R-390 Reflector April '04 Edited

From r390a@bellsouth.net Thu Apr 1 01:54:06 2004
Subject: [R-390] Interesting radio on ebay

OK, the radio itself is not so interesting, the description is what is interesting. And over and above the $100 packing fee over and above shipping cost.

From bill@iaxs.net Thu Apr 1 05:10:01 2004
Subject: [R-390] Interesting radio on ebay

Gotta admit that I wouldn't expect much, especially since you can't pick it even if you live next door. Looked like he only took cash (no recourse) but later said PayPal OK.

OTOH, I once paid a shipper to pick up, crate and ship an R-391 because the ad was "pickup only". That cost $150 twelve years ago. The set arrived in a professional crate, lined with 1/2 inch of corrugated cardboard. Shipped by air, no damage. Regards, Bill Hawkins

From jmiller1706@cfl.rr.com Thu Apr 1 05:26:04 2004
Subject: [R-390] Info Please

It's being worked. http://search.yahoo.com/search?ptswg+ied&eiUTF-8&frfp-tab-web-t&copmss&tab

From jmiller1706@cfl.rr.com Thu Apr 1 05:28:31 2004
Subject: [R-390] Info Please

It's being worked. Called Warlock. More: http://www.fcw.com/fcw/articles/2004/0301/web-ied-03-02-04.asp

From r390a@rcn.com Thu Apr 1 15:18:05 2004
Subject: [R-390] Unusual Dittmore-Freimuth unit

Found this in a corner the other day, with both meters intact:
http://users.rcn.com/r390a/hobby/Dittmore-Freimuth.jpg Does this count as a D-F sighting?

From eldim@worldnet.att.net Thu Apr 1 19:34:03 2004
Subject: [R-390] Unusual Dittmore-Freimuth unit

What's the actual diameter of this wind meter? I would think that you should receive some points for the name, a point for the nice picture, 1 point for bringing it to the attention of the group. However, the actual point value, must be verified, ratified, and approved by a higher authority. Of course, if you had supplied the other product picture for comparison, then the point assessment by the group would have been better understood. Best regards, Glen Galati, KA7BOJ

From r390a@rcn.com Thu Apr 1 20:42:20 2004
Subject: [R-390] Unusual Dittmore-Freimuth unit

It's about two feet in diameter. Just wanted to show one of the things D-F did besides putting their tags on EAC-made R-390As.

From dallas@bayou.com Thu Apr 1 21:48:44 2004
Subject: [R-390] Wally Chambers (K5OP) Audio Derived AGC

Quite a long time ago Wally told me about a very simple audio derived AGC mod for SSB consisting of one bridge rectifier and one 10K ohm resistor. I tried it, didn't think it did much of anything for the R-390A, so I put it in a box and was going to mail it back to Wally. But somehow it sat for years on my kitchen counter, and never got mailed. Eventually I moved it to one of my parts storage closets. A few months ago I noticed it and decided to try it again.

The AC leads of the bridge rectifier (a 1.5 amp 50 volt Rectron RB151, also Radio Shack 1151) are connected to the balanced line out terminals, the positive lead to the ground terminal, the negative lead to a 10K ohm resistor lead, and the other resistor lead to the AGC jumper (either screw #3 or #4) on the rear panel terminal strip.

As I had done before, I turned the LINE GAIN knob to about 3. (Wally never told me what setting to use, and I never thought to ask.) And as before, I could tell that the mod was providing additional AGC voltage because of increased Carrier Level meter indications. And, yes, as before there what no noticeable improvement in the SSB quality. I still observed "pops" and "clicks" on some first syllables. For some reason I decided to increase the audio derived contribution by increasing the LINE GAIN setting. When I increased it to 4 and 5, SSB sounded a bit better. So I upped it to 6, and eventually 7. Above 7 is seems that the R-390A begins to be desensitized.

My opinion now of the K5OP audio derived mod is completely reversed. It is a great SSB mod when used in conjunction with my well-known AGC mod. It is also simple to do. I soldered terminal lugs (available from Radio Shack) to the AC and + leads of the bridge rectifier, and a short insulated wire from the "other 10K resistor lead to a terminal lug so that the mod can be implemented merely by unscrewing 4 screws on the terminal strips, sliding the lugs onto the screws, and tightening the screws. No soldering to the R-390A is necessary. Try it. You'll like it. It, together with my BFO vernier fine tuning mod, makes the R-390A a truly world class SSB receiver.

From dallas@bayou.com Thu Apr 1 23:34:16 2004
Subject: [R-390] Wally Chambers (K5OP) Audio Derived AGC

No. My BFO vernier fine tuning mod is done with a voltage regulator, voltage variable diodes, and a 50K ohm pot (the pot added to the front panel in place of the DIAL LOCK mechanism). It was mentioned recently on the "qth" R390 reflector, and is described in detail in a file that can be downloaded from the FILES section of the YAHOO r390 reflector. Best regards, Dallas

From dallas@bayou.com Fri Apr 2 01:56:56 2004
Subject: [R-390] Wally Chambers (K5OP) Audio Derived AGC

Hi John,

I use whatever AGC speed band conditions (including QRM and QRN) dictate. But as you guessed, I normally use SLOW, and the audio derived AGC mod improves the SLOW AGC the most. I haven't looked at the audio derived mod yet with my scope, but I presume it substantially speeds up the SLOW attack time, which is very slow in an unmodified R-390A, about 10 milliseconds. To eliminate "pops" and "clicks" on initial syllables of SSB transmissions, I have found that attack times of about 3 milliseconds or less are needed. Remember, too, that the SLOW AGC of an unmodified R-390A uses a Miller effect AGC, which has an amazingly slow attack time of 200 milliseconds. I would be surprised if this audio derived AGC mod worked with SLOW AGC in an unmodified R-390A. Bur who knows? Maybe someone will try it and report back to us. Best regards, Dallas

From dallas@bayou.com Fri Apr 2 19:16:25 2004
Subject: [R-390] Correction To "Chambers Audio Derived AGC Mod"

Well, I don't know how I botched it so badly. The 10K ohm resistor should be 1K ohms. And instead of being in the path to the AGC line, it is in one (either one) of the AC lines of the bridge rectifier to either one of the LINE OUT terminals.

From cbscott@ingr.com Fri Apr 2 19:25:12 2004
Subject: [R-390] Correction To "Chambers Audio Derived AGC Mod"

Dallas, Is this very effective without other SSB mods? I think I'll try this as it's so easy, but was wondering what I might expect with it. I know it's pretty simple and words pretty much describe it, but is there a schematic somewhere online? Thanks, Barry(III) - N4BUQ

From hdalexander@att.net Fri Apr 2 19:38:15 2004
Subject: [R-390] Antenna relay

Hi, I've been a member for about a year. I have learned alot from all of you. Thanks.

I have a Motorola R-390, serial #4812, order #14214-PH-51-93. I don't think that the antenna relay is working properly. When I put the function switch to CAL nothing seems to happen. What should happen? Should I see, or at least hear, the relay energize?

Also, I just don't seem to pick up anything on the higher bands (above 20Mhz). For now I only have a 35 foot wire strung IN my house. Could my problem simply be that I need a significanly longer and higher antenna? I would welcome any advice on antennas.

The R-390 was my 60th birthday present to myself. I want to get back into HAM radio, having let my novice license (WN1LTJ, dated 1956!) expire long ago. Thank you in advance for any words of wisdom you can provide. Harold Alexander

From djmerz@3-cities.com Fri Apr 2 20:15:32 2004
Subject: [R-390] Correction To "Chambers Audio Derived AGC Mod"

Hi, well, I wondered why it didn't work and was pursuing the cause. I found the mentioned RS

rectifier in my junk box, still in the orig. package, probably 20 years old. But I got no effect with your described hookup - I'll try the corrected version shortly.

But aside from that I found another quirk ?? in my 390a. I've never been happy with agc on the set - it has the two diode mod in the agc circuit. I began to wonder if the C551 cap was bad and tried the suggested test of switching between fast, med and slow setting to see if the indicated carrier level changed as an indication of leakage.. In doing this I noticed the quirk?? - when I switched from slow (which has B+ on one side of C551) to med or fast , the carrier meter pins to the upscale direction then drifts back to a level that is about 20 db higher. It stays at this level until I turn the rf gain down and back up, then it goes back to the lower level, about 20 db down from where it went went it drifted down from the meter pinned state. While all this is going on, I put a VTVM on the agc line and don't see this happening with the agc voltage. It didn't reflect this quirk, except it did go far upscale negatively when I switched from slow to med but returned to a level that was the same as before the switch. It there some kind of latching of the i.f. tube on the other side of the carrier meter, or is this likely a bad carrier meter. It seems to do it regardless of what the signal carrier strength is and shows no quirks when I move it up and down with the rf gain control. When I switch from fast to med to slow, in that order, the carrier level stays the same. Only when I switch back up to med or fast does the quirk occur, Dan.

From w4pnt@velocitus.net Sat Apr 3 02:46:06 2004
Subject: [R-390] PANEL REFINISHING update

Hi Gang. First off I want to thank all who responded to my inquiry about GK500, etc. Globe King 500.

Unfortunatly, there doesn't seem to be enuf investment interest in refinishing this series of radios. The last thought on pricing for a set, btw, was $600. for the "B" & "C:" models. And that if I get more than one radio to do. The 1st run would be done @ a loss most likely. So I will leave the GK500 screening policy the same as I did for the Johnson 500. Come up with 3 or 4 complete panel jobs & I will invest in art work & screens. You fellows know who owns GKs.

Yes I now do the Johnson 500. And they are NICE1 The price for complete job is $450.

*******The R390(A) radio.**
I am now doing these radio panels @ $125. front side. I can also do the back if you kike for $225 both sides (twice the work).

Johnson Vik-II
I have asked this question before. Is there any interest in refinishing this radio @ $350. complete? Thats the same price as a Valiant, btw. I would have to come up with artwork & screens. I own one of these so I can easily do that. And because of that I would be willing to "roll into production" starting with two jobs. Still I NEED TO KNOW HOW MANY ARE INTERESTED IN SPENDING THAT KIND OF MONEY on Vik-IIs. Its a heck of a transmitter, the only one that I know of that was designed & build Mil Spec by Johnson in that era.

And I would be willing to do some partial swapping for Johnson panels, bezels, & cabs, mostly J500s & Rangers. Btw, the Ranger II is the same layout as the Ranger 1. For those of you that have not visited my web page, please do so. I have a brand new screen printing press that I would like to use more, hi. Warm regards Dee

From dallas@bayou.com Sat Apr 3 03:53:36 2004

Subject: [R-390] Attack Time Of K5OP Audio Derived AGC

This evening I measured the attack time of the K5OP audio derived AGC. It was about what I expected. With the LINE GAIN set at 7, and SLOW AGC, the attack time was about 1.5 milliseconds. A slight amount of "overshoot" (strictly speaking, undershoot) was observed. I can't hear it either in the lab, or when receiving actual SSB, so it is not worth getting excited about. A resistor (value to be determined) in the AGC line would probably fix it, and I may do that eventually. As the LINE GAIN is decreased (not recommended), the attack time increases. At LINE GAIN 3 the attack time is about 5 milliseconds, and as I said before, some pops and clicks are observed on initial syllables. I should add that the LINE GAIN pots in my R-390A's (and, in fact, all pots) have been replaced with new AP Type J pots (formerly Allen Bradley, but now Clarostat). If you have an R-390A with a well worn LINE GAIN pot, there is no telling how the K5OP mod will work in your R-390A.

From dallas@bayou.com Sat Apr 3 12:28:28 2004
Subject: [R-390] Correction To "Chambers Audio Derived AGC Mod"

Hi Dan, Sorry about the mistakes.

Your account of the CARRIER METER hanging rings a bell, but my memory just isn't what it used to be. Maybe it will come to me later. Unless you did the two diode mod yourself, my first guess would be that it was done wrong. When I get a "new" R-390A, the first thing I do is restore it to original. That has saved me a lot of grief in the past.

If the problem remains after restoring it to original, you need to swap out the IF deck to determine if the problem is due to your IF deck or not.

The K5OP Audio Derived AGC probably won't work anyway for your R-390A because from your description it appears that your SLOW AGC is the original Miller effect circuit. The attack time of the original SLOW AGC is painfully slow, about 200 milliseconds according to my Hollow State Newsletter article. I'll stick my neck out on this one and say that the K5OP ADAGC just doesn't move enough electrons to charge a SLOW Miller circuit fast enough.

From dallas@bayou.com Sat Apr 3 14:30:13 2004
Subject: [R-390] Duuuhhh (K5OP Audio Derived AGC)

First, let me say how much I appreciate the stimulation questions I have been asked about the K5OP Audio Derived AGC mod. Sorry about the mistakes, and I hope you will be patient with any of my misunderstandings.

Anyway, I was asked, several times I think, if the K5OP mod would work with an unmodified R-390A. I said "probably not," thinking the question was about the SLOW AGC. But I forgot all about the MED and FAST. For all I know it will work just fine with them. I would do my old 2 diode AGC mod, though, (and remove R547, or unsolder one end of R547) because it is so simple to do, and it provides longer release times for FAST and MED (which is desirable).

Removal of R547 may cause the SLOW AGC to "hang" for a while and only slowly drop back to normal. I'm not sure on this, though. It has been too long since I studied the R-390A AGC variations.

I have an unmodified IF deck that I will try with the K5OP Audio Derived AGC and report on that later.

From djmerz@3-cities.com Sat Apr 3 17:11:49 2004
Subject: [R-390] Correction To "Chambers Audio Derived AGC Mod"

Dallas,

I changed the K5OP audio agc gadget to the corrected config and it seems to help a bit on the reduction of distortion on initial attack. But that aspect wasn't too bad without it with the diode mod in place. I did the diode mod myself and I'm pretty confident that it's installed the way it should be. My story is a little more complicated than I stated since I'm using a 390 i.f. chassis in my 390a radio but I've convinced myself that this is not the cause of the quirk that I see. I'll probably wait to see what characteristics you observe with your unmodified i.f. chassis as far as carrier meter hang goes since my 390a i.f. chassis also has the diode mod in it and I'd rather not undo the mod at this point and stick it in to see its characteristic. I would be interested in the observation of anyone else on absence or presence of this quirk of meter hang and whether or not the carrier meter is pinned in a set with or without the diode mod when switching from slow to med on agc. Dan.

From dallas@bayou.com Sat Apr 3 17:52:42 2004
Subject: [R-390] Correction To "Chambers Audio Derived AGC Mod"

Dan,

You have two diodes (and I don't know what else you added, or what else you removed) in (to/from) your IF deck. Whatever results I get with my unmodified IF deck won't tell you anything about your IF deck possible problems. A lot of people have written about my AGC mods, and some of them have gotten it/them wrong. Maybe you were unlucky and stumbled across one of those versions. I would have to dig through my archives, but I believe there were two (possible three) "Lankford 2 diode AGC mods." Which one are you using? In these recent postings to the QTH R-390A reflector, when I referred to "my AGC mod" I meant my final one, the one which appeared in HSN #27. If you don't have that mod, then K5OP Audio Derived AGC mod probably won't do anything for you. Finally, you have only belatedly told me that your IF deck is not an R-390A IF deck, but a modifier R-390 (non-A) IF deck. It is likely that is why you are having those problems. Best regards, Dallas

From tetrode@comcast.net Sat Apr 3 18:50:33 2004
Subject: [R-390] Correction To "Chambers Audio Derived AGC Mod"

From dallas@bayou.com Sat Apr 3 19:04:25 2004
Subject: [R-390] K5OP AGC Mod & Umodified IF Decks

I put an unmodified IF deck in my R-390A a little while ago and measured its attack times with a scope using the K5OP AGC mod. SLOW is awfully slow because of the Miller effect circuit it uses. The SLOW attack time was about 200 milliseconds with or without K5OP. Unacceptable for SSB. The MED attack time with K5OP was unmeasurable because it was an awful looking curve, not the exponential curve (or approximately exponential) that we need to assign an attack time to. It probably sounded bad to, but I didn't bother to listen. The FAST setting is unsuitable for SSB.

So there you have it. The K5OP isn't a stand alone AGC for unmodified IF decks. It is a helper

which provides more electrons to give the optimal FAST attack needed for the SLOW AGC setting of my (last) AGC mod.

When I have referred to my AGC mod, I meant the last one. I don't recall exactly how many AGC mods I published. Two or three. (And there is another one that I haven't published yet, but it is just a minor variation of the "last" one.) A lot of different people have written their versions of my AGC mods, some right, and some wrong. So you won't have to find out the hard way that you have a wrong one, I have uploaded my last AGC mod to the FILES section of the other R-390 reflector.

http://groups.yahoo.com/group/r-390/

The access the file you have to register with Yahoo, and then you have to join the group. After you have joined the group, you can click on FILES in the side bar, then click on the Dallas folder, and then download the file (there are two others, the SSB filter file, and the BFO vernier fine tuning file). The AGC file is BIG, about 3 Megs. It takes a while to download. It also contains a simple mod to increase the BFO injection voltage. The BFO injection mod may negatively effect the AGC voltage. In that case you should re-neutralize the BFO. This is discussed somewhere on Chuck R.'s web site, I think, and probably elsewhere. I haven't checked this out myself because I never had any problems.

The K5OP mod may work with one of my earlier (and simpler) "2 diode" mods. But I probably won't look into that immediately because I have other irons in the fire.

From Llgpt@aol.com Sat Apr 3 19:00:51 2004
Subject: [R-390] Correction To "Chambers Audio Derived AGC Mod"

Having applied this modification many years ago, I would say, it it without a doubt essential to the proper operation of an R-390A, either for am broadcast/swl listening or ssb listening.

It (the two diode Lankford mod) eliminates the s-meter hang when switching to med agc from slow and improves listening in the am mode. Of course, It vastly improves the listening in ssb. I fully realize that many do not care to "modify" a R-390A, but that is their problem, not mine.

Having known K5OP, and Dallss for many years, I can say without reserve, that those who haven't chosen to make these modifications are living in the dark ages. Les Locklear

From djmerz@3-cities.com Sun Apr 4 00:51:00 2004
Subject: [R-390] Correction To "Chambers Audio Derived AGC Mod"

Dallas and others, thanks for your patience - hard to tell from the reprint of your article that I have whether it's HSN 27 or not - it's titled " R390A AGC/BFO Mods... By Dallas Lankford published June, 1990 if I'm reading their reprint format correctly - I obtained it from Nat. Radio Club R66 reprints quite awhile back, and I think the only thing I didn't do was take out the 220k resistor that one of the diodes bridges. I just added two diodes 1N4148's. In some 390 postings, this was referred to as Lankford HSN 23. As far as I can tell from other comments, the pinning of the meter is typical 390a or 390 action when switching from slow to med. The quirk of hanging at a higher level may be something else, which I'll pursue. I apologize for not mentioning the 390 i.f. chassis earlier but was really after information on what was normal for the 390a agc carrier meter when switching the slow/med/fast.

At this point, I'm thinking of trying another mod for agc published in Electric Radio Nov 2001. I corresponded about a year ago with Ron Deeter and he suggested a variation of this that he put into both a 390a and the 390 i.f. /390a combination. These mods do away with the suppressor grid connections. For the most part, I dislike extensive mod's because I mostly like to appreciate the old sets for what they were. But I can always stick my original 390a i.f. back in for that purpose or for the next guy that gets it. Perhaps someone else has tried the Electric Radio mod. I'm not sure it'll be worth the effort beyond what the two diodes accomplish. My biggest desire is to accommodate ssb signals with big strength differences without turning the rf gain up and down constantly.

I did take a look today through the archived FAQ's on the Lankford agc mod subject under 390 ssb mod's to refresh my memory on where I got the mod I made. All the info that originally lead me to make the diode mods was there, along with comments of others at the time on this reflector. There's a lot there on the subject. Thanks to all for the comments, Dan.

From djmerz@3-cities.com Sun Apr 4 05:32:42 2004
Subject: [R-390] K5OP AGC Mod & Umodified IF Decks

Dallas,

I took a look at the posted agc mod you put on yahoo. It's the same article I have as a reprint from Nat. Radio, called out as R66, only cheaper this time since I think I paid them per page. It took about 25 min with a 56K modem. You did add a note about the difficulty of putting the complete mod. in an EAC chassis , located on the page of the schematic. I didn't put in any of the the time constant capacitors mentioned in this article, just the diodes, so I guess my mod would count as an earlier type, as I left the grid/plate Miller effect circuit on the slow position in place. I recall that I did add the 47 pf bfo coupling cap. And to my embarrasment, I find you mentioned the pinning of the carrier meter when switching from slow to medium for an unmodified circuit, which goes away with removal of the Miller effect circuit. So if I did read this completely earlier, I forgot it. But it's good reading - maybe I'll remember it longer this time. best regards, Dan.

From pulsarxp@earthlink.net Mon Apr 5 00:32:26 2004
Subject: [R-390] R-390A High!

This is bad! I have not as yet restored my R-390A I bought recently and have now purchased another one! I got the re-cap kit for the first one and just ordered another one for the second receiver. Maybe doing two will help out if I need to swap modules to sniff out trouble. (Haven't looked under the hood as yet on the second unit). Thank goodness both receivers have original meters. This is habit forming. Lee, w0vt

From dhallam@rapidsys.com Mon Apr 5 13:37:27 2004
Subject: [R-390] Reception

Is there something wrong with my R-390 (nonA) or does reception on the ham bands just stink right now. I can receive short wave BC stations just fine but on the ham bands there is nothing but howls, whistles, heterodynes, and maybe an occasional CW station. David C. Hallam KC2JD

From roy.morgan@nist.gov Mon Apr 5 14:17:51 2004

Subject: [R-390] Reception

wrote: >Is there something wrong with my R-390 (nonA) or does reception on the ham >bands just stink right now. ...there is nothing but howls, whistles, >heterodynes, and >maybe an occasional CW station.

David, That's a secret government program to get all hams to give up on their hobby so the FCC can ram BPL down our throats with less opposition. Roy

From dallas@bayou.com Mon Apr 5 16:31:54 2004
Subject: [R-390] AF LF Frequency, Distortion, & Power Mods

Recently I did Chuck Rippel's change of C604 and C605 to 0.022 or greater for improved LF response and found they worked very well provided you don't increase them too much, which may cause motorboating at higher LOCAL gain settings. I also tried the conversion of XV603 for a 6AQ5 as a triode as well as associated changes. It worked poorly, with increased distortion and power output was not increased. So I restored XV603 for the stock 6AK6 and paralleled 1200 ohms across R614, which increased the gain but also increased distortion, and 330K & 200K paralleled across R612 for increased negative feedback to reduce the (excessive) gain and reduce distortion. The net effect was an increase in 6AK6 max power output from 0.90W to 1.0W into 8 ohms real (through an impedance matching transformer) and a reduction in distortion (compared to unmodified). With Graham Maynard's 6AQ5 mod, which cuts off pin 7 of the 6AQ5 and then replaces the 6AK6 with it, lower distortion is maintained while max power output is 1.4W RMS into 8 ohms real. If you want more power, you should probably use the LINE out to a hi fi.

My mods require no removal of parts, only paralleling resistors across existing resistors. If you don't like the mod, you can easily remove it. There is a picture with description on the Yahoo R-390A reflector FILES section.

From rbethman@comcast.net Mon Apr 5 18:36:55 2004
Subject: [R-390] R-390A High!

Lee, You have YET to become enlightened! This a VERY strong ADDICTION, that has neither CURE nor CENTERS for rehabilitation! It only becomes worse - The LARGE (400Lb. and up) transmitters start to come home. <Grin>

Welcome to the "Heavy Metal" addicts! The T-368s, BC-610s, T-213s, AND commercial Bcst TXs are going to grow in your shack. Bob N0DGN

From cbscott@ingr.com Mon Apr 5 19:27:13 2004
Subject: [R-390] R-390A High!

Lee, Hmmm, not sure if you're bragging or complaining. Welcome to the dark side. Barry(III) - N4BUQ

From wa9vrh@mtco.com Mon Apr 5 20:57:03 2004
Subject: [R-390] Collins Collectors Association First Wednesday AM Night April 7th

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

Cedar Rapids, Iowa (QRZ) - Wednesday April 7th on 3880 kcs at 7:30PM 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 will run for 90 minutes this month as a test. The remaining time zones will be an hour. Stations check-in using Collins and other transmitters with AM capabilities, new and old. The idea is to revel in this nostalgic mode, enjoy giving vintage equipment a "run," and sharing some storytelling about classic vacuum tube homebrew and commercial designs.

In months past, anchor stations have included those running the beautiful Collins 300-G, pictured below, as well as those running the amateur KW-1 and other noted models.
http://www.amwindow.org/pix/jpg/300g.jpg

LISTEN for these 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.

7:30P-9P East Coast Anchor: Bill K2LNU (upstate NY)
8P-9P Midwest Anchor: Tony W9JXN (Illinois)
8P-9P Rocky Mountain Anchor: Jim WA0LSB (Colorado)
8P-9P West Coast Anchor: Bill, N6PY (California) comments please to wa9vrh@mtco.com

From jbrannig@optonline.net Wed Apr 7 12:55:05 2004
Subject: [R-390] CV-591 Audio

I just completed a substantial re-build and alignment of my CV-591 SSB converter. The audio output is still low. The Audio gain must be fully open to to get any reasonable audio output. Is this a drive problem from the R-390A? Has anyone else experienced this problem? Thanks, Jim

From mikea@mikea.ath.cx Wed Apr 7 14:22:38 2004
Subject: [R-390] CV-591 Audio

wrote: > I just completed a substantial re-build and alignment of my CV-591 SSB > converter. > > The audio output is still low.

That's interesting. There are a couple of things I'd look at in this situation:

1 Scope or use a good RF voltmeter to measure the IF level from the R-390A; and
2 Use a good calibrated signal generator (HP 8640B, AN/URM25, etc.) to see what input to the CV-591 is needed to get good output level.

This should tell you which piece of gear to look at. After that, it's a matter of chasing signals from stage to stage until you find where the gain is lower than it should be, something is misaligned, etc. Good luck and happy hunting! Mike Andrews

From James A. (Andy) Moorer" <jamminpower@earthlink.net Wed Apr 7 15:06:02 2004
Subject: [R-390] CV-591 Audio

Last time I saw this (1) C26 had shorted, which (2) burned R34 and C25.

I replaced these and all was well. Anything that causes extra current to flow through the 6AQ5 (V6) will stress R34. It is a 2W 560 ohm cathode resistor. Also, if C25 opens, it will reduce the audio gain quite a bit. I had already determined that there was plenty of signal getting to the audio stage. Enjoy! James A. (Andy) Moorer

From roy.morgan@nist.gov Wed Apr 7 15:29:04 2004
Subject: [R-390] CV-591 Audio

wrote: CV-591 SSB >converter. > >The audio output is still low.

There are various arrangements of the audio output and rear panel jumpers. Study the manual to see if you have the thing set up right. If I remember right, one output arrangement delivers 10 milliwatts or some low power, and the more normal arrangement delivers rated output. The normal output is not very high. I suggest you run the line output to a small external amplifier. Roy

From pulsarxp@earthlink.net Wed Apr 7 15:30:09 2004
Subject: [R-390] TEST EXTENDER CABLES

Should one purchase the R390A Test Connectors kit to make up a set of test extender cables sold by Fair Radio p/n #390A-CON for $59.95? I have not dug into my two radios at yet so I am a little at a loss what I will need when I get in there. Lee Bahr, w0vt Houston

From cbscott@ingr.com Wed Apr 7 17:24:59 2004
Subject: [R-390] TEST EXTENDER CABLES

Lee, Not sure what these are, but they sound like cables that let you test a given module outside of the main chassis. I haven't needed them, but if this is what they are, they would come in handy. Barry(III) - N4BUQ

From paul@pdq.com Wed Apr 7 19:34:24 2004
Subject: [R-390] OT: Hamvention RV parking

Weather permitting, can I do overnight RV parking across from Hara in the fields where I usually park my truck? I noticed Dayton KOA doesn't do RV reservations. Suggestions for overnighting RV? Please reply directly to me (off list), email me for copies of replies if you are interested. Thanks.

As always, I'm hoping to find a C-974, PP-629 and a CU-286. Paul

From roy.morgan@nist.gov Wed Apr 7 20:15:12 2004
Subject: [R-390] TEST EXTENDER CABLES

you wrote: >Should one purchase the R390A Test Connectors kit to make up a set of test >extender cables sold by Fair Radio p/n #390A-CON for $59.95?

Lee, My opinion: Many fine radios have been fixed up just FINE without the convenience of the test cables. They help if there are some odd problems, such as intermittent shorts or the like. But with a sharp eye to the voltage and resistance tables, and careful thinking about the test points, and possibly the use of a couple of socket extenders, you can solve most any problem.

Now if it is your job to work on them all day long, as folks did in the service, then test cables save a lot of time. Roy

From mjmurphy45@comcast.net Thu Apr 8 13:42:52 2004
Subject: [R-390] TEST EXTENDER CABLES

I wish Fair would have made fewer extender cable kits and saved all of those R390A Audio decks that they cut up. Every time you see modules missing connectors it usually means that somebody got a great set of extender cables. On the other hand, buy one of the audio decks or other modules missing the connectors for cheap and restore them using the extender kit! MM

From ke1mb@hotmail.com Thu Apr 8 21:50:54 2004
Subject: [R-390] 4kc filter repair?

Has anyone rebuilt a 4kc filter before? I have been trouble shooting mine and have found it to have about a 10s-unit difference on the s-meter and about the same drop measured from the IF out using a spectrum analyzer. The signal to noise is slightly worse than the others. I have also noticed a .5db ripple across the top of the band pass on that filter. I do not notice this on the other filters. I also read the same 50ohms across the internal coils on all four filters. I supect that the foam inside the filter is bad because the filter seems to have a muted tone to it. I have the proper re-work tools to dissasemble the filter, clean it, and sweep it on a VNA once done. I am wondering if anyone has tried this and if so any tips? thanks joe KE1MB

From hbreuer@debitel.net Fri Apr 9 11:43:13 2004
Subject: [R-390] HSN Hollow State Newsletter

Hi, I wonder if the HSN Hollow State Newsletter is still alive. Last issue I got was #53 Summer 2002. I renewed my subscription in late 2002 and the cheque was cashed but nothing received thereafter. I know that there was a delay "because there was nothing to print". 73 Heinz DH2FA, KM5VT

From mjmurphy45@comcast.net Fri Apr 9 16:16:39 2004
Subject: [R-390] R390A Basics Finished

Hi All,

Well folks, I have finally completed the basics on my 1960 Stewart Warner. This radio had good synchronization and basically worked on all bands like a normal radio. All tubes were tested as good. I had five problems which were driving me nuts:

1. The classic stuck ON power microswitch

2. I had a weak band (8-16 MHz) with no antenna trimmer action
3. Sensitivity to varying wildly day to day. Shorting the hot plate trimmer on the RF coils to ground (Z20x series) would temporarily fix the problem - spark!.
4. Cal signals weak.
5. I had a a weird audio gain control problem at the top of the range and generally low audio gain.

Anyway, I did the did the basic IF Module and Audio Module cap and resistor changeouts and pulled the front panel and did the RF Deck. The power supply was inspected but not touched. 149.9 Volts on E-607. I also did the typical gearset cleaning using Mystery Oill and a lube with Mobil-One. The thing was reassembled. I then did a quick tune up per the manual.

The results:

Main AC Microswitch - The stuck microswitch was indeed stuck but after removing it and inspecting it, the contacts were not fused; the u-shaped flopper was not flopping. A slight bend to the spring metal that pushes it fixed the problem. I cleaned the contacts and re-assembled it, testing for contact action as I performed each step. By the way, this switch can be installed backwards and it actually still functions. The power wires will be on the wrong side of the switch!

Weak Band - After re-furbing the RF Deck and reinstalling everything, the Front End coil assembly was removed from the top of the deck and dis-assembled. I simply hit the trimmer with deoxit and cleaned the contacts. The band came back and the front panel trimmer now worked on that band.

Intermittent Sensitivity - The paper caps changed in the RF deck apparently fixed this. Just as a precaution, I changed several of the 0.005 1KV caps around the RF amplifier too. No idea which one fixed it. Found a weird thing at C257. It was a 47 pF NPO dogbone cap but no C227 at all. I added C227, 0.047 uF in parrallel with it.

CAL Marker - Besides replacing the paper caps and a couple of 1/2W resistors, I found that the resistors in the plate circuit of the multi-vibrator, R224 and R226 were pretty much cooked and double value so I replaced them with 10K, 1 Watt flameproofs.

Scratchy Audio - The audio module got the treatment and I found that the front panel audio pot had a value of 5K instead of 2.5K. I must have put this in years ago not realizing that the cathode followers could not tolerate the DC bias shift. I found the original pot and disassembled it, cleaned it and replaced it. This was all it took.

After a quick tune up, the radio is a new beast indeed. All on my list responded beautifully. **I used the NTE MLR-Series dark orange mylar film caps throughout. These caps are just as inexpensive, available and fit better than the Sprague**s. **Here is the data sheet on the NTE caps: http://www.nteinc.com/capacitor_web/pdf/mlr.pdf**

Next - AGC, Product Detection and Audio improvements. MM

From roy.morgan@nist.gov Fri Apr 9 16:56:53 2004
Subject: [R-390] 4kc filter repair?

you wrote: >Has anyone rebuilt a 4kc filter before?

Joe, Yes, (but not me.)

> I have also noticed a ..5db ripple across the top of the band pass on > that filter.

That is so flat as to indicate the filter is kaput, which you know already. Usually the ripple is much more than a half db (or did you mean five db.?)

> I supect that the foam inside the filter is bad

Likely. If a bit of foam gets onto the disks, the thing will be very lossy.

> I am wondering if anyone has tried this and if so any tips?

I can't remember who told about doing this but there is a web site that shows the process. Now I cannot locate that web site.

Here are some parts of my notes file that may be of interest:

From: John Kolb <jlkolb@cts.com>
Subject: Re: [R-390] Mechanical Filter Repair

On Wed, 24 Jul 2002, Norman Ryan wrote:

John "The Filter King" Kolb guesses the magnet wire size to be #36. I poked around with a Google search and found DC resistance to be .4148 Ohm per foot at this site:
http://www.mwswire.com/insdia2.htm>
Any more hints, tips, experiences with mechanical filter repair from the group?

Just measured 2 open filters and a loose bobbin and got wire diameters about 0.0062 and 0.0070 ("V and Y case filters), which would be 34 or 35 gauge enameled wire. >The King :)

Data on the filters is at: http://www.angelfire.com/de/vk3kcm/filters.html

This site tells of inexpensive filters for the 74A-4: http://www.albany.net/~bg/Mods/AMFilter.htm
INRAD, International Radio, Inc, sells new filters of many sorts: http://www.qth.com/inrad/

In 2000, the following message started a 10- message thread on filter rebuild. I suggest you search the archives with the subject and read themall:

>From: G4GJL@aol.com
>Date: Wed, 15 Nov 2000 05:35:22 EST
>Subject: [R-390] Mechanical Filter rebuild
>To: r-390@qth.net

>I have a 4kc mechanical from a St Juliens rig which has a diaconnected >winding. The cause of this as is so common, was from the inertial stress >placed on the wire itself as the rig is transported. The original foam shock >absorbant material inside the filters is now likely to be in an advanced >state of decay. I guess more of us will see this type of failure resulting in >dead positions on the selectivity switch. Interestingly, my other blue >striper has a dis 2 kc filter.
>
>Now the Questions!
>

>1. Does anyone know how many turns are on the actuator windings of these >devices
>
>2. Does anyone know how to form replacement windings. bothe the input and >output windings are formed in two pies, about 0.2 inch diamater. The centre >hole allows clearance for the actuator pin driving the resonant disks. The >wire is (predictably) microscopically thin.....I guess at 40 or 42 Wire >Gauge (At those sizes the difference between AWG and BSWG is impereptible!!!)
>
>Any comments would be welcome. > >Thanks > >Pete > >G4GJL Roy

From eldim@worldnet.att.net Fri Apr 9 22:55:37 2004
Subject: [R-390] R390A Basics Finished

Hello Michael & fellow BA'ers, Nice job on reporting all your actions. IF YOU'RE NOT TESTING THE COMPONENTS THAT YOU REMOVE, I have a suggestion that I'll be happy to undertake. I will be happy to test any of your capacitors that you send me and report to the group the test findings. This is just for capacitors. All you need to do is tag the suspect component with the C# and what it was removed from, and where in the circuit it functions. i.e. C-126, R-390, Audio Module, on cathode of V-106. These numbers or hypothetical. If you want the components returned, please include return postage. **Please note I stock a lot of NOS mica, silver-mica, and oil filled caps. I'm working to inventory, centralize, and catalog these components, including wire-wound and carbon resistors. Best wishes to all for a Blessed Easter Season.** 73, Glen Galati, KA7BOJ

From Barry Hauser <barry@hausernet.com> Sat Apr 10 00:20:16 2004
Subject: [R-390] HSN Hollow State Newsletter

Hi Heinz & Gang:
HSN is still alive, but remains in a state of suspended animation. A couple of articles were in the works but not quite finished. They could be picked up and completed by the authors. I will attempt to follow through.

True, the problem is finding authors -- and material -- that makes sense in the Internet age. In other words, what would be fit to print and circulated by means of hard-copy, black 'n white, via snail mail, that isn't better handled in glorious color on a website somewhere? (and isn't already covered as well?)

This was where the previous editor (Reid Wheeler) left off and I've experienced the same thing.

Aye, that's the rub. I even bought some time with my treatise on boatanchor packing and shipping -- the last issue, to which you refer. However, I'm an editor type, not sufficiently experienced enough to generate much in the way of how-to articles personally.

In my more desperate hours, I've even contemplated resorting to "yellow journalism" -- and I would have -- but no good material for that (rumor mongering, etc.) Y'know, like using boatanchor attributes in an allegorical way to segue into completely different subjects. For example: "Contemplating the RF deck in an R-390 the other day, I came to the realization that its construction is analogous to the world's geopolitical system. Some parts go up and down -- sometimes but not always -- others go round and round, some slower than others. And right smack in the middle of the works -- what's there? A Geneva gear. Hmmmmmm.."

More yellow: "There's a rumor circulating that Rockwell Collins will be going back into production on

the true successor to the R-390A." "Dateline XX/XX/XX -- a cache of new old stock SP-600 turret coil modules has been found in a cave in Colorado." Abominations Dept: "Bozo guts RAK-7 to use for unique computer cabinet -- and has the nerve to brag about it!" (last one is true)

Would anything like that be of interest? Probably not.

All that said (wrote), I still have not given up. Rather think of HSN as sleeping, lurking, building momentum, getting ready to burst forth once again, but .....

Rest assured, though, if you are owed issues, the publisher -- Ralph Sanserino -- has a record of it and you'll be credited appropriately when the time comes.

Meanwhile - if anybody has any ideas, anything new or old to contribute that could even by means of a stretch of the imagination belong in a mailed out newsletter -- I'm all ears. (Especially if you offer to author it -- I assist with the editing and assembly.)

(Hmmmmm.... looks like there might be a need for an update/reprise on that AGC/SSB, etc. mod. Was thinking of gingerly approaching the original author (and HSN editor) about it, but he's generally quite busy with his responsibilities in academia. (Don't want to put him on the spot and mention any names, but first name is the same as a major city in a very large state.)

So, guys, gimme a hand here -- what's fit to print? What would you like to see? Start your engines, sharpen your pencils. Barry (ed.)

From w5or@comcast.net Sat Apr 10 02:30:03 2004
Subject: [R-390] 4kc filter repair?

Roy mentioned the web site describing rebuilding a Collins mech. filter. It was mostly in Japanese, although the pictures told the story. Unfortunately the original link is broken; there is a notice to check another site, but the filter article is missing. I'll see if the author will respond and revive his original pages.
Another solution, proposed by George Rancourt was to compensate the gain on the other filters. Well, here is the original posting to the list in 1998, I think. Sorry, I lost the header to credit the author.

--snip--
I had a rather enjoyable conversation with George Rancourt (K1ANX) in my quest for a Dittmore-Freimuth (EAC) IF deck. He passed along a helpful tidbit regarding IF deck alignment when one of the mechanical filters is a few dB's softer than its siblings. The filter which is used the most tends to wear out and not pass as much signal. His solution is to detune the rest of the filters slightly using the variable capacitors across the filters to match the soft filter. Then increase the IF gain of the entire deck to compensate.
--snip--

I think the original specs allowed only 1 to 2 db loss.

Anyway, I think this might make a great on-going discussion topic, as all our filters are due to become extinct. I have some that rattle now with what must be hardened foam bits. What is the *proper* way to get these things apart? Don W5OR

From ToddRoberts2001@aol.com Sat Apr 10 04:18:57 2004
Subject: [R-390] 4kc filter repair?

One other way to get around the problem : There is currently an F455 N40 filter on the E-place for $23.50. Always a good idea to check them from time to time. I picked up an F455 N80 there a while back for $12.00 . Not as much fun as trying to rebuild a filter but a lot less frustration! 73 Todd Roberts WD4NGG.

From vk2abn@batemansbay.com Sat Apr 10 04:34:57 2004
Subject: [R-390] 4khz filters

I dismantled one of these filters the other day and found that the failure mode is that the filters are surounded by a type of foam ,rubber or plastic which has dematerialized and become sticky and corrosive and the wires to the transducers were damaged , I have over the years repaired abt 40 recievers and low gain in the 4khz filter is not uncommon luckily I found 5 complete 390a IF strips in a scrap yard many years ago and I have been able to keep my three rx s going , I have seen a site on the net where someone was supplying replacement filters and I think the link was from chuck rippels web site but they were not cheap

From stevehobensack@hotmail.com Sat Apr 10 13:11:16 2004
Subject: [R-390] 4kc filter repair?

Here's how I got one apart. Hang the filter about head high from a garage rafter, use a small wire tied to the end on the solder lug(s). Hang a weight to the outside shell so the filter balances vertically. Sweep a propane torch over the filter. When the solder melts, the shell will drop to the floor, leaving the innards intact. 73....Steve...KJ8L

From jmiller1706@cfl.rr.com Sat Apr 10 14:14:42 2004
Subject: [R-390] 4kc filter repair?

Has anyone been able to clean out the old foam and reconstitute the foam inside the filter to make it function again?

From jlkolb@cts.com Sat Apr 10 19:19:35 2004
Subject: [R-390] 4kc filter repair?

That sounds like it would be pretty hard on the connecting wires between the transducer coil and the end terminals.

In trying to open the smaller "Y" case filters, with the shell in a vise while pulling on the end piece with terminals and heating, I found I usually was pulling too hard so the end piece moved too far and broke the wires when the solder liquidified.

Not a big problem if the wires break at the terminal end but bad news if they break at the coil.

Perhaps Steve's setup but where the filter could only move 1/2" rather than 6' John

From vk2abn@batemansbay.com Sun Apr 11 07:12:25 2004
Subject: [R-390] 4KHZ filters

I think that it would be a very difficult job to repair filters a jig would have to be made also the parts internally are SPOT welded together . the smallest welds I have seen ever . to remove the ends off the filters I used a Jewlers gas torch you have to be quick and when the solder melts you remove the ends abt 1/8 inch so as not to break the fine wires, BUT to get the filter assy. out you have to cut the wires to the end cap on one end then you can slide out the resonator assy. the filters transducers DC resistance is 48 ohms , I think the cheapest way out would be to fit Murata ceramic filters which are available in various bandwiths at 455khz , on a different subject I have just linearized a PTO by making a little jig and using the dial from a ten turn pot to draw graphs untill I got a straight line response It took abt 5 hours and when I put the cover on I only had to make a slight ajustment to the end stop and it is within 300 hz from one end of the dial to the other , A win for me anyway regards to everyone Bernie Nicholson VK2ABN

From ke1mb@hotmail.com Sun Apr 11 11:52:30 2004
Subject: [R-390] 4kc filter

well getting the filter apart was easy, i used a hot air rework station to do it, I could find nothing to indicate what the failure was. i even re assembled the filter, sweep it, then decided to take it apart again determined to find the fault but ended up breaking one of the little wires spot welded inside.. this filter case will get stuffed with ceramic filters, or maby a modern collins filter.. people have said the most used filter goes bad, ?? something took out my filter over time, not sure what it was.. sure was no foam to go bad, this collins filter had rubber supports inside.

as far as the PTO. it really make me question what causes that.. if you cal the PTO with the dial adjust at .000 and then move 300kc you notice you are off right? ok, I move up to .700 and readjust, same result, dead on fo about 300kc either way. because of this i question the the gear train, I think a pencil mark on the shaft of the PTO will tell me what is going on, it is very possable that this is the gear box and that the adjustment you made in the PTO makes up for that.. just a thought.. something like this does not bother me.. I can always re-cal the pto then tune in. but the filter really bugs me, the most amazing thing about the r390a is it's ability to hear a station a few kcs away from a powerful one, i have never heard a radio do that.. not like this thing, plus you can hear the collins filters, it really sounds good, I have found pleanty of replacements, just bums me out the 4kc filter is gone.. i just bought this radio.. great shape.. just out one filter.. ok, thanks

From ham@cq.nu Sun Apr 11 16:10:47 2004
Subject: [R-390] 4kc filter

Hi, This is turning into two different threads .....

The filters on the 390 come from the land of vacuum tubes. They have very high input and output impedances compared to modern Collins or ceramic filters. That isn't to say you can't make the solid state era filters work, they just won't work quite the same way. If you can get filters that are set up for vacuum tube era stuff it will be easier to drop them in. Since they built a run of 390's with ceramic filters it is possible to get either type. Finding OEM ceramic parts would be tough though.

The PTO issue .... There is a well documented issue with the main coil in the R-390 PTO's.

Collins figured out the problem and changed the design on the next generation of radios. All of the subsequent Collins designs used the newer coil rather than the R-390 one. It's not at all clear why somebody didn't put he newer coil into a 390 PTO ... I suspect that Collins kept quiet about what the fix was for competitive reasons. The guys that figured it out still treated as a big secret thirty or forty years later.

A couple of things happen to the coil over time:

First the core material that tunes the coil changes value over time. Depending on the material this could go either way in terms of inductance.

Second the coil form it's self shrinks very slightly. This puts the windings of the coil closer to the core. The change in length is insignificant. When the turns get closer to the core the inductance goes up.

The net result is that the tune range of the coil changes as it ages. Since no manufacturing process is perfect the coil turns are not quite spaced evenly over the length of the coil. As the value of the coil changes the relationship between the non linearity and the tune setting changes.

The nice thing about the gear train is that until you loose a tooth off of a gear it keeps doing about what it always has done. The play goes up a little on the counter as things wear with time but the rest of the system stays pretty tight.

I have no problem at all with doing a linearity fix on a PTO. It takes a lot more patience than most of us have. The thing that puts most of my 390's off frequency is the crystals. Getting to the point that they are not a problem also takes a lot of patience and a very big bucket of crystals. If you wanted a radio that you could simply tune to frequency that would be the way to go. No calibrate each time you switch the MHz knob. Of course you could revive one of the Manson Labs.46rom talking to the tech's who built them that would be a bit of a chore though. Take Care! Bob Camp KB8TQ

From dathegene@hotmail.com Sun Apr 11 20:14:20 2004
Subject: [R-390] agc repair

The Agc on my 390-A doesn't work. Substituted V506, V508 and V509 with new tubes, no help. No agc voltage appears at TB102 3 and 4. Any thoughts on where to start? Thanks, Gene NAØG

From windy10605@juno.com Sun Apr 11 23:11:32 2004
Subject: [R-390] SP-600

Is there a compendium of SP-600 advice, changes, improvements, things to watch out for, etc like on the R-390 ? 73 Kees K5BCQ

From ToddRoberts2001@aol.com Mon Apr 12 03:18:58 2004
Subject: [R-390] 4kc filter repair?

A good subject on ways to rebuild or re-work the mechanical filters used in the R-390A. My current thinking is to look into the new Rockwell/Collins mechanical torsional filters and adapt them for use in the R-390A, along the lines of what Curry Longwave Products are doing. The new Rockwell/Collins mechanical filters are small enough to fit inside a 3/4" diameter metal tube that could be cut to similar

dimensions of the original filters for mounting inside the filter box cover. They currently list symmetrical filters in 3.80KHz bandwidth that would be close to the original 4KHz wide units. The newer filters have a much lower input and output Z of 2K ohms so a matching network will need to be mounted on the input and output sides for step-down and step-up to the HI-Z used in the R-390A circuits. The whole thing could be mounted on a circuit card small enough to slip inside a 3/4" diameter metal tube with end plugs. I wonder if anybody has looked inside one of the Curry filters to see what kind of matching network was used? Might be a fun project to try to produce a line of replacement filters for the R-390A. 73 Todd Roberts WD4NGG.

From ke1mb@hotmail.com Mon Apr 12 10:22:25 2004
Subject: [R-390] replacement filters

Ok, now I move one to replace this 4kc filter. So here goes some ideas. There are newer replacements out there as mentioned but they do have the lower input impedance. From what i can tell there are two things to over come. First is the match on the input. I assume you could use an op-amp rated for that frequency as a buffer. You would have to power it off a power supply derived from the 6 volt heater lines. This could work but may degrade the overall IMD performance of that path, this could also be proven with test eqpt. The second is the AGC voltage that seems to be feed thru the output coil to the grid of the 6BA6W. I would think that a 1meg ohm resistor from the AGC source across the new filter output would work. For some reason I do not feel output impedance will matter because you are feeding such a high impedance input to the tube. The voltage level should be the same with no load from the tube to pull it down. I think all I am concerned with here is matching the output voltage of the new filter with the old ones and finding something that will have the same spec. as the original design. thanks Joe KE1MB

From stevehobensack@hotmail.com Tue Apr 13 00:54:10 2004
Subject: [R-390] SP-600

Kees, Issues 20, 21, & 22 of Electric Radio magazine have a lot of improvements by KD0HG, for the sp-600 including a nice product detector. Email: ER@OfficeOnWeb.Net webpage: WWW.ERMAG.COM snailmail :
Electric Radio
PO Box 242
Bailey
Colorado 80421-0242 73...Steve..KJ8L

From stevehobensack@hotmail.com Tue Apr 13 01:03:23 2004
Subject: [R-390] agc repair

Gene, agc voltage is very feeble. Any gassy/leaky tube, usually a 6ba6, or a leaky cap in the agc circuit will suck down the voltage. There is no easy way to find the leaky cap. It usually involves cutting one end free, and using a megger or the old fashined magic eye cap checker. Good luck. Steve....KJ8L

From ham@cq.nu Tue Apr 13 01:14:26 2004
Subject: [R-390] replacement filters

Hi, In general on a filter both the input and output impedances matter. If you don't get them both right you will at least mess up the pass band of the filter. Bob Camp KB8TQ

From jlkolb@cts.com Tue Apr 13 04:51:02 2004
Subject: [R-390] replacement filters

You could indeed terminate a low output impedance filter with a 2 K resistor to ground and capacitor couple to a 1 M resistor between grid and AGC line. The output side of the filter would be happy. If, however, you were using a 7:1 stepdown ratio transformer on the input side (100K:2K match), you would be loosing 86% of your IF voltage unless you step it back up with a 1:7 transformer at the output side.
The loss isn't that bad, however. the "N" series filters used in the 390A are spec'ed at 25 db loss max. Modern mechanical or ceramic filters will be more like 6db or less loss. With modern filters, you might end up inserting a resistive pad to make the replacement filter have as much loss as the other filters in the set. JOhn <http://members.cts.com/king/j/jlkolb>

From jmiller1706@cfl.rr.com Tue Apr 13 08:02:22 2004
Subject: [R-390] 4kc filter repair?

Curry has filter products already for the 390a. http://www.r390a.com/html/Curry.html

From kc8opp@yahoo.com Tue Apr 13 11:09:35 2004
Subject: [R-390] PTO

David, I have a COSMOS built for the 390A that is now in one of my R390's.

You will have to fabricate a new rear mounting bracket. I was able to pull the green screw and barrel out of the old bracket and press it into the new bracket.

Rewire the the power connector to match and replace the signal output cable with some rg-58 and a normal BNC. Good luck and let us know how it works. 73's Roger KC8OPP

From ghayward@uoguelph.ca Tue Apr 13 13:35:03 2004
Subject: [R-390] Re: AGC repair

Another thing to check is the antenna trimer. Its shaft is live to AGC. Thats why the isulated bushings are important. Spraying with even a slightly conductive lubricant is bad news. 73 de Gord, VE3EOS

From jetemp@insightbb.com Tue Apr 13 16:37:50 2004
Subject: [R-390] PTO

Hello to the group, I have four Cosmos PTO's in my R-390A's and spares. All have the "type" 136-1 printed on the case. I own a R-390 that also has a Cosmos PTO. This PTO appears to have original wiring. The "type" printed on this PTO is 136/283. Perhaps there was a contract let for replacement PTO's manufactured by the Cosmos people for the R-390?? Any thoughts? Sincerely, Jim Temple
Yes I'm baaack.

From davidmed82@yahoo.com Tue Apr 13 18:55:41 2004
Subject: [R-390] PTO

David,
There are 3 things you have to do to convert and R-390A PTO to an R-390.
1. Shorten the output cable and replace the mini BNC with a regular BNC, This is not as easy as it sounds as the cable in the R-390A is a mini coax and it is not easy to attach a full size BNC. If I had to do this I would replace the whole cable assembly.
2. The pinout in the power plug is different and has to be rewired. This should not be difficult.but be careful. It is easy to damage these connectors with too much heat.
3 You will have to replace the rear mounting plate.

If you decide to go ahead with this I have some junk PTOs here and can probably come up with a rear mounting plate and an output cable. Dave

From jetemp@insightbb.com Tue Apr 13 23:17:50 2004
Subject: [R-390] R-391 slugs (again).

I have recently obtained a very nice R-391 that is S/N 379 of the 1952 contract. I have corrected a few corrosion related problems and, hopefully, only have one remaining repair.

When looking at the front panel, the left most RF coil bank (16-32mhz) has four RF coils. Since the RF deck is Mod 2, it has the smaller diameter slugs for this bank only. Now, I was under the impression that all four of the 16-32 slugs would all be the smaller diameter. The rear three coils (Z-206), in this radio, are small diameter with blue dots on top of the slugs and the front coil (T-206) is a large diameter slug with a red dot on top of the slug.

One of the small diameter, blue dot, slugs is broken into three pieces and needs to be epoxied. What I am unsure of is the identification of the front T206 coil/slug. Should this be a small diameter, blue dot slug, or is it correct as a large diameter, red dot slug??

Your vast knowledge and helpfulness has and is greatly appreciated. Sincerely, Jim Temple

From bill.riches@verizon.net Wed Apr 14 00:50:09 2004
Subject: [R-390] Tek Scope Repair

Dummy me - I sent a Tek 465 scope to a guy in the mid west - months ago and I have lost my copy of the service order! I may have received his name from this list. If any of you know of Tek repair shops out west (maybe N or S Dakota) please jog my memory! Bill Riches

From ke1mb@hotmail.com Wed Apr 14 11:46:21 2004
Subject: [R-390] 4Kc filter replacement

After weighing all the possable ways to solve this problem of finding a replacement filter I think the easest way is to try to find a exact replacement. Ok that sounds pretty simple except fot he fact that finding the ones in cylinder cases styles is a bit harder. After searching e-place for a while I find various collins filters that have the same center freq. and the same rated bandwidth. They even have the same part number minus the case style. So the idea here is to locate a collins filter, which does not

seem to be a problem, remove the filter element from the existing case and install it into the cylinder case I have left from the 390a. I assume that i would dissamble most any drum head type collins filter rated at the same spec and find the element inside to be the same or real darn close. The advantage is I can find any case style a lot easer than just one style case. Second is it really should be the same element inside and thus becoming a drop in replacement without matching concerns or really drifting away from the original design. By the way the input i have gotten from other members on the mailing list on this topic have been great. I would like to give a thankyou to all those who have thrown in their input and ideas. Joe KE1MB

From wb6orz@pacbell.net Wed Apr 14 21:09:38 2004
Subject: [R-390] WANT please: Power Connector for TMC CV-591A (MSR-4)

Would be greatful to obtain, for SSB Adapter Model MSR-4 (CV591-A) I need P4 (female) for the power cord in order to mate with J2, which has three male contacts. P/N MS3106A-14S-2S Thanks in advance for the part or info to source one. Les

From bill.riches@verizon.net Wed Apr 14 21:38:31 2004
Subject: [R-390] tek scope repair

Thank you all that gave me suggestions on who I sent my scope to. Tom N0JMY gets the prize suggesting Joe Smith at Nebraska Test Equipment in Omaha. 73, Bill, WA2DVU

From wgdavis@bellsouth.net Wed Apr 14 22:32:26 2004
Subject: [R-390] Wanted
Hi Guys, Looking for an VBC Model 3000 NBVM Baseband Transceiver, made by Henry Radio.. Any ideas; please contact me @ wgdavis@ipass.net.. C U Later, 73 WG WG Davis / K4WGD

From ross@hypertools.com Wed Apr 14 23:46:11 2004
Subject: [R-390] Wanted: CU-1338/FLR-9(V) info

Fellows of the Filament - I just picked up this FLR-9 multicoupler - does anyone have specs on it, or a schematic or a manual? Looks to be HF... thanks Dave Ross N7EPI

From mikea@mikea.ath.cx Thu Apr 15 14:33:05 2004
Subject: [R-390] Wanted: CU-1338/FLR-9(V) info

> Fellows of the Filament - > I just picked up this FLR-9 multicoupler - does anyone have specs on > it, or a schematic or a manual? Looks to be HF...

There is a complete TM 32-5985-217-15 somewhere out on the web; I saw a link to it some months ago and D/Led a copy. That's this pub:

Technical Manual Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual for Antenna Group

Countermeasures Receiving Set AN/FLR-9(V7)(V8) HQ, Department of the Army June 1976

I printed off a copy for the ex-NSG guy that works here; he was quite thoroughly appalled. Then I showed him the pictures of the KG-14, KWR-37, KWT-37, and other stuff. He was shocked enough when he learned a few years back that I had three R-390A and one R-390, but those pics just about took him over the edge.

I don't see CU-1338/FLR-9 mentioned anywhere in the manual, which I find puzzling, since it's obviously a part of the FLR-9 and the manual covers just about everything. All the couplers in the manual are CU-2049 through CU-2055. I can't help wondering if you have a coupler that is for an earlier version of the FLR-9; if so, it probably is similar to one of the couplers in this version of the manual.
I'll try to scan the coupler schematics in, and provide a URL, over the weekend -- in my Copious Free Time. Mike Andrews

From mikea@mikea.ath.cx Thu Apr 15 14:35:51 2004
Subject: [R-390] Wanted: CU-1338/FLR-9(V) info

> Fellows of the Filament - > I just picked up this FLR-9 multicoupler - does anyone have specs on > it, or a schematic or a manual? Looks to be HF...

Me again; I don't have to scan the images in. The PDF is at
<http://kahuna.sdsu.edu/~mechtron/PremRxPage/ref/wullenweber.pdf>. Have fun. Mike Andrews

From pb@cq.nu Sun Apr 11 21:12:06 2004
Subject: [R-390] agc repair

Hi, With "no agc voltage at all" (I assume that means zero volts) I sure would check the resistance of the AGC line to ground. It sounds like a short in one of the bypass cap's or cables. Assuming you find a short at the back panel TB102 then unplug the modules one by one. Either the short will go away when one of the modules is unplugged or the short is in the main wiring harness. If it's in the harness check the normal pinch points. Hope that helps. Bob Camp KB8TQ

From BRingwoo@csir.co.za Fri Apr 16 08:50:42 2004
Subject: [R-390] 390a - Switch Wafer Alignment

Hi all,

Pulled the RF section and crystal oscillator last weekend to try and cure one or two irritating faults, particularly that of having to rock the wavechange switch on the bands 11 to 17 MHz to get reception. On close inspection of the switch wafers in the crystal oscillator, I noticed that they are out of alignment, with the front wafer being displaced sideways just enough to make contact unreliable. The contacts on the low range and high range are good. The question is, how easy is it to realign the wafer ? It needs to ne moved about 0,5 to 1 mm sidways - is there enough play on the mounting screws ? and has anyone else had this problem ? Amazingly, the switches and contacts all look bright and shiny and new. Once this is fixed, the only remaining problem will be intermittent low sensitivity on the 0,5-8 MHz range which almost always presents itself after switching to the 0,5 to 1 MHz range. (Doesn't make sense to me, but it might to one of you.) 73s - Bryce

From dallas@bayou.com Fri Apr 16 12:44:41 2004
Subject: [R-390] 390a - Switch Wafer Alignment

Hi Bryce,

I never moved the mounting screws, but I would assume there is enough "play" to move them sufficiently to realign them.

However, are you sure that is the problem?

Put the MCS knob on its shaft and run the bands from 0 to 30 and back to 0 again as you look very closely at how the nipples make contact with the wipers. At various band positions (say 3, and 10, and 17) change back and forth between adjacent bands while looking very closely at how the nipples make contact with the wipers. In oscillator decks that I have examined, there is quite a bit of backlash... enough so that one wafer is "good" but the other is "bad." This is due to the fact that the cutout in the bakelite disc in the center of the wafer is larger than it should be. With care and patience, you can resync the osc shaft (loosening and tightening the non-mar clamp on the osc shaft gear) so that neither is good or bad, but both are merely O.K. As I recall, I adjusted the shaft at least half a dozen times, maybe several dozen times before I got it like I wanted it. Anyway, it fixed my similar osc problem. It seems like I tried to use thin shims against the shaft flat through the bakelite disc, but I didn't like the idea of metal pieces that could fall out and cause other problems. But that might be the only solution in some cases Best regards, Dallas

From cbscott@ingr.com Fri Apr 16 19:25:36 2004
Subject: [R-390] OT: Power cord for older TEK scope

I posted this to the TEK Scopes list, but thought I would ask here as well since many of you have older scopes. Is there a source for the power cord for a TEK 561A? On the scope end, it has a molded, right-angle plug that looks pretty much like the female end of an ordinary extension cord with a large, round molded casing that fits in the round recepticle.

My first 561A (I now have three of them) had a straight-style end for the scope, but this forces the scope to sit away from the back wall and it tends to stress the cable as well. One of my newer acquisitions included what appears to be an original cord (and has the little spool of silver-bearing solder to boot) so now I'm looking for a couple of other power cords. Thanks for any help, Barry(III) - N4BUQ

From DJED1@aol.com Fri Apr 16 20:38:31 2004
Subject: [R-390] Microswitch replacement

I began having problems with the microswitch in my R-390A failing to turn off the radio. After disassembling and playing with the switch twice, I called Fair Radio to see if I could get a replacement. The answer was yes, but at $10 each. I ordered two since I assumed they were clipped from rigs that couldn't be salvaged. I was pleasantly surprised to receive two NOS switches which has never been soldered. So now I've got a spare to leave to the next generation. I also took the oportunity while I had the radio apart to tweak the calibration and end point on the Cosmos PTO I have installed. Nice smooth tuning but the calibration seems to drift after a couple of years. Now I can enjoy the radio for the next several years. Ed WB2LHI

From r390a@rcn.com Fri Apr 16 20:59:50 2004
Subject: [R-390] Microswitch replacement

Are you sure they are "new OLD stock" or do they look more recently made? Same manufacturer as the original? It sure would be nice to find a current stock replacement.

From cbscott@ingr.com Fri Apr 16 21:13:51 2004
Subject: [R-390] Microswitch replacement

$10 per switch, you say? Oh, I see now, "MicroSwitch". Hmmm, when you go to turn off your radio now, do you have to press "Start" first? Barry(III) - N4BUQ

From r390a@bellsouth.net Sat Apr 17 00:39:15 2004
Subject: [R-390] Microswitch replacement

Only on the WinSwitch96 and newer models.... heehee

From jbrannig@optonline.net Sat Apr 17 00:54:40 2004
Subject: [R-390] Microswitch replacement

Letsee, I have OFF, STANDY BY, AGC, MGC, CAL. No Start..... Is My 67 EAC an early module or mebbe a depot dawg? Jim

From cbscott@ingr.com Sat Apr 17 03:39:58 2004
Subject: [R-390] Microswitch replacement

No, but it sounds like you do need to go to the MicroSwitch website and download the latest Service Pack. Barry(III) - N4BUQ

From courir26@yahoo.com Sat Apr 17 03:47:00 2004
Subject: [R-390] Build Your Own R-725 Link

Gentlemen? I was aksed to furnish the link to this article, so I thought I'd also post the link as well:

http://www.geocities.com/courir26/r725conv.htm

Spend your summer lining up parts for fall completion. Since I did this project a few years back, I hope I can still find my R-390A IF deck. 73 de N5OFF

From Robert Nickels" <w9ran@oneradio.net Sat Apr 17 04:05:55 2004
Subject: [R-390] Microswitch replacement

> Are you sure they are "new OLD stock" or do they look more recently made?

Dave, and all - I work for Honeywell Sensing and Control, makers then and now of the Original

MICROSWITCH. I don't have the exact cross-reference p/n in hand, but you can still buy an equivalent switch brand-new from (where else?) Allied Electronics. I think you'll find what you need on page 666-667 of their catalog:

http://www.alliedelec.com/catalog/pf.asp?FN667.pdf

I think they do have a minimum order but if you can't find ways to spend money outta the Allied catalog, I can't help! 73, Bob W9RAN

From ham@cq.nu Sat Apr 17 04:11:22 2004
Subject: [R-390] Microswitch replacement

Hi, Sorry you can only download the MicroSwitch service pack *if* you have a current support agreement in place and are the listed support administrator for your site. In addition any benchmarking using the contents is strictly forbidden unless authorized in writing ....

It's pretty common to have an "extra" switch position. Generally it shows up past the CAL position. It was put there to allow you to turn on the SSB option if I remember correctly ....

The *big* thing to do when you replace the microswitch is to make sure that it's nice and tight. You want a good positive action on the switch. If it loosens up you can get a partial closure. This is a really fast way to kill your nice new switch .... Enjoy! Bob Camp KB8TQ

From r390a@bellsouth.net Sat Apr 17 04:31:31 2004
Subject: [R-390] Microswitch replacement

Hmmm. this is scary. All this making fun of the switch and associating it with MicroSOFT, and the catalog page on which it is listed is page *666*!!! (OK 667, neighbor across the street of the beast :-P)

twitch Now do you guys see why I run MacOSX? At least it is not evil! heehee Tom

From redmenaced@yahoo.com Sat Apr 17 04:47:26 2004
Subject: [R-390] Springtime!!

Hi, I'm putting a new 480 Volt service in a local factory that makes,..... what else,.... SPRINGS!!

Bill, the owner, says he likes doing custom springs, short runs of custom springs! If all you need is a dozen, he'll do a dozen.

Angelica Spring Co.
99 West Ave.
Angelica, NY 14709 585-466-7892

Send him a sample, or specs, and see what happens. Good guy to deal with, too.

Oldham coupler springs? RF deck springs? What do we need?

On another subject, The heavy equipment repair guy up the street told me his 1953 Lincoln welder was

acting up, arcing over inside, smoking, etc,... but only when he ran it on DC.

Gee, I thought, what could the problem be? 8^/

Sure enough, there is a HUGE selenium rectifier stack inside, about 6" X 12" X 18". It was making HUGE beautiful, blue sparks when he showed it to me. His wife said he was real sick, 102+ fever, Sunday after spending most of Saturday welding with it. But he was only sick for a few hours,..... lucky? He promised me he'd only use it on AC until we round up some new rectifiers for it. Joe

From tetrode@comcast.net Sat Apr 17 04:59:19 2004
Subject: [R-390] Microswitch replacement

I took a look at the pages mentioned below and didn't see any pin plunger style microswitches that match the fit and form of the type used in the 390s. ?? John

From tetrode@comcast.net Sat Apr 17 05:54:17 2004
Subject: [R-390] agc repair

Hi Gene, I've fixed three "no AGC" problems and none involved leaky caps or tubes, although the former can certainly degrade AGC action.

The one that was toughest to find but easiest to fix was a 390A that acted like the AGC line was shorted to ground but the resistance measurements looked OK. The problem was that one side of the diversity OR-ing diode on the rear terminal had been bent over and was touching the chassis, so it was clamping the AGC line to within a few tenths of volts to ground!

The other two problems each occurred in a 390 and 390A IF module. The Zxxx coil that is the resonant plate load for the AGC amplifier tube opened up and thus the poor tube wasn't getting its B+. Had to replace that coil in each IF. :^(73, John

From mikea@mikea.ath.cx Sat Apr 17 15:06:40 2004
Subject: [R-390] Springtime!!

Joe Foley wrote: > The heavy equipment repair guy up the street told me > his 1953 Lincoln welder was acting up, arcing over > inside, smoking, etc,... but only when he ran it on > DC. > > Gee, I thought, what could the problem be? 8^/ > > Sure enough, there is a HUGE selenium rectifier stack > inside, about 6" X 12" X 18". It was making HUGE > beautiful, blue sparks when he showed it to me. His > wife said he was real sick, 102+ fever, Sunday after > spending most of Saturday welding with it. But he was > only sick for a few hours,..... lucky? > > He promised me he'd only use it on AC until we round > up some new rectifiers for it.

Sounds damned impressive.

I think he needs to tell his doctor he needs to be tested for selenium ingestion/poisoning. IIRC, it's not just an immediate thing; it's also a long-term thing. If the doc thinks there may be a problem, then the tests will tell for sure, and they can take measures to mitigate the problems. Mike Andrews

From bjtatum@ev1.net Sat Apr 17 16:12:47 2004
Subject: [R-390] R-1274 Synthesizer by Manson Labs

Hello- I will be at the Belton Hamfest with the Manson Labs Synthesizer pair. Will have units up for sale, or trade for nice late model R-390A. Thanks, Byron.

From jetemp@insightbb.com Sat Apr 17 14:19:39 2004
Subject: Fw: [R-390] PTO

I have been thinking (oh-oh). The cable that outputs the frequency for the R-390A is tagged P717. The Cosmos PTO that is installed in my R-390 has the frequency cable tagged as P723. Is this more proof that, perhaps, Cosmos had a contract to provide replacement PTO's for R-390's?? Sincerely, Jim Temple

From DJED1@aol.com Sun Apr 18 01:14:49 2004
Subject: [R-390] Microswitch replacement

writes: > http://www.alliedelec.com/catalog/pf.asp?FN667.pdf

They were identical to the one in the radio, so I'm assuming they were old spares. I couldn't fine anything else with the four mounting holes that the original switches have.

From tangerame@earthlink.net Sun Apr 18 01:53:52 2004
Subject: [R-390] CU-168 Coupler

The CU-168 coupler is in use by many R-390a owners so I hope this is not too far off topic. Question is: "Where can I get a schematic". The circuit is easy to reverse engineer but I just wanted to know what protection this device offered from excessive rf voltages at the antenna if any? I'd like to know this before I figure a way to add it in myself. i.e an extra set of relay contacts shorting the input when I key up. Tony WA6LZH (Aging Intercept Operator)

From jbrannig@optonline.net Sun Apr 18 01:59:00 2004
Subject: [R-390] Distribution Amplifier

The May issue of QST has a very neat EIGHT receiver distribution amplifier as the feature article. Jim

From tetrode@comcast.net Sun Apr 18 02:38:32 2004
Subject: [R-390] CU-168 Coupler

Woohoo Tony, it's your lucky day. I was curious too so I went to the LOGSA site and typed in CU-168 into the Pub Title Text box and hit search, and out popped the TM 11-5985-212-15 Field and Depot Maintenance Manual.

It's one of those classic designs that uses a lumped element delay line to feed independent push-pull 12AU7 amps. It has an input transformer for its front end and they are usually pretty robust, so just treating it as a normal RX input should be sufficient to protect it. I remember an old post from Nolan Lee where he told of his setup taking a lightning hit and toasting his multicoupler, but the RX's

connected to it were fine. Unlikely that a solid state multicoupler would offer that kind of protection.

Don't forget to terminate the delay line output J203 if you're not using it to feed something else. http://www.logsa.army.mil/etms/find_etm.cfm John KA1XC

From schluensen@freenet.de Sun Apr 18 03:54:18 2004
Subject: [R-390] the German 390A ... Rohde&Schwarz EK07/D2

hi all, my 67EAC 390A works very well - like new! next project is a Rohde&Schwarz EK07/D2 - the german 390A ...*hi looking now for a service manual for this great boatanchor... 73, Frank, DK1LX

From ptaa@ieee.org Sun Apr 18 17:45:40 2004
Subject: [R-390] the German 390A ... Rohde&Schwarz EK07/D2

I also have a EAC '67 R-390A/URR - in mint condition. The EK07/D2 is IMO the better receiver - in most respects. Even the weigth is higher! ;-))) Marvellous AM sound. Regards, Per-Tore LA7NO

From James A. (Andy) Moorer" <jamminpower@earthlink.net Sun Apr 18 17:49:31 2004
Subject: [R-390] the German 390A ... Rohde&Schwarz EK07/D2

There is a scan of the original military manual for the EK-07/D2 on my web page: http://www.jamminpower.com/main/EK07.jsp

Scroll down to the bottom and you can download it from there. It is, of course, all in German, but the schematics are pretty clear. In general, there is not much alignment to do. It is unlike the R-390/R-390A in that respect. James A. (Andy) Moorer www.jamminpower.com

From R390rcvr@aol.com Mon Apr 19 00:47:54 2004
Subject: [R-390] Cleaning sealed pots?

Good evening all, I am working on a R-390, with sealed pots for the AF and line gain pots. Both are very erratic, obviously need to be cleaned, but, they are the high quality sealed units. The quality is nice, but how do you clean them? Can one very carefully drill a hole through the side, with a bit of grease on the bit, and a drill stop, and then spray in a bit of Deoxit? They don't look like they would be easy to disassemble either. Any thoughts would be appreciated. Randy

From k6fsb@juno.com Mon Apr 19 02:56:46 2004
Subject: [R-390] Cleaning sealed pots?

Randy- it is possible to open the pots- both CTS and AB-by un-doing the tabs that hold the back in place..this allows cleaning and luberication.....it also allows inspection of the carbon film and wiper. some times the carbon film has been damaged, how i'll never know....but if it is slightly raised or has a raised/bump, do not try and clean(scrub..pressure etc...) the raised area only further damage will occur not much can be done except replacement of the element. i've been able to change shafts/elements....having lots of pots with the wrong shaft/configuration..then again it is nice to have a machine lathe to cut off the peened/crimped areas holding the wiper, drill and tap the shaft then replace/reinstall the wiper. Ron

From buzz@softcom.net Mon Apr 19 05:57:08 2004
Subject: [R-390] O.T. page for TV-7 tester

Listers, I need a scan or a copy of page 65/66 for the TV-7/D tube tester. Thanks, Buzz

From tetrode@comcast.net Mon Apr 19 06:54:45 2004
Subject: [R-390] Cleaning sealed pots?

Don't use Deoxit for cleaning pots, it's a contact cleaner and is designed to dissolve metal oxides (guess what some pot elements are made of) and leave behind a light lubricant. The R-390 pots are very susceptible to this kind of solvent damage and of course I found out the hard way. I make a habit of measuring the pot elements before and *after* I work on them, and watched one of the front panel's controls double in value after I Deoxited it. :^(

So the next time I decided I'll try some CaiLube, after all it's designed to be used on controls, and after an extremely gentle application to the element of a replacement used Limiter pot (500K) that I was preparing, I saw its value go from about 800K to 3 Meg after just a few rotations of the control shaft. :^(

The original Limiter pot I was replacing was completely shot, its element measured 75 Meg, almost not there. In the same radio the IF Gain pot on the IF deck measured 10X greater than it was supposed to be; in each of these I suspect solvent application as the cause of the damage.

I don't know what to recommend as a good cleaner or lubricant now, it almost seems like voodoo. Some audio guys swear by WD-40, and others swear at it. Other remedies I've heard included Vaseline as well as some kind of silicone gel that also provides mechanical damping, and another fellow in one of the radio newsgroups makes his own secret homebrew formula that he sells. One thing is for certain - always measure the part after treating it to see if its value was affected.

Often the 390 pots are not just a little dirty but actually worn out. I've had a couple of RF Gain pots that were mechanically worn out at the 10 o'clock position that they normally sit at; there was simply no more resistive element at that one spot.

I'd definitely like to find a good replacement source for the Audio/Line pots, but 2.5K panel pots with .25" shaft and audio taper are near impossible to find; if they were 5K it wouldn't be so bad. I've actually thought of trying a dual 5K pot with all the connections paralleled. John KA1XC

From BRingwoo@csir.co.za Mon Apr 19 13:49:08 2004
Subject: [R-390] Re: Downloading form Andy's Site - EK07

Hi, I downloaded the manual from Andy's site using DAP and was rewarded with a ".jsp"* file. If you also get this problem with this file, rename it to a .pdf and you will be able to read it. I've never seen an EK07 here and was curious. This seems to be a naming thing, it won't work on other .jsp files, I'm sure. -Bryce *java server pages. We're not quite out of the Microsoft era here.

From BRingwoo@csir.co.za Mon Apr 19 14:00:26 2004

Subject: [R-390] 390a - Switch Wafer Alignment

Hi, Thanks to Dallas Lankford and Pete Wokoun,sr.

Concensus is that there's a lot of slop on the shaft and some good can be obtained by putting a shim one side of the shaft under the misaligned wafer. Dallas also cautions about attempting to align the crystal oscillator section wafers with the unit detached from the rest of the RF unit. I followed their advice and aligned it as best as I could without dismantling the wafer mounting screws. So far its working quite nicely. - Bryce

From chacuff@cableone.net Mon Apr 19 14:49:19 2004
Subject: [R-390] Cleaning sealed pots?

Hi John and Group, I agree with you John, Deoxit was not meant for pots....and will damage them over time. How much time depends on the wear the pot has experienced prior to treatment with Deoxit.

Options...MG chemicals makes a product called NU-Trol which has worked well for me. It's quite lubricating though....just a small amount covers it. It also has solvents for cleaning.

Another option that has worked well also is a product by GC electronics called De-OX-ID. Not to be confused with Deoxit. GC's product has been around longer as I understand it from the friend and owner of the local parts store where I get it. Remember the old Quietrol....worked great...I still have a small amount...but have been told the GC De-OX-ID is basically the old Quietrol.

RS also markets a small can of control cleaner...not sure how it works though.

CaiLube is strictly a lubricant...mainly used for lubricating the sliders on a mixer board. Keeps them sliding smoothly. It has no cleaning properties. Don't understand it causing problems with a vintage pot unless it caused the phenolic base to swell opening up a thin spot in the carbon trace...which may happen with any of these...don't know.

Anyway...just some options to consider. I wouldn't use WD-40...it gums up rather quickly....And don't use the new reformulated Blue Shower (not Blue Stuff....abrasive tuner cleaner...Yuk!)....it melts some plastics....learned the hard way on that one....melted a 70's audio pot into one piece. It was sold by another store as a suitable environment friendly replacement for the old Blue Shower. NOT>>>> The old blue shower was good to use on pots....Oh well..so much for environmentally friendly... Cecil...

From roy.morgan@nist.gov Mon Apr 19 14:54:50 2004
Subject: [R-390] O.T. page for TV-7 tester

wrote: >Listers, I need a scan or a copy of page 65/66 for the TV-7/D tube tester.

The whole series of manuals is available for download free at: http://www.kg7bz.com/Manuals.html
Roy

From drewmaster813@hotmail.com Mon Apr 19 22:50:53 2004
Subject: [R-390] Potent I/O Meters...

wrote: >I don't know what to recommend as a good cleaner or lubricant now, it almost seems like voodoo. Some audio guys swear by WD-40, and others swear at it.

I've used WD-40 and it seems to work reasonably well, although it gums up after a while. I have also had success with 100% isopropyl alcohol (applied generously with an eyedropper). It also works well to remove solder flux and to clean tape heads. Let it evaporate before operating the equipment; alky is extremely flammable. The most readily available small quantity source I have found is isopropyl formula gasoline dryer/antifreeze.

Rubbing alcohol is usually 70% iso alky and the rest water; hence does not work well.

>Often the 390 pots are not just a little dirty but actually worn out. I've >had a couple of RF Gain pots that were mechanically worn out at the 10 >o'clock position that they normally sit at; there was simply no more >resistive element at that one spot.

Sometimes the wiper can be bent to sweep a different radius and ride on a previously unused portion of the element. That worked well for a Mazda volume airflow sensor in a friend's car (the sensor is a pot whose shaft is coupled to a spring-loaded vane in the air intake).

>I'd definitely like to find a good replacement source for the Audio/Line >pots, but 2.5K panel pots with .25" shaft and audio taper are near >impossible to find; if they were 5K it wouldn't be so bad.

One could use a 5k unit with 4.7k or 5.1k fixed resistance parallelled across the element. That would keep the load impedance presented to the previous stage at the design level. The source impedance feeding the following stage would change but would have no effect as the input impedance of the following stage is many times higher than that from the pot's wiper in any case.

> I've actually thought of trying a dual 5K pot with all the connections >paralleled.

How about a "stereo" pot? Concentric line and local level controls would be a neat feature if suitable knobs could be found :) Drew

From vk2abn@batemansbay.com Tue Apr 20 08:04:17 2004
Subject: [R-390] 390a

Hi everyone I was wondering if anyone has carried out mods as per electric radio mag / competition grade 390A reciever . I have just read it and feel a bit enthused I do have the test gear to evaluate the mods ,I wonder ????? ,on another note I have just modified a spare IF module to accept a set of upper and lower sideband assyametrical filters I removed 2+4khz filters and substituted new filters and removed bfo coil and reconected as a crystal osc on 455khz substituted 12ba6 tubes in bfo and VFO and used 3tf7 socket as a double triode product detector 12au7 and connected a high resistance relay to switch the audio lines through the prod detector when u switch the BFO on and it works magnificently ,I am just still playing around with AGC time constant to better suit SSB , I AM ITERESTED TO HEAR FROM ANYONE ELSE WHO IS PREPARED TO PERFORM MAJOR SURGERY HI Regards to all Bernie Nicholson Vk2ABN

From ke1mb@hotmail.com Tue Apr 20 12:47:42 2004

Subject: [R-390] R-390A mounting position

I want to mount my 390 in a 45 degree position in a homemade rack box. Does anyone for see any problems? I use the radio nightly so it does get used. thanks joe

From Barry Hauser <barry@hausernet.com> Tue Apr 20 13:52:31 2004
Subject: [R-390] R-390A mounting position

Hi Joe & List, May not be such a good idea to operate an R-390 at 45 degrees, or even a smaller angle.

The mechanics -- particularly slug racks, cam followers and the slugs themselves -- may rub against rear mating surfaces or pull at a slight angle vs. full vertical position. This may also contribute to a slight misalignment of gear shafts as they will tend to shift rearwards, etc. Parts will also mesh or ride somewhat off the wear-in positions.

For example, the slug racks have some fore-aft play and will shift rearward. The back surfaces of the racks (with the cam followers) will tend to rub up against the inside surface of the RF deck. With a slight shift, the slugs themselves will not longer be perfectly aligned with the cores and the support springs ("springy thingies" hanging from the racks) may pull at an slight angle to the cores. You could correct some of this by tweaking the lateral slug adusters -- if it is an R-390A. If it's an R-390, there are no adjusters. The increased drag might be enough to feel when tuning - or maybe not.

In addition, it's unwise to support the radio by the front panel in that position, so you 'd have to find a way to support it from the back at that angle. There also may be some tubes that should be operated in a vertical position. Can't say whether that would adversely affect convection cooling at 45 degrees vs. full vertical.

Again, doesn't sound like a good idea to me. You can temporarily prop it up and see if there's any immediate increase in drag that way -- particularly when turning the KC knob. Worst-case -- might even be some jamming or sticking slugs whereby a slug rack doesn't come down all the way even with the return springs because the works are cocked Even if not, it's probably not a good move from a wear and tear standpoint. My 2 cents submitted above. Barry

From cbscott@ingr.com Tue Apr 20 14:08:22 2004
Subject: [R-390] R-390A mounting position

So you could mount it upside-down without introducing extra wear? Barry(III) - N4BUQ <g>

From roy.morgan@nist.gov Tue Apr 20 14:37:18 2004
Subject: [R-390] R-390A mounting position

wrote: >I want to mount my 390 in a 45 degree position in a homemade rack box. >Does anyone for see any problems? I use the radio nightly so it does get used.

Joe, If what you have is an "R-390 non-A" then I strongly suggest you mount a fan next to the 8082 voltage regulator tubes. If what you have is an R-390A, then don't bother beyond leaving space for air circulation. The 45 degree angle won't matter at all. Roy

From mjmurphy45@comcast.net Tue Apr 20 14:45:57 2004
Subject: [R-390] R-390A mounting position

This could be dangerous. Is you chair capable of tilting forward as well?

From cbscott@ingr.com Tue Apr 20 14:52:13 2004
Subject: [R-390] R-390A mounting position

As heavy as the radio is, maybe it would be easier to mount the radio horizontally and tilt the rest of the room on -45 deg.? Barry(III) - N4BUQ

From flood@Krohne.com Tue Apr 20 15:48:20 2004
Subject: [R-390] Distribution Amplifier

Greetings all, I read the article and was quite impressed so I ordered the "Kit" mentioned in the article Friday night. It arrived Monday here in Boston! I was even more impressed at the quality of the materials in the kit. I may have to get some new components to build it up, as stuff from the junk boxes just won't do this thing justice. I'm looking forward to building it. I had been on the lookout for a mil-surplus unit for some time without luck. Perhaps this light weight item will allow me to bring in another boat anchor to my shack and use the weight I was reserving for the RX multicoupler. If there is any interest, I'll post my results here. (don't expect anything quick!) John Flood KB1FQG

From pwokoun@hotmail.com Tue Apr 20 16:33:25 2004
Subject: [R-390] Distribution Amplifier

You folks got me really interested in seeing that article on a long-sought accessory to the shack! Our QSTs to Hawaii won't get here until about May 10. Does the author give any noise floor or max signal specs for it? pete KH6GRT

From mmdues@hal-pc.org Tue Apr 20 19:34:21 2004
Subject: [R-390] Distribution Amplifier

Hi, Pete, and ALL, The author and designer of the multicontroller has a neat web site that describes the project pretty well. Go to:

www.w8zr.net/multicontroller/

In speed reading the QST article just now, I did not see a noise floor specification mentioned, but he is using new Maxim MAX497CPE video amplifier ICs each containing four 275 Mhz low-noise amplifier/buffers. I, too, am very interested in getting his kit and building it for all my receivers. Marshall Dues WB5MYO

From k6fsb@juno.com Tue Apr 20 17:55:01 2004
Subject: [R-390] Cleaning sealed pots?

re On potentiometers

lubricants....lubriplate white grease seems to work quite well. another product-tuner lube white lithium grease is also good.

anybody have any experience with synthetic lubes????

cleaning isopropyl alchol (100%) is a good cleaner.

an old trick to change a pot from linear to log is to use a resistor (standard value as close as possible) about 11% value (10.9% if you want closer)of the pot from wiper to one side (not across the element). this will be avery good approximate. also gives up or down taper as needed. ie 25K linear taper and a 2.7k or 3k will do fine. Ron

From roy.morgan@nist.gov Tue Apr 20 18:01:46 2004
Subject: [R-390] Distribution Amplifier

wrote: www.w8zr.net/multicontroller/ > >In speed reading the QST article just now, I did not see a noise floor specification mentioned,

The web site says:
"...Each amplifier has an open loop voltage gain Av2 (6dB), an input resistance of 1.2 Mohm and an output resistance of 0.1 ohm. The output noise is specified as less than 5.6nV/(Hz)^1/2, which corresponds to about 0.16 uV measured in a 1 kHz bandwidth...."

It sounds like these amplifiers will deliver better performance than the old tube type or even later solly state multicouplers. I would expect that in any but the most serious noise free locations (such as in the *middle* of the outback in Australia) this thing will not contribute any detectable noise to the signals you will receive.

(As if I *need* another project, I am considering building one of these.. Can anyone report the approximate cost of the Mouser order for parts???) Roy

From cbscott@ingr.com Tue Apr 20 18:04:57 2004
Subject: [R-390] Distribution Amplifier

Looks like a really well-designed project; however, I'm afraid if I built it, I'd start looking for 6 more receivers... Barry(III) - N4BUQ

From jbrannig@optonline.net Tue Apr 20 19:00:32 2004
Subject: [R-390] R-390A mounting position

Depending on the foundation, mounting the R-390A in one corner of a room just might tilt it 45 degrees..... Jim

From wa9vrh@mtco.com Tue Apr 20 23:06:48 2004
Subject: [R-390] Cleaning sealed pots?

Hi all, I maybe coming into the middle of this thread but I thought I was reading from the start. The discussion of all the cleaning/lubing agents has been great. My question is on a sealed pot. How do you get the stuff in there? Especially if it is buried in a chassis? Thanks 73 Larry WA9VRH

From jmiller1706@cfl.rr.com Wed Apr 21 02:19:04 2004
Subject: [R-390] R-390A mounting position

I would be concerned about oil leaking out.

From cbscott@ingr.com Tue Apr 20 23:18:50 2004
Subject: [R-390] Cleaning sealed pots?

There's a guy who makes a threaded adapter that screws onto the 3/8" sleeve. The adapter is hooked to a tube with a pump whereby you can force cleaner/lubricant into a pot in the small gap between the 1/4" shaft and the I.D. of the 3/8" sleeve. Not sure if this is meant for sealed pots, but I think that's why he made it. At least I *THINK* that's what the apparatus is for; I could be wrong. I haven't seen one, but I can ask him if there's interest. Barry(III) - N4BUQ

From kgordon@moscow.com Tue Apr 20 23:50:56 2004
Subject: [R-390] Cleaning sealed pots?

> agents has been great. My question is on a sealed pot. How do you get > the stuff in there? Especially if it is buried in a chassis? Thanks 73 > Larry WA9VRH

GC used to sell a device which looked like an overgrown hypodermic device which screwed onto the threaded bushing which holds the pot to the panel. You took the knob off the shaft, filled this hypodermic device with your cleaner, screwed in onto the pot, and forced the goop into it through the shaft-to- bushing space by working the plunger. It worked pretty well as I remember it. I lost mine many years ago. Ken W7EKB

From ham@cq.nu Tue Apr 20 23:57:26 2004
Subject: [R-390] R-390A mounting position

Hi, Physically doing an inclined mount on a 390 may be harder than it looks. The radio really is not set up to hang by it's face plate. If you take a look at the "standard" cabinets they go to great lengths to support the radio along the bottom edge of the frame. In order to keep things right you would need to support both the back of the radio and the bottom of the radio. Not easy ....

That of course assumes we are talking about a 45 degree tip back. If you are tipping it 45 degrees forward then things are even more difficult.

I have a couple of R-390's that I would not trust running at a 45 degree angle. The springs on the slug racks do not have enough "pull" to keep everything running smoothly when the racks are at a significant angle. They tend to hang up rather than follow the magic cams. You probably could re-spring the radio with stiffer springs but then the tuning knobs would be even harder to turn. Since the radio stays at the tune point due to friction you could get things a bit crazy this way ....

Bottom line - you would need a pretty good mount *and* a maybe one radio in four to make it work like a R-390 should. Take Care! Bob Camp KB8TQ

From ronhunsi@ptd.net Wed Apr 21 00:45:12 2004
Subject: [R-390] Distribution Amplifier

The Mouser bill comes to $123 or so, but I'm not sure if the includes the back orders. I, too, received the kit from the developer and the quality is very high. Ron Hunsicker

From DWADE@pacbell.net Wed Apr 21 01:45:39 2004
Subject: [R-390] R-390A mounting position

I can certainly understand the physics involved with running it at a 45 deg tilt.

But, I've been considering a rack style console that would hold a '390A in the lowest (desktop level) position. If the front panel were perpendicular to the desktop, one has to crouch a bit to view the panel straight on. A slight tilt, no more that 20 deg I would guess, is plenty to bring it so the plane of the panel is directly facing the operator.

Does this much less severe angle pose any problems in anyones mind? Dennis

From ham@cq.nu Wed Apr 21 01:39:09 2004
Subject: [R-390] R-390A mounting position

Hi, I think you would get around the weight on the back of the radio problem with a 20 degree tilt. You probably will still have to need to fiddle the racks a bit to make it work. Take Care! Bob Camp

From brookbank@triad.rr.com Wed Apr 21 01:50:50 2004
Subject: [R-390] R-390A mounting position

I think the best is a compromise, 22 degrees for the R-390 and 23 for the chair. I gave one degree less for the radio to conserve the mechanics

From hankarn@pacbell.net Wed Apr 21 04:01:19 2004
Subject: [R-390] R-390A mounting position

The radio was designed to be mounted as a Rack mount by the front panel. I have seen rows of them in USAFSS with no rear support. Hank KN6DI

From pb@cq.nu Wed Apr 21 02:50:32 2004
Subject: [R-390] Distribution Amplifier

Hi, Well don't throw out all the glow in the dark stuff quite yet .....

The video amplifiers that form the heart of the ARRL project are pretty darn nice little chips. However they are not rated for IMD and their harmonic distortion numbers begin to climb as you go past about 10 or 12 MHz. That isn't to say they fall apart. Far from it they probably work pretty darn well considering what they are.

What they are not is the tuned RF front end on an R-390. I would be very interested to see how they do when attached to a couple hundred feet of wire with the bands open ... Take Care! Bob Camp KB8TQ

From dwade@pacbell.net Wed Apr 21 05:35:40 2004
Subject: [R-390] Distribution Amplifier

Bob brings up a good point that I think is easily overlooked.

The project has two area in which gain is applied, the distribution section, and an optional rf amp ahead of that. In correspondence with the author, I expressed my concern that unknowing builders would carelessly include as much gain as they could before the front end of their receivers and I suggested some article language cautioning its use.

As I'm sure all of us know, most HF receivers seldom need another rf stage, not to mention the '390 series. As Bob points out, IMD and other bad things are more likely to happen even without the added gain block. I hope potential builders of the distribution device keep that in mind. Dennis

From k6fsb@juno.com Wed Apr 21 06:31:18 2004
Subject: [R-390] Cleaning sealed pots?

Larry- unfortunately remove the pot form radio for dissembly/inspection/lube and or replacement....sometimes easier said than done Ron

From jbrannig@optonline.net Wed Apr 21 12:43:04 2004
Subject: [R-390] Distribution Amplifier

Good points. An attenuator ahead of the amplifiers should help with any overload problems. The author includes filters for AM and VHF in the basic design. Also, many BA receivers of lesser pedigree than Collins need help above 20 Meters or so. Jim

From cbscott@ingr.com Wed Apr 21 14:31:02 2004
Subject: [R-390] R-390A mounting position

I machined a set of nylon rails that bolt onto the bottom edge of each side panel (using the holes where the bottom cover normally attaches). These rails make up the difference between the bottom edge of the front panel and the side panels. The radio (R390A in this case) is supported all along each side panel and sits flat inside the table-top cabinet. I could tilt it back with very little additional stress on the radio. Of course, slug racks, lube, etc., have to be accounted for, but the frame itself would be supported just fine in my case. I agree that when the radio is on the table top, the controls do not face the operator as well as I'd like and have thought of tilting mine a bit for that very same reason. Too many other projects... Barry(III) - N4BUQ

From w5or@comcast.net Wed Apr 21 14:58:22 2004
Subject: [R-390] Distribution Amplifier

Jim Garland, creator of the distribution amp project, probably tried it out on an EAC R-390A. I saw one at his well equipped shack/lab a couple of years ago. Jim is an amazing fellow, holding a doctorate in solid state physics, prolific radio project designer/builder, president of a university, vintage radio restorer, active ham. I don't think he ever sleeps. Don W5OR

From w5or@comcast.net Wed Apr 21 15:12:06 2004
Subject: [R-390] R-390 distant cousin?

John, K4OZY, found and adopted an unusual Collins Navy contract receiver at a hamfest. It is an R-627, part of URC-8. He is seeking more information, and a manual or schematic.

It shares some characteristics with the R-390. To me it looks like a cross between an SRR-13 and an R-390. Anyone know about these radios? Reply to me or the list, I'll forward to John.
http://www.jptronics.org/radios/Collins/R627 Don W5OR

From Commtekman@aol.com Wed Apr 21 15:17:54 2004
Subject: [R-390] Distribution Amplifier

Hello All- I have been reading with great interest the discussion on the distribution amplifier. I have two military units that are marked: CU-1872, these appear to have one input and eight outputs and are quite heavy. The back is marked "Autec Project" Does anyone know anything about these ? Tnx- Bob K6OSM

From flood@Krohne.com Wed Apr 21 15:40:16 2004
Subject: [R-390] Distribution Amplifier

Greetings, Yes, I agree, I'm sure that is why the developer designed the pass filter to cut of above 75MHz. I won't change the filter values to allow for the 150 MHz cutoff as I'm sure that the R390A and SP600-JX would be confused by high power paging signals. I haven't given up on the valves yet. I've just not been lucky enough to find a dist. amp. here at the New England flea markets. John Flood

From drewmaster813@hotmail.com Wed Apr 21 22:22:00 2004
Subject: [R-390] R-390A mounting position

wrote: >I've been considering a rack style console that would hold a '390A in the >lowest (desktop level) position..

You could send your radio's front panel to Dan Arney for re-engraving. He could do an oblique font style so that even with the radio in the upright position the legends would appear correct when viewed at a 20 degree angle from above. (Dan, can you re-engrave the VRC too? :) Drew

From w5kp@direcway.com Thu Apr 22 14:05:19 2004
Subject: [R-390] Fowler R-390A S/N 1

Still sitting on some dot-com money and your wife is looking for a unique Father's Day gift? Point her to this, currently listed on W5MC's website www.collinsandharrisradios.com:

"FOWLER R-390A S/N 1 Built 1985. Fowler was contracted to build 5 each of these. This unit is S/N 1 complete with matching Original US Navy Manual Dated 1986 As well all modules are matching S/N 1s PRICE $3,000"

Collector-wise, I'd consider this the Mona Lisa of R-390A's. Mac has lots of other esoteric goodies listed for sale, too - but this one sure caught my eye. I don't have a spare three grand lying around or I'd probably have to have it myself for bragging rights. No personal pecuniary interest, but I've dealt with Mac before, and he's a straight-up guy who won't mess with anything but the best of the best in radios. Jerry W5KP

From flood@Krohne.com Thu Apr 22 15:20:42 2004
Subject: [R-390] Fowler R-390A S/N 1

Wanted: New home for me and my Fowler '85 contract R390A S/N 1 in the Boston , MA area. Original home lost when wife found out how much I spent on the radio. John Flood

From BRingwoo@csir.co.za Thu Apr 22 15:44:35 2004
Subject: [R-390] Fowler R-390A S/N 1

Oh boy - doesn't that sound too familiar !

From ke1mb@hotmail.com Thu Apr 22 19:14:17 2004
Subject: [R-390] To un-mod or not

I have just recently bought a 59' Steward-Warner. It is in really good condition but with some mods. My first question is, a co-worker who worked on the 390's in the service believes that if a mod was done by military personal under factory approved updates then that mod should be considered "stock", and under a collectors point of view it be valid.

I would like to know if the 85' vintage radios had tubes instead of diodes.

Secondly is someone made some IF mods in my radio. V506 seems to be a diferential product detector now. And there are various diodes in the AGC section which I have not mapped out. It all works very nice. But I don't use the radio that way. I use the IF out. That way I can play and not cut up the radio :) I notice that when I use my Kenwood 930s as the demodulator (with 60db of pad) I get very good results with the 390 on MGC. I am wondering if the stock ACG would work better using the 390 as a down converter only.

I don't plan on selling this radio, the best city radio ever!! With the kenwood 930 dialed up on 455kc +/- some, and the 390 as the front end, I hear things neither radio can hear by itself. It is a scary combination. thanks joe ke1mb

From ah7i@atl.org Thu Apr 22 19:06:27 2004
Subject: [R-390] To un-mod or not

wrote: > I don’t plan on selling this radio, the best city radio ever!! With the kenwood 930 dialed up on 455kc +/- some, and the 390 as the front end, I hear things neither radio can hear by itself. It is a scary combination.

You answered your own question...

From ham@cq.nu Fri Apr 23 02:07:52 2004
Subject: [R-390] Distribution Amplifier

Hi, A couple of things you could do with the ARRL distribution amplifier:

1) The MAX 496 is a direct drop in for the MAX 497. The 496 has the same spec's except it has half the gain and significantly less distortion above 10 MHz.
2) Change out the 75 MHz high pass filter for one that cuts off at 30 MHz. If you are running into a '390 there's nothing good going to happen with signals and distortion above 30 MHz.
3) C14 is the input blocking capacitor. The guys who did the AMRAD whip antenna came up with the fact that making this cap smaller trades off lightning protection for low end response and noise figure. If AM radio is not an issue dropping this part back to 0.001 or even less might be a good idea.
4) In the same way putting a coil of some sort in the location shown for R2 could help for ESD and lightning. Of course a DC short can cause problems of it's own.

Please don't take this as a bash of the design. It looks like a *very* well done design. I suspect it works very well just like it is shown in the article. All I'm trying to suggest is that it might be possible to optimize it for R-390 type use. Take Care! Bob Camp KB8TQ

From r390a@bellsouth.net Fri Apr 23 02:35:00 2004
Subject: [R-390] To un-mod or not

wrote: >> I don’t plan on selling this radio, the best city radio ever!! With the kenwood 930 dialed up on 455kc +/- some, and the 390 as the front end, I hear things neither radio can hear by itself. It is a scary combination. >

Even scarier is me using my 756Pro as an IF for my 390A! Talk about an "oh boy" combination. It's nice to be able to narrow things down to 50 Hz bandwidth to help dig out nearly inaudible CW, and all the other whizbang DSP gizmos on the Icom are nice too, like the FFT panoramic display. (though at 16 KC wide on the 390A, you only get a teeny slice to look at) Now if I could make myself move the room around so both radios would be on the SAME SIDE of the room, it would be a lot easier to use this setup. Tom
From ham@cq.nu Fri Apr 23 02:57:35 2004
Subject: [R-390] To un-mod or not

Hi, Odd but true - most receivers do not present a 50 ohm load to the antenna. When you pop a radio on to the 455 KHz output of the R-390 you put a "strange" load on the 455 KHz output of the radio. Like everything else on the 390 it will do better if you align it with that load in place *if* that's the way you are going to run the radio. A second thing to play with is the good old IF gain adjustment. You may find that a lower gain setting will still drive the outboard radio and give you better overload performance. Since both of these adjustments are reversible there's not much risk in trying them to see if they help or not. Enjoy! Bob Camp KB8TQ

From ke1mb@hotmail.com Fri Apr 23 04:42:41 2004
Subject: [R-390] To un-mod or not

The buffer amp in the 390a does a good job, but regardless i have to use 60db of attenuation between the IF out and the kenwood 930. The signal is too hot otherwise, here you get a perfect 50 ohm load for the 390's IF out. The 60db is a must, you will overdrive your HF rig without it.

From courir26@yahoo.com Fri Apr 23 12:58:51 2004
Subject: [R-390] Fowler Letter to Mac

Gentlemen? I remember when Mac related this letter to me. As I recall from his description, he received a letter on Fowler letterhead demanding return of his Fowler to the plant, recalled for the danger of radioactive materials. As I recall also, Mac told me the letter was signed by a Mr. Charles H. Hungadunga, of the law firm Hungadunga, Hungadunga, Hungadunga, and McCormick (oops, I forgot one Hungadunga, the most important one, too). Of course, my recollection is based only upon what Mac told me, so it is therefore hearsay and unusable in court. Tom N5OFF

From mikea@mikea.ath.cx Fri Apr 23 14:12:44 2004
Subject: [R-390] Fowler Letter to Mac

wrote: > Gentlemen? > > I remember when Mac related this letter to me. As I recall from his > description, he received a letter on Fowler letterhead demanding return of his >

I guess the propagation on the list is a little bit hosed; I don't have anything else about the letter, other than Tom M's post. Would someone care to repost the note that started this thread? Mike Andrews

From ham@cq.nu Fri Apr 23 15:13:31 2004
Subject: [R-390] To un-mod or not

Hi, One option might be to move the IF pick off point closer to the start of the IF chain. Obviously this involves modification to the radio ... One good option might be to use a scrap IF strip that's missing a couple of the filters. That would leave your "real" IF strip intact. Take Care! Bob Camp KB8TQ

From wwarren1@nc.rr.com Fri Apr 23 18:28:47 2004
Subject: [R-390] To un-mod or not

It's even easier than that, simply disconnect the plug bringing the 455 kHz IF signal from the RF deck to the IF deck and use that signal to go the auxilliary receiver. Yes, one misses the mechanical filters of the 390A, but one also misses the intermod of the first IF stage, which according to some of the documentation, is one of the main sources of troubles. However, with that setup, you'd be getting the image rejection and selectivity of the 390A front end.

Remember that the IF deck is set up for 150 microvolts input at 455kHz for -7 volts on the diode test point. Thus, the RF deck as the front end to the aux receiver may still be too hot. That is, approximately a 2-4 microvolt input to the 390A antenna will deliver 150 microvolts to the RF deck, and that's about a

-83dBmw signal. -83dBmw shouldn't overdrive the aux receiver, but with presumably no AGC on the 390A RF deck, the signal will go up very considerably (should be linearly) with increased antenna signal strength. Hope this all makes sense. Tom, W4PG

From roy.morgan@nist.gov Fri Apr 23 23:35:35 2004
Subject: [R-390] Distribution Amplifier

wrote: >I have been reading with great interest the discussion on the distribution >amplifier. I have two military units that are marked: CU-1872, these >appear to >have one input and eight outputs and are quite heavy. The back is marked >"Autec >Project" Does anyone know anything about these ?
I can tell you what the "Autec Project" is:

In the Bahama Islands, Andros Island is the largest one and among least populated. It hosts the AUTEC fallibility of the US Navy. Atlantic Underwater Test and Evaluation Center (or some such name.) Between Andros Island and Grand Bahama Island is a very deep (one thousand fathoms) piece of ocean about 50 miles wide and 100 miles long. It is used for submarine exercises and torpedo firing training. The place has a small number of shore stations with tracking equipment and a control station to keep track of what's going on both on and under the water.

Most likely your distribution amplifiers came from the communications part of the place. Roy Navy ASW Helicopter Pilot, retired.

From r390a@bellsouth.net Sat Apr 24 23:27:56 2004
Subject: [R-390] Collins Tube Shield Data up

Well, almost up. Bellsouth's lines have been so noisy the past month my upload speed is around 300 bps. That's NOT 300Kbps, BTW.... grumble....

This is scanned from the 1962 Collins Industrial Products catalog. Compares Collins "66J" heat dissipating tube shields to the normal shiny variety or none at all. Impressive. If I could find info on IERC shields of the period, I'd scan that too. I would imagine the IERC data to show them a few degrees cooler than the Collins shields. The files "Collinsgraph" 1 and 2 are closeups of the graphs on page 2 of the shield listing. Trivia, this particular catalog originally belonged to the tech library at Dayton Engineering Association, Dayton OH. Thin book, besides tube shields, it has data on PTO's and auto-positioner assemblies sold by Collins at the time.

If anyone wants larger scans of the graphs please let me know. If the scans ever upload, they will be under -- http://www.fernblatt.net/Collins/ 73 Tom

From tetrode@comcast.net Sun Apr 25 01:52:30 2004
Subject: [R-390] Collins Tube Shield Data up

> Thin book, besides tube shields, it has data on PTO's and auto-positioner assemblies sold by Collins at the time.

Tom, what's an auto-positioner, anything to do with an auto-tune?

From r390a@bellsouth.net Sun Apr 25 04:23:27 2004

Subject: [R-390] Collins Tube Shield Data up

> > Thin book, besides tube shields, it has >> data on PTO's and auto-positioner assemblies >> sold by Collins at the time. > >Tom, >what's an auto-positioner, anything to do with an auto-tune?

Yes. Collins was well known at the time for such things in their radio gear, they also offered the subassemblies for sale. The PTO's as well. Tom

From pulsarxp@earthlink.net Sun Apr 25 05:11:32 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

I'm about ready to take my Dremmel Tool out and cut my C603 and C606 power supply filter caps open to RECAP them from my "cap kit". If I screw them up on my first go round, how hard is it to find replacement cores to try it all over again if I fail the first time? Are they available? It would make me feel a lot better knowing they are not impossible to locate or I had spares if I did screw them up. Anybody have any units bad or good available? (I've got many can electrolytics, but none that plug in. In fact I have never seen any like this before. But then, I am new to R-390A restoration). Lee, w0vt Houston.

From r390a@bellsouth.net Sun Apr 25 05:42:50 2004
Subject: [R-390] Entire 1961 Collins Industrial Cat is up

Went ahead and scanned all 12 pages. Scanned as moderately sized jpg for size reasons. Anyone needs anything larger, higher res, or gif (it makes cleaner lines), let me know.

As before, it is a www.fernblatt.net/Collins/

From jbrannig@optonline.net Sun Apr 25 13:49:05 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

It is pretty hard to screw this up..... I did it because "it was there", but it is really not worth the effort. Just pull the caps and solder the replacements across the terminals. Jim

From ToddRoberts2001@aol.com Sun Apr 25 14:48:11 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

writes: I'm about ready to take my Dremmel Tool out and cut my C603 and C606 power supply filter caps open to RECAP them from my "cap kit". If I screw them up

I have looked into the problem of replacing the filter cans C603 and C606. The best way I have found is to buy several 8-pin Octal Base Plugs available from many sources. I bought some aluminum tubing that was a close fit to the Octal Plugs and cut a few lengths equal to the originals. The newer late-manufacture HV Electrolytics will easily fit inside the aluminum cylinders. After wiring up the caps the aluminum tubes can be glued to the Octal Base and then put a nice looking end cap or hole plug on the open end of the tubes to seal them up. I have found the 8-pin Octal plugs grip pretty tight when plugged into the octal sockets with the new lighter-weight cans so there is no need to use the clamps around the cans. You have to really tug on them to pull them out. The original heavy filter cans only had 4 pins and didn't hold very tight in the sockets and needed the clamps to stay put. The end result is a nice-looking

pair of plug in caps that can be easily changed out if ever needed. 73 Todd Roberts WD4NGG.

From ham@cq.nu Sun Apr 25 14:49:54 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

Hi, Actually that reminds me of another way to do it.

Grab a dead old octal tube and use the base to mount the new capacitors on. An old metal can octal should have just about the optimum base on it. An octal relay base would do the same thing. There's nothing very fancy about the wiring required to properly connect a power supply capacitor ... Take Care! Bob Camp KB8TQ

From ham@cq.nu Sun Apr 25 14:51:37 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

Hi, What is commonly available are plug in cans with octal bases on them. They don't look like the original capacitors but most of them fit just fine in the same location. Some of the cans are plastic and others are metal. I prefer the metal ones, but that's because I dig them out of the trash at work.

Since the cans are square rather than circular they have more volume to stuff things in to. That makes the recap job a little easier and may allow larger capacitors to be used. Opinion is mixed on just how large a capacitor to use if you do go larger. Bigger capacitors give less ripple, narrower current spikes and higher voltages. Less ripple is good there is some debate about the higher voltages. Narrow current spikes are not a good idea. The caps that are located after a choke don't have any problems but the input capacitors do.

If you decide you need to pick up some more plug in capacitors what you need to be pretty careful about is the can height. The parts in there are just about maximum height to clear the bottom cover. You don't have to worry much about value or voltage since what ever is inside is probably long dead anyway. A visit to the local ham fest is usually the best route. At one time Fair Radio would sell you an audio deck minus the connectors. I don't remember if they left the capacitors in place or not. Either way they are a likely source if you need to go mail order. Enjoy! Bob Camp KB8TQ

From hankarn@pacbell.net Sun Apr 25 17:22:28 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

Lee,

I went whole hog on 18 sets for the ones I am rebuilding. cut the cans open on an engine lathe, cut off the ends of the old ones, stripped out the guts, boiled the cans to loosen up the crud, then scraped them clean on the inside. Then had to squeeze one of the .47 in a vise to fit in the can. Drilled the pins and inserted small brass screws to solder to. Sealed the cans with JB weld and had adhesive labels made to state the value and date done. Would I do it again NO WAY. My choice would be Frontier Capacitor who does them for about $40.00 each with a guarantee. No these are not for sale.

I have a few labels left, silver with black lettering. They say rebuilt by KN6DI on them. Hank KN6DI

From jbrannig@optonline.net Sun Apr 25 20:01:46 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

BTW, Antique Radio has replacement electrolytics for the 75S receivers. They are $29 or so. Worthwhile because the can is too small to rebuild and there is very little room in the power supply section of the chassis to fit three replacement capacitors. Jim

From pulsarxp@earthlink.net Sun Apr 25 21:28:05 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

I want to thank everyone on the reflector for their help given regarding the C603 and C606 capacitors. Some of the help was given privately and some over the reflector. I appreciate all the response and I now know I have alternative solutions and a way out of this if I do screw up the old caps. I have decided to rebuild them myself if possible for the learning experience. If that fails, I'll use alternative A or B or C. It feels good to know I have a fix one way or another if I mess up the old caps.

I was given the following advice and probably the best solution from them needs to be decided by each individual when replacing existing C603 and C606 caps in his own receiver, depending on the value of TIME, COST, SKILL, and APPEARANCE:

1. Rebuild the old ones, "it's easy", (cut with dremmel tool, heat can, pull guts out, clean with solvent, screw in screws into old pins, cut off screw heads and solder new caps to pin screws. Then epoxy old can head to base alighning can parts as it was before cutting apart).
2. Same as above but "it's difficult" and all brands of replacement caps don't fit the old can space.
3. Hand wire discrete caps in the radio and forget the cans, rebuilding isn't worth it.
4. Fit an aluminum tube sized to fit an octal tube base and make your own can to fit new caps within the tube. The 8 pins will hold the caps in place without the holding bracket as needed with the old caps.
5. Buy old caps from Fair Radio if they still have them to attempt solution #1 over again. (Fair Radio does not include these caps when buying an audio module from them).
6. Buy old pin caps from flea markets and rebuild them per solution #1.
7. Buy ready recapped C603 and C606 caps from Frontier who does this professionally.

Hank Arney says he had some labels made up with his name on them to cover up the splice area of the can after re-capping. I've been thinking for someone doing this infrequently, a person could make up his own labels by using aluminum tape used on heating/air conditioning pipes. The stuff is available at places like The Home Depot. You could then make clear labels with black lettering to affix over the aluminum tape once it is in place over the splice. The aluminum tape sticks to metal like crazy and it is fairly heat resistive too. The joint would look very professional.

Well, that's what list members sent me regarding C603 and C606. Again, I want to thank all those that took the time and responded to me. Hopefully your info will help others facing the same problem make their decision on how to best approach replacing C603 and C606. 73, Lee, w0vt Houston

From cbscott@ingr.com Mon Apr 26 17:35:32 2004
Subject: [R-390] DeOxit question

I notice there are two DeOxit products from Caig: 5% and 100% solutions. I don't see any explanation as to which one is best.

I assume the 5% solution is diluted with other chemicals and is "weaker" than the 100% solution, but I don't know if the 100% solution might be too harsh for some applications. I have the D5, but was wondering if the D100 would be better.

I need to get some CaiLube and was thinking about getting some D100 but didn't know if it would be any better for general cleaning than the D5. Any comments? Thanks, Barry(III) - N4BUQ

From Barry Hauser" <barry@hausernet.com Mon Apr 26 18:29:16 2004
Subject: [R-390] DeOxit question

The D-100 is for treating contacts that are already clean -- it has no cleaning properties -- just protection from oxidation and some degree of lubrication.

D-5 has only 5% of the "protectant" component but has "20% cleaning" power". Caig explains this somewhere on their web site but you have to dig a bit for it.

Under most circumstances, what you want is the D-5 -- because most of the time, we're trying to clean and remove oxides from switch contacts, tube pins, etc. It leaves enough of the 5% behind after the cleaning solvent evaporates to do the trick.

Of course, if you really want to do it up, you can apply a miniscule amount of D-100 after cleaning the contacts with D-5, but it's probably overkill. You might use D-100 prior to fitting critical connectors together which are either already clean or new. However, in that situation, you might want to go with their Pro-Gold.

Another of their products is very good -- CaiKleen RBR. It's excellent for restoring old grommets, rubber feet, seals (like the one on the URM-25's), and resurrecting grungy old power cords and interconnection cables. The best value is the 354 ml. screw-top can. Seems a bit pricey at just under $17, however, I use it often and I still have half a can after 3 or 4 years. The stuff is highly aromatic intense citrus smell and can be a bit overwhelming. Works best on a rag or paper towel -- I don't think I'd want to spray the stuff. Makes you loose interest in orange juice for a while. I found a similar product by MG Chemicals in a little clear/brown plastic bottle -- "Rubber Renu" -- 100 ml. I think I paid about $3 for it. I don't know if it's quite as potent as Caig's.

At first, on some rubber items, it can look like you've ruined the thing. The rubber may pucker and look like it's come down with a case of the pox. But after a short while it reforms -- clean and more pliable. Excellent for restoring rubber test leads, which tend to pick up grime to the point where it's hard to tell the red from the black. Just use a small amount on a rag and draw the wire through with some pressure. Do that repeatedly, turning the rag until the lead is clean. Be sure to allow plenty of time for air drying. Afterwards, the test leads will be like new -- pliable -- which is why the good ones are rubber-covered in the first place. Barry

From drewmaster813@hotmail.com Mon Apr 26 23:07:13 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

wrote: >What is commonly available are plug in cans with octal bases on them. They don't look like the original capacitors but most of them fit just fine in the same location. Some of the cans are plastic and others are metal. I prefer the metal ones, but that's because I dig them out of the trash at work.

Ahhhh! Man after my own heart. I'm reading this on a monitor acquired from "Curbside Computer" :)

Gutted cases from square octal based relays work well also. Of benefit is that there is no black uckumpucky to dig out as with the original caps.

One could also dispense with any kind of octal plug. The new caps could simply be installed under the audio deck chassis. They could also be installed from above; use radial leaded caps and insert leads through the existing chassis sockets, solder leads to terminals underneath.

>Opinion is mixed on just how large a capacitor to use if you do go larger. >Bigger capacitors give less ripple, narrower current spikes and higher >voltages. Less ripple is good there is some debate about the higher >voltages.

The stock value caps are probably on the large value side. Perusal of the Cost Reduction Report reveals that larger values were used to compensate for the tendency of electrolytics to reduce capacitance at very low temperatures. Drag out the fat caps for when you stick the radio in your igloo.

>Narrow current spikes are not a good idea. The caps that are located after a choke don't have any problems but the input capacitors do.

All is copacetic in spikeland. The R-390A B+ power supply is choke input. No worries there.

>If you decide you need to pick up some more plug in capacitors what you >need to be pretty careful about is the can height. >You don't have to worry much about value or voltage since what ever is >inside is >probably long dead anyway.

The 2 section cap could be a much shorter can. For uckumpractice, the first one I gutted was an octal can (not from an R-390A) about 2" tall. I didn't use that can, but it had plenty of space to accommodate a pair of 47uF, 350v radial leaded caps.

[On Fair Radio...] >Either way they are a likely source if you need to go mail order.

How about that other place further out west? They'll sell you a reformed (iffy proposition at best) NOS cap for "only" about $40.

If one simply must attempt to use original or NOS electrolytics (with their original insides), it would be well to remember that the General Instrument units used in the '67 EAC contract are by far the worst. Drew

From Barry Hauser <barry@hausernet.com> Tue Apr 27 00:36:25 2004
Subject: [R-390] Re: [R-390A] Electrolytic Can Filters C603 & C606

You can also buy new octal relay cases that start out empty -- if you can't find free ones or want to start up a volume operation. I think it was Jan Skirrow who was doing that and stuffing them with new electrolytics -- bought a couple of sets --- very nice. Barry

From cbscott@ingr.com Tue Apr 27 19:29:43 2004
Subject: [R-390] Need 6AS7G tube

Anyone know where I can get one 6AS7G? I bought two TEK561A 'scopes and both of the 6AS7G's were bad. I found one NOS at the local parts store, but need one more. These scopes will be used when I work on R390A's so there's the obligatory reference. Thanks, Barry(III) - N4BUQ

From k3pid@comcast.net Tue Apr 27 20:48:29 2004
Subject: [R-390] [R-390]re Need 6AS7G Tube

There are 4 variations of the 6AS7G available from www.tubesandmore.com with prices ranging between $4 and $11 Ron H. K3PID

From jmerritt2@capecod.net Tue Apr 27 23:09:13 2004
Subject: [R-390] Need 6AS7G tube

Use the 6080 instead. A common tube.

From cbscott@ingr.com Wed Apr 28 13:43:06 2004
Subject: [R-390] RE: [R-390]Need 6AS7G Tube

Gang, I have lots of offers/references for the tube. I have contacted the person whom I'm getting the tube from. If something should fall through (things do get broken in the mail), I'll keep the list of offers.

Thanks so much. I knew I could count on this group. Hopefully I will have something that someone else needs one day! Barry(III) - N4BUQ