that the

higher value capacitors produce a lower capacitive reactance at the lower frequencies thereby allowing a greater low-frequency voltage on the grid of the final PA enhancing the low-frequency response.

Given the subject line of this post, I proceeded to place 0. 033uF capacitors in parallel with the existing 0. 01uF capacitors. Theoretically, this should have yielded 0. 043uF; however, I didn't notice any change in the sound. I assume this is because while the total capacitance is now greater, each capacitor acts independently; however, why didn't the 0. 033uF capacitors still allow the low-frequency voltages and I would still get a better low-frequency response? Is it possible I just didn't notice the difference or was my method completely invalid? Barry - N4BUQ

From ham at cq. nu Tue Apr 19 16:01:08 2005
Subject: [R-390] The total capacitance of capacitors in parallel is equal to the sum of each capacitors

Hi,

Well it could be because the laws of physics have been suspended by act of congress.

Assuming that both capacitors are working and in the circuit then you should have them add when they are in parallel. With a 4x increase in the capacitors you should push the low end a bit more than an octave down. That's *if* the capacitor is the only thing limiting the low end. I would guess that the output transformer drops out somewhere down low.

Do you have anything you can sweep the audio response with? Usually that is the only way to be sure you are winning or loosing. A partial octave improvement can be tough to hear below 100 Hz or so. It's a lot easier to hear below 100 cps. Take CareBob CampKB8TQ

From Flowertime01 at wmconnect. com Tue Apr 19 18:24:17 2005
Subject: [R-390] Audio Capacitance

Barry,
Audio Capacitance,
Are you sure you have enough ear to discern the lower lows?
Did you get all the caps in the chain from the detector to the output?
If you missed one then that one is still limiting the lows.
Get the cathode by pass caps also. These will keep you from hearing a difference.
Does your speaker or headphones have enough low end to enable you to discern the difference? Your R390 may have more bottom end than the speaker or headset or ears can reproduce.

Why do you believe the signal you were hearing has any more bottom end to hear?

Do not be deceived easily. Stay with it and review what going on in your receiving environment. There may be more low frequency than before, I just may not be as overwhelming as you expected. You are not going to get a boom box out of a 1/2 watt audio amp. Work with your BFO against a CW signal generator and listen for an improved lower audible frequency as you zero beat the BFO.

Big caps is better sound for sure. Many or have been there and done something. Those that have stay with it long enough to get all the items changed are happier with the sound.

Caps in parallel all add up to a simple sum. You are better off just doing a replacement. Things are not

critical in the audio deck. Your not likely to send it into oscillation by doing cap replacement. The new caps are so much smaller you can do the whole deck with some 450 or 600 volt caps in some . 1 or . 3 values in place of the . 01 values. Find the 8uf and put a 20 or so in there. A low voltage elec will be OK. Roger KC6TRU

From Flowertime01 at wmconnect. com Tue Apr 19 18:28:58 2005
Subject: [R-390] Audio Capacitance

Fellows, Yes I did say go from . 01 to . 1 or . 3

A jump to . 03 from . 01 just will not give you enough to hear the difference. As some of the other post pointed out the transformers and other things are still effecting the changes Roger KC6TRU

From mjmurphy45 at comcast. net Tue Apr 19 20:17:42 2005
Subject: [R-390] Audio Capacitance

Barry,

Beefing up those caps is good practice. But, it is a little like standing on your sprinker hose with both feet and taking one foot off.

Do the Rippell - C604 and C605 to 0. 033 uF and a 10 UF cap for C609. This should get you somewhere near 100 - 200 Hz for your -1dB point on the low end and your high end should be fine. Perhaps too fine. My top end was peaking above normal. Removing or reducing the value of C612 (68 pF) will flatten the high end. In any case you should be going out above 10KHz to the -1dB point. This should get you to 300mW at under 3% distortion. 1 Watt or so is about the maximum I could get out of the stock 600 Ohm iron for 11% distortion with this mod.

If you should try to bypass R614, the cathode resistor, with a 100 uF electrolytic in order to increase gain, the positive feedback at R615 will cause trouble, producing a novel circuit - more suited to a code practice oscillator. The positive feedback produced by R615, the 56 Ohm job, is yet another mystery circuit of the R390A. I have elected to short this little bugger out.

If you are willing to do a simple rewire to replace the 6AK5 with a 6AQ5, lower R614 to 270 Ohms or so and install a small all-american 5 type output transformer, you can easily get to 1 watt at less than 1% distortion and obtain 30 Hz to 20 kHz bandwidth. With a better transformers and more fooling with the circuit, 2 - 3 Watts is possible. Warning - Playing with this circuit is addictive, buy another audio deck. Mike Murphy WB2UID

From r390a at bellsouth. net Tue Apr 19 20:59:30 2005
Subject: [R-390] Yet another Black Panel '390A on the 'bay

This one isn't in such good shape as the last one that was all dolled up. http://cgi. ebay. com/ws/eBayISAPI. dll?ViewItem&item=5768431647 73 Tom

From ham at cq. nu Tue Apr 19 21:24:49 2005
Subject: [R-390] Yet another Black Panel '390A on the 'bay

Hi,

About the only thing I would comment on in the verbage is the part about the solid state replacements for the 26Z5's. One KV is a bit lower in the PIV department than the "official" diodes you are supposed to use. These days putting a couple of 1N4007's in series to get up to 2KV is still a sub 50 cent option. Take Care Bob CampKB8TQ

From chacuff at cableone. net Tue Apr 19 23:07:38 2005
Subject: [R-390] Yet another Black Panel '390A on the 'bay

Well his text states there is no documentation that black faced R-390A's were ever manufactured. I thought there was..... Where's Les! It looks like a demilled radio to me. Missing meters. Missing tag. Who knows. Bet it still goes for over 1K....Cecil...

From Llgpt at aol. com Tue Apr 19 23:20:10 2005
Subject: [R-390] Yet another Black Panel '390A on the 'bay

Several ex-operators who worked for the NSA in various capacities whilestill attached to the United States Naval Security Group (in various locations)would tell us different. Another friend who worked for Motorola at WrightPatterson said that they (Motorola) made up a batch of fifty for the USN. If youhave ever been aboard ship at night and tried to see the front panel detail with red night lanterns will know what I'm talking about. The claim was the black panel with the white engravings/silk-screen provided a much better contrast. Howard Mills has what sure appears to be an original black front panel. I've seen several myself. For the non-believers, be careful of strange visitors……. Les Locklear

From mjmurphy45 at comcast. net Wed Apr 20 07:00:08 2005
Subject: [R-390] Audio Capacitance

Hi Tom,

The "how" is positive feedback. This is a path which feeds some of the output signal from the output stage (developed on the cathode resistor), back, to the cathode of the audio driver stage. The "why" is less understood. This feedback method must have been added in the design to generate a deliberate effect that the designers wanted - like a peak in the response. The guys on line can help you more than I can. All I know is that positive feedback if taken too far can cause some nasty effects like oscillation! Adding a bypass or having the increased resistance is like turning up the regen control! Mike Murphy WB2UID

From ham at cq. nu Wed Apr 20 08:18:36 2005
Subject: [R-390] Yet another Black Panel '390A on the 'bay

Hi,

This is more in the line of an interesting story than hard data.

The R390's and 390A's from Motorola were made at the Augusta Boulevard plant in Chicago. That plant

was long gone from the Motorola empire by the time I got there but the stories lived on.

Like a lot of factories in that era pretty much everything was done on site. They did painting in house. Repainting equipment carts to your department's colors was a favorite night time sport. They would paint anything any color 24 hours a day ....

Since they did the front panels in house varying the color would have been easy. I have also seen evidence that they repainted front panels on new radios in production. It's very likely that they repainted panels as a repair process.

I find the theory that they painted some of the production radios black plausible. I have yet to see evidence that it happened as a "painted that way new" process rather than a repaint later in life. There is evidence of white panel and light blue panel radios out there. The same thing applies to them. They certainly existed in military service. How they got that way nobody seems to know. Enjoy! Bob Camp KB8TQ

From courir26 at yahoo. com Wed Apr 20 09:22:49 2005
Subject: [R-390] Black 390A's

What may have happened is that a Govt agency ordered 390A's of MIL spec, and made a spec exception for the black paint.

I believe some NASA, FCC and FAA receivers have popped up. It is plausible that a civilian agency simply said "make 'em black for us," but I doubt that an Army inspector would go out on a limb and accept black radios for the military. Les, aren't most of these black ones Mot? Tom

From n4buq at aol. com Wed Apr 20 09:32:32 2005
Subject: [R-390] Audio Capacitance

Mike,

C604 and C605 are the ones I was jumpering with 0. 033's. I replaced C609 with a 10uF too. I need to try this again, this time with the calibrator signal and maybe watching an output meter. I may see some increase at the low frequencies that way, but if I can't really hear the difference, then it won't matter.

One thing I wasn't doing during the experiment was to listen through the 600 to 8 ohm transformer. That makes quite a difference too. I'll try to hook that up in the test this time.

I'm currently in the process of making a jumper cable to allow me to power the PTO (and the RF deck for that matter) away from the radio and onto the bench. I don't want to take any more chances on shorting anything else out while doing my PTO linearity work. BTW, this one looks pretty bad linearity-wise. I plotted the output in Excel and it looks pretty pitiful. Hopefully I can replace the capacitors someone mentioned and improve this thing right off the bat. I'm worried, though, that the "curve" looks like a sawtooth pattern in places. Maybe someone else has already tried "correcting" the stack. Dunno... Barry - N4BUQ

From Llgpt at aol. com Wed Apr 20 10:02:42 2005
Subject: [R-390] Black 390A's

All of the ones I have seen that appear to be original are Motorola. Ofcourse, many hobbyists have "rolled their own. " Les

From flood at Krohne. com Wed Apr 20 10:11:14 2005
Subject: [R-390] Yet another Black Panel '390A on the 'bay

This is listed up for sale by a regular contributor to this list and I have to say that this is one of the most honest descriptions I've seen in a long time on the "E" place. $1,000+ for a radio without an IF deck? I'd be delighted for the seller if it goes that high, but is it possible to get that kind of price if you don't use the words: Collins, Rare, and L@@K??? John Flood KB1FQG

From hankarn at pacbell. net Wed Apr 20 10:12:37 2005
Subject: [R-390] Black 390A's

I have some that I have done. Black with white and also Red lettering. Hank KN6DI

From R390rcvr at aol. com Wed Apr 20 10:26:59 2005
Subject: [R-390] Another black faced Motorola

Good morning all:

I have a black faced Motorola from the 58 contract. I had always assumed ithad been painted by the previous owner, but I will do some snooping, see whatthe back of the panel looks like, etc. I doubt the average owner would repaint the back of the panel black and resilk screen all the lettering. Les, do the "real" black face units have silk screened white lettering onthe back? Randy

From n4buq at aol. com Wed Apr 20 10:27:55 2005
Subject: [R-390] Black 390A's

I took two front panels to the powder-coaters yesterday. I opted for gray to try to make them original-looking but am now wondering if I should have stuck with my original plan for black so I could retire early...Barry - N4BUQ

From Llgpt at aol. com Wed Apr 20 10:45:50 2005
Subject: [R-390] Another black faced Motorola

The units I have seen, had the original silk screening on the back of the
panel. None were black front and rear. I have seen silk-screened and engraved versions. Les

From Llgpt at aol. com Wed Apr 20 10:46:56 2005
Subject: [R-390] Black 390A's

One in Gray, one in Black, then you can retire and use the gray faced one! Les

From barry at hausernet. com Wed Apr 20 11:28:53 2005
Subject: [R-390] Black 390A's

How about black with gray pinstripes -- goes nice with a red tie, uh, red meters and counter. This was the rare Hart, Schaffner and Marx version, sub-sub contracted through Helga Rubenstern. Requires a trip to the Boatanchor Emporium & Habberdashery Ltd. as follows ...

Knobs, of course, are gentleman's black -- spit-shined courtesy of Florsheim. Optional water repellant cover by Burberry. (sp?) No?, OK here's a more affordable one from London Fog. Need socks? They go over the knobs to protect the finish. Can I interest you in a nice pair of 500 lb rated suspenders? Your receiver will be even more snazzy hanging from the ceiling. Makes a real statement -- you do have 2 X 8's in the ceiling? Shock mounted so it protects your ballast tube and sensitive filaments --not to mention optimum ventilation unsurpassed by any other method. Let's see now -- did you have the R-390 or R-390A? As I recall, one dresses right, the other dresses left. Anon

From n4buq at aol. com Wed Apr 20 11:33:11 2005
Subject: [R-390] Black 390A's

Since many of these radios saw service in the '60s, shouldn't a tie-dye be more appropriate? Psychedelic version anyone? Barry - N4BUQ

From n4buq at aol. com Wed Apr 20 12:08:33 2005
Subject: [R-390] Black 390A's

Perhaps one could just spill several colors of paint on one's shirt and then roll around on the front panel. A "Jackson Pollock" version. Barry - N4BUQ

From chacuff at cableone. net Wed Apr 20 12:14:40 2005
Subject: [R-390] Black faced R-390A's

This is a stretch but wasn't a black NOS Military cabinet (CY-979?) sold recently on Ebay? (sold for like a gazillion dollars) Why would the military have black cabinets in stock if they didn't have black faced radio's? Just a thought...Cecil...

From ham at cq. nu Wed Apr 20 12:24:08 2005
Subject: [R-390] Black 390A's

Hi

I think that the black front panels look very nice. There was a black front 390A at Hostraders a few years ago and it had been done very nicely. The real question is what color do you make the knobs? If you go with a black front panel and black knobs the knobs more or less fade into the panel. The same thing applies to the meter covers. Maybe a black front panel with white letters and the knobs done a nice dark red ....Enjoy! Bob CampKB8TQ

From JMILLER1706 at cfl. rr. com Wed Apr 20 12:24:25 2005

Subject: [R-390] Black faced R-390A's

Why not strip 'em down to bare metal and then polish to match the "billet aluminum" look of your Harley?

From Llgpt at aol. com Wed Apr 20 12:27:23 2005
Subject: [R-390] Black faced R-390A's

Exactly! Les

From Llgpt at aol. com Wed Apr 20 14:10:42 2005
Subject: [R-390] My take on the R-390A Black Faced Receivers and other items of interest.

Many years ago, conventional wisdom said the last R-390A's produced were onthe 1967 EAC contract. In March, 1995 I broke the news about the 1984 FowlerIndustries contract. Another "source" said that Collins only produced 525 R-390A's. Thatmyth/legend was proven to be so much bs too. Since then, several other small contracts have surfaced.

Way before that, conventional wisdom said the Hammarlund SP-600-JX-26 wasthe last of the Super-Pro series. Once again, having a SP-600-JLX-27 sitting onmy bench, I thought, that can't be true. Another quest, another myth/legend destroyed. The last suffix number in that line was a JX-39.

Damn, this stuff is getting old, do I have to uncover the Black Faced R-390A info for you guys too?

Not to worry, It will be revealed in due time. My trusty sidekicks TomMarcotte and Wally Chambers will have to once again wade into the fray and destroy the naysayers! Les Locklear

From jetemp at insightbb. com Wed Apr 20 15:49:17 2005
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?

Thanks for any help on this matter. Sincerely, Jim Temple

From chacuff at cableone. net Wed Apr 20 16:27:01 2005
Subject: [R-390] OT: Diode Matching

Hi Jim,

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. Cecil...

From ham at cq. nu Wed Apr 20 16:29:50 2005
Subject: [R-390] OT: Diode Matching

Hi,

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. Enjoy! Bob CampKB8TQ

From flood at Krohne. com Wed Apr 20 17:05:54 2005
Subject: [R-390] Crayola front panels

You are all much to narrow minded, thinking about all this color stuff. What I want is a clear lexan panel for the R390, R390A and SP600 so that I can see the moving parts! John Flood KB1FQG

From hankarn at pacbell. net Wed Apr 20 17:25:21 2005
Subject: [R-390] Crayola front panels

John, Money talks and we all know what walks down the road How many do you want? Hank KN6DI

From barry at hausernet. com Wed Apr 20 17:34:37 2005
Subject: [R-390] Crayola front panels

wrote: > You are all much to narrow minded, thinking about all this color stuff. > What I want is a clear lexan panel for the R390, R390A and SP600 so that I > can see the moving parts!

That's a good idea -- and put some blue lights inside like those fancy computer cases.

Hey, wait a minute -- narrow minded! ! ! Them's fightin' words! Dare ya' ta' cross this line:

—

OK -- how about a mirror panel - -for the self-absorbed?

No? Like to see the insides -- mount a dozen of those micro TV cameras to keep watch on the works -- and ballast tube glow.

OK, try this: A panel made up of a wide-screen LCD, so you can read the posts without taking your eyes off your '390. Or maybe watch TV, or keep it tuned to the abominable e-place and mount a dedicated place bid button on the front. Also, with the LCD you could change the color at will.

Not good enough? Take your lexan, two layers or some double pane weatherproof plexiglas and fill it with suitable oils and whatnot -- yup a lava lamp front panel.

I could do a couple dozen more, but here is the piece d' resistance -- or a piece 'o resister or sumpin ...

Cover the panel with Formica of your choice. Might even be gray, or plaid or that orange color with the flakes in it, and surround with fluted aluminum extrusion. For that '50's diner look - or maybe "dinette set" look. But beware -- when offered this option, Helga Rubenstern rejected it out of hand saying "Ooohh puleeeze, how boooshwa! " OK, she would have spelled it correctly, but that's the way she said it, adding, "Don't you have something in a bronze or gold tone, perhaps with some nice filagree work in it? Something more, uh, tasteful. " Barry

From ham at cq. nu Wed Apr 20 17:38:08 2005
Subject: [R-390] Crayola front panels

Hi,

Actually this does not really address the issue at all. Once you put on the Lexan front panel you have to decide what color to paint each of the internal parts....

Given the current state of the art in radios seems to be antennas that light up LED's the possibilities for demonstrating bad taste are enormous. (says the guy who wants red knobs on a 390,…). Enjoy! Bob CampKB8TQ

From n4buq at aol. com Wed Apr 20 17:49:07 2005
Subject: [R-390] Crayola front panels

Don't paint the front panel at all. Mount motor drives on all front panel controls with the appropriate

serial/parallel interface to a computer program that looks like the front panel. Put the R390x right up next to the antenna to eliminate any feedline loss. Run the controlling wires from there to the computer. Change the color any way you want, any time you want. Barry(III) - N4BUQ

From flood at Krohne. com Wed Apr 20 17:51:39 2005
Subject: [R-390] Crayola front panels

I'm now convinced that there is nothing that Hank can't build. He is a true capitalist (except that he sometimes forgets about profit, I think) No "RED" panels in his shop. John Flood <------ worried that the list manager will spank us all.

From n4buq at aol. com Wed Apr 20 18:00:20 2005
Subject: [R-390] Crayola front panels

I seem to recall the plexiglass / lexan front panel has already been done. I wish whoever did it would post a picture. Barry - N4BUQ

From chacuff at cableone. net Wed Apr 20 18:04:40 2005
Subject: [R-390] Crayola front panels

Hank never forgets about profit….. His customers do! Cecil...

From chacuff at cableone. net Wed Apr 20 18:06:06 2005
Subject: [R-390] Crayola front panels

Well all the gears could be polished as could the other items viewable through the clear front panel...Sounds neat! Cecil….

From ham at cq. nu Wed Apr 20 19:32:34 2005
Subject: [R-390] Crayola front panels

Hi,

Well as long as you have all the stuff apart you could send the gears and moving parts out for a nice coat of 24 karat gold. Hard black anodize the face of the RF deck. It would look sharp. I bet if we get an order together for a hundred or so and collect all the money and send it to Hank he'll do some up for us ...Take Care! Bob CampKB8TQ

From wa6knw at sbcglobal. net Wed Apr 20 19:39:03 2005
Subject: [R-390] Re: Black 390A's

Well, We have a woman here at work who was an Oh Five Hog (05H). To the unwashed and uncleared in the audience that means she was a Morse Intercept Operator in the US Army. Thqat also ment, during her time in service, that she was a member of Army Security Agency (ASA). Not to belobor the subject, we were discussing R-390(*)'s one day and I provided her some pictures of some that were at various

unmentionable places. She remarked that she wish that she could have gotten some pictures of the receivers she used at a certain 3-letter agencies facility that were black faced. So I later showed a picture of one of the pseaudo black paneled radios that is floating around the internet. Man, she went bonkers....How did you get that picture? We're going to get into trouble if we get caught with that picture. She could not belive that it was from the internet. So I sent several URL's with all kinds of R-390(*) stuff and she was just flabbergasted at the information that was at hand..... . BTW, she's the HR manager where I work.

Well, I did mention R-390(*) several times so I guess this wasn't off topic =;>) RICH WA6KNW

From ham at cq. nu Wed Apr 20 19:57:23 2005
Subject: [R-390] Re: Black 390A's

Hi,

There is a lot of information that black radios were used. Now, can we find out how they got that way ....Enjoy! Bob Camp KB8TQ

From chacuff at cableone. net Wed Apr 20 20:45:12 2005
Subject: [R-390] Re: Black 390A's

I though it was a good post...I think it qualifies as hard evidence of the existence of the blackfaced 390A. I move we consider it verified...all in favor say amen!

The amen's have it....No opposed...it carries! Still would like to see the back side of the panel on the one on the bay right now...It looks like it could qualify as a demiled NAS dog....Cecil...

From Flowertime01 at wmconnect. com Wed Apr 20 21:08:48 2005
Subject: [R-390] Black 390A's

Barry, Call the man, get them done in black and retire. You can always get your self another R390 if you feel you rake in to many dollars. Roger KC6TRU

From hankarn at pacbell. net Wed Apr 20 21:11:56 2005
Subject: [R-390] Crayola front panels

I already have the CNC engraving program for the R-390A, we could add holes AR to the program and alter it to Non A pretty easy. We can dupe the program over to the non A also.

On the 390A CNC drill I had close to 50 people THAT SAID THEY WERE GOING TO GO FOR IT and on that basis I told the Shop it looked good for 50 sehe did the program and we did individual panels after being run through the time saver to have a good surface to work with after powder coating. With all of the warping and shimming and time we did 31 panels of which 14 were mine which I put in to spread out the cost. Needless to say we both lost our you know what on that deal.

Plus i got accused of ripping guys off on the job. Yeah Sure! ! ! ! Hold your breath. I just called Dave at his shop and he said he would need 50 to add to the program and tooling.

Cost I have no idea, have a good source for LEXAN which is not cheap.

If we have over 50 that are truly interested in it is there someone out there willing to get the list together for me to get an estimate of total cost. I am working 7 days a week and do not have the time to answer that many emails. It will be cheaper is each person was willing to fill in the lettering, no lettering on the rear.
SO NOW WE ARE AT PUT UP OR SHUT UP. The new LEXAN would be flat so that would solve the warping problem. If there is true interest I will do a WAG estimate based on 50. Hank KN6DI

From Flowertime01 at wmconnect. com Wed Apr 20 21:20:03 2005
Subject: [R-390] Crayola front panels

You are all much to narrow minded, thinking about all this color stuff. What I want is a clear lexan panel for the R390, R390A and SP600 so that I can see the moving parts! John Flood KB1FQG

From hankarn at pacbell. net Wed Apr 20 21:25:50 2005
Subject: [R-390] Crayola front panels

Anytime any one wants to come to So Cal and follow me around on one of these drills be my guest, that does not mean room, board and 8o7's. The leg work and follow up is very time consuming. My limo is an old 87 Ford diesel ambulance with over 300,000 miles on it.

Profit I have heard of that somewhere in my travels. I see very little of it here. If I could sell my inventory of over 400 radios and I would guess 5 to 8 tons of parts, I could relax a little and play HAm radio and make my antenna farm grow. HiHi. Hank KN6DI

From Flowertime01 at wmconnect. com Wed Apr 20 21:30:17 2005
Subject: [R-390] Re: R390 Professional Operators

Well, We have a woman here at work who was an Oh Five H (05H).

Rich, : Tell her a 33C4H said hi from the R390 list. Roger L. Ruszkowski KC6TRU. P. S. my wife was a 98C.

From ham at cq. nu Wed Apr 20 21:32:54 2005
Subject: [R-390] Crayola front panels

Hi
A couple of minor issues. I seem to recall that some of the front panel controls are grounded through the front panel. Lexan is not terribly conductive ....

The front panel is attached to a bunch of stuff with countersunk screws. They are nicely sized for aluminum. It's not clear to me how well they would match with Lexan. Cold flow and cracking issues are what I'm getting at.

Fine detail machining of Lexan can be a chore. The stuff tends to turn into nasty strings rather than chips.

Lexan is strong and it is fairly rigid. Is it as strong and rigid as aluminum? If we mount a radio by a lexan front panel what happens? I would hate for this to turn into another everybody looses kind of deal. We have enough history in that area to finance several small countries ....Take Care! Bob Camp KB8TQ

From Flowertime01 at wmconnect. com Wed Apr 20 21:38:15 2005
Subject: [R-390] Crayola front panels

Bob, Be careful, This horse ain't dead yet and you could get kicked. Roger KC6TRU

From ham at cq. nu Wed Apr 20 21:41:32 2005
Subject: [R-390] Crayola front panels

Hi I think it's an interesting idea. I just don't want to spend a bunch of everybody's time and money on something we haven't figured out. I actually was serious about the black aluminum panel with the dark red knobs as well ....Take Care! Bob CampKB8TQ

From jetemp at insightbb. com Wed Apr 20 21:56:57 2005
Subject: FW: [R-390] OT: Diode Matching

Thanks for all the replies. The low voltage "diode mode" position on my multi-meter is good enough for the purposes I needed. Regards, Jim

From ham at cq. nu Wed Apr 20 21:57:18 2005
Subject: [R-390] Crayola front panels

Hi
Now if I was going to try to stir things up I would suggest we make the panel out of a aluminum / lexan / aluminum sandwich. That way we get conductivity, rigidity, *and* we can use rear mounted color coded LED's to illuminate the markings. The LED's could change colors to match the mood of the station we are listening to ....But of course I would *never* stir things up ....Enjoy! Bob Camp KB8TQ

From chacuff at cableone. net Wed Apr 20 22:12:13 2005
Subject: [R-390] Crayola front panels

I glass bead blasted a set of knobs the other day and they looked so good I thought about clear coating them and using them on a black faced radio...Could do the pointer stripes in red....Just some thoughts...

From ham at cq. nu Wed Apr 20 22:15:41 2005
Subject: [R-390] Crayola front panels

Hi,

Now that's an interesting twist I had not thought of. I pretty much assumed the knobs would look pretty poor unless you painted them. What ever you use for the pointers would have to contrast well with bare metal. That's always been the challenge - how do you contrast with a mirror? Enjoy! Bob Camp KB8TQ

From chacuff at cableone. net Wed Apr 20 22:22:06 2005
Subject: [R-390] Crayola front panels

That's a pretty cool idea Bob. Engrave through the aluminum front panel and into the lexan layer. Paint the front and rear aluminum pieces black and introduce light some how into the lexan layer to illuminate the engravings in the lexan. I believe that would be one cool looking panel. Got to find some way to close the edges so the light wouldn't escape and ruin the effect in a darkened room. Top aluminum panel could have folded edges to contain the lexan layer.

If we go to all that trouble maybe we could come up with a retro style red LED frequency display to replace the veeder root counter mounted in the same display cover....7 segment or maybe even dot matrix LED. A real cool 2005 R-390B...If we could come up with a neat affordable retrofit for the mechanical filters..... Hmmm Cecil...

From ham at cq. nu Wed Apr 20 22:29:08 2005
Subject: [R-390] Crayola front panels

Hi,

If you just paint the edges you will take care of the light leak problem. I suspect that Hank will be looking for a couple hundred pieces on this one ...Just walking through ..... Enjoy! Bob Camp KB8TQ

From hankarn at pacbell. net Thu Apr 21 00:14:25 2005
Subject: [R-390] Crayola front panels

All of you guys know that LEXAN is non conductive and the R39XX panels require a ground circuit between the controls and chassis via the front panel, of which could be imbedded in a circuit on the rear of the panel. More money. Hank KN6DI How about another brilliant idea ! ! ! ! .

From jpl15 at panix. com Thu Apr 21 00:36:33 2005
Subject: [R-390] (no subject)

wrote: > How about another brilliant idea ! ! ! ! .

Microsoft(tm) XR390A requires 9. 1G Pent XII, 24G RAM, 4TB HD, XP ProOptional second display for scanning function

Features: Doesn't weigh anything
Benefits: Doesn't weigh anything
Pros: Doesn't weigh anything
Cons: Microsoft(tm) Products have no Cons! !

Microsoft(tm) XR390A is available on 14 CDROMS or 4 DVDROMS and can be up and running in less than a week. Current MSCE required to install and operate this software.

However: "It doesn't weigh anything! " Audio drivers available at additional expense. There ya

go....Cheers John KB6SCO

From drewmaster813 at hotmail. com Thu Apr 21 01:34:25 2005
Subject: [R-390] Re: Crayola front panels

wrote: >Now if I was going to try to stir things up I would suggest we make the >panel out of a aluminum / lexan / aluminum sandwich. That way we get >conductivity, rigidity...<snip>

Why not use "transparent aluminum"? Scotty suggested that posessing its formula could make you "rich beyond your wildest dreams of avarice". "Ay Captain, there be whales down here! "

Drew (who is typing this on an "Oh, how quaint! " keyboard instead of speaking "hello computer" into the mouse)

From k4kwm at hotmail. com Thu Apr 21 06:16:01 2005
Subject: [R-390] Crayola front panels

Saw a 51s1 quite a while back on ebay with just such a panel/ John John Page K4KWM

From ham at cq. nu Thu Apr 21 08:25:39 2005
Subject: [R-390] Re: Crayola front panels

Hi,

If I thought there was any chance of Hank having transparent aluminum in stock in an adequate quantity for the job I would have suggested it. As I understand it he used his last batch making stuff for people who pay better than we do :) Enjoy! Bob CampKB8TQ

From hankarn at pacbell. net Thu Apr 21 08:40:23 2005
Subject: [R-390] Crayola front panels

Back when I worked as an avionics tech/electrician we did custom aircraft instrument panels using Grimes panel lights. They were really neat. They were the cats meow, now glass cockpits are the only way to go. Hank KN6DI

From chacuff at cableone. net Thu Apr 21 09:05:01 2005
Subject: [R-390] Crayola front panels

You make up the ground with a lock washer with a ground tab on each control and daisy chain them back to a chassis ground. That's one way to do it...I'm sure there are others. Cecil...

From n4buq at aol. com Thu Apr 21 09:36:04 2005
Subject: [R-390] Crayola front panels

Something that does look pretty slick is to take the paint off the knobs and polish them on a buffing

wheel with jeweler's rouge. They really shine. Unfortunately, it makes them look too much like old stereo knobs. I think they look better painted, but to each his own. Not sure how the large knobs would look this way, though. Barry - N4BUQ

From n4buq at aol. com Thu Apr 21 09:38:29 2005
Subject: [R-390] (no subject)

Can I get that on 8" single sided, single density floppies? Barry - N4BUQ

From n4buq at aol. com Thu Apr 21 09:43:04 2005
Subject: [R-390] Crayola front panels

Hmmm. I thought the only place that required grounding is the cap that connects near the carrier level meter. That's why they masked that little circle there. Do any other control require grounding?

I'm not interested in a clear panel, but just thought I would ask about this. Since the backs of the original front panels were painted, I assume they didn't need conductivity at all the controls' points. Barry - N4BUQ

From levyfiles at att. net Thu Apr 21 09:45:49 2005
Subject: [R-390] Crayola front panels

I love glass cockpits but as a private pilot totally wonderful and way overkill. For a guy flying 400 people about in lousy wx well kinnda necessary i reckon after 40 hours of computer training. Who knew that computers would end up running our cars, boats, radios, cameras, tape machines, tv. I am waiting for the grocery cart with ip. So who has a digital readout for the 390x??? 73, Bill N2WL

From tetrode at comcast. net Thu Apr 21 09:51:06 2005
Subject: [R-390] Crayola front panels

> Hmmm. I thought the only place that required grounding is the cap that > connects near the carrier level meter. That's why they masked that little > circle there.

Yup!

>Do any other control require grounding?

Nope! 73, John

From r390a at rcn. com Thu Apr 21 09:56:32 2005
Subject: [R-390] Crayola front panels

Make the grounding foil in the shape of Art Collins silhouette.

From roy. morgan at nist. gov Thu Apr 21 10:05:56 2005

Subject: [R-390] Re: Black 390A's

wrote: >Well, We have a woman here she was just >flabbergasted at the information that was at hand....

Rich,

I strongly suggest that one day you haul in to work a nicely tuned up R-390A before she gets to the office and place it on her desk or side table, running with a speaker softly playing out the low end of 40 meters. Slip a copy of "How to Become a Radio Amateur" into her inbox, too. Roy

From roy. morgan at nist. gov Thu Apr 21 10:18:14 2005
Subject: [R-390] Crayola front panels

wrote: >Now if I was going to try to stir things up I would suggest we make the >panel out of a aluminum / lexan / aluminum sandwich. That way we get >conductivity, rigidity, *and* we can use rear mounted color coded LED's to >illuminate the markings.

Most military aircraft panels and avionics were made with black painted and engraved plastic (likely Plexiglas) panels mounted over the aluminum front panel of the box. Pilot lamp holders made with red plastic were placed wherever needed to light the things up at night.

>The LED's could change colors to match the mood of the station we are >listening to ....

Darn, we did not have that feature. Roy

From youngbob53 at msn. com Thu Apr 21 10:32:47 2005
Subject: [R-390] Re: Crayola front panels

I thought transparent aluminum could only be had on Star Trek? Bob Young

From youngbob53 at msn. com Thu Apr 21 10:33:38 2005
Subject: [R-390] Re: Crayola front panels

Never mind I hadn't read the whole post yet. Bob young

From hankarn at pacbell. net Thu Apr 21 10:34:00 2005
Subject: [R-390] Crayola front panels

That and the two strips on each side where the mounting screws go to ground the panel to the chassis. Hank KN6DI

From mikea at mikea. ath. cx Thu Apr 21 10:37:46 2005
Subject: [R-390] Re: Black 390A's

wrote: Well, We have a woman here at work who was an Oh Five Hog (05H).

If you really, really want to freak her, you can show her the pix ofthe various cryptodevices that now are available, and print off the operator/maintenance TM for the Elephant Cage for her.

The _NSA_ has pictures of KW-26C devices on _its_ site.

Hey, they were glowbug!

I had an ex-NSG type here shouting "You Can't Have That! " when I showed him the Elephant Cage TM, further beat him down with pic of _my_ R-390, R-390A, and R-1051, and finished him off with the cryppie stuff. When I left, he was whimpering.

My favorite memory of the ASA was the day the guard upstairs, while on duty, decided it was a good time to field-strip and clean his M1911A1. The OD happened to walk by while it was all in pieces on the desk, and was in no way amused. Mike Andrews, W5EGO EX-AFCS ("Alcohol Flows in the Crypto Shop") SSGT (E-5), USAF, 1967-1971

From n4buq at aol. com Thu Apr 21 10:39:51 2005
Subject: [R-390] Crayola front panels

Yeah, I've got some old Collins avionics radios I use for donor parts for my R390A's. Things like the little solder stand-offs in the IF deck are in these and I've needed a couple during my rebuilds. At any rate, they are black with white lettering and they do look nice (at least I assume they did when they were new). Barry - N4BUQ

From meyer_rm at yahoo. com Thu Apr 21 10:41:04 2005
Subject: [R-390] Crayola front panels

Not to stir this pot any more than it's already been stirred but if we're going to go through all that trouble, why not just just transparent aluminum (actually transparent alumina) Might be the best of all worlds. Yes, the stuff is real: http://tonytalkstech. com/2004/08/23/transparent-aluminum/ Cheers! '73 de N2DXN Bob

From chacuff at cableone. net Thu Apr 21 10:49:49 2005
Subject: [R-390] Crayola front panels

Don't guess we'll be building any invisible aircraft out of that stuff anytime soon. Nor R-390 panels....Cecil...

From goode at tribeam. com Thu Apr 21 10:52:11 2005
Subject: [R-390] Yet another Black Panel '390A on the 'bay

My dad worked at Augusta as a QA inspector. I actually visited Augusta when I was about 10 and saw the high speed printers for the dew line being tested. I had a print out from one of them for many years.

My dad also worked on the R-390As. I am not sure that was at Augusta. It may have been at Clyborn. I will try to ask him about these things. The problem is that he at times does not recognize my brother or myself, so I am not sure how accurate any information from him would be. This is really a problem with anyone's memory. Time plays tricks on what you believe is fact. The only real believable way to prove

the black front issue would be an original contract with black fronts being specified. My 2 cents, Steve, K9NG

From n9zsv at cei. net Thu Apr 21 11:01:55 2005
Subject: [R-390] Re: Black 390A's

wrote: >Big snip One of my favorite memories of the RAF Croughton crypto shop was when an airman second decided it would be funny to attach a picture of Adolph Hitler over his photo on his ID badge. As I was leaving the com center he was spread eagled on the floor with a . 45 stuck in the back of his neck and the AP security guard's knee in his back waiting for the OD to transport him to the guard house. I saw him later armed only with a stick having a nail on the end, picking up papers from the ground while his shotgun armed guard watched very closely. I didn't see any stripes on his sleeve either. 73 Gary de N9ZSV

From Lester. Veenstra at intelsatgeneral. com Thu Apr 21 11:14:23 2005
Subject: [R-390] Re: Black 390A's

As an Ex NSG type (CTM1), where would I find an "operator/maintenance TM for the Elephant Cage"?Les K1YCM/3

From ham at cq. nu Thu Apr 21 11:53:42 2005
Subject: [R-390] Crayola front panels

Hi

I suspect that the radio works at least a little bit better with the front panel grounding the shafts on the controls. I doubt it's a big deal, but I would not deliberately isolate them.

The second issue would be safety. With the shafts grounded an accidental short to the shaft does not give you a "hot" knob. Again that's a pretty rare thing, but 200 volts on the knob would be a bit of a surprise. Take Care! Bob CampKB8TQ

From stevebyan at mac. com Thu Apr 21 12:12:45 2005
Subject: [R-390] CU-1388/FLR-9 (was Black 390A's)

wrote: > If you really, really want to freak her, you can show her the pix of the various cryptodevices that now are available, and print off the operator/maintenance TM for the Elephant Cage for her.

Which TM's would that be? I paid big $$ for several from the NTIS, and snarfed a PDF of one off the LOGSA web-site, but apparently the one containing the maintenance info on the CU-1388/FLR-9 is still classified, as none of the one's I have contain info on it.

If I recall correctly both the NTIS and LOGSA refused to give me certain of the FLR-9 TM's because they were classified. The LOGSA site actually lists TM 32-5895-233-15 as "S&I USAEMRA, Vint Hill Farms STA, Wrrenton, VA 22186"! You need a login to get that one.

The power supply in my CU-1388/FLR-9 blew up (must be a design flaw; the PC board showed evidence of serious ECO activity) and took some of the unobtanium PNP RF transistors with it. I

managed to get hold of a batch of 2N5160's and used them as replacements, but it would be nice to have a schematic and maintenance info. I still don't know what to do with the test points on the front panel :-) Regards,-Steve

From Lester. Veenstra at intelsatgeneral. com Thu Apr 21 12:15:50 2005
Subject: [R-390] CU-1388/FLR-9 (was Black 390A's)

And of course "USAEMRA, Vint Hill Farms STA, Wrrenton, VA 22186" is long gone.

From mikea at mikea. ath. cx Thu Apr 21 12:28:24 2005
Subject: [R-390] CU-1388/FLR-9 (was Black 390A's)

wrote: > And of course "USAEMRA, Vint Hill Farms STA, > Wrrenton, VA 22186" is long gone.

"I'm sorry; I can't talk about that. " -- Mike Andrews, W5EGO

From levyfiles at att. net Thu Apr 21 14:28:03 2005
Subject: [R-390] Crayola front panels

called RFID tags. Wallyworld demanded that all supplicants begin to use them. Allows control of inventory in/out much better. We use them on the East here to get across bridges. Wonderful thing. Pays the toll automatically. Helps the cops find bad guys.....If you were a smart bad guy you wouldn't use it would you? Bill N2WL

From stevebyan at mac. com Thu Apr 21 14:46:09 2005
Subject: [R-390] Re: Black 390A's

wrote: > 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 RECEIVIN 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. Regards, -Steve

From kellerfamily01 at charter. net Thu Apr 21 16:06:49 2005
Subject: [R-390] Black Panel R-390A

I was one of those military spooks assigned to the NSA at a location in the late 1950's that is, to this day,

still secret. I had both an SP-600 and an R-390A at my operating position for voice intercept. . I recall that the SP-600 had the standard grey panel, but the R-390A, while not exactly black, was a very dark shade of grey - something like charcoal grey. Not trying to keep this discussion going - just putting in my two cents worth. Bill K.

From G_Jacobs at wfec. com Thu Apr 21 16:11:53 2005
Subject: [R-390] R390A knobs

I am looking for a full set of knobs, and handles for a R390A. I am bringing one back to life. Someone has removed all of the knobs and handles, before I got it. I would take what ever I can find including a junker. I can be contacted by phone 405-247-4262 days 405-247-7007 nights, or g_jacobs@wfec. comTNX 73 Gordon KA5ZTI Anadarko, Oklahoma

From n4buq at aol. com Thu Apr 21 16:19:33 2005
Subject: [R-390] Black Panel R-390A

Bill,

I think I have that R390A. :) Shhhh! Don't tell anyone, though. http://members. aol. com/n4buq/r390a/ Barry - N4BUQ

From dsmaples at comcast. net Thu Apr 21 17:22:39 2005
Subject: [R-390] Crayola front panels

All: Hmmm...why stop there? Get a large touch-screen display so the radio can REALLY be "man-sized", and follow this with a hue-changing routine where the panel, knobs, and display fade from color to color. Add DSP to correct distortion in the audio chain. Possibilities are endless...Dave WB4FUR

From w4qg at cfl. rr. com Thu Apr 21 19:09:21 2005
Subject: [R-390] 8640B help

Hello All,

Excuse the off topic post (well, not totally off-topic, I am going to use the 8640B to align my 390A's). I was wondering if there might be someone on the list familuar with the design of HP 8640B's who could give me some advice on debugging a problem. Please reply direct. Thanks! Paul W4QG

From ham at cq. nu Thu Apr 21 19:32:55 2005
Subject: [R-390] DSP IF

Hi,

The idea of putting a DSP IF processor on the IF output of an R390 sounds like an interesting project. The nice thing about the 390 is that you can get at both the IF output *and* the AGC chain without modifying the radio at all. Given the high performance RF section and the mechanical filters the result should be very competitive.

Of course this gets into the general direction of witchcraft and the like.…Enjoy! Bob Camp KB8TQ

From dsmaples at comcast. net Thu Apr 21 20:01:46 2005
Subject: [R-390] RE: DSP IF

All: It's not R-390, but is anyone aware of relative INEXPENSIVE DSP eval boards still to be had? Everything I see now is $350-$400.

Trying to build an eval board is not on the possible list. I don't have (a) good circuit layout software, (b) board-processing facilities, etc. , etc.,... The idea of doing I & Q demodulation for SSB really intrigues me… 73, Dave WB4FUR

From chacuff at cableone. net Thu Apr 21 20:15:39 2005
Subject: [R-390] DSP IF

The thoughts of an 455 Khz IF based DSP filter system has been rolling around in the back of my head for quite some time. An outboard accy. of that type would be very popular considering the number of radios that use the 455 Khz IF. I might try sending the IF output from my R-390A to the antenna port on my Icom 756 Pro II and use the Pro as an IF/Processor/Demod and see how things stack up...

My understanding is that DSP processors that go up to 455 Khz are quite expensive and mostly smoke and mirrors at this point. You'd have to down convert to something lower....Cecil...

From Flowertime01 at wmconnect. com Thu Apr 21 20:17:17 2005
Subject: [R-390] DSP IF

Bob, Can we do DSP in hollow state, Rack and room size are no problem but I do so hate that sand state stuff even if I did slip a pair in for the 26Z5s? Roger KC6TRU

From tetrode at comcast. net Thu Apr 21 20:19:06 2005
Subject: [R-390] RE: DSP IF

Dave, this isn't a board but it'll fit your budget.

IK2CZL is a fellow R-390 enthusiast and has free PC DSP detector software. All you have to do is mix down the 455 KC IF output down to anywhere between 13 and 18 KC and the PC sound card takes care of the rest. I haven't tried it (yet) but it looks very cool and would like to hear of anybody that has used it. http://www. detomasi. it/en/project. html73, John

From Flowertime01 at wmconnect. com Thu Apr 21 20:23:18 2005
Subject: [R-390] RE: DSP IF

Dave,

So many people are now using the sound card and "ugly" Micro soft OS and C code running on a PC.

Ala PSK34.

Not that jumping in on that route is any easier than a stand alone DSP chip on a card. Sure hope someone comes up with something. I think I would like to follow you along as you travel down that educational path. Roger KC6TRU

From mikea at mikea. ath. cx Thu Apr 21 20:44:35 2005
Subject: [R-390] DSP IF

wrote: > Can we do DSP in hollow state, Rack and room size are no problem but I do > so hate that sand state stuff even if I did slip a pair in for the 26Z5s?

Well, doing real DSP in hollow state will involve some hundreds or thousands of tubes, with attendant heat, power, and reliability probs. It could be done, I suppose, but you're talking about implementing a real computer in hollow state, and that was found to be clunky and expensive.

To do it _all_ in hollow state, you'd end up using WIlliams-tube memory, instead of ferrite cores. Fun to watch, but prone to screen burn-in, hard to keep aligned, and slow.

Rack and room size probably _would_ turn out to be a problem. So would air conditioning. In dead of winter. Mike Andrews, W5EGO

From jhhaynes at earthlink. net Thu Apr 21 21:21:14 2005
Subject: [R-390] Hollow-state DSP

Another reason it can't be done these days is that the audiophools have driven up the price of double triodes beyond belief.

From wjneill at lcc. net Thu Apr 21 21:50:56 2005
Subject: [R-390] DSP IF

The original Army EINIAC artillery firing table computer was driven by a couple thousand vacuum tubes and the TM for the sucker describes power requirements, cooling requirements, and heat dissapation requirements that were resolved only through industrial-strength solutions. And, the output of the beast was directed to a Model 15 page printer in five-level 75wpm text. Bill Neill Conroe, Texas

From ham at cq. nu Thu Apr 21 21:54:22 2005
Subject: [R-390] DSP IF

Hi,

The trade off is basically that with tubes you are better off doing the analog processing. The digital stuff is just to hard to do. If you count up the transistors the same thing is true with sand, but of course these days nobody counts transistors.

From mjmurphy45 at comcast. net Thu Apr 21 22:26:56 2005

Subject: [R-390] DSP IF

Cecil,

We built something like this at work (at a higher IF frequency 45 MHz! !). I'm no expert but. .

I think you have to sample the IF with an outboard A/D converter first before sending it into the DSP to keep the costs down. If you want to talk about a digital IF processor in an outboard box, the intermediate frequency spectrum (of the R390A) is first digitized by an analog-to-digital converter (ADC) into a slower digital data stream; this contains all of the signals present in the IF. Nyquist says we need to sample at twice the frequency of our 455 kHz IF and most converters can easily do this. Even low cost Sigma Delta converters (like the one in your sound card) get close to being able to do this. There may be some Sigma Deltas around which can do 1 MSPS or better.

The digitized IF signals are then translated to baseband by something called a Digital Drop Receiver or Digital Drop Converter (DDC). This could be a chip or it more likely is code running in an FPGA or DSP core. Downconversion is accomplished by digitally mixing the intermediate spectrum of frequencies with a sinusoidal waveform generated by a synthesizer. The baseband output can be thought of as the R390A receiver's 4th IF, which is selected from the DDC's other output frequencies by a very efficient brick-wall digital filter. It is at this stage that the outboard circuit can crank in some serious selectivity. Remember, we are talking about programmable gate arrays or pure software in a DSP for all of these stages and functions.

The DDC's baseband output is fed to a DSP (or into another section of the DSP or FPGA which is actually acting as a DSP), which performs signal demodulation. The DSP's output is then converted from the digital domain back into the analog domain by a digital-to-analog converter, amplified, and is made available to Cecil via a bigass tube amplifier and a speaker. Mike MurphyWB2UID

From levyfiles at att. net Thu Apr 21 23:18:36 2005
Subject: [R-390] DSP IF

Golly Cecil and Mike,

What a can of worms you have opened up. Why not just buy a DSP radio and tune it to 455 and plug that into the 390a. Wouldn't that accomplish the same darn thing. Now no one say why go to the expense of another radio..... . thats what we do fellows. Any excuse to try something requires a new radio! N2WL

From BRingwoo at csir. co. za Fri Apr 22 03:29:02 2005
Subject: [R-390] DSP IF

Hi all,

There's quite a few DSP sofware packages out there - one has already been mentioned. Another on my computer is "Spectrum Lab". You'll need to convert the IF down to 25kc/s with an MC 1496 chip (or similar, or better). - or a 7360 ;-)

I've got an old Analog Devices ADSP 2100 evaluation kit which I keep meaning to play with, but never get around to it.

How about simply putting a hollow-state notch filter on the R390-A ? - that seems more "in-keeping with the propriety of the radio".

- Bryce

(The mind boggles at the thought of doing DSP with tubes - we don't even generate enough electricity in this country to power the thing).

From ham at cq. nu Fri Apr 22 08:17:46 2005
Subject: [R-390] DSP IF

Hi,

Here's what makes this approach different than a off the shelf DSP radio:

1) The R390 has a *very* different approach to RF processing than what you can buy off the shelf today. They just can't afford to make them this well anymore.

2) Unless you have *very* small hands and fingers modern radios are a bit much to operate. Say what you will about R390 wrist it's a minor issue compared to the eight zilion buttons syndrome on a modern radio.
3) To make a processor work right you need to drive the AGC line on the 390 correctly. Putting a dsp radio on the 455 KC output does not allow you to do the AGC thing.

4) The hidden agenda here is to do a *very* good job on AM processing. I have yet to see a dsp radio that does even a so so job on AM. It would be nice to do it right.

I can see good reason to start out with a PC program just to see what works and what does not work. In the end though I'd like to have something like my Sherwood box that sits in the rack with the R390 and spits out audio. Enjoy! Bob CampKB8TQ

From mhuss1 at bellatlantic. net Fri Apr 22 08:39:13 2005
Subject: [R-390] DSP IF

Being the proud owner of both an R-390A and a Ten-Tec RX-320, I have given this some thought. Decided to try feeding the RX-320 from the IF Out of the R-390A. the results were O. K. Had 33 bandwidths, and passband tuning. When I put everything back to normal, I noted that I could only pick up local AM stations on the RX-320! A trip to Ten-Tec got the first Mixer FET's replaced. Apparently you can get enough output from the R-390's IF Out to blow the input of the RX-320! Be WARNED!

My next attempt is to build the downconverter and try the audio card route. i rejected this at first because there is an annoying delay with these things. My shack computer being an old 266 MHz computer. Previous attempts with this resulted in delays up to seven seconds in the audio. Makes it a real pain to tune with.

From mhuss1 at bellatlantic. net Fri Apr 22 09:41:53 2005
Subject: [R-390] Crayola front panels

Little late on this post, but I could go for a Plexiglass front panel backed by Aluminum. You paint the plexiglass white, then black. then you rout the lettering on the front side, drill holes almost through the panel on the rear side near each label, then insert LEDs. Makes a nice backlit display.

From chacuff at cableone. net Fri Apr 22 09:49:09 2005
Subject: [R-390] DSP IF

That's what I had in mind too Bob… something like my old Kiwa MAP with IF level notch, a dozen selectable filters, AM and Product detection… maybe even Synchro and top it off with a very clean 5 watt amp with a well matched speaker/cabinet arrangement. Been plenty of MAP's used with R-390A's and SP-600's in the past… heck maybe still today. (sold mine a few weeks ago to buy an SE-3… money went for car insurance and a HS class ring!) It allows you to better use the radio on today's bands without having to touch a thing in the radio…

I know there are those who will say "why not just buy you a new radio" Well I did...and I like it a lot. (Icom 756 Pro II...all DSP) It only highlights some of the deficiencies of the R-390A and SP-600 that could be solved with an outboard IF/Detector/AF strip. Look at the archives....they're filled with the groups quest for 1) improved audio...2) fixes to improve SSB functionality....3) questions about "what are we going to do with these aging mechanical filters. "We all love the front end and the tuning arrangement...that is what makes the R-390 series what it is...We have a love/hate relationship with the mechanical filter arrangement and would like to improve the audio for broadcast listening. Seems to me what we are talking about is the perfect solution if it is done properly. Personally I am not a proponent of sound cards and PC processing. I know it's cost effective because we already own it...but I like to use my PC for other things while listening....

I'm like Bob...I much prefer to operate a boatanchor radio because of the human interface but would like some ot the technology found in the new stuff...I said some...not all! To be fair what is it we usually hate about the sand state radio's...besides the cramped user interface....Phase noise, display noise, poorly designed power supplies, poor audio..... just to name a few. Some of that has gotten better in the new radio's but I still prefer the tube stuff.

One suggestion from the past was to purchase a used Ten-Tec RX-320 black box receiver used and put it to work as an IF/Detector/Processor. Feed the audio out to a nice external speaker or even better to a Hi-Fi system...It would probably work OK but I know it's not optimized for what we want to do. Plus if you are going to do this from the ground up it should be implemented in the 32 bit chipset as opposed to the 16. The 16 works good but I'm not sure how much longer it will be around knowing how computer technology changes. Again the RX-320 would require the use of the PC or a laptop to drive it...I would much prefer knobs and buttons in a more portable system.

Anyway before you send the sheriff out to arrest the infidel keep in mind this is just brain storming about a modern way to do what we have been discussing for years in bits and pieces. Cecil....

From ham at cq. nu Fri Apr 22 10:16:17 2005
Subject: [R-390] Crayola front panels

Hi,

There is few major problems with this idea:

1) It's practical and could actually be implemented.

2) It would look almost as good as the transparent aluminum based product.

3) It would not cost several million dollars to tool.

No way we are going to get Federal funding for this one. Enjoy! Bob CampKB8TQ

From goode at tribeam. com Fri Apr 22 10:18:09 2005
Subject: [R-390] Black Panel '390A and other rambling

I talked to my dad last night. Unfortunately the only info I was able to get from him was that I did not go to Augusta. He took me to Clyborn to see the dew line printers. There you go for remembering facts. Although I was about 10 years old and really only knew I was going to where dad worked.

He could not remember anything about the 390. I believe he only worked on the 390A's. I vaguely remember him complaining that Motorola lost the 390A contract to some company that had no experience building them. They were not even an electronics company! This could have been referring to Helena-Rubenstein. But it also could have been Stewart-Warner, or even both. A short time after Moto lost the contract my dad was laid-off for quite a while. It was hard times for the family. He was mad at the world and we were the closest part of the world. I do not know why he did not go to Stewart-Warner and work for them on the 390As. They were also in Chicago at the time I believe. He was finally called back to Moto to work on other government contracts.

So I would have liked to own a Motorola R-390A. I never wanted a Stewart-Warner. If a Helena-Rubenstein actually exists, I'd only want to piss on it. What I have is a nice depot-dog with no Stewart-Warner modules. So much for history, Steve, K9NG

From n4buq at aol. com Fri Apr 22 10:26:22 2005
Subject: [R-390] D-Hole Punch?

Anyone know a good method for making the D-hole needed for the fuse holders on the rear panel? I know I can file the shape or simply drill it round, but I don't really want to introduce a lot of filings and I'd like to have the D-shape. The Greenlee punches are very expensive, especially when I just need two holes. Any other ideas? Thanks, Barry - N4BUQ

From hankarn at pacbell. net Fri Apr 22 10:28:05 2005
Subject: [R-390] Crayola front panels

I also have a 390A with the front panel in Gold alodine and black letters. Hank KN6DI

From ham at cq. nu Fri Apr 22 10:31:10 2005
Subject: [R-390] Black Panel '390A and other rambling

Hi,

The contracting on the 390A was very similar to a lot of systems. As time goes on the contractors are often less and less capable. There are a few cases this has not been true, but usually it is. Take Care Bob

From goode at tribeam. com Fri Apr 22 10:49:36 2005
Subject: [R-390] Black Panel '390A and other rambling

My understanding, which is fourth hand with no real facts, was that Motorola was not disqualified from bidding. They just lost the bid to other companies. The lowest bid/bids win. I think my dad's complaint was that Moto had two contracts of experience building 390A's. They knew the costs and put in a fair bid. The other companies had no experience, except for Collins which I don't know if they bid or not. Helena-Rubenstein would know better than Motorola what it cost to build an R-390A?

Is there any evidence that the later Motorola units were assembled poorer than the earlier units? Steve, K9NG

From r390a at bellsouth. net Fri Apr 22 11:31:21 2005
Subject: [R-390] Aviation front panels

Changed the subject so as to spare the poor horse a few beatings.

We could have a load-bearing frame topped with a flat black "light pipe" front panel, aviation style, with all the lettering on the front panel having a cool red glow at night, with "normal" white in brighter light. Could use LEDs instead of the $25 apiece aviation backlights. The counter can be switched between white or red lighting or replaced with a self-dimming LED display, though tiny nixies or a neon plasma display might be more "period" for the radio. That would look *snazzy*, sort of like an LTV G-133F. (In case ya hain't heard of this, it's a repackaged 51S1A) Could even use multi-color/multi-shaped knobs LTV-style for full "blackout" operation. Yea, snazzy! Tom NU4G

From r390a at bellsouth. net Fri Apr 22 11:44:12 2005
Subject: [R-390] DSP IF

I have tried the IF out to my Pro II. Works well. Just put the 390/390A in 16KHz, erm, I mean 16 KC bandwidth and connect the IF out to the Pro/ProII/ProIII *receive input* (so you won't transmit into your 390! !) Works great! I have considered taking the output directly from the final mixer before it goes to the IF deck, but have been too lazy to try since it involves taking the top cover off, which I can't do since the radio is in a rack (an open air rack, in case someone fusses) and I am especially too lazy to pull the radio, and my back, just to get a few more KC of band width. Tom NU4G

From Radiograveyard at aol. com Fri Apr 22 12:05:08 2005
Subject: [R-390] 390-A front panels

I had one a few years ago foolishly sold it. The whole front panel was polished and engine turned. Thought it must have been the generals or admirals. Yes the lettering was there and was engraved. Pete

From ham at cq. nu Fri Apr 22 12:46:02 2005
Subject: [R-390] Black Panel '390A and other rambling

Hi,

Based only on talking to people at Motorola who worked on the R390's they put a lot of work into them. The PTO corrector stack adjustment process was famous even twenty years later. I suspect they bid the contract as they saw it - build the whole radio. Some of the later contracts had the PTO built by an outside contractor. Take Care! Bob CampKB8TQ

From chacuff at cableone. net Fri Apr 22 12:54:07 2005
Subject: [R-390] DSP IF

That's good news...I'll have to give it a try. It would be interesting to try an R-390A with the Pro II as it's IF chain up against a Pro II in tough band conditions. See how the two front ends and xtal oscillators against synthesis stacks up! Cecil. .

From ham at cq. nu Fri Apr 22 13:02:04 2005
Subject: [R-390] DSP IF

Hi,

I would like to try something that retains the mechanical filters. One thing you could try is to do equalization in the DSP. That way you could take out the delay and amplitude ripple of the filters in *your* radio. You could also turn the 16 KC filter into something like an 18 KHz filter (a modern upgrade).

As long as you are matching things up you can also calibrate the AGC voltage. More or less you build up a table of AGC versus db of attenuation. The R390 is amazingly linear in this respect so it should work pretty well. The net result is a "sort of" addition of more bits to your A/D converter. One of the reasons you need as much of this kind of thing as you can get is that A/D converters are relatively noisy gizmos. A 3 db noise figure converter is a tough part to find.

All of this would specifically match the DSP to the radio, but to me at least that's an advantage rather than a disadvantage. If you had some memory on the DSP you could store multiple radio profiles to match the various radios you used it with. The calibration and equalization stuff is pretty much transparent in normal use so you don't have a lot of added buttons or menus to cope with in normal operation. The gizmo needs to be pretty user friendly if it's going to be of any real use. Enjoy! Bob Camp KB8TQ

From jmiller1706 at cfl. rr. com Fri Apr 22 13:02:17 2005
Subject: [R-390] WTB Collins PTO

Looking for a working Collins manufactured PTO for 390A. Jim N4BE

From ham at cq. nu Fri Apr 22 13:14:59 2005
Subject: [R-390] DSP IF

Hi,Try 4. Keeps tripping the spam filter.

If you go out and buy one of the black box radios you still have the problem of what to do about the

AGC feed back into the R390. If you are after good AM you want to be able to cut back the gain on the front end and IF's to keep everything linear.

You can get 16 and 18 bit A/D converters these days that will run up to the one or two mega sample range. To do things right at 455KC it would be nice to be above a 2 MHz clock rate. In order to get up to around 24 bits on the converter you are going to have to get down to a 200 KHz clock. That would put your final IF at maybe 40 or 50 KHz. Take Care! Bob CampKB8TQ

From Lester. Veenstra at intelsatgeneral. com Fri Apr 22 13:54:53 2005
Subject: [R-390] DSP IF

Suggest one of the usual DBF mixers and an LO of 465 will give the "audio baseband" for the soundcard demod while the image will not be a concern

From jsullivan10512000 at yahoo. com Fri Apr 22 14:36:02 2005
Subject: [R-390] Please post to list

Sir, please post this to list, and see my note below, but don't list it on postings:

WANTED for R390 (not "A"), 1. Engraved front panel to buy or exchange for mine, which is silk screened rather than engraved.

2. A. C. cord, prefer original military, but may take replacement. 3. cabinet, prefer military, but may take replacement, IF WELL VENTILATED. Email me directly, as I no longer get posting automatically to my email box jsullivan10512000atyahoo.com

Note: No longer get auto. postings to my email box, (grew tired of the huge chatting about black, and related front panels)!

From chacuff at cableone. net Fri Apr 22 15:25:24 2005
Subject: [R-390] Please post to list

Did they make engraved R-390/URR panels....all I have seen (only a few) were silk screened? Cecil...

From R390rcvr at aol. com Fri Apr 22 15:33:00 2005
Subject: [R-390] Engraved R-390 panels

Cecil and list:Actually, the majority of the 10 or 12 that have passed through my handshave been engraved. For a long time I thought there weren't any silk screenedones!

I have seen both Collins and Motorola's with engraved panels, although weall know about tag switching. I have tried to pin down the silk screened ones toa particular contract, but unsuccessful so far. I would welcome any help from people with experience in this area! Randy

From Llgpt at aol. com Fri Apr 22 15:33:45 2005

Subject: [R-390] Please post to list

Yes, both types of panels, although the silk-screened were more abundant. Les

From Llgpt at aol. com Fri Apr 22 15:36:01 2005
Subject: [R-390] Engraved R-390 panels

writes: Cecil and list: Actually, the majority of the 10 or 12 that have passed through my handshave been engraved. For a long time I thought there weren't any silk screenedones! I have tried to pin down the silk screened ones to a particular contract, but unsuccessful so far. I would welcome any help frompeople with experience in this area! Randy

Good luck on finding that contract, it was probably done at depot levelrather than in production. I know of probably 20-25 contracts on the R-390A'sthat aren't documented. Les

From richardlo at admin. athabascau. ca Fri Apr 22 16:36:05 2005
Subject: [R-390] DSP IF

wrote: > 4) The hidden agenda here is to do a *very* good job on AM processing. I have yet to see a dsp radio that does even a so so job on AM. It would be nice to do it right.

My tastes are much more pedestrian, I want a synchronous detector so I can get away from my daily doses of audio distortion brought about by fading issues with the carrier and the sidebands. Always a way to consume time and money. Richard Loken VE6BSV

From richardlo at admin. athabascau. ca Fri Apr 22 16:42:45 2005
Subject: [R-390] DSP IF

wrote: My shack computer being an old 266 MHz computer. > Previous attempts with this resulted in delays up to seven seconds in > the audio. Makes it a real pain to tune with.

7 seconds with a 266 hmm? Now what would the delay be with the proposed tube type DSP? Suppose we could build it out of TWT's to get the speed up. How fast a digital processor can you build with a bunch of 12AX7's like IBM used to implement the 701? Richard Loken VE6BSV

From redmenaced at yahoo. com Fri Apr 22 17:37:27 2005
Subject: [R-390] Please post to list

Mine's engraved/punched/stamped. Joe

From barry at hausernet. com Fri Apr 22 18:07:23 2005
Subject: [R-390] Please post to list

My theory is that the panels started out a bit thicker than final. The lettering was punched on a punch press -- possibly one of two halves at a time.

Then, the panel was sanded down or milled to clean up and provide sharp edges to the lettering -- i. e. get rid of the dimples that punching would likely cause. That would also clean up any deep scratches that might occur when handling stacks of panels.

I have two R-390/URR's and two R-391/URR's. All four panels have punched/stamped/engraved/carved/indented/etched/fillagreed, not silk-screened, lettering.

Has anyone ever found a panel that was depot or factory redone whereby the original lettering was filled in and the thing was silk-screened? Maybe some are stamped, but in mufti.

I dunno, these dead horses keep jumpin' up and bolting out of the corral. Just be grateful they don't kick us in the head. The fact is, most of these reprise issues are never totally resolved, so the horses aren't dead at all. They're just playin' 'possum with one eye open waiting for an opportunity to rear up and do what they do. Put another way -- old threads never die, they only lurk away. Barry

From djmerz at 3-cities. com Fri Apr 22 18:14:18 2005
Subject: [R-390] R390 power cord

Hi,simple questions regarding power cords. I'm in the habit of acquiring the pc-type power cords and cutting the female end off and using them for various radio projects. I have a 10 ft one that I'm going to use for the R390. It's marked 3/18 (18 ga. wire I assume and that's what it looks like). It has three covered, stranded wires including a green ground and also has a fourth uncovered stranded wire that is under the metal foil shielding cover, and all are sheathed in the oute plastic cover. First question: is this wire size big enough? It would seem so to me based on 2 to 3 amps. Second question: Should I connect both the covered green wire and the uncovered wire to the radio ground at the radio? They are both connected to the ground on the three terminal male plug. I assume the purpose of the uncovered ground wire has to do with contact to the metal sheathing (shield) around all the wires. Dan.

From drewmaster813 at hotmail. com Fri Apr 22 18:17:42 2005
Subject: [R-390] D-Hole Punch

Barry (N4BUQ) wrote: >Anyone know a good method for making the D-hole needed for the fuse holders >on the rear panel?

I assume you are adding 2 fuses to a 1-fuse radio. Instead of cutting holes, you could install pigtail-type fuses underneath the audio deck on unused terminals of the filter capacitor sockets. Another option would be to install just 1 B+ fuse (better than none) on the power supply module in series with the transformer's high voltage winding center tap.

To replace these fuses it would be necessary to remove the module in question but that should not pose a hardship because changing B+ fuses should be a rare event indeed. Drew

From barry at hausernet. com Fri Apr 22 18:22:25 2005
Subject: [R-390] R-390 Knobology Question

This is not to be confused with past resurrections of deceased equine entities. We have discussed the knobs at length here and there, but not the reason for the choice/design. In particular:

The KC and MC knobs are (I believe) unique to the R-389/R-390/R-391/R-390A family. The smaller knobs are similar in shape to a series of bakelite knobs made by Dakaware and possibly others, but are unique in that they are metal. The fastening arrangement with breakatonium clamps is also fairly unique for the big ones (instead of set screws).

Does anyone have any background on this design element? It would seem that the more common bakelite fluted knobs - such as on the R-388 would have sufficed -- even a bunch of "chicken head" pointer knobs for the small ones. Bakelite or similar would have the advantage of no paint required, and common knobs would be easier replacements from standard/stock items in the event of breakage or extreme wear. Anybody have any idea? Barry

From flash at skybird. biz Fri Apr 22 18:25:04 2005
Subject: [R-390] IF out

A few years ago I took the IF out from my 390A and hooked it to the antenna input of my SONY-2010, and tuned to a station with slop from an ajacent freq, Turned up the Sony volume and flipped on the Synch detector, and low and behold the interference was gone.

The Sony audio does not match the great low frequencies you can get from the detector output on the 390, and I have the one with the probe jack on the front panel.

Since my 390 quit a couple years ago the bands have died. I have a lot of receivers, including a zenith console, and everything is gone.

Interesting that project HAARP made their own aroura borealis a few months back. I live in the aroural zone, and radio has always been weird.

Now I can't get anything on the ham bands. Late nite talk show host Art Bell (also a ham) has mentioned that there is something wrong with the ionosphere, his band conditions are like mine.

The only thing on shortwave is EWTN, they cut through everything. Always have. WWCR is spotty. WB8EOH Bird

From pstaupe at qwest. net Fri Apr 22 18:36:19 2005
Subject: [R-390] IF out

Bird, Good discussion of the Sony 2010....that used to be my quick way to get synch detection out of the R-390. I'm lucky enough to have a Sherwood SE-3 that I use, and now a nice MSR-9, (but it overloads....any AGC experts out there?)

Finally, WEWN is my favorite....I have been amazed in the past month though, they have moved their former set in stone schedule to 5850 kc for most of the night and well into the morning due to interference or propagation, I don't know which....I should call Glenn Tapley their SW director to find out....Best regards, Paul W0AD Minneapolis

From llgpt at aol. com Fri Apr 22 18:48:33 2005
Subject: [R-390] Please post to list

Yes, I and others have seen silk-screened panel that were painted over, the silk-screened again. Les Locklear

From Flowertime01 at wmconnect. com Fri Apr 22 19:00:08 2005
Subject: [R-390] D-Hole Punch

Barry,

Along with filing holes and making lots of metal bits to clean out is to use a router. Pick up a small (< 1/4) bit and use it to do the D hole. The smaller the bit the closer you get to a true D shape.

Some duct tape and felt pen will help you get a template to route to. Some lumber cut for filler will get you a level surface on the back or a chassis if you need it.

After you drill a hole large enough for a D punch you already have a lot of metal in the chassis and the extra from the router is not that much more. The router bit will turn a larger chip than a file will. A high speed steel bit will last long enough to work a hole into the chassis. Change the router plunge depth and start the second hole with a fresh bit of bit.

If you do not have a router you can use a router bit in a high speed drill. The higher the speed the better. I cannot foresee you using a drill press and sliding the chassis around on the drill table. But then one works with the tools you have. Roger KC6TRU

From dsmaples at comcast. net Fri Apr 22 19:14:47 2005
Subject: [R-390] DSP IF

All: Absolutely good thoughts here. I'd be willing to fiddle with the DSP code if I had an eval board for it, but it would have to compete with other projects. I've had a DSP course in the past, and made As in it. It was really fun to get around a new concept and wring it out. Dave WB4FUR

From dsmaples at comcast. net Fri Apr 22 19:35:11 2005
Subject: [R-390] IF out

All: I have to say that propagation has been a lot spottier over the past year or so than before. Worst I have heard in 3+ sunspot cycles, methinks...Dave WB4FUR

From Flowertime01 at wmconnect. com Fri Apr 22 19:45:58 2005
Subject: [R-390] R-390 Knobology Question

Barry,

One school house idea was the knob shape let you get a hold of it even while wearing gloves. I have seen R390/A operated in Korea where it was done with gloves and you did not put no head phones on your bear ears.

The MC knob could take some massive (R390 Wrist) force to move over an over set detent. Set screws would will not give you enough friction and would be forever failing.

I have on occasion had to file / burnish a burr on the MC and KC shafts to get a front panel off. The idea was that the clamp knob would not put burrs on the shaft like a set screw will.

Die cast knobs in the 1950 era were cheaper that Bakelite or plastic. The die cast was also expected to be resistant to known life forms. Further the die cast was expected to freeze and vibrate in shipping without failure. Most of the design was driven from lessons learned the hard way out of WW II.

The tax payer wanted cheep stuff. But the stuff was not supposed to kill our own fellows.

You are right there were lots of other good designed knobs in production. Why not just go with common parts? I just retired out of Raytheon after 20 years. Every day I was working with young engineers that acted like the world was created just this morning by themselves. They had no clue what's in use and production. Sur get me a new NATO Stock Number for these stainless steel 10 x 32 x 1 inch fasteners for the parts manual. What! you mean I can buy these from Mc Master Carr and still list them in the parts manual with someone else's NSN and not actually buy NSN parts for the assemblies?

Have some ever had the chance to look at NSN Micro Fitch and see how many times common hardware (and electronic parts) have been duplicated in the inventory system. > Roger KC6TRU

From K4HCA at alltel. net Fri Apr 22 19:55:05 2005
Subject: [R-390] D-Hole Punch?

This subject reminded me of a question that I have not seen the answer to; Why do some R-390A's have three fuse holders on the back and some have only one??? Harold

From ham at cq. nu Fri Apr 22 20:07:49 2005
Subject: [R-390] DSP IF

Hi,

What I'm after is AM that is easy to listen to. I'm not after Hi Fi, or AM stereo. All I want to do it tune a station and listen to it with the least strain possible.

The SE-3 is a synchronous detector and it works very well with the R390. It certainly works better than the other analog synchronous detectors I have used. That said it isn't perfect. I think that with modern DSP and a bit of listening time (and tweaking and listening) you can do better. Certainly with DSP you can "vote" the sidebands by octaves. You can also do some stuff to null out heterodynes and other junk. You are not going to get Hi FI audio (20 KHz 1 db point) out of an R390 with a 16 KC filter in it. I also don't think that many of us have stations that are clear channel enough to make something that wide practical. Take CareBob CampKB8TQ

From ham at cq. nu Fri Apr 22 20:20:12 2005
Subject: [R-390] D-Hole Punch?

Hi,The original radios came out with just one fuse.

After a while in the field they found a problem with the fusing. In order to make the radio work properly

with all the heaters turned on and high line voltage they had to put in a fairly large line fuse. In a radio with the heaters all turned off and low line voltage this fuse was way over size. In the case of a B+ short deep in the radio you would take out various chunks of the power supply before you blew the fuse.

The solution was to add a fuse in the B+ lead out of the power supply. That way it would trip properly regardless of weather the heaters were on or off. When they added the B+ fuse they also added a holder for a spare fuse. Take Care! Bob CampKB8TQ

From ham at cq. nu Sat Apr 23 09:44:38 2005
Subject: [R-390] D-Hole Punch?

Hi, One thing I should have added but forgot to before. (Must be a bad brand of Tequila ...)

We never ever run the heaters on R390's any more. Even Nanuck the Eskimo decided to turn off his last year when they put central heat in the igloo. This drops the power consumption of the radio by quite a bit. Less power equals a smaller line fuse.

You can cut the size of the line fuse almost in half and get away with it if you are running a slow blow fuse. I normally check the junk box and use what ever is handy. This is a very cheap "conversion" and might save having to fix some major damage to a radio ...Take Care! Bob CampKB8TQ

From jsullivan10512000 at yahoo. com Sat Apr 23 13:53:58 2005
Subject: [R-390] Post to list

Please post this item:

WANTED to buy: For R390 (not "A" version), I am in need of three slug for RF deck, 2 different diameters of slugs. This is a Motorola deck, I think 1951 (not sure of date), with MOD 3, but slugs from other decks may be appropriate size, I don't know. If you can possibly help, I can email you precision measured diameter and length of slugs I need. Any suggestions where I might search for these? Email me directly, as I don't get auto messages right now from posting: jsullivan10512000atyahoo. com Best, Jack

From N4BUQ at aol. com Sun Apr 24 22:17:03 2005
Subject: [R-390] Paint advice needed

Hi, all.

I had the R390A front panel powder coated and now need to re-letter the engraved lettering. I tried this with acrylic enamel and, while the lettering came out nicely, the enamel doesn't stick all that well to the powder-coated surface. I could easily peel the excess off with my fingernail and the enamel is pretty easily wiped clean with something as innocuous as denatured alcohol.

I'm wondering what to use to fill in the lettering. I've read a bit about acrylic lacquer. Does anyone know if that would adhere any better to the surface than the enamel? What have others used on powder-coated panels? Thanks, Barry - N4BUQ

From djmerz at 3-cities. com Mon Apr 25 02:54:02 2005
Subject: [R-390] R390 progress

Hi, I listened to the R390 tonight for the first time after repairing - more to go.
So far:
Put 12BW4's in place of 26z5's that were missing and rewired the sockets Added two 75 ohm-10 watt resistors below the rectifier sockets in place of missing 47 ohm resistors - a trial to start with, seems ok Jumpered pins 4/5 to 2/7 and used 12BH7 in place of missing 3tf7 Straightened a badly bent twinax female antenna socket Wired a replacement power connector obtained from Fair Added a missing knob, also from Fair Cleaned gear train in place with mystery oil

The radio worked once I realized the previous owner had used enameled magnet wire on some added wiring on the rectifier sockets - my connection to it looked good but only connected after I did some scraping to get rid of that enamel ! !

It appears to be reasonably aligned and reads about 10 khz high on both ends of the 1000 khz range. So far only one dead band found up to 20 Mhz which was as high as I checked. 7 to 8 Mhz is dead. I haven't cleaned any switches so hopefully that's the problem but only one other band showed any sign of intermittent connection. The line meter appears dead. The carrier level meter appears ok.

I still need a male twinax connector for the antenna socket - one listener indicated he had one but I'm having trouble getting more info from him to pay him so he can send it. One other response offered an IBM server cable with two connectors that were said to fit, so that's my backup source at this time. My local electronics junk collector couldn't help me on this one.

Roy Morgan indicated he would provide a drawing/description of the fan he installed on his R390 to cool the 6082 tubes.

I was relieved that the radio worked and pleased that it's working so well at this point. The seller said it played weakly - at this point it is better than that in my opinion and I haven't messed with the tuned circuits at all or changed any of the tubes. I suspect that the haywired resistors that were stuck in the 3tf7 socket were part of the problem before. I removed the i. f. chassis to jumper the ballast tube pins and was pleased at how nice it looked underneath there.

Now I have to study the manual a bit to see how the alignment goes on the 390 vs. the 390a - more similar than different I suspect, Dan.

From ham at cq. nu Mon Apr 25 07:23:07 2005
Subject: [R-390] R390 progress

Hi, Sounds very good so far!

I would definitely check the crystals for the dead bands. They may simply have come loose in their sockets. The easiest fix of all is the 10KHz offset on the readout. Just center up the zero adjust, slip the counter and you're done. Take CareBob CampKB8TQ

From chacuff at cableone. net Mon Apr 25 08:58:32 2005
Subject: [R-390] Paint advice needed

Hi Barry,

You wouldn't have the opportunity to send me a couple of close up photos of the engravings after the powder coating would you. I have wanted to do that but have been told by several that the powder coating would flow and fill in the engravings too much to properly refill the letters. I still think that would be the ideal way to do it if one could avoid the fill in problem. If botched I would imagine it would be hard to remove.

I would check with the guys that are doing powder coating of the silk screened panels as to what type of paint is used on those to adhere to the powder coating for the lettering. Howard Mills is doing them I know. Not sure about others...maybe Walter Wilson?

From chacuff at cableone. net Mon Apr 25 09:33:36 2005
Subject: [R-390] 390A Audio Deck ?

Hey Folks,

Things went from lively to dead all of a sudden. Thought it might be a good time to ask a question. While contemplating the construction of the R-390A audio deck questions in my mind have come up about the planned use the original designers had for the mirrored relay and tube socket holes that are blocked off. The various builders of the audio deck in all cases seemed to have punched all the holes and labeled the chassis then covered it all up from the top side with a block off plate. I haven't gone as far as removing the plate to see if the tube type is even designated...i'm assuming it would be another OA2....but maybe not.
Just thought I'd check with the group for some history about this. I can't say I remember it ever being discussed. . Thanks...Cecil...

From barry at hausernet. com Mon Apr 25 11:15:23 2005
Subject: [R-390] 390A Audio Deck ?

As I recall from old posts -- it was for an optional squelch.

If not, maybe it was like one of the three B-29's the Russians kept and copied during/after WWII. It had a patch in the fuselage. All the TU-4's they made had the the same patch because they were told to make an exact duplicate. Not likely, but I don't know that anyone has ever seen the audio deck without the patch and the optional "kit" installed. OK, so I'm a rumor mongerer. Practicing to become a TV news pundit able to speculate on cue. Barry

From mikea at mikea. ath. cx Mon Apr 25 13:24:39 2005
Subject: [R-390] R390 progress

wrote: [snip] > I still need a male twinax connector for the antenna socket - one listener > indicated he had one but I'm having trouble getting more info from him to > pay him so he can send it. One other response offered an IBM server cable > with two connectors that were said to fit, so that's my backup source at > this time. My local electronics junk collector couldn't help me on this > one. These are currently available from Amphenol and other connector manufacturers; I got mine from

Synergy Datacom Supply 405 N. Classen Boulevard OKC OK 73106 405-232-6127 I think I paid less

than $10. 00 for it. Mike Andrews, W5EGO

From roy. morgan at nist. gov Mon Apr 25 13:49:03 2005
Subject: [R-390] R390 power cord

wrote: >...I'm in the habit of acquiring >the pc-type power cords and cutting the female end off

Dan,

Good plan.
>...First question: is this wire size big enough?
Yes.

>...Second question: Should I connect both the covered green wire >and the uncovered wire to the radio ground at the radio?

Yes.
>...I assume the >purpose of the uncovered ground wire has to do with contact to the metal >sheathing (shield) around all the wires. Dan.

Yes. It's called a drain wire, and is the best way to make contact with the foil shield. You may notice that the jacket markings include the word "Shielded". Only some computer type cords have this, and the ones that do seem to be thicker than the ones that don't. I use them on receivers, even if the receiver has line bypass caps installed (or a line filter as the R-39x radios do.)

I was poking through a box of such cords recently, and it's my impression that cords can be grouped by thickness as follows:

18/3 no shield
18/3 with shield
16/3 no shield
16/3 with shield

Please check with an ohmmeter the line and neutral connections. Note: the LINE connection in an outlet is narrow. The Neutral connection is wide. The Safety ground connection is round. (In a three wire line cord, the flat blades may both be narrow. In a "Polarized" two-wire line cord, one is wide.

Here's color code information from a message by Bob Nickels

"...For years, the colors of individual conductors in cords for use in North America have been black for line, white for neutral, and green for earth (ground). But in order to harmonize worldwide standards, two major UL equipment standards, UL 1950, Information Technology Equipment, and UL 2601, Medical and Dental Equipment, started several years ago to require the more traditional European conductor color coding: brown for line, light blue for neutral, and a combination of green and yellow for ground.

The color conversion is as follows:

LINE(US) Black = (EU) Brown
COMMON(US)White = (EU) Blue

GROUND(US) Green (EU) Green/Yellow ..."

As you replace normal line bypass capacitors, do not put them back one each from line and neutral to chassis, put them as follows: One from Line to Neutral One from Neutral to chassis.

Complete, longer diatribe on line cords and bypassing supplied separately to anyone who requests it. Roy

From roy. morgan at nist. gov Mon Apr 25 14:03:22 2005
Subject: [R-390] IF out

wrote: >Since my 390 quit a couple years ago the bands have died.

Maybe it's the Russians messing with the ions to bring our society to it's knees.

>Interesting that project HAARP made their own aroura borealis a few months >back. I live in the aroural zone, and radio has always been weird.

I talked with a fellow from Naval Research Laboratories who is an ionospheric physicist and was (is?) involved in the HARP project. I got the impression that the studies are done from time to time but by no means even much of the time. . They are short term events. Also, he told about how at least some of the measurements they make are optical. The light from the ionized gasses in the upper atmosphere caused by the HARP transmissions is very weak, and simply not detectable by the unaided eye. They use extremely sensitive photomulitplier sensors in order to even detect the effect. This means that the tests are likely all at night.

It's my opinion that HARP has nothing to do with the bad reception you report. I look forward to other ideas on the list. Roy

From roy. morgan at nist. gov Mon Apr 25 14:05:32 2005
Subject: [R-390] IF out

wrote: >...I'm lucky enough to have a Sherwood SE-3 that I use, and now a nice >MSR-9, (but it overloads....any AGC experts out there?)

Paul,

Replace all or most of the paper caps in your MSR-9 (CV-591). That will help a LOT to improve it's apparently none-too-good AGC system. Roy

From roy. morgan at nist. gov Mon Apr 25 14:20:36 2005
Subject: [R-390] 390A Audio Deck ?

wrote: >As I recall from old posts -- it was for an optional squelch.

Barry, That is correct.

The function switch has the needed extra position and the wireing harness has the needed wires to install

the squelch.

There have been reports of R-390A's with the squelch installed (though I don't have one). It could be done by a field change involving a relay, the tube socket and tube and a few components. If I remember correctly, it used the existing relay in the audio deck that grounds the audio signal, in addition to the added relay and a new marking plate for the Function switch. I would suspect that the added relay was a 10 milliampere type arranged in the plate circuit of a 12AU7/5814. See the R-390/URR schematic for the details. Roy

From JMILLER1706 at cfl. rr. com Mon Apr 25 15:27:46 2005
Subject: [R-390] Line Noise and Balanced Antennas

Ever since the Florida power company routed a high voltage live through my neighborhood, I have been plagued by S-9 impulse noise in the 3-7 Mhz range, except on rainy days. I have sent a problem report to the company, we'll see what they do. The noise blanker on my "modern" transceiver takes most of it out, but the 390a ears it all too well. I have heard that a balanced antenna using both sides of the balanced input, with dual center conductor coax, may help with noise sources. Would this help with line noise, and what are the design dimensions? Jim N4BE

From mikea at mikea. ath. cx Mon Apr 25 16:11:20 2005
Subject: [R-390] R390 progress

wrote: wrote: > [snip] I still need a male twinax connector for the antenna socket - this time. My local electronics junk collector couldn't help me on this one. These are currently available from Amphenol and other connector manufacturers; I got mine from

> Synergy Datacom Supply
> 405 N. Classen Boulevard
> OKC OK 73106 > 405-232-6127 > I think I paid less than $10. 00 for it.

Me again. The twinax connectors I have are Amphenol 82-5589-RFX. They work just fine on an R-390 or R-390A. Mike Andrews, W5EGO

From w5or at comcast. net Mon Apr 25 16:30:22 2005
Subject: [R-390] R390 power cord

<soap box on> Roy, I think you should post your entire line cord diatribe right here on the R-390 list. Not everyone who needs the info is going to request it from you, but safety is a big concern, or should be, with those of us new to vintage gear who are used to dealing with modern non-lethal (<12VDC)* radios.
I frequently remove hacked on power cords to vintage military equipment, usually because the original cord was missing and the proper connector wasn't avaialble. It amazes me how many have the polarity wrong, aren't fused, and have no safety ground.

And that doesn't begin to describe the bad stuff I see with old consumer type AC-DC BC radios. Yikes. </soap box off>

*Yes, low voltage low current DC can be lethal but not as often as 125VAC tied direct to a gigawatt

power plant.

From w5or at comcast. net Mon Apr 25 16:54:51 2005
Subject: [R-390] R390 progress

Dan, you need a new local electronics junk collector. Check with any computer network company that has been around for a while. If they haven't thrown away all their TwinAX connectors they will likely be happy to give you a few. Some will have a nice chuck of coax attached ready for whatever you want to put on the other end. If all else fails, I'll send you a couple for postage. Don

From w5or at comcast. net Mon Apr 25 16:58:19 2005
Subject: [R-390] Belton Swapfest 30 April 05

Any list member planning to attend the Belton TX hamfest this weekend? Don

From mmdues at hal-pc. org Mon Apr 25 18:06:03 2005
Subject: [R-390] Belton Swapfest 30 April 05

Hi, Don and Group,

I plan to drive from Katy, TX on friday afternoon. I have just finished recapping and re resistoring and aligning a Hallicrafters SX-110 for a friend who lives in Temple and will deliver it to him on friday evening. I usually stay in a cheap motel up near Temple, and drive down to the swapfest after an early breakfast down I-35 on Saturday morning. I usually split for Houston about 10 a. m. or so with my loot.

I'm looking forward to the drive - the bluebonnets are in full bloom, so it ought to be a nice 3 hour drive across part of Texas. See you there. 73, Marshall M. Dues, WB5MYO

From dsmaples at comcast. net Mon Apr 25 19:00:04 2005
Subject: [R-390] R390 power cord

All: From what I have seen from his previous post, I heartily agree. I have to say that I'm really intrigued by the part about bypassing. Dave WB4FUR

From Flowertime01 at wmconnect. com Mon Apr 25 20:24:08 2005
Subject: [R-390] Twinax From IBM Used

Fellows,

The IBM twinax connectors go onto the R390 antenna relay just fine.
I have been using them for years. The Twinax coax works fine also.

You can ground one of the conductors and feed the other conductor from the antenna. If you have some ferrite that covers the frequency range you like, you can wind a simple balun to provide a balanced input to the R390 from the antenna. If you have a balanced line or balanced antenna match the twinax can be feed from that device.

If you are going to have to buy some coax, buy enough twinax to get you outside the shack. Buy a couple Twinax feed through of cable splice connectors. Run the twinax from the receiver to outside the shack. Place the matching device outside in a weather sealed container and ground the outer shield of the twinax outside.

This works to keep shack noise out of the R390 antenna. It made a world of difference for me in my San Diego California garage with all my computer stuff running.

You can find the twinax as IBM token ring cable as used stuff. It is recognized as good coax worth saving and just wondering what to use it for. The heavy duty serious computer support places may have several lengths collecting dust complete with connectors. A right angle adapter is also useful if one is to be had.
Just ask for the IBM token ring cable and connectors. Skip the Radio part. The computer Geeks do not understand radio. Roger KC6TRU

From Flowertime01 at wmconnect. com Mon Apr 25 20:27:49 2005
Subject: [R-390] IF out

Its them chem trails.

The stuff has metallic particles in it and its killing the propagation. You never know where in your skip path its being sprayed and what effects it will have on your signal from day to day. Roger KC6TRU

From Flowertime01 at wmconnect. com Mon Apr 25 20:50:47 2005
Subject: [R-390] Line Noise and Balanced Antennas

Jim, Yes, a balanced input can help. However YMMV.

If you have lots of RF noise hitting your antenna, balancing the feed line is not going to be the saving grace. I just put up a post earlier about using some IBM twinax to feed an R390. My noise was from my own equipment in the garage with my receiver.

The use of a balanced line and dipole antenna helped me with some of the other neighborhood noise. I was never able to cure it all.

However, the trouble of installing the Twinax between the receiver and a match box outside where the coax came down from the antenna was really worth the effort for me. Maybe just getting that much shielded cable as a ground strap between the receiver and a good ground was as much help as anything.

Been there done that, think it was worth doing. Roger KC6TRU

From djmerz at 3-cities. com Mon Apr 25 22:50:54 2005
Subject: [R-390] R390 progress

Bob/others, I pulled the crystal oscillator chassis out of the 390 (non-a) and got it open down to the heater surrounding the crystals and then reconsidered. I started thinking maybe it's the position of the switch like someone mentioned relative to the 390a - I decided to check that before tearing into the

heater. I put it all back together and now found 7 to 8 Mhz worked most of the time - good enough to hear at least one ham mid-day. But I then checked all the bands using the crystal calib and found all bands worked but noticed 4-5, 5-6, 6-7, 7-8 and 8-9 Mhz were quite a bit weaker receiving the marker compared to the other bands. I would say 7-8 is not working very well but seems to mostly work. Occasionally it seems to not work. I tweaked the appropriate caps and tuning rods a bit at 4. 6 and 7. 8 Mhz but this didn't seem to strengthen reception much. I'm wondering what to try next to find the problem. The high bands seem to work ok judging by being able to peak the background noise and picking up signals on the ones where there's some activity. That's as far as I got. Is tearing into the heater box surrounding the crystals straightforward ? - the manual I have doesn't show that detail or the position of various crystals within the box. I guess I should check the condition of the oscillator tubes, duh ! !
I got the line meter to work by putting the missing jumper back on the 11/12 positions on the rear - seems to be ok now. The dial calibration was correctable from the front panel, or very nearly so. I'll deal with that later. I appreciate all the help and advice, Dan.

From ham at cq. nu Mon Apr 25 22:58:07 2005
Subject: [R-390] R390 progress

Hi,I have never torn into the crystal "box" on a 390 so I am just assuming it's set up the same way as the 390A. If so then it's not terribly hard to get into. While you have it open I would at least pull each crystal out and re-seat it.

There is a test point that will let you figure out if the oscillator is the issue. That should give you a pretty good idea how to track the problem down. I'm still betting on an oscillator problem. You could be correct in saying that your bandswitch is out of synchronization. Take CareBob Camp KB8TQ

From djmerz at 3-cities. com Tue Apr 26 02:15:40 2005
Subject: [R-390] R390 progress

Hi, I was surfing on Medley's site and see he says getting into the xtal box is quite a job - I'll explore other things before going there. I pulled the two oscillator tubes, 6AJ5's according to the manual and markings on the radio. (What a job to get those little guys out of the cramped box - resorted to tongs with tape to get some traction - I see why I need those missing tube pullers ! !) But one of mine was a 6AK5. Both tested ok and the 6AJ5 is apparently the same tube as the 6AK5 designed for low plate voltage. They indicate about the same gm when tested according to the Hickok settings for 6AJ5, which puts low voltage on with my tester. Does anyone know if the 6AK5 performs reasonably well in place of the 6AJ5 in a 390? I don't think I have extra 6AJ5's but I have enough 6AK5's to sink a very small boat. I think I searched my boxes for most of the 390 tubes when I first got it - may have to go searching again,Dan.

From LairdThomasN at JohnDeere. com Tue Apr 26 08:02:18 2005
Subject: [R-390] R390 progress

Here is a clip from my archives from Dr. Jerry K0CQ…. Tom Laird WC9M Moline, IL.
==========

I did find full data sheets on the 'J and the 'K. There was a difference in standard characteristics, at least in the GE brand the J's heater cathode voltage was limited to 90 volts but was rated at 120 volts in the K. The other ratings including capacitances were identical.

In typical operation the Gm of the J is half that of the K, but with the plate voltage so low the J's curves look more like a triode's curves, because they don't get up to the constant current regions of the normal pentode. There are more curves shown for the J than for the K but they are miles from overlapping so are nearly impossible to compare.

Since the input C and the maximum voltage ratings and dissipations are the same, I stick by my prior conclusion. There could be a difference in cathode material maybe to encourage electron emission at the lower plate voltage of the typical operation of the J, but if it was significantly different they couldn't have the same maximum plate voltage, so I stick by my conclusion that the J is a K tested at 28 volts and the K is a J tested at 120 volts on the plate. And the plate test voltage is selected at the end of the production line according to which tube they need at the moment. I suppose these days I should say "was! "
There were some Western Electrics, 404 family if I remember correctly that fit the same sockets with higher gain and lower noise that might be interesting for RF stages. I know the Western Electric tubes definitely worked better in old 2m FM radios. Wouldn't be any benefit in oscillators, but might make the higher frequency bands a bit livelier in the RF stage.

Probably in a 1938 or 1939 (maybe later) issue of the IRE Proceedings of the Electron Devices group, there's an article about the J and K. Maybe something in the MIT RAD lab books on components since the K was used heavily in WW2 radar IF strips. Maybe something in the IF amp book too. Jerry, K0CQ

From roy. morgan at nist. gov Tue Apr 26 11:17:13 2005
Subject: [R-390] Power Cords and Bypassing: Roy's Diatribe

wrote: (Topic was: RE: [R-390] R390 power cord" <soap box on> Roy, I think you should post your entire line cord diatribe right here on the R-390 list. (snip) </soap box off>

Ok, folks here is the info I have written/collected on power cords and bypassing. Some notes are in order:
1) The R-39x line filters have multiple capacitors from both sides of the power line to chassis. They act like voltage dividers IF the chassis is not properly grounded and you get about half the line voltage on the chassis. This does NOT mean that the caps are "leaking" or shorted - they are simply acting like capacitors. The R-390/URR line filter has more caps in it than the R-390A/URR one does.

2) Replacing the original line filter in R-39x radios with a modern "computer type" chassis connector with filtering may be a good idea if you have ground fault detectors in use. The AC current bypassed to the safety ground (chassis) from the original R-39x line filters can trip these devices. A simple metal plate can be made to replace the original line filter and mount the new line cord connector.

3) I have included one source for appropriately rated line bypass caps. They also have info on these caps that is worth reading. In case you are replacing or adding bypass caps to your equipment, I suggest you follow that link and use modern properly rated caps.

4) I have the following available as separate documents:
- The "imaginative but quite serious descriptions" of how your wife can be come a widow mentioned below.
- A diatribe on the dangers of Variacs and what can go wrong when you "bring the radio up slowly".
- Info on reforming electrolyitc caps and testing smaller ones for leakage.

5) Corrections and opinions welcome. Thanks.

Roy's Diatribe on Fused Line Cord Plugs and Line Cords and RF Bypassing power cords and bypassing. txt From k1LKY

Fused Line Cord Plugs:

Under no circumstances should you ever use a fused line cord plug, period. It can kill you in a variety of ways. The Johnson company put them on Rangers, Valiants, and other equipment. I have a Heath VHF-1 6- and 2-Meter transmitter with one on it. These line cords and fused plugs are the first thing to go when I start returning it to serviceable condition. Note that there seem to be two applications for fused line cord plugs: Electric fence energizers and decorative electric holiday candles and light strings. The electric fence situation is based on long history, and safety may well rely on the idea that the case of the energizer is grounded with a ground rod to make the fence work properly. The window candles and light strings have no chassis, no switch, no transformer, and very little exposure of energized conductors to people.
Some time ago I wrote imaginative but quite serious descriptions of some of the many ways fused line cords can make a widow out of your wife. These are not included here. In summary, however, the way your wife gets to be a widow is as follows:

1) The equipment with the fused line cord plug suffers an internal short such as in a transformer or RFI bypass capacitor, with the short circuit more or less to the chassis.
2) ONE of the line cord plug fuses blows (almost never will both blow unless the fault is a dead short.)
3) You unplug the thing, unhook the "good station ground" wire and antenna, move the radio to a work bench to figure out what is wrong. Notice that the ground you *might* have had on the chassis is removed.
4) You plug it back in and unknowingly insert the unpolarized plug so the intact fuse puts line voltage on the chassis.
5) You reach for the power switch, the current kills you and your wife becomes a widow.

This is a topic sure to generate much traffic on any radio mailing
list. People's attitudes seem to fall into four groups:

1) "Problem? What problem? There's no problem here. " Duuuhhhh!

2) "Originality forever! " To hell with the fact that it may kill me or someone else, I will use the original fused line cord and my equipment is authentic.

3) "Hmmm..." I'm glad to know about all this (but I may not DO anything to prevent my death or that of any other hapless and innocent person.)

4) "But of course! "Safety in line cords is easy to understand and worth paying attention to. I'm going to get busy and fix this situation now.

Be safe, live long. Do not use fused line cord plugs. Install a three-wire grounded line cord, and make sure your outlets are working right.

Line cords and how to install one safely:

(in US standard line cords):
GREEN is safety ground, and should be tied directly to the chassis. In European (IEC) cords, the safety ground is Green/Yellow.

BLACK is "hot" or "line" - it goes directly to the rear of the fuse holder, the terminal farthest from the outside of the fuse holder where the cap is installed. The terminal on the fuse holder nearer the chassis or panel goes to the switch and should go nowhere else. (See info on bypass caps below.) If you use an open clip-style fuse holder under the chassis, use either end of it.

WHITE is "neutral" and goes UN-fused to the system, e. g. power transformer primary. Do not put a fuse in both power cord lines. This can lead to a dangerous situation, though it's less likely to be dangerous with a three wire grounded line cord than with the deadly fused two-wire un-polarized line cord plug.
On the line cord wall plug,
- the round, longer pin is green
- the larger flat pin is neutral
- the narrower flat pin is line or hot.

(beginning of extract from message by Bob Nickels)
From: "Robert Nickels" <w9ran@oneradio. net>
Subject: [Johnson] Fused Plugs
...
A good source of replacement 3-wire power cords are those used by computers and peripherals, but most of them use the European color designationsFor years, the colors of individual conductors in cords for use in North America have been black for line, white for neutral, and green for earth (ground). But in order to harmonize worldwide standards, two major UL equipment standards, UL 1950, Information Technology Equipment, and UL 2601, Medical and Dental Equipment, started several years ago to require the more traditional European conductor color coding: brown for line, light blue for neutral, and a combination of green and yellow for ground.

The color conversion is as follows:

LINE(US) Black = (EU) Brown
COMMON(US)White = (EU) Blue
GROUND(US) Green (EU) Green/Yellow

(end of extract from message by Bob Nickels)

Older HP and other test equipments were equipped with an oval line cord connector and matching cord. The Belden/Volex 17280 power cords are apparently the normally-connected cord. . There is a version with reversed line and neutral. In all of them, the offset (center) pin is chassis ground. When working with these equipments and line cords, do take time to sort out hot from neutral so you retain the safety aspects of the fuse connection.

RF Bypass caps should be installed as follows:

One from Line to Neutral, after the fuse.
One from neutral to chassis.

When our boatanchor equipment was made, it was common to use both a two-wire, ungrounded line cord and two bypass caps, one from each side of the line to the chassis. Do not re-create this situation when you install the three wire grounded line cord. This causes a danger of fire should the line to chassis cap short but not draw enough current to blow the circuit breaker, and this arrangement also causes the chassis to be at half the line voltage if the safety ground is not present (such as in a two-wire outlet used

with an adapter, or in an outlet improperly wired or faulty.)

There are currently available "Safety" capacitors meant for line bypass applications. You can tell them from normal caps in the catalogs because they cost about 5 times as much as normal caps. If you take apart computer power supplies or junk TV sets, you will wind up with one or two from each unit.

A reasonable review and discussion of caps used in older radios and line bypassing is at: http://www. justradios. com/safetytips. html ABC's of SAFETY Capacitors for Tube Radios

They do fail, however, to discuss the method of installation above. The authors are in Canada and offer a number of services for old radios, including technical information, and capacitors. Here is their capacitor page: http://www. justradios. com/capacitors. html

You can also find the same kind of capacitors at Mouser and other large parts suppliers.

Fuses:

The topic of fuse installation and choice of fuse type and rating is a complicated one, but here are some points to consider:

1) For normal equipment, put one fuse only, in the Hot wire of the line cord as near as practicable to the point where the line cord enters the equipment. The black, Hot wire of the line cord should run directly to the tip of the fuse holder - see part 2 below for more details.

In equipment such as the Valiant transmitters that are made with extensive RFI filtering on all leads exiting the case, you may not want to add a rear chassis skirt mounted fuse holder. In other radios that never did have a fuse, such as the Hallicrafters S-20R, adding a fuse holder would ruin the originality of the set. In these cases, mount an open fuse clip below the chassis, possibly using an existing screw or transformer mounting bolt.

Some military equipment was built with a fuse and possibly a switch section in both wires of the line. This was done where the equipment was to be used aboard ship or in other places where the power circuits were floated from ground for safety and reliability reasons. (This situation also applies generally in Sweden and some other European countries.) If the equipment is in good condition you can leave it as it was built but make sure you have a good three wire grounded line cord and that your outlet grounds are properly connected.

Note: the three-terminal MS series, "Amphenol" type connectors used by the military on such equipment as the CV-591 and CV-89 were installed with (at least) two different pin arrangements. . Be very careful that you dope out what you have when working on equipment of this sort. Mis-matching the cord to the equipment could lead to trouble.

2) The Hot or line wire of the power cord goes directly to the rear of the fuse holder, the one farthest from the outside of the fuse holder where the cap is inserted. The terminal on the fuse holder nearer the chassis or panel goes as directly as possible to the switch. This reduces to the absolute minimum the amount of conductor inside the equipment that is not protected by the fuse. And it reduces the chance of a shock when you are installing or removing the fuse if the line cord is still energized.

3) The "cold" or neutral side of the line cord should NOT be fused. The Green, safety ground wire should never be fused. Also, the safety ground should not pass through any connector other than the line cord connector and should not pass through any printed circuit path. It should be connected directly to

the chassis.

4) Follow manufacturer's specs for the type and rating of the fuse. Beware of low voltage fuses that may fit the fuse holder you have. Fuses rated at 32 volts may not properly protect you and the equipment in normal line voltage situations. If you don't know the current rating needed, make a guess at the rating and use smaller and smaller fuses until they blow from time to time. . then increase the fuse current rating a bit.
5) "Inline" type fuse holders can be used under a chassis with no holes to drill or screws needed to hold down an open style fuse holder. They come in two sorts, apparently. One sort is just like a panel mount fuse holder but has no mounting nut and no external solder connections. Wires enter the cap on one end and the holder body on the other end. The other sort is rounded and fastens together in the middle. This link shows both types and has them for sale: http://www. members. tripod. com/ralph_graves/littlefuse. htm

GFI and Hot Chassis Troubles:

The R-390 series of receivers, among others, was built with robust line filters. The R-390/URR filters have more caps in them than the R-390A/URR ones do. The arrangement of the capacitors places half the line voltage on the chassis if the chassis is not grounded. This is NOT because the line filter capacitors are leaking or shorted, it is normal voltage division behavior of the circuit as installed. If the chassis is grounded, enough current flows in the safety ground wire to unbalance the two line currents and trip many ground fault interrupter devices. Old style methods of bypassing both wires of a two-wire line cord to the chassis can do the same things. Steps to correct these troubles include:

1) Remove the line filters or line bypass capacitors connected in the old style and either leave them out or install bypasses as above.

2) Use an isolation transformer or a "Sola" type constant voltage transformer (most of which have isolated secondaries). Note: most "Variacs" or variable voltage transformers do NOT provide any isolation. Some that do apparently exist but they are rare. Further, fuses in these things may be in the input wire only and not in the variable voltage output wire. This can lead to overloading the low voltage turns of your transformer. Both input hot and output hot should be fused, or at the
least only the output wire.

3) Use properly grounded three wire line cords with non-GFI protected power circuits.

Outlet Safety Testers:

Most home stores and electrical supply houses can sell you a small gadget to test your outlets with. They have a number of neon lamps that indicate proper functioning or various fault conditions. The cost is less than $10 and is one of the best investments in your safety you can make. Even "licensed professional electricians" can and have made mistakes wiring up houses, and time and wear can open up safety grounds that were installed properly in the beginning. You owe it to yourself, your family, and later occupants of your house to buy and use one of these very helpful gadgets.

Think safety. Install proper grounded line cords. Live long....(end of diatribe)

From Flowertime01 at wmconnect. com Tue Apr 26 16:25:59 2005
Subject: [R-390] R390 progress

Dan, The 6AK5 is used in the R390/A it is also a 5654. I do not remember what belongs in the R390 for mixer tubes.

I really hate to send you into the RF deck. Not the first task to take on as a new R390 owner. But it sounds as if you need to get a look under there. Read up on the band switch adjustments, and how to set the receiver up on blocks to get the front panel off. Locate your green gear. (You did not hear it from me, but you can do a RF deck pull on the R390 without a green gear. It is of course easier with the gear than without by some margin or the military would not have spent the money on the gear)

R390s tune in bands. (. 5-1) (2-3) (4-7) (8-15) (16-31) If 4, 5, 6, and 7 are not sounding good you must suspect the RF alignment. As you have a cal tone on every 100 Hkz you know the crystal oscillators are good. They could be better maybe, but they are at least not dead.

Since you tweaked the RF bank for the 4, 5, 6, 7 band and did not get these bands to sound as good as some other bands, you need to do two things. You may have done them and just not reported it. Check the mechanical cam alignment at 7. 000+. Lift the slug rack for the band and make sure the slugs are all there.
You could have a the cam miss aligned for the band. A slug may be broken and the bottom of it setting in the coil tube. This could have happened in shipping the receiver to its new home with you. Look at the color dots on the slugs in the 4-8 slug rack. One of the slugs could be the wrong part. (mechanical size is OK but materiel is wrong) The 4-8 band could have had a wrong slug in it for a long time.

While your at it, loosen the adjustment plate and let the slugs recenter while the slugs are as far down in the coil as they go (bottom of the cam). You will need some pointy nose pliers to undo the slug rack springs. Undo the springs from the rack while the rack is at the bottom of the cam. You way want to just watch the cam and slugs travel in the coils while you move through the MC bands. the racks will bind in the slide ways and not follow tightly on the cam. This will give you weak signals.

All cal tones on all bands will not have equal strength. Weak tone on a Mhz band is a call for a new crystal in the second oscillator. Not something you have to do now, but it gives you a chance t get things on the shopping list.

OK so now you done all this and life is still not wonderful. You may need to pull the RF deck and do a band switch alignment.

More mail to follow on that subject. Please let us know how these simple checks went. Roger KC6TRU

From Flowertime01 at wmconnect. com Tue Apr 26 16:41:48 2005
Subject: [R-390] R390 progress

Dan,

I sounds like Tom said Jerry said, the whole world knows you need some 6AK5 / 5749 in your R390. Not something you have to do, but you will likely hear more with some 6AK5.

Now your looking for tubes, The first thing there is all brands are not equal. Take what you can get today and try them. Do not pass up any swap meet bargains and take those home. Try them. Swapping tubes is the difference between very good receivers and really awesome receivers (my to cents) A tube will not fix a problem that is not the tube. But once you get all the problems fixed, then tubes do make a difference.

You may yet need to pull the RF deck to change some caps. Do some more reading and lets see if we can get you the whole list of things to check for before we send you off to just yank the RF deck for fishing venture. There are lots of other specific not invasive test that can be conducted before we send you down that path.

If you were a student in the 33 or 31 MOS an instructor would not hesitate to make you pull that deck on the drop of a cigarette butt. However you would also have been trained and psychologically conditioned to do the task prior to jumping in. For 33's that instructor was a hell of a lot more scary than any piece of hardware. Roger KC6TRU

From Flowertime01 at wmconnect. com Tue Apr 26 16:45:15 2005
Subject: [R-390] Power Cords and Bypassing: Roy's Diatribe

Roy, Thank you Roger KC6TRU

From jshorney at inebraska. com Tue Apr 26 17:19:42 2005
Subject: [R-390] Twinax From IBM Used

wrote: > >Just ask for the IBM token ring cable and connectors. Skip the Radio part. The computer Geeks do not understand radio.

I beg your pardon? :-)

BTW, Token Ring cable is UTP. Modern variety is pretty much the same as CAT5, in fact, CAT5 Cheepernet cable can be used. Ask a computer geek for "Token Ring cable" and you will probably get your choice from about 5 different varieties of twisted pair.

The twinax you speak of was used mainly for mainframe interconnects and backbones. Usually called "thick ethernet" in my experience. But you are correct, there is lots of it around to be had for the asking. Jim (computer geek)

From r390a at bellsouth. net Tue Apr 26 18:45:12 2005
Subject: [R-390] Oldest Recorded R-390A Example

Yep, you know where I found it. http://cgi. ebay. com/ws/eBayISAPI. dll?ViewItem&item=5769545066

The shipping cost isn't so bad. Hopefully he'll pack it so it gets to the buyer in one piece. Tom NU4G

From rbethman at comcast. net Tue Apr 26 19:02:04 2005
Subject: [R-390] Oldest Recorded R-390A Example

I'm confused. What makes this the oldest R-390A recorded example?

I have a '51 Collins R-390A, and have the original data plate, IF Module S/N is 35, and the only two pieces NOT Collins are the PTO and the Audio deck. I don't see a date on that rcvr, or any details on its internal components, or a S/N. What did I miss? Bob - N0DGN

From varsdale at verizon. net Tue Apr 26 19:54:11 2005
Subject: [R-390] Oldest Recorded R-390A Example

He's hawking it as " World War II R-390A/URR Receiver " Walt K5SXO

From courir26 at yahoo. com Tue Apr 26 20:21:15 2005
Subject: [R-390] Oldest Recorded R-390A Example

The oldest 390A known to me is mine, single digit sn from first contract. Tom

From ham at cq. nu Tue Apr 26 20:43:18 2005
Subject: [R-390] Oldest Recorded R-390A Example

Hi,

There used to be a guy who showed up at the Hosstraders hamfest one of who's businesses was to make up name plates. He had an interesting collection of "number one" serial number name plates. I have always wondered how many of them eventually will show up at auction. Take Care Bob Camp KB8TQ

From bipi at comcast. net Tue Apr 26 21:47:05 2005
Subject: [R-390] Binding Post to BNC Adaptor

I am looking for a binding post to BNC adaptor for an HP voltmeter. HP part number is HP 11011A but I would imagine they were manufactured by others as well. Anyone have a spare they are willing to part with or know who might have them for sale? I checked Fair Radio, Surplus Sales, and several other electronics parts suppliers. Thanks 73 de Mike K7PI Mercer Island, WA www. k7pi. com

From r390a at bellsouth. net Tue Apr 26 22:29:26 2005
Subject: [R-390] RE: [humor] Oldest Recorded R-390A Example

Guys, I was making fun of the seller's listing. The guy had the receiver listed as a "WWII R-390A" It was just a bit of humor. 73 Tom

From Flowertime01 at wmconnect. com Tue Apr 26 22:55:03 2005
Subject: [R-390] Twinax From IBM Used

Jim (computer geek)
The devil is in the details. I have master degree in Computer Science and have made a living at it long enough to retire. Seen any chad lately? How about some ferrite core memory? You just can't use a generality any more without offending someone. Sorry, Jim your turn to be it.

Sorry, you are right token ring is also UTP.
But if you are a real computer geek you will come back with the history of how tokens got off IBM into UTP. And IBM was big on star topology. IBM liked the twinax because it provided a shielded balanced line. You could get two computers across town connected, but that was before Al Gore invented the

Internet.

"Ask a computer geek for "Token Ring cable" and you will probably get your choice from about 5 different varieties of twisted pair. " See my point exactly. Computer history less than 10 years old.

Thick net is more like RG8 3/8 dia coax with some good shield. Thick net was the original Ethernet. If someone offers you some Thicknet or Ethernet cable, Accept the offer, Boat anchors are always in need of anchor chain. Roger KC6TRU

From jshorney at inebraska. com Tue Apr 26 23:36:55 2005
Subject: [R-390] Twinax From IBM Used

wrote: >The devil is in the details. I have master degree in Computer Science and have made a living at it long enough to retire. Seen any chad lately?

Not lately....Unless you count Florida. Still see punch card stuff occasionally, but not so much anymore.

>How about >some >ferrite core memory?

Got some in my basement, out of a Varian mini. It probably doesn't qualify in your book though, because it's mounted on a glass-epoxy circuit board. A whole 8K, IIRC.

>You just can't use a generality any more without offending someone. Sorry, Jim your turn to be it.

Who says I was offended? I was just clarifying what people actually call the stuff these days.

>"Ask a computer geek for "Token Ring cable" and you will probably get your >choice from about 5 different varieties of twisted pair. " See my point exactly. >Computer history less than 10 years old.

I was thinking more along the lines of something someone is actually likely to find at a computer shop, surplus auction, etc. these days. Recent history. Anything older than that is either still in buildings as old as my R390A (to stay on topic) or taking a dirt nap. Anyway, I think this is the first time I have ever heard someone with your credentials, as impressive as they are, refer to the stuff as Token Ring cable. Maybe I'll go ask Reichenbach...

>Thick net is more like RG8 3/8 dia coax with some good shield. >Thick net was the original Ethernet. >If someone offers you some Thicknet or Ethernet cable, Accept the offer, >Boat anchors are always in need of anchor chain.

I regularly turn my nose up at twinax cable (of whatever type). I could lay my hands on enough for my needs probably any time I want to, but don't need any just yet. Need to get the 390A reworked first. Need any 8228's? 73 Jim

From djmerz at 3-cities. com Wed Apr 27 02:27:18 2005
Subject: [R-390] R390 progress

Roger, I started thinking about pulling the 390 rf chassis and was looking at the manual to see what was involved. I haven't had the front panel off yet so the first task will be getting those panel screws out without snapping one off. This was my first mistake when I pulled the panel off my 390a - haven't

gotten the broken screw stub out to date - it reminds me to be more careful on screws that haven't been out for a while. But that aside, the green gear is there; I found one confusion in the manual copy I have; should the meghz knob be set to 00 or 10 before pulling the panel and rf chassis? It seems 00 would be the logical setting since the cams are mostly near high points there. I'm warming my mind up on what it involves but am still playing around with the other kinds of diagnostics first. I did replace the two oscillator tubes with 6AK6W's, which I found in my cache. I got it working somewhat better on the "bad" bands by pulling out the two rf tubes and the 1st mixer tube, testing them and then putting them back in ! ! Maybe one wasn't seated well or a dirty contact. I probably should put a little deox on the tube pins here. They are some of the easier ones to pull. I have a variety of brands to try later. Since the 1st mixer is used only for the lower bands, I thought maybe the problem was there. But dinking with the iron cores/trimmer caps in that stage didn't improve signal getting thru much. More later, Dan.

From roy. morgan at nist. gov Wed Apr 27 09:18:51 2005
Subject: [R-390] Oldest Recorded R-390A Example

wrote:>I'm confused. > >What makes this the oldest R-390A recorded example? >What did I miss?

The item title says: "World War II R-390A/URR Receiver " I bet they'd have been amazed to have one on Guam in 1944! Roy

From ai2q at adelphia. net Wed Apr 27 10:00:10 2005
Subject: [R-390] R390 progress

Dan, et al:

Pulling the RF deck out and re-installing it is not difficult---even if you didn't have the green gear. I was entirely successful with my R-390 restoration (see the archives for details) and my set was missing the gear. I simply held the gears in place with duct tape (!) while dropping the chassis back in. Followed the instructions in the TM to the letter. Worked just fine. GL es enjoy a great old piece of equipment.
Vy 73, AI2Q, Alex in Maine

From richardlo at admin. athabascau. ca Wed Apr 27 12:36:07 2005
Subject: [R-390] Twinax From IBM Used

wrote: > The devil is in the details. I have master degree in Computer Science and have > made a living at it long enough to retire. Seen any chad lately? How about > some

Yeah but we were never "geeks", maybe "hackers" back before those earnest young men with the goatees reinvented both terms. I don't even remember being a hacker when I was loading tapes into a ASR33 so I could fire up the PDP8.

A geek is the guy at the circus who bites the heads off chickens. Richard Loken VE6BSV

From paul at pdq. com Wed Apr 27 11:39:24 2005
Subject: [R-390] R390 progress

wrote: Pulling the RF deck out and re-installing it is not difficult---even if you didn't have the green

gear. I was entirely successful with my R-390 restoration (see the archives for details) and my set was missing the gear. > I simply held the gears in place with duct tape (!) while dropping the > chassis back in. Followed the instructions in the TM to the letter. Worked just fine.

If you are slightly patient, you can do the mechanical alignment while it is installed. I think you just have to have the crystal deck off the back of it.

The "hard" part there then becomes putting the oldham coupler back in between the RF bandswitch and the crystal deck. Paul

From djmerz at 3-cities. com Wed Apr 27 12:23:44 2005
Subject: [R-390] R390 progress

Paul, I guess I already did the hard part. I had the crystal oscillator chassis out already, wanting to take a look at the switch/crystal but stopped at the heater box and put it back in, thinking I'd better check some other possibilities first, like the tubes and maybe pinpointing the problem before tearing things apart. The oldham coupler disc was nice to me and stayed in place while I tightened the clamp - need 3 hands for this so I guess I got lucky. I didn't even grease it up like the manual suggests to keep it in place. My confidence is growing, thanks for the suggestions/and relating your experience, Dan

From wd8kdg at worldnet. att. net Wed Apr 27 12:59:47 2005
Subject: [R-390] Variable-Frequency Oscillator End-Point Adjustment

Good Morning to All,

The other day while performing an end-point adjustment I realized there is a better way. For those who would like to add a new tool to their collection; add a Snap-On SSM5A. It is nothing more than a screw starter. Used one years ago (about 30 years) for those hard to reach places on motorcycles.
No need to remove the VFO subchassis just to remove the end-point-adjustment cover nut, reinstall VFO; then, repeat the same process all over again when you are done with the end-point adjustment!

You still have to remove the front panel. Rotate the riveted locking plate by hand until the holes line up through the front of the receiver and allow access to the cover nut. I then used a screw driver long enough to just loosen the VFO cover nut. Leave the cover nut partially threaded into the VFO. The SSM5A is about 5 1/4 inches long. Long enough to reach the cover nut. If you have a screw starter or purchase one the next sentence will make sense. Cock the screw starter and place it through the riveted locking plate hole and lower it until it reaches the cover nut. Line the screw starter up with the notch in the cover nut and push. Rotate the cover nut until loose. Righty tightie, lefty loosie. The screw starter can now be raised with the cover nut attached. The cover nut will NOT pass through the hole in the riveted locking plate! You will have to grab on to the cover nut with your fingers.

Access to the adjusting screw is now possible. Reverse the process when the end-point adjustment is complete. This should give R-390A owners more time to play Radio.

And of course you have my standard tail light guaranty this will work on your R-390A, it has been tested on a 56 Motorola. later.....craig,

From tetrode at comcast. net Wed Apr 27 13:27:31 2005
Subject: [R-390] Twinax From IBM Used - geek

> A geek is the guy at the circus who bites the heads off chickens.

That's the 19th century definition; today we are all definitely radio or R-390 geeks, just ask my non-geek wife :^) John (a radio geek and proud of it)

geek. n. Slang

1. a. A person regarded as foolish, inept, or clumsy.

1b. A person who is single-minded or accomplished in scientific or technical pursuits but is felt to be socially inept.

2. A carnival performer whose show consists of bizarre acts, such as biting the head off a live chicken. http://dictionary. reference. com/search?q=geek

From Flowertime01 at wmconnect. com Wed Apr 27 14:34:40 2005
Subject: [R-390] R390 Band Switch Alignment

Fellows, Please I need some help to go out to Dan,

Some where last month I put up a post about why we should pull the RF deck and do the band switch adjustment by inspection of the switch by eyeball. Because the switch sections are not all exact and wonderful.

My old sent mail has determined that I sent that post to long ago and deleted it for me. I just love computers. If someone has a copy, will you please put it back out here again. Thank You.

Dan has an R390 that is weak in a couple of bands. It sounds as if his receiver needs a band switch adjustment. It also sounds as if he needs some pointers on doing a deoxit of all the switches, crystal sockets, tube sockets and deck connectors. Some pointers from old post may be useful to Dan on this subject as well. Thanks Roger KC6TRU

From tetrode at comcast. net Wed Apr 27 15:06:03 2005
Subject: [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. 73, John

From David_Wise at Phoenix. com Wed Apr 27 16:33:42 2005
Subject: [R-390] Variable-Frequency Oscillator End-Point Adjustment

I don't even remove the front panel.

I broke an old metal-tip alignment stick into two pieces. The short half is just short enough to maneuver into place. It's also just long enough to turn between thumb and forefinger.

I can't remember how I initially broke the cover nut loose; I probably took out the VFO. If you get lucky, your right-angle screwdriver will have the right orientation to catch. I put it back on with the above alignment stick, which keeps it loose enough to get it back off the same way. I rock the radio onto its face to drop it out, and put it on its back to put it back in. Takes some poking around, but it still beats (with a stick!) pulling the front panel, unless you're rack-mounted. 73, Dave Wise

From wd8kdg at worldnet. att. net Wed Apr 27 17:11:08 2005
Subject: [R-390] Variable-Frequency Oscillator End-Point Adjustment

Talk about working in tight spaces.

I needed to slip the veeder root counter after tweaking the VFO, so the front panel had to move a few inches. There is more than likely a better way, but I tweaked the VFO, slipped the counter, and then checked to see how far off the VFO was end to end. After finding the correct direction to turn the adjustment, it wasn't too bad.

Got a question for the group. I made my end-point adjustment with the receiver standing up on its back panel. In this position it was easier to get the cover nut out of the way and see what I was doing. Would there be any difference with the receiver in its normal top side up vs. panel side up while performing the end-point adjustment. Or I'm I picking belly button lint, almost like discussing the replacement of capacitors.

I did notice some backlash with the R-390A front panel side up. In other words, checking 100KHz markers counting up vs. checking the markers counting down was different. Always had to start at 000, calibrate, and check every 100KHz up to +000, counting up. Once the end-point was as close as I could get it, I put the receiver front panel on. Today, checking the 100KHz markers, and the receiver in normal position markers are repeatable going in either direction. Craig,

From djmerz at 3-cities. com Wed Apr 27 18:19:40 2005
Subject: [R-390] R390 Band Switch Alignment

Roger/others, I'm getting nearer to doing what you're suggesting and pulling the rf chassis. I started listening on 40 meters to see what I could get out of the 390. At first, not even the calibrator signal was audible on the 7 Mhz range but I got it to come in weakly by turning the Mhz knob a bit about the detent point. I put some deoxit on the tube pins, 1st/2nd mxr, r. f. tubes - things seemed to get better. I rocked the Mhz knob for a while and pretty soon I was picking up a West coast noon net, with signal coming in pretty good and some very strong. It seemed to be on a par with the 390a at that point - at least it was acting like a radio where I could peak the background noise with the ant. Trim. So I'm thinking there is a dirty switch contact in there someplace, maybe under the rf chassis and it seems only to be affecting the 4,5,6,7 Mhz ranges. The lower bands seem to always work and the higher bands seem to always work. So I left the set on for a couple of hours and it continued to be ok on 7 Mhz range but when I went back after about 3 hours, it was back to nearly dead not able to hear the calibration oscillator and then only weakly on 7 range and only slightly better on 4,5, and 6, after some moving of the Mhz knob but I wasn't able to revive it to the former state of operating much better. I going to start loosening up the front panel screws....Roger, I remember the post on alignment of the switch - I may still have it in my mail here - will take a look, Dan.

From djmerz at 3-cities. com Wed Apr 27 18:27:53 2005
Subject: [R-390] Paint on counter numerals

Hi, has anyone touched up the numbers on the veeder root counter? Some of the white flaked off the six digit on the 390 so it looks like a small o. I thought maybe acrylic craft paint would work and it can be easily mixed to get the matching "yellow" of the other digits, plus it dries in a hurry. Any experience here, Dan.

From wli98122 at yahoo. com Wed Apr 27 18:50:53 2005
Subject: [R-390] Power Cords and Bypassing: Roy's Diatribe

Nice essay, Roy! One can not ever be too careful in power input circuitry.

Here my note from 1999: "Not all FL101's are the same. One of mine has the terminals mislabeled. Terminal A on the side of the power filter was in continuity with terminal "B" on the bottom, and vice versa. My other filter was labeled correctly. So a word to the wise: do a quick continuity check on the power cord-fuse-switch wires when you install the mandatory three wire grounded line cords".

Perhaps the "best" solution is to install the modern AC computer-type chassis connector with filtering as Roy suggests.

A good article on restoration our boatanchors is found at QST August 1995 pp49-52 by Larry Keith KQ4BY W. Li Mercer Island, WA (Currently working on a pristine all Capehart R-390A)

From dsmaples at comcast. net Wed Apr 27 19:54:52 2005
Subject: [R-390] Power Cords and Bypassing: Roy's Diatribe

All: Roy's "diatribe" is pretty good to me overall.

I put in a standard CORCOM filter on the rear panel of the 390A where the original line cord went in. A little bit of work to make the appropriate square hole, but once done, it was fine. Never had to do anything else there, and a standard IEC cord fits just fine.

For the Valiant owners: Not an R-390 issue, but I was able to sneak a panel-mounted fuse holder in the small space between the rear panel and one of the large transformers mounted against the rear of the Valiant. This allowed me to use a standard 3-wire cord on the Valiant and still have an outside-accessible fuse. The fact that this made the Valiant "no longer original" didn't bother me in the least, but to each his own...73, Dave WB4FUR

From jmiller1706 at cfl. rr. com Wed Apr 27 20:57:32 2005
Subject: [R-390] R390 Band Switch Alignment

Could be the xtal oscillator. Try giving the xtal trimmer caps for the questionable bans a few spins to work through any oxidation, then repeak them. Also be sure no slug racks are sticking. Give them a tap with your finger to be sure they pop into place and see what happens.

From ToddRoberts2001 at aol. com Wed Apr 27 21:04:03 2005
Subject: [R-390] Paint on counter numerals

writes: Hi, has anyone touched up the numbers on the veeder root counter? Some of the white flaked off the six digit on the 390 so it looks like a small o.

Hi Dan, yes I have touched up numbers on the 390 veeder-root counter dial. I just took some Testors model paint and a fine brush and did the best I could with it. It turned out pretty nice - you can't tell it has been retouched so I guess I achieved the desired result! 73 Todd WD4NGG

From Flowertime01 at wmconnect. com Wed Apr 27 22:08:25 2005
Subject: [R-390] R390 Band Switch Alignment

John, Thank you for the archive link. I need that and did not know it. Mark Huss,

Thank you for putting up the post from my soap box.
Dan Merz,

You may have a band switch alignment problem where the 4, 5, 6, 7 setting is not making good contact in one of the wafer sections.

As you have Cal tones on each band, the oscillators and crystals are good. The only things in common with the four bands being weak is the RF switch and the set of tuning coils. The rack, the slugs, the switch, Check the slugs and rack from the tops side before you pull the RF deck. Do peak the second crystal deck caps.

One additional idea before you go into the bottom of the RF deck. Pull the slug rack by releasing the two springs (one front and one rear) on the rack and lift it out of the slides. Insert a #1 Philips screwdriver down the slug hole and remove the 6x32 screw that holds each coil can in place. The coil cans plug into the deck with several pin contacts. Wiggle them up free and clean the contacts and pins. These contacts have been known to oxidize like tube and crystal pins and sockets.

Mark Huss put up a soap box of mine about why we should pull the RF deck and do the band switch alignment by eye. It looks like you have a classic case of band switch just not quite making on one position. Some time if you tune from high to low or low to high the switch will make for you going one way and not the other. Some time you can do 8, 7, 6, 7 and get the 7 Mhz to work. some times you can do 3, 4, 5, 4 and get the 4Mhz to work. These are clues the switch lash is to far out and needs adjustment. May as well get your self a some deoxit or other favorite switch contact cleaner and go after the band switch. As long as you have to pull the RF deck, you may as well do a full PM under there and be done with for a couple years.

Plan to clean the switch, set the switch adjustment, give the deck a bath, and check the state of the capacitors under the deck. If you have some brown beauties in there, change them out. Just do not jump in real fast. work with the receiver, Use it a while, work on the other parts of the alignment and see how it works out. After you get all the other easy top side items fixed up, then plan a Saturday to do the RF deck. By that time you will have gotten the tools and materiel together for the task.

From buzz at softcom. net Wed Apr 27 23:58:36 2005
Subject: [R-390] Paint on counter numerals

I made new number strips for a speedometer using Paintshop Pro a few years ago. Measure the circumference of the counter spool, then plot out a suitable size rectangle, change the background to black then place the number in white. I printed the strips out on label paper then cut 'em out and stuck 'em on. Then finished it out with a few coats of clear acrylic. Buzz

From mparkinson1 at socal. rr. com Thu Apr 28 04:11:45 2005
Subject: [R-390] kleronomos audio mod

Does someone have a copy of this audio mod I want to give it a try something to do so to speak like I don't have any R-390a to work on. I don't have a copy of the ER article that would be great also I was wondering if someone had it and scan to me or what ever it would take to get an email copy of this. Matt

From ham at cq. nu Thu Apr 28 07:09:09 2005
Subject: [R-390] kleronomos audio mod

Hi

I don't have a copy of the mod. I have seen it and it's a major bunch of surgery on the audio deck. Last time I checked used audio decks still were in the sub $30 range. I would suggest grabbing one of those to do the mod on. That way you still have a working original to swap back to. Like a lot of mods going back and forth trying things will be part of the process. Take Care Bob CampKB8TQ

From jonandvalerieoldenburg at att. net Thu Apr 28 10:28:44 2005
Subject: [R-390] kleronomos audio mod

I'd also be interested if some one has a copy of this. -- Jon Oldenburg AB9AH "When life hands you lemons, ask for a bottle of tequila and some salt. "

From brumac at juno. com Thu Apr 28 11:34:59 2005
Subject: [R-390] kleronomos audio mod

Matt, Like Jon, I would also like to have a copy of this mod. Bruce MacLellan

From djmerz at 3-cities. com Thu Apr 28 11:57:35 2005
Subject: [R-390] Paint on counter numerals

Todd, is the testors paint non-water based, one of the smelly types that cleans up with paint thinner or lacquer thinner? Thanks, Dan

From djmerz at 3-cities. com Thu Apr 28 12:19:36 2005
Subject: [R-390] kleronomos audio mod

Hi all interested in this mod, I put this mod on a second audio chassis and it's in my 390a currently, probably to never be removed as long as I have the set. I have both articles relating to this mod

published in Electric Radio and can send to those that want it. Please email me directly and I'll wait a few days and send them all at once. I'm quite happy with how it turned out. It does entail putting a 9 pin socket in place of the 6ak6 7 pin socket for the 6360 ! ! ! output tube and adding a small output transformer in that unused area (squelch circuit area?) of the 390a audio chassis.

There is another audio mod, also published later in Electric Radio June 2004 "Simple Audio for the 390a" by Mike Murphy. I believe this mod, which doesn't involve as much chassis hacking and uses a 6AQ5 is a good one, but I have no direct experience with it. I'd probably try it if I were doing the mod now because it's easier. If I feel so disposed, I may try this one in the 390 non-a if I can find a spare audio chassis. I could scan this article also if enough interest. The article documents the performance before and after the mod pretty thoroughly. Dan

From djmerz at 3-cities. com Thu Apr 28 12:56:37 2005
Subject: [R-390] R390 Band Switch Alignment

Hi, ok, here's some more data to chew on. The 390 non-a seems to have settled into working pretty well on the lower bands except for the 7 to 8 Mhz range. At least I can consistently hear the calib oscillator on most others. I put my scope on the oscillator input to the cathode of the 2nd mixer tube - the rack gets in the way using a tube extender on the 1st mixer so I focused on the 2nd for now. The oscillator output should be 20 Mhz (10 doubled) for this band. It is, but the waveform is badly distorted and at least half the amplitude of most of the output for most of the other bands. If I look at the 17-18 Mhz range where the same crystal is used, again the waveform is distorted and even smaller in amplitude. The distortion is mostly of the nature that every other cycle never goes down very far so the wave is almost like a 10 Mhz wave with a notch instead of a complete cycle in between to make the 20 Mhz form. The 27-28 Mhz range, which uses the third harmonic of this same crystal, doesn't look so distorted, go figure. If I can figure out how to get a tube extender into the 1st mixer socket, I'll look at the 1st oscillator output, but the 10 Mhz xtal for 7-8 Mhz for that oscillator is also used on 2-3 Mhz and that band seems to be ok.

So it looks like the xtal or it's connection is the problem. Are the crystals in the 390 soldered in or are they in sockets? I tinkered with the trimming caps on the back a bit but that didn't resolve anything. I suppose the bandswitch could still be the problem but the waveform on the scope doesn't show any evidence of intermittent or inconsistent connection when I change bands. But I should check the 1st mixer tube for the signal from the first oscillator also.

In looking thru the Field and Depot Maint Manual (last digits 35) and the Organiz. Maint Manual (last digits 20) I mostly understood the xtals and the conversion scheme in 35 and which xtals were used on the various bands but failed to understand one table in 20 that identified which xtals were bad based on which bands didn't work. That table is in Sect 14 under troubleshooting in Manual 20. Does anyone recall a problem with this table. Also in Manual 35, alignment of 2nd xtal oscill. Sect. 77 advises which trimming caps to adjust for each band. Cap. number 16 seems to be left out and Band 17 seems to be left out. Anybody recall this omission?More later, Dan.

From wli98122 at yahoo. com Thu Apr 28 17:29:43 2005
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. W. Li

From Flowertime01 at wmconnect. com Thu Apr 28 17:32:50 2005
Subject: [R-390] R390 Band Switch Alignment

Dan, It sounds like you have narrowed this down to a weak crystal. Sorry I do not have an R390 manual at hand to help my memory.

The cover does come off the crystal cover deck. All the crystals do plug in. You should try to pull the cover and clean the crystal contacts. Likely the cover has been off before. I do not know if the osc deck ovens are switched. In the R390/A the ovens are switched. If the R390 ovens are on the switched circuit someone may have left the oven leads unsoldered the last time the crystal oven cover was off.

You can get the cover off without pulling the RF deck. It just takes some creative work. Once you get the cover off, you mite look at all the crystal socket contacts and give them some cleaning. The trimmer cap may be broken or need cleaning. I always hated to work on the caps in the osc deck. You can pry the retained clip sideways off the under side, lift the cap and washer out. Clean every thing up and put it back together.

The crystal are used on the fundamental and harmonics. You can have one perform not well on one band and be OK on the harmonic. The crystals do go bad. Replacements are available. You will find some of them off frequency. The cal tones on the band will all be high or low. If the crystal is used on a harmonic the cal tones on that band will be twice as far off. If the crystal is just off frequency, that's what the zero adjust is for. If you have a weak band, then you may want to change the crystal.

Again this why I suggest you just play with your receiver as is for a while and get a feel for its behavior. You can do the clean and lube and see how many problems get cured with some cleaned up contacts. Roger KC6TRU

From wa6knw at sbcglobal. net Thu Apr 28 18:33:48 2005
Subject: [R-390] Re: kleronomos audio mod

Come on guys. I know we all want to get everything we can inexpensively; but, in this case ER

magazine is a Mom & Pop outfit that is trying to give us the articles and information that allows us to dream about those olde boat anchors of yesteryear. So why not break down. Spend the couple of bucks for a back copy with the article in it..... Who knows you may see what you're missing by not subscribing and do that also..... RICH WA6KNW

From bmg50pa at suscom. net Thu Apr 28 19:12:05 2005
Subject: [R-390] R-390A Audio Decks

It was mentioned that these decks are around $30. I'd like to locate 1 or 2 EAC decks. Can anyone help?Thanks,Mort Denison York, PA

From youngbob53 at msn. com Thu Apr 28 19:29:29 2005
Subject: [R-390] Re: kleronomos audio mod

How do I check this magazine out, subscriptions rates etc. ? Bob Young

From brumac at juno. com Thu Apr 28 18:05:38 2005
Subject: [R-390] kleronomos audio mod

Hi Dan, I would like to have a copy of the Kleronomos mod too. Thanks for your generous offer. Bruce MacLellan

From jamminpower at earthlink. net Thu Apr 28 19:49:27 2005
Subject: [R-390] R-390A Audio Decks

You should contact the folks at Fair Radio (www. fairradio. com) They may be able to pick some EAC decks out of their pile. James A. (Andy) Moorer

From chacuff at cableone. net Thu Apr 28 19:56:17 2005
Subject: [R-390] Re: kleronomos audio mod

I agree with that....If someone will list the issue number I think it appropriate to contact the mag and order the back issue. It's a great magazine and personally I'd like to see it stay around. Cecil...

From hankarn at pacbell. net Thu Apr 28 20:02:25 2005
Subject: [R-390] Re: kleronomos audio mod

Rich, as you know ER is a copyright magazine, so without the written permission of the author or editor it is against the law to copy it to any medium. I think the back copies sell from ER for a little over $3. 00 plus postage.

It is also in HSN which also has copyright protection. I think back issues sell for a buck or so plus postage.
I have one complete set of each plus through about 16X of another of ER plus a few extras. Which is spoken for if I ever get a full count. in my

spare time.

As Rich says support the ER as it is a great magazine and worth every penny. For the El Cheapo Frugal ones you can get it by media mail lot later date.

ER has a deal where you can get all of the back issues for a flat rate. They also have email and a web site so you do not have to pay a few cents a minute for a phone call. If you are really cheap you can send a post card fo r . 22? or so. Hank KN6DI

From youngbob53 at msn. com Thu Apr 28 20:51:50 2005
Subject: [R-390] Re: kleronomos audio mod

If you are really cheap you can send a > post card fo r . 22? or so.

Sounds like my kind of price, haha!

From kgordon at moscow. com Thu Apr 28 21:07:39 2005
Subject: [R-390] Re: kleronomos audio mod

wrote: > How do I check this magazine out, subscriptions rates etc. ?

http://www. ermag. com/ Best little magazine out there IMHO. Ken W7EKB

From kw4a at direcway. com Thu Apr 28 21:18:21 2005
Subject: [R-390] Audio Mod

Kleronomos Real Audio Mod: This is a major (non-reversible) mod that is documented in Electric Radio issue 42. It converts the AF deck to deliver 5 watts of push-pull audio into an 8-ohm speaker. Larry KW4A

From youngbob53 at msn. com Thu Apr 28 21:20:33 2005
Subject: [R-390] Re: kleronomos audio mod

Well, they got one more subscription out of me, Bob Young

From r390a at bellsouth. net Thu Apr 28 21:35:29 2005
Subject: [R-390] OT -- Collins as a Religion [humour, sort of]

A relic of Arthur The Venerable, may his name ring in the aether forever. http://cgi. ebay. com/ws/eBayISAPI. dll?ViewItem&item=5769356689 I've not been able to find incense with "tube radio smell". I guess you gotta use an old Collins radio. 211's would make good candles. Tom NU4G

From wa6knw at sbcglobal. net Thu Apr 28 22:41:14 2005
Subject: [R-390] Re: kleronomos audio mod

OK, here's some R-390A audio related ER articles.
ER 42 OCT 1992 Real Audio for the R-390A
ER 94 FEB 1997 PG34 Real Audio for the R-390A, Revisited
ER 181 JUN 2004 PG28 Simple audio for the R-390A
ER 181 JUN 2004 PG46 Audio Circuit Design in the R-390 Receiver Family
ER 183 AUG 2004 PG7 Cheaper and Simplier Upgrades for the R-390A
ER 186 NOV 2004 PG30 AN Audio Filter Modification for the R-390A
RICH WA6KNW

From djmerz at 3-cities. com Thu Apr 28 22:49:42 2005
Subject: [R-390] Kleronomos audio mod

Hi, such a hot item and yes there is probably a copyright issue here. I'm not selling this to anyone or advertising it as available; I remember when I tried to get the first Kleronomos article from ER before I made the mod a few years ago. It wasn't available. I had the second article in my own subscription copies of the magazine. No back issues were available and as I recall ER did not object when I asked the editor, then Barry Wiseman, about my providing the copy I finally obtained to someone that requested it. I was concerned about providing something that ER might be selling. I notice in my latest issue of ER that any back issue is offered for $3. 75 including shipping, or you can buy the entire set of back issues for $375. They don't provide copies of individual articles to my knowledge. $3. 75 isn't a ripoff - I think I pay $2. 67 per issue with my subscription.

I finally obtained a copy of the 92 article from a ham friend. He sent a jpg that I could barely read and I ended up retyping it completely to avoid eyestrain. I have subscribed to ER since about 1995 so don't have any of the earliest articles, which covered the 390a in several articles. A complete index to ER is available online.

Electric Radio is a unique publication in many ways with heavy emphasis on AM ham operation. But it has many interesting ideas, projects, reviews etc for general hi-tech radio buffs with little reference to solid state. I continue to read it with interest even though I am not a ham. Some of the articles are personal recounts by old timers. I recommend it. I'll be more careful in the future about offering copies in an open way. If you feel unjustly awarded with a freebie, I suggest subscribing to make amends for our sins. That should make the editor happy.

The issues were: Real Audio for the R-390a Oct 1992
Real Audio for the R-390a Revisited Feb 1997
Simple Audio for the R-390a June 2004
If you're going to do the Kleronomos mod, you should have both of the first two articles. The Simple Audio article stands alone. Dan

From ham at cq. nu Fri Apr 29 07:32:37 2005
Subject: [R-390] R390 Audio

Hi,

Most of the classic audio from the good old days ran push pull output devices. Since the 390 has a single ended output transformer you can't implement this kind of output circuit without surgery. The R390 power supply also limits you when you want to put a pair of 6L6's in for output drive. One other very simple option is to pull the audio off of the diode load. Running it into a decent external amp works

better than just about anything you can fit inside the radio.

None of that is to say that you don't want to do mods to the audio deck. Audio is certainly an area where the radios can be improved. The only thing to consider is weather you want to go one way or another.

Here's the suggestion - If you are going to do a "chop and cut" type mod on the audio deck anyway then think a little about all the things you might want to do. Putting in a buffered wide band output from the diode load probably can be done with half a dual triode. Doing it while you are laying out the work to be done should be a lot easier than doing it after the fact.

The net result would be a radio with three audio outputs - not a bad feature. You might also pick the buffered audio off after the gain pot. This also would be a nice feature. Take CareBob Camp KB8TQ

From LairdThomasN at JohnDeere. com Fri Apr 29 08:53:24 2005
Subject: [R-390] RE: Audio Mod

Don't forget the addendum to the original article, read it before you proceed.

I have done the "diode load" scheme with and old Grommes open frame audio amp with a pair of push/pull 6V6's into an old organ speaker. Talk about great AM audio! But, the downside it's not a self-contained unit. That may or may not be a concern for some...Anyway, either way is better sounding audio in my opinion. Tom Laird WC9M Moline, IL.

From redmenaced at yahoo. com Fri Apr 29 10:59:01 2005
Subject: [R-390] Kleronomos audio mod

But then you could just ask Bill, KD0HG. Joe

From mjmurphy45 at comcast. net Fri Apr 29 11:50:09 2005
Subject: [R-390] 390A Audio Deck ?

Barry,

Speaking of B-29's, I got to see the restored Enola Gay this week. I had a couple of hours on the loose while on a work trip in DC (picking someone up at Dulles Airport). WA1QHQ, Mark and myself hit the new Air and Space Smithsonian Annex. You get a nice peek right into the front Norden Bombsight and you can see what looks like an ART-13 remote control box. They are keeping some small and very large birds there including the SR-71 that set the coast to coast speed record and an Air France SST which was given to the Smithsonian, and the Space Shuttle Enterprise (which is gigantic).

The museum is well worth a visit and did not cost a dime (well except for Cecil's tax money). Even the parking was free at the end of the day when we showed up. Mike Murphy WB2UID

From wak9 at cornell. edu Fri Apr 29 12:27:46 2005
Subject: [R-390] Rats - There goes a pair of 26Z5W's

> As I was sticking the screwdriver into the PTO to adjust it, I heard the sound like something was

drawing excessive current.

I know this post was awhile ago, but I haven't seen this in the replies. **I recently did my pto and noticed that the end point cap is hot. If you touched the frame at all, it's shorted to ground.** The procedure says to use an insulated screwdriver. A metalic tool doesn't seem to throw the freq off much, so I imagine that they tell you this to prevent shorting the circuit to ground. I didn't have a non-ferrous tool so I used a standard tweaker. I noticed it sparked a little if I hit the frame while adjusting. A little heatshrink on the shaft should do the trick. Hope this helps.

From roy. morgan at nist. gov Fri Apr 29 15:50:11 2005
Subject: [R-390] Re: unusual Capehart for me

wrote: >Am looking at my third R-390A I think that either this unit failed its functional checkout and just sat around somewhere; or that it was used infrequently (wishful thinking).....

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.

(NO 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. Roy

From chacuff at cableone. net Fri Apr 29 17:35:45 2005
Subject: [R-390] 390A Audio Deck ?

I'm headed up there in June for a week. Taking my kids for the first time (13 and 16)....they should have a ball! Got to be an R-390A in the Smithsonian somewhere...we're going to go looking for it! Cecil...

From mikea at mikea. ath. cx Fri Apr 29 18:03:34 2005
Subject: [R-390] 390A Audio Deck ?

wrote:> I'm headed up there in June for a weekGot to be an R-390A in the Smithsonian somewhere... we're going to go looking for it!

<sound of light bulb coming on>

By @PANTHEON, you're _RIGHT_! Or (even better) an R-390.

So how do we check to see if they do, and what do we do about it if they _don't_? I'm more than just a

little bit serious about it.

I grant you that BC-348, SCR-274, and other rigs may have played a big part in WW II and the Korean Conflict, but the R-390* radios are arguably best of breed for their time. Mike Andrews, W5EGO

From Flowertime01 at wmconnect. com Fri Apr 29 19:02:43 2005
Subject: [R-390] Re: R390 At Smithsonian

Fellows, The problem is not do they have one, Its is it out where it can be displayed. Smithsonian has so much stuff, they have been know to dump some of at sea.

I agree we need one on display along with whole bunch more items. We need to get the anchor glow bug groups together and see what's in house and what we can do to get a display. Maybe we could get the display at one of the other sites some where in the nation. Roger KC6TRU

From lester. veenstra at intelsatgeneral. com Fri Apr 29 20:26:26 2005
Subject: [R-390] Re: R390 At Smithsonian

wrote: >The problem is not do they have one, Its is it out where it can be displayed. Smithsonian has so much stuff, they have been know to dump some of at sea.

R-390As are on display at both CIA and NSA museums.

From chacuff at cableone. net Fri Apr 29 22:35:15 2005
Subject: [R-390] Green Gear

Hey Folks,

I have heard so much about the "Green Gear" over the years that I figured it was absolutely essential. I'm in the middle of an RF deck teardown and all I can see the thing does is keep the counter sync'd to the gear train. If one is going to remove the counter to disassemble the gear train or even to just give it a good wash down it's going to get out of sync anyway. I would guess one could spin the gear train around to align the cams with the marks, put the counter back on set to 2. 000 and it would be good to go right? Of course I didn't address the bandswitch..... I'll look at that a little closer!

Am I missing something?? If not I'll be pulling things down tomorrow and I'll put the green gear back in it's storage spot! Cecil....

From djmerz at 3-cities. com Sat Apr 30 12:37:50 2005
Subject: [R-390] Green Gear

Cecil, there are several explanations of the green gear in the archived material. I put one of these in a text file (Bonds, Jan 13, 1999) for my future reference when I take my rf deck out at some point. I can send you the text file, either as Word or WordPerf. File, if you like, off the posting. My interpretation is, the green gear isn't essential but makes things a lot easier. Bonds describes a scenario of re-assemblying if you don't have a green gear, which makes me think it's not as straightforward as you suggest. Duct tape was suggested to me as a substitute to hold the positions also, instead of the green gear. Why not

use the gear, if you have it? Maybe you're taking the gear train apart as well? Best regards, Dan.

From r390a at bellsouth. net Sat Apr 30 12:59:32 2005
Subject: [R-390] OT -- Phone Company Color Codes

Someone had asked about them on another list. I know there are other refs out there, but I scanned a pair of Bell reference cards in a format suitable for printing. http://www. fernblatt. net/phonecolors. pdf 73 Tom NU4G

From roy. morgan at nist. gov Sat Apr 30 14:08:15 2005
Subject: [R-390] Variacs and solas: additional thoughts.

wrote: > >(DO NOT bring it up slowly on a variac!)....
>
>I was re-reading an old e-mail of yours, is your advice >based on the fact that an unmetered Variac could put >over 125VAC onto the primary of the power transformer? W. Li,

Actually, it can be much worse. Many variacs are wired for overvoltage and would deliver up to 150 volts if they are ment to be run from a 115 volt line. Even if a variac has a meter, it's easy to operate it incorrectly and not notice the meter until after some damage has been done.

I just did two experiments:

1) With a second variac (a GR W5MT3), I powered a STACO Adjust-A-Volt rated for 120 volts input, 7. 5 amps output. This thing is both useful and dangerous in that it has a two-position power switch: "120 Volts"and "140 Volts". I fed it 130 volts to simulate a 117 volt variac on a 124 volt line. With it switched to the 140 volt output, the output was 150 volts running a 4+ amp halogen work lamp.

2) I re-arranged things and fed the General Radio W5MT3 with the STACO. The GR unit is rated at 115 volts input, 5 amps output, 0-135 volts. It is set up for overvoltage and has the normal ON-OFF power switch. I ran it with 121 volts input (the house line voltage at the time) and the output at max setting was 142 volts running a 100 watt lamp. I then increased the input voltage to 124, which I get as line voltage from time to time, and the output was 146 volts. If I run it on normal line voltage of 122, it produces something like 147 volts. If I set the dial to "115", I get whatever is the line voltage at the time, normally 121 to 124.

So, take your pick, 146 to 150 volts input to your 50 year old radio rated at 115 or 117 volts. I'd expect trouble.

The danger with the STACO transformer is that you can easily push the switch to "140 volts' instead of "120 volts", and if the knob is set full up, you get 150 volts output.

A further note on variacs in general:
The fusing or circuit breaker arrangements can be important. The GR W5MT3 has a circuit breaker on it and the STACO has a fuse. My guess (without investigating it just now), is that both of them are in the INPUT of the unit. This means that if there is a short cicuit or heavy overload on the ouput, and you start at 0 volt setting and increase the setting slowly, you'll be overloading the windings as to current, and the fuse or circuit breaker will not trip or blow. In my opinion, variacs should be fused or have circuit breakers in BOTH input and output. This will protect the thing wherever an overload would occur. I

have had such failures burn the low windings of a small variac in a DC power supply, and recently got a one-amp GR W-200B one-amp variac with evidence of the same thing.

Incidentally, if you run into a 400 cycle variac, it can be run on 24 volts AC. (The allowable voltage is proportional to the frequency.) This can lead to a convenient low voltage power supply. If you hook a 400 cycle variac to 60 cycle supply at it's rated voltage, expect smoke in a hurry.

Some notes on constant voltage "sola" transformers:
Some are the "harmonic neutralized" type and some are not. All these things operate on a magnetic circuit basis with non-linearities and very high circulating currents. Part of the current is harmonics of the supply voltage due to the non-linearities. Thus, the output waveform may well be regulated to 115 or 120 volts RMS, but have very high peaks in a distorted waveform. It seems to me that this could create high B+ voltages in rectifier power supplies. Filaments may be very happy at the right RMS voltage but the B+ may rise very high due to peak rectification in the supply.

It has been noted on the reflector that "sola" type voltage stabilizers create both noise and a lot of heat, especially when they are lightly loaded. The good advice given was to run them well loaded at all times to avoid trouble. It may be that 20 to 40 percent loading will bring down the waveform peaks to reasonable levels, but some experimentation is in order. Installation instructions advise making sure there is plenty of air circulatoin to avoid overheating. The Sperior Electric Company makes Sola brand regulators still, and their website has interesting reading.

I have a 230 volt input unit here that runs the photo darkroom to avoid troublesome changes in enlarger lamp brightness due to changes in line voltage. When it is switched on, there are significant overvoltage transients, and I make sure that nothing but light bulbs are on the line when I start it up. A surge supressor outlet strip might help protect the few solid state things I use (timer and enlarging densitometer), but it also might get a whacking big surge each time I start up. The Oscilloscope will tell the truth in the matter.
By the way, two of the three capacitors in this thing failed open at one point. Each was rated at 8 uF and 660 volts ac. The output voltage collapsed to near zero. I was able to locate a fairly high voltage (440vac) motor starting capacitor of the right capacitance that was about one fifth the size of the original three caps. It seems to work fine. The voltage on the capacitor during operation is normally way above 440 volts ac, but it was all I could find, and they normally have breakdown voltages very much in excess of the rating.
I once had a Sola made for 50 cycle operation (for use in Europe). The thing did not work well at all on 60 cycles. It regulated at some 150 volts output, and over a limited range of input voltage. As I understand it, it is not feasible to modify the 50 cycle units to work on 60 cycles. I sent it to someone in a 50-cycle country and he was happy to get it.

If you have a sola transformer that's rated at 120 volts and you want to get 115 volts out of it, add a voltage bucking transformer, or see if there is room to add a few turns of wire in series with the normal output over the existing winding and arrange the connection to reduce the output. I've not added bucking turns to a sola but it's an attractive possibility.

Normally, voltage regulator transformers will operate well just a bit above their rated output power (they are rated in volt-amps, not current, because of the the way they work and the harmonic content of the output.) Above a certain point, however, they collapse and go into a low-output-voltage condidition. This is good, because they are inherently current limiting. Apparently, there is no harm to the thing and it automatically recovers.

Here are some questions to investigate:

Variacs:
1) What particular makes and models of "variacs" are set up for overvoltage as made?
2) Do small variacs behave differently than bigger ones? (I doubt it.)
3) Are fuses or circuit breakers normally in the input as made?
4) What errors are found in the dial readings due to line voltages being
higher than the unit was made for?
5) Are the voltmeters found on variacs at all accurate?

Constant Voltage Transformers:
1) Do small ones behave in a way similar to large ones? (I have examples from 60 volt-amps up to one Kilowatt.)
2) What peak voltages come out of the harmonic neutralized type, and what from the non-netutralized ones, as a function of loading.
3) Does harmonic content in the output lead to high voltages in rectifier power suppllies? Are choke input plate supplies affected in the same way?
4) What are the overload characteristics of these things? Are they the same for small and bigger units?
5) Where above rated output do these things collapse, and do all such transformers behave this way?

Sooo many projects, sooo little time! Roy

From youngbob53 at msn. com Sat Apr 30 15:20:34 2005
Subject: [R-390] Variacs and solas: additional thoughts.

When I use a variac I always have a voltmeter hooked up to the output at all times, because mine will also go up to 140 volts with 117 line voltage, Bob Young

From ham at cq. nu Sat Apr 30 15:42:38 2005
Subject: [R-390] Variacs and solas: additional thoughts.

Hi,

A few observations:
Variac's are always fused on the input side - thank the nationalelectric code for this one. Rarely you will see one with dual fuses,but if it only has one fuse you'll see it on the input.

Constant voltage transformers have one other oddity. When you checkthe output voltage with a fairly normal AC voltmeter you never quiteknow what you will get. A true RMS meter will give you one thing, anda peak reading / calibrated to read RMS meter will give you somethingvery different. Take Care Bob Camp KB8TQ

Thank you for the engineers at Hammarlund who had the foresight to includemany multi tap voltage selections on the SP-600 Power Supply Transformer. Tap #5 is for 130 volts which more closely matches the voltages of today. Mostpeople who are operating their SP-600 would be wise to remove it from thecabinet or remove the bottom dust cover and look. It probably has the voltage set to the # 4 tap, which is 117 volts. Move it to the # 5 tap for 130 volts,the P. S. Transformer will thank you and it will run cooler and the stabilitywill more than likely improve. Les Locklear

From Llgpt at aol. com Sat Apr 30 15:53:08 2005
Subject: [R-390] Variacs

I agree with Roy, I don't own a variac and neither do real men. Put thereceiver in question to a smoke test or be a wimp.....:-) Seriously, I don't use one, no need to if you know anything about electronics. Les Locklear

From mjmurphy45 at comcast. net Sat Apr 30 16:26:47 2005
Subject: [R-390] OT -- Phone Company Color Codes

An old tapper from PA State police gave me the official memory rhymes for the two cards which were taught to identify pairs to line men.

TIP-
Why - White
Run - Red
Backwards - Black
You'll - Yellow
Vomit - Violet

RING -
Boys - Blue
On - Orange
Girls- Grey
Bring- Blue
Surprises-Slate

Mike Murphy WB2UID

From wli98122 at yahoo. com Sat Apr 30 16:42:26 2005
Subject: [R-390] Re: Variacs and solas: additional thoughts.

Roy & others:

Excellent thoughts! Fusing the output of a Variac is something that really ought to be a mandatory 'upgrade'.

Many power transformers (Tek ones come to mind too) have multi-input primary taps, and using the highest one is good as Les points out. The 'factory' Variac voltmeters are often junk. W. Li

From ba. williams at charter. net Sat Apr 30 22:47:24 2005
Subject: [R-390] Variacs

> Mr. Morgan just deliver a nice monalog on Varaics, I might suggest that if you collect Collins or any other tube operated equipment and you have trouble operating a Varaic, a transformar with a knob on the front of it, you might consider collecting stamps, the worse you can get from that is a paper cut. With all due respect gentlemen, this isn't ding-dong school. good grief... Joe W2DBO

Uh, oh.....If you see us running, hurry and catch up. (Bomb squad motto)

From K4HCA at alltel. net Sat Apr 30 22:54:44 2005
Subject: [R-390] Variacs

I agree with Mr. Morgan. Entirely too much bandwidth has been expended on this thread! Any Amateur Radio operator who doesn't knows the difference between an Ohm, a Volt and an Amp ought to take up bird watching. Harold

From dfranklyn at mindspring. com Sat Apr 30 23:13:05 2005
Subject: [R-390] Variacs

<Any Amateur Radio operator who doesn't knows the difference between an Ohm, a Volt and an Amp ought to take up bird watching. <

That's a thought! We could always use a few more people looking for that "extinct" woodpecker ;-)

From chg111 at hotmail. com Sat Apr 30 23:22:47 2005
Subject: [R-390] Variacs

I always enjoyed looking for the elusive Double-Breasted Matress Thrashers...<grin>-Sandy G. C. H. (Sandy)Geiger III

From kgordon at moscow. com Sat Apr 30 23:43:45 2005
Subject: [R-390] Variacs and solas: last thoughts.

The Variacs I have seen and used can ALL be wired so that the output is both higher (140VAC) and lower (110 VAC) than the input voltage (120 VAC), but all such "adjustments" are internal. The Variac has to be partially dismantled in order to do the changes.

I have several Variacs which have two-sided dial plates: one side reads from 0 - 100 PERCENT, and the other side reads 0 - 140 VOLTS, so you flip it over to the side you want.

I also have one large Variac that has such low impedance that when I turn it on, the breaker feeding that socket blows. Sometimes it takes multiple attempts until I hit it at a valley in the sine wave. Then I leave it on. I haven't turned it off for about the past 5 years. None of mine are fused in the output, but I think they will become so shortly. Ken W7EKB