R-390 Reflector June ’05 Edited

From jsullivan10512000 at yahoo.com Wed Jun 1 13:17:55 2005
Subject: [R-390] Front panel, R390A, to sell

How interesting, that I got several offers on the R390 panel I posted about a week ago, but after I emailed them regarding their offers, they didn't respond. Panel is in very good condition, could be used "as is," IS ENGRAVED, with white lettering showing very well.

One "problem," is that someone had the freq. tuning knob set too deep, so it cut circular cut into panel that may be filled with auto body glazzing puddy, JB weld, or similar, or left as is (when knob is in place, one cannot see the circular cut). NO other gouges, cuts, dents, etc. at all. IF you want it, shipping will be $10.00 in U.S.A. Give me an offer that you can and are willing to pay; not an offer that you won't answer email about! May entertain trade for some R390 (non "A" parts). Best, Jack Sullvan

From brookbank at triad.rr.com Wed Jun 1 18:08:12 2005
Subject: [R-390] R-390 (NON A)

Have a r-390 that have just finished working on it, replaced defective PTO, Crystal calibrator, checked all tubes and replaced some weak ones, then aligned it. It work great, But the carrier lever meter works backwards, the stronger the signal, the less the indication on the meter. Have replaced the meter and there is no change.

Can someone put me on the right track for this problem? Thanks in advance for any and all suggestions, Pat

From djmerz at 3-cities.com Thu Jun 2 02:41:08 2005
Subject: [R-390] R-390 (NON A)

Pat, the thing that comes to mind is that you have the leads to the meter reversed. I looked at my meter and this would be easy to do. I assume if you zero the meter at zero then when a signal appears it goes downscale and off the scale, and hence you have to zero it toward the high end of the scale to get signal response the way you described. My leads are color coded but I don't know if the color code is universal to all 390's. But you could trace the leads with an ohmmeter back to the 6th i.f. tube/agc tube to see which is which. The minus side should go to the agc tube, the plus side to the 6th i.f. tube. Disconnect the two meter leads and pull the two tubes and measure from the cathode pin of each tube to the two leads to see which is which (power off on the set !!) Or just reverse the leads and see if it works ok then. Email me if you need more info on which tubes I'm talking about. Dan.

From brookbank at triad.rr.com Thu Jun 2 11:03:21 2005
Subject: [R-390] R-390 (NON A)

Dan, I did reverse the leads and the meter pegs on the 0 side and never moves from there. So, at least for now I think the polarity is OK. The strange part is that since I have two R-390, when I tune them both to the same station, both meters settle at about the same DB level, both using very similar antennas.

So it just does not bother me to much from a operational point of view, but it does from a purist

perspective.

If you have any other ideas, please let me know. I have the alignement procedures here at home, but do not have the wiring diagrams to try to make sense of this problem. Thanks .....Pat

From roy.morgan at nist.gov Thu Jun 2 11:05:30 2005
Subject: [R-390] R-390 (NON A)

wrote: But the carrier >lever meter works backwards, the stronger the signal, the less the >indication on the meter.

Pat, I wonder if the meter is connected backwards and the zero set point is mis-adjusted. Roy

From brookbank at triad.rr.com Thu Jun 2 11:32:12 2005
Subject: [R-390] R-390 (NON A)

Dan, I am eating crow, the leads were reversed and after going thru the carrier level adjustement found out that the pot was defective, have replaced it and all is OK now.....Thanks and sorry for the noise. Pat

From djmerz at 3-cities.com Thu Jun 2 11:46:50 2005
Subject: [R-390] R-390 (NON A)

Pat, I'm unsure from your comment what you are observing and with which polarity. It sounds like you reversed (or previously reversed) the polarity of the meter and now (or before) strong signals make the meter needle go upscale as it should. But you say the meter pegs at the zero side and never moves from there. Did you try zeroing the meter with the pot on the i.f. chassis at this time? If the polarity is indeed correct and the meter is pegging to the left near 0 then you need to adjust the zero pot on the i.f. chassis to bring the needle to zero with no signal. It may be so far out of adjustment toward the zero side that no signal can bring it back up scale. Once the meter is zero'd correctly and the polarity is correct, a signal should drive the needle to the right

I take it that your other 390 operates normally as far as signals driving the meter upscale and even though the 390 in question drives the needle in a backwards direction, the db points coincide. This is pure chance. If you have the meter polarity reversed and zero the meter with no signal, then a signal will drive the meter offscale to the left. If you reverse the meter connections under these conditions, the meter should stay zero'd (or approximately so) and now the signal will drive the needle upscale.

My conclusion is: no matter how you have the meter connected, zero the meter with the pot on the i.f. chassis. After zeroing, the needle should go upscale with a signal. If it doesn't, reverse the meter connections. Now the meter should still be approximately zero'd and the needle should go the right direction upscale with a signal. You may have to re-zero the meter a bit. Dan.

From djmerz at 3-cities.com Thu Jun 2 11:54:23 2005
Subject: [R-390] R-390 (NON A)

Pat, my last message was unnecessary - good job finding the problem, thanks for update, best regards, Dan

From n4buq at aol.com Thu Jun 2 12:18:01 2005
Subject: [R-390] Signal Generator Impedence Questions

Gents,

The IF alignment procedures for the R390A state to connect the URM-25* to the input connector using an impedance matching adapter (either Test MX-1487/URM-25D or CU-206/URM-25F depending on which generator you have). Assuming the URM-25* is 50-ohm output, what does this converter do? I find it odd that the adapter is mentioned for the IF GAIN ADJUSTMENT procedure, but not for the IF alignment procedures even though the generator is connected to the IF module the same way for both procedures.
I assume the input impedance of the IF module is something other than 50-ohms and the adapter is being used to match the two impedances, but I don't know what the input impedance of the IF module is.

I have a GR1001A signal generator which, for most attenuation settings, has an output impedance of 10 ohms. The reason I'm asking about the above adapters is I'd like to construct a proper matching network for my 10-ohm generator to work the same way as the 50-ohm generators do for the IF alignment procedures.

Another question: The instructions state to set the output at 150uV for the IF GAIN ADJUSTMENT procedure. If I'm using a different adapter for 10-ohms versus 50-ohms, will I need to change the output setting to something other than 150uV to account for the different adapter impedances? Thanks!
Barry - N4BUQ

From rbethman at comcast.net Thu Jun 2 12:44:04 2005
Subject: [R-390] Signal Generator Impedence Questions

Barry,

The GR-1001A originally came with a 50 ohm adapter. It, however, was limited to certain outputs to "maintain" its 50 ohm output.

I'll take a GOOD look at min and see if I can look inside and get a schematic drawn of its insides. May take a week! I'm just starting a string of 12 hour shifts. Bob - N0DGN

From Flowertime01 at wmconnect.com Thu Jun 2 12:46:16 2005
Subject: [R-390] R-390 (NON A)

Pat,

Not worry, This is what the reflector page is all about. Happy to read about you trials and tribulations with your R390 puzzle de jur. I was clue less. Roger KC6TRU

From n4buq at aol.com Thu Jun 2 12:48:14 2005
Subject: [R-390] Signal Generator Impedence Questions

Bob,

That'd be great. I've not been too handicapped with the 10-ohm output for the most part, but I'd like to get 50-ohm output just so I can eliminate that from the overall equations.

I'm guessing I'd still need details for the other test adapter as apparently it is matching the 50-ohm output from the URM-25 to whatever is the input impedance of the IF deck. Thanks again, Barry - N4BUQ

From Flowertime01 at wmconnect.com Thu Jun 2 13:33:23 2005
Subject: [R-390] Signal Generator Impedence Questions

Barry,

As it was done way back when (68-75) and taught at the ASA school house at Ft Devens Mass. Skip all those adapters. None were actually used. We all read that same TM. Nice theory, good education, likely the real exact science way to do things. Just not what was practiced in the Field world wide for years.

The IF alignment procedures for the R390A state to connect the URM-25* to the input connector using an impedance matching adapter (either Test MX-1487/URM-25D or CU-206/URM-25F depending on which generator you have). Assuming the URM-25* is 50-ohm output, what does this converter do?

>From Para 73 page 114. of the R390/A TM 11-5820-358-35 Dec 8 1961 copy. Fellows, does someone have the AN/URM 25 TM and tell us exactly what is in these two Adapters? Thanks Roger KC6TRU

I find it odd that the adapter is mentioned for the IF GAIN ADJUSTMENT procedure, but not for the IF alignment procedures even though the generator is connected to the IF module the same way for both procedures.

Just one of those errors in the TM. Do you know what it cost to get an errata page distributed for a TM? This was our excuse for never using any adapter. Just look at the preferred paragraph and get it done.

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I assume the input impedance of the IF module is something other than 50-ohms and the adapter is being used to match the two impedance, but I don't know what the input impedance of the IF module is.

No one at the school house or student of the school house knows either.

--- ---
I have a GR1001A signal generator which, for most attenuation settings, has an output impedance of 10 ohms. The reason I'm asking about the above adapters is I'd like to construct a proper matching network for my 10-ohm generator to work the same way as the 50-ohm generators do for the IF alignment procedures.

Old 33's knew the input of the IF deck was not 50 Ohm's. Its likely not 10 Ohms either.

Field practice was to skip all the adapter stuff. Just cable it up. We did use 150uv into the IF deck. BNC to adapter on the back panel and mini BNC jumper cable moved from the 50 ohm output to The IF deck input.

Chuck Ripple had a good procedure to readjust the IF gain for over all receiver best signal to noise ratio. This procedure is not dependent on signal generator impedance matching and gives the real world best performance.

Just cable up your generator for alignment and tube noise testing. Every thing is relative. An adjustment either provides more output or less output.

A tube change either provides a better signal to noise or a poorer signal to noise when the generator is adjust for the same signal plus noise level. This checks the noise of a tube compared to another tube in the same socket. Changing tubes into the same socket with the signal generator held constant, checks tube gain. More tube gain may or may not be more tube noise. This is a definite place where YMMV.

Another question: The instructions state to set the output at 150uV for the IF GAIN ADJUSTMENT procedure. If I'm using a different adapter for 10-ohms versus 50-ohms, will I need to change the output setting to something other than 150uV to account for the different adapter impedances?

For alignment and test, just cable it up and use 150uV. Run what you need to get a 1/2 watt of audio out.

You are running a 10 ohm source into a higher impedance. The higher impedance will not load the source. The receiver is essentially a voltage circuit as opposed to a current circuit.

You hang a 1 watt 600 ohm resistor on the local audio output and start measuring the output while reading the DB scale of the AC meter. You quickly find that when turning the audio modulation on and off, you either are getting a 30 DB change between modulated signal and un modulated signal.
As you play with the IF gain to change the diode load DC voltage (-7 volts) and the signal generator output level to get the 1/2 watt output. you are either getting the 30 DB change. Changing the exact gain and drive will not change the signal to noise ratio. Making adjustments will make changes. Changing tubes will make changes. Work on it until you get the 30 DB change.
Then just dial 150uV and set the IF gain for -7 volts. Go on to the RF deck alignment. When you get that done then set the IF deck gain as Chuck Ripple details it.

Barry, If this is all not as clear as mud or darker, ask some more questions. Roger KC6TRU

From Llgpt at aol.com Thu Jun 2 13:44:21 2005
Subject: [R-390] Signal Generator Impedence Questions

How true, In the "real world" we don't need no steenking impedance matchers.....

Just like Variacs, don't use 'em. Never will. Lump them in with cell phones, don't use 'em, don't need 'em. Les Locklear

From bill at iaxs.net Thu Jun 2 14:06:57 2005
Subject: [R-390] Signal Generator Impedence Questions

It's true that if you measure the input in microvolts then the impedance doesn't matter. But the low impedance puts a load across the antenna coil that isn't there if you use a long wire antenna. The purpose of the network was to simulate the antenna and not load down the antenna coil.

As it is, most people aren't set up to do microvolt tests because their shielding isn't good enough. Might just as well connect the generator direct to the antenna and do the alignment without worrying about impedances. You'll use the antenna trimmer with a real antenna.

You can't really test the receiver sensitivity that way, though. You can check your shielding by seeing if the jump in dB from 1 microvolt to 10 is the same as 10 to 100.

If your generator has a microvoltmeter, it may be looking at the input to the attenuator, which has to be properly terminated to have the right voltage at the output. Bill Hawkins

From n4buq at aol.com Thu Jun 2 14:18:11 2005
Subject: [R-390] Signal Generator Impedence Questions

Roger,

It's pretty clear and makes sense. I have Chuck's method for setting the IF gain and will probably use it, but was wanting to try the method in the manual.

One thing I did notice that was rather humorous. In the section for aligning Z503, the manual states that if Z503 is defective, replace it. I'm not sure why they felt the need to include that blurb. Kind of obvious, isn't it? Thanks! Barry - N4BUQ

From n4buq at aol.com Thu Jun 2 14:23:05 2005
Subject: [R-390] Signal Generator Impedence Questions

The GR1001A doesn't have a microvolt meter. In reality, I was guessing at 150uV by setting the output level to 100uV and setting the adjustable attenuation control to 150%. Kludgy, but probably not too far from accurate (if it is in calibration which I'm sure it isn't). I was just trying to get something close to the procedure that's in the manual.

I was disappointed that with 150uV(?) at the input, I was not able to get -7V on the diode load. I'm guessing I have a gain problem (bad tube, drifted resistors, etc.) in the IF deck, but haven't checked all that yet (but plan to). I was thinking that the 10-ohm impedance mismatch might be affecting my ability to set the gain by the manual properly. Thanks for the input guys! Barry - N4BUQ

From roy.morgan at nist.gov Thu Jun 2 14:59:51 2005
Subject: [R-390] Signal Generator Impedence Questions

wrote: >The GR1001A doesn't have a microvolt meter.

To Barry and all,

I have both information and experience with the GR 1001A. (I thought I had a manual in digital form, but I find I do not.) I'll provide more details later, but in short:

- The thing was meant to be operated with a 40 ohm series output resistor to create a generator of 50 ohms source resistance. For the RF Level Set meter, Output mulitplier, and Output Variable control to give you a correct indication, the end of any cable needs to be loaded with 50 ohms. With the end of the cable not terminated, you get twice the indicated output.

- They provided one 50 ohm load that was also a voltage divider (I think it was 10:1). Use of that thing let you be quite confident of the actual voltage at the input of the receiver (or whatever) with little effect from the actual receiver (or whatever) input impedance.

> In reality, I was guessing at 150uV by setting the output level to 100uV > and setting the adjustable attenuation control to 150%.

You did just the right thing *IF* you loaded the end of your cable with 50 ohms, *and* used a 40 ohm series resistor at the generator. (And avoided the one attenuator setting that is not 10 ohms source impedance.)

> Kludgy, but probably not too far from accurate >(if it is in calibration which I'm sure it isn't).

It may be closer than you think. More later. Roy

From JMILLER1706 at cfl.rr.com Thu Jun 2 15:21:31 2005
Subject: [R-390] R-390 (NON A)

Could this be an AGC problem? I seem to recall on my 390a that when I turned AGC off (MAN), is the radio saturated with strong signals th meter would tend to either stop moving upward or actually drop. Obvious question is: Do you have AGC enabled?

From JMILLER1706 at cfl.rr.com Thu Jun 2 15:23:58 2005
Subject: [R-390] R-390 (NON A)

Never mind, should have read the rest of the thread before responding.

From brookbank at triad.rr.com Thu Jun 2 15:57:15 2005
Subject: [R-390] R-390 (NON A)

You are absolutely right, thanks to you being so alert we me become less dumb. Pat

From David_Wise at Phoenix.com Thu Jun 2 17:31:24 2005
Subject: [R-390] R-390 (NON A)

Dave, Looks like I'll be finding a 40-ohm resistor post haste. I didn't say the 1001A does not have a calibrated attenuator; I said it doesn't have a microvolt meter. Your instructions to get 150uV are exactly what I did.

Most of us are lazy. We leave off the trailing "/URR".

My opinion is that the phrase "R-390" in casual use can be interpreted either generically, meaning either the R-390/URR or the R-390A/URR, without distinguishing between them, or specifically, meaning the R-390/URR. While the implication that they're interchangeable may irritate those with religious feelings about the superiority of the R-390/URR, not knowing which is being discussed causes anxiety in everybody else.

The made-up "Non-A" suffix, while grating to some, at least removes all doubt as to which model one is referring to, and allows "R-390" to be unambiguously generic. We should note that HP's use of a suffix on every version of a given instrument (including the first) allows one to use the non-suffix construction this way. I think the R-390 (generic) would be in good company if we treated them likewise. ISTR internal evidence in various manuals indicating that this was also the military convention. No suffix = any suffix. 73, Dave Wise

From Flowertime01 at wmconnect.com Thu Jun 2 18:27:53 2005
Subject: [R-390] Signal Generator Impedence Questions

Les, You do live out on the edge don't you. Roger KC6TRU

From Flowertime01 at wmconnect.com Thu Jun 2 18:51:48 2005
Subject: [R-390] Signal Generator Impedence Questions

Barry,

I have not used a GR1001A . Consider stepping the output up to the next output range and setting the adjustable attenuation control back under 100% to what would be 150uV. Just because the dial goes up to 150% the generator may not be able to put that out. Not that the generator will not do it, but the attenuation network and maybe current / voltage limiting of an output stage hits a ceiling before you 150% of output at the low ranges.

Kludgy, !! Is there some other way?

I was disappointed that with 150uV(?) at the input, I was not able to get -7V on the diode load.

Something is wrong, either low output or IF deck needs some work. The gain adjust should let you get about -15 volts with the pot cranked over full gain and 150 uV in.

You are just not going to look at 150uv on a scope or measure it with a meter. How does the signal gen perform at 1 - 10 uv on another receiver?

As the other mail pointed out, due to lack of shielding you cannot really run the 150uv output through an attenuator and see how it performs as a 1- 10 uV drive for a receiver.

You will know when you have it right, the R390 will definitely not be deaf.

I was thinking that the 10-ohm impedance mismatch might be affecting my ability to set the gain by the manual properly.

Not likely. Either the generator output is low, or you do have IF, Audio deck problems. Pop the VFO on and you should get about -30 volts on the diode load.

I was just trying to get something close to the procedure that's in the manual.

Understandable Barry, when every thing is not going well, Try reading the manual.

One thing I did notice that was rather humorous. In the section for aligning Z503, the manual states that if Z503 is defective, replace it. I'm not sure why they felt the need to include that blurb. Kind of obvious, isn't it?

Lots of little bits of humor in those TM's dry reading but some error included. Roger KC6TRU

From David_Wise at Phoenix.com Thu Jun 2 19:00:42 2005
Date: Thu Jun 2 19:12:40 2005

It's not like that, Roger. The output from the oscillator goes to a meter. You goose the oscillator until it's on the SET mark, then you get a specific voltage by setting a downstream attenuator. It's a decade step atten plus a 0-to-2.0 vernier. So as I said to Barry, you'd set the step atten to 100uV and set the vernier to 1.5 .

For the current task it's beside the point, as others have mentioned. Adjust for best S/N if you care; if you don't, well, you don't; set it midrange and forget it. 73,
Dave Wise

From Flowertime01 at wmconnect.com Thu Jun 2 19:17:28 2005
Subject: [R-390] Signal Generator Impedence Questions

Dave,

OK, what you fellows say about the generator is good.

Barry must have a poor IF / Audio chain as he is not getting a good -7 volts and generator cable set up is OK.

Once Barry does a once over on the front panel to make sure he has the Knobs set right. MGC, BFO OFF, 2KC, Audio and RF gain to max and limiter really set off, then he has to look at the cable.

I would hate for him to have a bum mini bnc adapter cable giving him trouble.

You and Barry feel the generator is OK. So it should drive the IF deck to get -7 Volts.

Did Barry rock the generator to get it into the middle of the IF deck output? Or is he just reading the front panel dial?

Another one of those silly little bit of real world that did not make the TM and bites everyone once in a while.

I understand Barry's original view, before this turns into rocket science,
what is wrong with the picture. Roger KC6TRU

From mjmurphy45 at comcast.net Thu Jun 2 21:52:18 2005
Subject: [R-390] Signal Generator Impedence Questions

From: *TM 11-5820-358-10 Using a variac to make fine generator adjustments when testing into your cellular phone..

From chacuff at cableone.net Thu Jun 2 22:10:48 2005
Subject: [R-390] Signal Generator Impedence Questions

That's only for the NoNukia model 930 (non A) though.... Cecil....

From stevebyan at mac.com Fri Jun 3 08:24:04 2005
Subject: [R-390] Ft. Devens (Was Signal Generator Impedence Questions)

wrote: > As it was done way back when (68-75) and taught at the ASA school > house at > Ft Devens Mass. Skip all those adapters. None were actually used.

Was there a Wullenweber antenna at Fr. Devens? (Chris?) Cummings claims there was on his site at http://www.mindspring.com/~cummings7/wullen.html (unfortunately not accessible right now due to Earthlink's bandwidth limits). I live near Devens, and haven't come across anything like the archeological remains of an FLR-9. Where was it located? The northern section is now being redeveloped as an industrial park; the area south of Route 2 is still restricted access and is in use for National Guard training.
Also, where was the ASA school located on the base? Regards, -Steve

From Lester.Veenstra at intelsatgeneral.com Fri Jun 3 08:34:10 2005
Subject: [R-390] Ft. Devens (Was Signal Generator Impedence Questions)

I was not aware of Wullenweber antenna at Fr. Devens. If there was one, it was not in the HFDF net.

Lester Veenstra (formerly Acton MA...K1YCM)

From tetrode at comcast.net Fri Jun 3 09:35:57 2005
Subject: [R-390] Ft. Devens (Was Signal Generator Impedence Questions)

Hi Steve,

I've heard similar rumors, but about 3 years ago a friend and I did a fairly good search of the place for such a thing and found nothing save for some open areas where the beast *might* have lived. Others have told me that there used to be one there but it had been dismantled long ago. Those things had enormous amounts of copper and steel as well as cabling which has scrap value.

Then there is also the question that since the Wullenwebber DF network was run by the Navy (oddly), why would there be one at an Army base? John > Littleton, MA

From Lester.Veenstra at intelsatgeneral.com Fri Jun 3 09:40:17 2005
Subject: [R-390] Ft. Devens (Was Signal Generator Impedence Questions)

Same reason they were at Air Force sites. One big family ! By the way, Devens would not have offered much over the site at Winter Harbor ME Lester Veenstra

From n4buq at aol.com Fri Jun 3 10:06:51 2005
Subject: [R-390] GR Adapter and Signal Generator findings

All this talk about the GR1001A reminds me that I need a GR 874 to BNC Female adapter. Does anyone know where I can get one of these?

Last night, I was playing around with the IF Gain control. I'm not convinced I have it set right, but I think it's pretty close. It's about at 2/3 full CCW. After setting it and with the radio set to 15.2mc, I connected the signal generator through my impedance matching network and started listening to the signal. With the output level set to 1uV, I could hear the modulated signal. I began decreasing the output and could still hear the signal as low as 0.2uV. I realize this isn't exactly scientific, but I was kind of surprised to hear the signal at that low level. Also, I didn't have the series 40-ohm or the parallel 50-ohm resistors in place yet so I'm not sure how this works into the overall equations, but I was pleased to be able to hear a signal that small.

I also realize there is (can be) signal leakage from the generator, but if I turn the output down below 0.2uV, the signal is inaudible so I'm not sure I'm hearing leakage or not. I have the 2V output on the GR1001A plugged so I don't think there's much (if any) juice getting out from that point.

What really surprised me was with the signal generator as my "antenna", signals on the 9mc band came blasting in. I've heard some signals with the generator connected before, but not that loud. Does this indicate the generator could be really leaking more than I suspect? It was pretty cool nonetheless.

Thanks for listening to my longwinded post. Barry - N4BUQ

From roy.morgan at nist.gov Fri Jun 3 11:18:22 2005
Subject: [R-390] GR Adapter and Signal Generator findings

wrote: >All this talk about the GR1001A reminds me that I need a GR 874 to BNC >Female adapter. Does anyone know where I can get one of these?

Barry,

Watch Ebay and go to Hamfests. (Sorry, none of mine are for sale.) Email the seller of item 7519425441 to ask if they have what you need. Several small lots of adapters have sold in the last couple of weeks. Item 7519914142 includes one 874 to bnc female adapter and three other items.

>... With the output level set to 1uV, I could >hear the modulated signal....could still hear the signal as low as >0.2uV. I ... >didn't have the series 40-ohm or the parallel 50-ohm resistors in place yet >so I'm not sure how this works into the overall equations,

Here is how it affects it:

The "source impedance" of the GR 1001A generator is (engineered to be) 10 ohms. With no series output resistor, and no 50 ohm load, the open circuit output voltage will be about twice what the meter-attenuator-controls indicate.

If you just hook the 1001A output to the receiver input, you have in effect a voltage divider of 10 ohms and whatever the input impedance of the receiver is. Let's assume it's 120 ohms (it varies with band and frequency). Then the actual voltage at the input terminal will be 120/130 of twice the indicated 0.2 uV, or roughly 0.4 uV.

The accessory I mentioned earlier is the GR Type 1001-P3 Voltage Divider. I seem to remember that it is a 10:1 divider with an input impedance of 50 ohms and an output impedance of 0.5 ohms. It this thing is used at the input to your receiver (along with the 40ohm series unit) you divide the indicated generator output by 10, and can rest assured that a receiver input impedance of 120 ohms or the like will not change that voltage value. Further, leakage is likely to cause less trouble.

A further note on the 1001A: Another poster is right, the thing has a voltmeter (a "simple" diode peak rectifier) calibrated to indicate at the red line on the output meter when 2.0 volts RMS is present at the input to the attenuator. The attenuator, multiplier, and output variable control are arranged to indicate the correct voltage at the cable termination if:
- the 40 ohm series resistor is in place
- the cable has a characteristic impedance of 50 ohms
- the cable is terminated in 50 ohms.

(There are some circuit refinements that are switched in by the operator below 400 kc or some such to retain accuracy of the system.)

If I remember correctly, the "high level" output connector is at the point in the circuit where the 2.0 volts is measured. The manual does say to cover that connector when making low level measurements.

>I also realize there is (can be) signal leakage from the generator, but if I >turn the output down below 0.2uV, the signal is inaudible so I'm not sure >I'm hearing leakage or not.

What *may* be going on is that the control you are moving is a dual wire wound potentiometer whose "bottom ene" is grounded. You may be simply getting to the ground point and cutting off the signal to the attenuator system. Leakage can exit the generator via many paths: bypass routes around the attenuator, power line, meter holes, other connectors such as the high level output, shaft openings and so on. I would expect the 1001A to show moderately low leakage, but by no means superb by modern standards. I've never tested one.

You can make a test though: Terminate the cable with a good 50 ohm load (not a resistor twisted to the raw end of a coax cable). Set the generator output to some moderate or low level, and place the cable on the table near the receiver, and use a sniffer loop (a few turns of wire at the end of a coax cable) connected to the antenna input to see if you can find any signal at or around the generator or cable.

Inversely, set the receiver up fed by the generator on some frequency, and use another generator with a sniffer loop on it's output to see if you can "inject" signals into the system from outside.

> I have the 2V output on the GR1001A plugged so >I don't think there's much (if any) juice getting out from that point.

Those connectors were provided with a snap-on cap that simply covered the opening. Later GR 874 connectors were made in "locking" style that reduced leakage quite a bit.. if your generator does not have the locking style connector, and you are using the snap-over cap, you are likely getting some leakage from that place. Use of a GR-874 "open" termination with a locking connector would likely reduce leakage quite a bit.

>What really surprised me was with the signal generator as my "antenna", >signals on the 9mc band came blasting in.

This is the best indication that you may have been getting leakage. If radio signals can get INto the generator, it's signals can get OUT.

> I've heard some signals with the >generator connected before, but not that loud. Does this indicate the >generator could be really leaking more than I suspect?

It could be. You can experiment quite well with those signals coming in. Wiggle things and unhook and short circuit points in the system till you find where those signals are getting into the receiver. Of course, loose coax braids in your R-390A are a possibility. You have not told us whether or not you are using a proper GR 874 connector at the output of the generator. If you are using banana plug-ended leads (as GR says you can) then that is a likely source of the signals. Roy

From Llgpt at aol.com Fri Jun 3 11:24:42 2005
Subject: [R-390] GR Adapter and Signal Generator findings

Surplus Sales of Nebraska, page 9 of their catalog 8 all the General Radio series adapters are listed.
Les Locklear

From levyfiles at att.net Fri Jun 3 11:45:16 2005
Subject: [R-390] GR Adapter and Signal Generator findings

Roy Barry and List

Besides Surplus Sales of N try emailing rfc@therfc.com http://users.erols.com/rfc/index1.htm

He has lots and lots of connectors of all kinds and a few R390a's of his own. 73 Bill N2WL

From w5or at comcast.net Fri Jun 3 12:50:45 2005

Subject: [R-390] Collins Mechanical Filter History

Interesting info from Rockwell. Some of the details don't jive with our lore. Also demonstrates why using the generic term, "R-390", is endemic to our list culture, and necessary.

<http://www.rockwellcollins.com/about/additionalproducts/collinsfilters/page 1907.html>

If the link above is truncated in your email program, go to www.collins-filters.com Click the About Collins Filters link See the History section.

Hello to all the guys I met for the first time at Dayton. I still haven't unpacked, nor looked at all my notes. Don

From wak9 at cornell.edu Fri Jun 3 12:53:54 2005
Subject: [R-390] Signal Generator Impedence Questions

> The IF alignment procedures for the R390A state to connect the URM-25* to > the input connector using an impedance matching adapter (either Test

Rodger, I have the Army TM for the AN/URM-25F at home. I built one of the matching networks in there (they might have called it a dummy load), think it was CU-409, but it's been quite some time, can't be sure without looking. But it does have schematics for the adapters in there, I'll try and have a look in the next day or so and make a posting. Maybe someday I'll scan it into a pdf. Then I just need a place to post it. Bill

From Llgpt at aol.com Fri Jun 3 13:06:39 2005
Subject: [R-390] Collins Mechanical Filter History

This was cut n' pasted from their page:

The highest volume application of mechanical filters in those days was in the R-390. Each radio used four mechanical filters. Originally designed at Rockwell Collins in 1955, the R-390 was later built by many different companies, mostly as the R-390A. The total production volume of R-390As was more than 65,000 radios.

It certainly doesn't demonstrate "why" the "generic term" R-390 is used. Their information isn't anywhere close to being accurate regarding the numbers built unless they are inlcuding the R-390 in with the R-390A. 65,000??? I don't think so! But, if you include the R-390's and R-390A's, it comes to more than 70,000+ radio receivers. So much for "historical accuracy."

Ahhhh, engineers....., reminds me of the saying an old engineer friend of mine told me:

"Having a college degree and legitimate parents doesn't mean you can't be a dumb bastard."

From Llgpt at aol.com Fri Jun 3 13:27:26 2005
Subject: [R-390] Collins Mechanical Filter History

Well Bill,

I care about accuracy. Not so much about the numbers, but the statement that the R-390 had mechanical filters. Part of the dumbing down of America if you ask me. Broad statements meant to be all inclusive, etc. I believe in being more accurate and doing research before speaking out or writing about something.
Yep, pretty soon I'll be history to, but history should be truthful and accurate right? You might disagree, but wrong and mistruths aren't accurate history..... Les Locklear

Subject: [R-390] Signal Generator Impedence Questions

Tom,

Is the standard IEEE Cat5 #30 damp sheep shielded? Roger KC6TRU

From richey2 at mindspring.com Fri Jun 3 14:19:08 2005
Subject: [R-390] GR Adapter and Signal Generator findings

Hey there old buddy, sensitivity is all in the front end, IF gain is just that, if the front end isn't able to hear a .2uV signal they all the if gain in the world wont have anything to amplify. The abality of a reciever to hear weak sigs is a function of the RF amp and the Mixer stages and the only reason there is an RF amp is to overcome the noise generated by the mixer, thats why alot of high end recievers made today don't have an RF amp, the mixer is so quiet that one isn't needed.

I doubt if anyone on this list has the abality or the equipment or the shielding to come anywhere close to measuring levels as low as .2uV with any degree of accuracy and furthermore, unless you live on the moon that amount of sensitivity would be usless on the freq covered by the R390 series. Joe W2DBO

From Flowertime01 at wmconnect.com Fri Jun 3 14:37:45 2005
Subject: [R-390] Ft. Devens R390 training

Steve,

I do not know what an FLR-9 is. I just do not remember the designation.

In 71 - 73, I did not know of a big elephant cage antenna at Devens. These things are huge, they put whole two story operations buildings inside them. I do not know what there military designation was.

A smaller circular antenna maybe 500 foot across and a bunch of vertical antenna poles used for Direction finding, were pretty much mobile units. I do not know the military designation for this one either.
They had at least one set up for the training DF operators and maintenance techs. It was over in what you now call the national guard area. There would likely be nothing left to identify that site. Just another open field with power lines to it.

There were two gates to Fort Devens from Ayer. Between Shirley and Ayer was the main gate. About a 1/4 mile in the gate and to the right side was a quadrant of buildings and a parade ground. The buildings were concrete brick. had open porches around the inside of the quad. The parade ground was across the street from the quad buildings. These were WW I hospital buildings and considered haunted.

I have heard these have all been torn down.

About a 1/4 mile in the gate and to the left up the road that went right between the school house quad and the parade field was the way to the old WW II barracks. There were some brick senior NCO housing in the area.

The old wood two story buildings were the students stayed. I was down there for a year in 68, 69. A mess hall called Connies served at least 4,000 guys every day. It was consolidated mess #4. It was the only one left a Devens then.

This indicated that once upon a time there were at least 3 others serving as many other guys. The barracks were whole big block.

We use to walk over to the base fence along the rail road yards and into Ayer from the barracks. The rail yard at Ayer was huge. All kinds of logistical stuff coming in and out of Devens during WW II. By the 70's it was all down sized.

ASA had the school house there for 05 dittiies, 98 traffic analysis and 33 radio maintenance. We were all of course in the collection business.

About a mile up the road from the main Ayer Gate on a hill top was the new barracks built in the late 60's and early 70's. This road continued across post to Route 2 the "back gate."

Did you know Goddard launched the first liquid fuel rockets from Ft Devens. That site was near the golf course. The gold course was considered one of the best in the state. Every politician and business exec that could wangle a base pass wanted to come out and play a few holes. If was built by the army corp. of engineers. There was a good size stockade on base that provided lots of labor to keep the greens.
What was considered the old hospital area over by Shirley is now a state prison. There was a gate over there called Shirley Gate.

Do you know where the other area was off post used for Vietnam Training. John Wayne filmed the Green Brett over there. Every one coming out of school had to spend a week in the "bush" over there before getting "out of school" and assigned to a duty station. Yes Sir, I understand a week of January at Ft Devens is just like July in Viet Nam Sir. I am sure I will learn some very useful escape and evasion lessons Sir. We were remfs, knew we were remfs, If things were going so bad in the war that us remfs were about to be captured, we were wondering about the leadership being taught at the 90 day OCS wonder school.

From Flowertime01 at wmconnect.com Fri Jun 3 14:44:21 2005
Subject: [R-390] GR Adapter and Signal Generator findings

writes: Barry - N4BUQ I was pleased to be able to hear a signal that small. 0.2uV.
What really surprised me was with the signal generator as my "antenna", signals on the 9mc band came blasting in.

Two things, One is this idea of sheilding. The other is I think you have your receiver working. Roger KC6TRU

From n4buq at aol.com Fri Jun 3 15:08:55 2005
Subject: [R-390] GR Adapter and Signal Generator findings

Yeah, I'd guess the generator is leaking some, but it did seem odd that with the attenuator turned all the way down, I could not hear any signals from the generator. If it is leaking from somewhere besides through the cable going to the radio, it would seem that I would still hear the signal when the attenuator is fully "off". Don't know, though.

I tend to agree. If it picks up that well with my cubical desktop "antenna", it seems the radio is working pretty well. Thanks! Barry - N4BUQ

From jsullivan10512000 at yahoo.com Fri Jun 3 18:46:07 2005
Subject: [R-390] R390A and R390 tuning slugs/IF,RF coils

Anyone have any tuning slugs for R390 that they would want to sell/trade? I have some NEW, still in original military packing, slugs for R390A, as follows, that I will sell/trade: 5 green dot, 15 red/white dots, also I have for R390A, new R.F. coil PN 447, 2 I.F. coils, PN 121-1, 2 I.F. PN 120-1, and one T501/T502 for trade whatever.

From mhuss1 at bellatlantic.net Fri Jun 3 20:21:34 2005
Subject: [R-390] Ft. Devens R390 training

As far as I know, there was never a FLR-9 Antenna or system on Ft. Devens. Training for FLR-9?s took place either at Homestead Fl. Or San Antonio. There were TRQ-29? DF sets that use R-725/URR receivers, a Goniometer, and about twenty-four 1.25? by 18? masts arrayed in a circle over a screen ground. It was located across from the old, old NCO Club (two revisions back) located on Mirror Lake.

Between the School Quad and the Ayer Gate were located three HF Cone Dipole Wire antennas arranged 120 degrees apart. It was used for live copy by 05H (Hogs) Morse Code Intercept Operators. Each Operator had an R-390A/URR and a ASR-33 Teletype for copying code. Practice copy was also fed to these receivers by racks of Multi-couplers and a wideband shortwave transmitter fed by wideband tape recorders.

The School Quad is still standing, but closed off. It was not the WW1 hospital, though I do not know the original location of it. I suspect that it was located at the old Warehouse area near the dump (where you jumped the fence into Ayer back in 68). Pictures of the WWI Hospital shows it to be wood. The Brick Quad was built in the 1930?s as Barracks. It included Mess Halls. And yes, Hale Hall is haunted. Across from the School Quad are brick Officers Quarters, also built in the Thirties. These were sold for a pretty penny after Devens was closed.

Yes, Goddard did shoot his first few liquid-fuel rockets from near the new Hospital. Intelligence School students erected a monument at the site in the eighties. It is now restricted from public access due to it being too close to the hospital, a State Prison Hospital now.

The Sniper Tree has been removed from behind the Main Ayer Gate after the post was closed. It was clearly visible to anyone entering the gate, located between two pine trees. Built during WWI as a training aid, it looked like a shell-shattered tree trunk. Made of concrete, there was a small hole at the base for a person to enter, and several gun-ports. Even after a hurricane took out one of the pine trees, exposing the ?shattered? top of the trunk, it was almost impossible to tell it from a real tree trunk.

Indeed, when the Grounds Maintenance people were cleaning up after the Hurricane, one worker took a chain-saw to it with spectacular results!

Oh, and yes, the Man-Traps are still there on the Golf Course! Made looking for balls in the trees to north of the fairway a bit exciting! Built during WWII, when parts of Devens was used for a POW camp, they formed deep pits to trap unwary Golfers!

Another point of history. As a major point of entry for returning Doughboys coming back from Europe, the Spanish Flu Epidemic of 1918 hit the post hard. Thousands died in the hospital there.

Oh, there were actually five gates, not counting the new one opening onto Route 2. Shirley Gate located by the old WW2 Hospital, which should have been still up in 68. Ayer Gate, what you called the Main Gate. The Commissary Gate, which led to Enlisted quarters used during WW2, converted after the war to civilian housing. Shaker Village Gate, off what was Salenero Circle. And the Airfield Gate, which led to the old Army Air Corp airfield. From 1939 P-40?s were stationed there. It was abanded after Moore Army Airfield was built. It is now Shirley Airport. Moore Army Airfield is closed, the runways torn up.
Sorry for the off-topic post. Ft. Devens was one of the nicest posts in the country. Though small, it was a pity when it closed down.

From mikea at mikea.ath.cx Fri Jun 3 20:46:50 2005
Subject: [R-390] R390A and R390 tuning slugs/IF,RF coils

wrote: > Anyone have any tuning slugs for R390 that they would want to sell/trade? I have some NEW, still in original military packing, slugs for R390A, as follows, that I will sell/trade: 5 green dot, 15 red/white dots, also I have for R390A, new R.F. coil PN 447, 2 I.F. coils, PN 121-1, 2 I.F. PN 120-1, and >one T501/T502 for trade whatever.

If you have a Z503 coil from the IF subassembly, Scott Bauer was looking for one 3 weeks back:

From mmdues at hal-pc.org Fri Jun 3 21:05:46 2005
Subject: [R-390] Ft. Devens R390 training

> Sorry for the off-topic post. Ft. Devens was one of the nicest posts in > the country. Though small, it was a pity when it closed down.

Mark,

Your post was definitely not off topic, rather, greatly appreciated. I, for one, really appreciate historical narratives on the use and application of our R-390 series radios where ever, how ever, and with what ever additional equipment. In 1962-64, I was home-ported in Boston (Charlestown naval shipyard) on a guided missile heavy cruiser, the USS Boston (CAG-1) as a radioman. I used R-390A receivers in the ships' crypto center doing submarine reports. I knew where all the submarines were -- ours, and theirs. I was 19-21 years old. Interesting times. Marshall Dues WB5MYO Katy, Texas

From kgordon at moscow.com Fri Jun 3 23:11:53 2005
Subject: [R-390] Signal Generator findings - .02 microvolt

wrote: > furthermore, unless you live on the moon that amount of > sensitivity would be usless on the freq covered by the R390 series.

I disagree. Although IN GENERAL what you say is true, there are times when 0.02 microvolt sensitivity comes in very handy. Ken W7EKB

From tetrode at comcast.net Sat Jun 4 11:30:47 2005
Subject: [R-390] Collins Mechanical Filter History

Les,

you should send Collins a nice note, talking about it here will not fix their problem. That 390/390A statement is 50 year old minutia that nobody cares much about save us. 73, John

From Llgpt at aol.com Sat Jun 4 13:19:06 2005
Subject: [R-390] Collins Mechanical Filter History

Already wprking on it. I figure the person who wrote it has probably never seen a vacuum tube, much less know the difference between a R-390 or a R-390A. (see how easy that was to say?) Les

From drewmaster813 at hotmail.com Sat Jun 4 13:19:35 2005
Subject: [R-390] Signal Generator findings - .02 microvolt

wrote: >furthermore, unless you live on the moon that amount of >sensitivity would be usless on the freq covered by the R390 series.

...to which responded.... >I disagree. Although IN GENERAL what you say is true, there are times when >0.02 microvolt sensitivity comes in very handy.

Atmospheric noise at HF almost always exceeds those fractional microvolt levels, particularly when the antenna resembles anything superior to an isotropic wet noodle.

Where the sensitivity comes in handy, however, is for use with antennas having poor signal-gathering ability. Shielded loop antennas would fall into that category. The shielded loop can offer good interference-nulling capability and freedom from susceptibility to e-field hash and trash that is generated by computers, compact fluorescent lights, and virtually all other consumer electronics so prevalent and unavoidable in the vicinity of our listening environment. Drew

From ezeran at ezeran.cnc.net Sun Jun 5 12:24:50 2005
Subject: [R-390] R-390 (NON A)

My opinion is that the phrase "R-390" in casual use can be interpreted either generically, meaning either the R-390/URR or the R-390A/URR, without distinguishing between them

Thats the way it was when I was in the Navy then the shipyard. They were all '390s'. EdZ

From k3pid at sbcglobal.net Sun Jun 5 16:52:18 2005
Subject: [R-390] R-390 (NON A)

Maybe that worked for the military but I've used both and can tell you there IS a diffference! K3PID Ron H.

From CRIPS01 at MSN.COM Sun Jun 5 19:13:49 2005
Subject: [R-390] Please spare us

All of the arguments about which one is better the R390/URR or the R390A/URR at this point in time is foolish. Both radios filled a military specification and both did their jobs very well. Instead of arguing which radio is better the discussion show center on what is different and why they are different. I look upon old radios as a kind of historical document. You are looking at the expression of electronic engineers of the past. so instead of some of the pointless arguments we have this forum let us discuss why Collins radio did what they did. Fortunately at least for Collins Radio this type of documentation has been collected and published. I wish there was similar documentation about rigs like the Lysco model 600 Transmaster which has to be one of the worst transmitters ever produced for sale, the engineers who designed this turd must have been drunk Ken de W7ITC

From levyfiles at att.net Sun Jun 5 19:19:47 2005
Subject: [R-390] Please spare us

I agree. Enough about which radio, religion, war, peoples, business, hobby is best. Its all unproven and unprovable.

We have freedom of speech in this country. That is not a right to beat a dead horse over and over. At some point abusers are carried off to the loony bin Bill N2WL

From k3pid at sbcglobal.net Sun Jun 5 19:56:57 2005
Subject: [R-390] Please spare us

I didn't intend to start a thread to once again "beat the dead horse"! In fact I made no assertion as to one radio being better than the other. My ONLY point was that they are indeed very different radios and to treat them as interchangeable is just plain wrong. In my opinion, it was unfortunate that the folks in charge at the time elected to simply append the A instead of specifying a whole new radio. Both are remarkable examples of electronic history. K3PID Ron H.

From jmiller1706 at cfl.rr.com Sun Jun 5 20:52:48 2005
Subject: [R-390] Please spare us

It is my understanding that the "A" model resulted from a cost reduction study conducted by the Signal Corps, documented in a report which you can read at Al Tirevold's site: http://209.35.120.129/faq-collins-cost.pdf

If the above link doesn't work, go to http://www.r-390a.net and browse the References for the Cost Reduction Report. It's all there. It was the result of a cost reduction effort instigated by the Government, and Collins apparently responded quite nicely.

To quote from the report: This report covers all the work done on the Signal Corps Cost Reduction Contract DA36-039-sc-52584 which resulted in the redesign of the Radio Receivers R-390( )/URR and R_391( )/URR. Except for the automatic tuning facility of the R-391, the two receivers are similar. These receivers, particularly the R-390, are fulfilling many needs of the Armed Forces, and are being produced in quite large quantities. Since the unit cost of these receivers is high, this program of cost reduction should result in a considerable saving to the Government.

In addition to the primary purpose of reducing cost, every effort was made to improve the reliability, accessibility and performance of these receivers wherever it was possible to do so. Two finished model R-390 and one R-391 receivers were built and delivered to the Signal Corps as called for in the contract. These are designated "A" models. One "B" model R-391 was also built and delivered to test all the new ideas and bring them together in one receiver.

The main task of the contract, then, was to reduce cost of the equipments and improve the reliability, accessibility and performance. The work done may be broken down into the following phases: Phase A: Study of the Main Areas for Investigation.

Phase B: Cost Analysis of the R-390 and R-391 Receivers.

Phase C: Design and Experimentation.

Phase D: Construction of "B" Model Receiver.

Phase E: Construction of "A" Model Receiver.

Phase F: Delivery of Models.

Phase G: Preparation of Drawings and Final Cost Analysis.

From r390a at bellsouth.net Sun Jun 5 21:31:30 2005
Subject: [R-390] A Sign of the End Times

I had a bunch of "gimme"s like this that I tossed out years ago. See why I'm one of the guys who says to never throw anything away!! http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=7326323199 JeeeBeeezus! Tom NU4G

From mjmurphy45 at comcast.net Sun Jun 5 21:45:21 2005
Subject: [R-390] R-390 "B"

Instead of arguing about what exists and has gone obsolete, what about what could have been: what if the military had demanded one more cost reduction attempt in the series using 1970's-type components? I will call it the B model. What about a solid state IF module, or PTO, a digital readout and no Ballast tube? Mike M. WB2UID

From jamminpower at earthlink.net Sun Jun 5 21:50:48 2005
Subject: [R-390] R-390 "B" model

Has anyone actually seen one of these? Did they ever build any? James A. (Andy) Moorer

From mhuss1 at bellatlantic.net Sun Jun 5 23:24:25 2005
Subject: [R-390] R-390 "B" model

In a manner of speaking, yes.

There was a limited production run of R-390A's with an electronic digital display. Used analog mixers on the three Local Oscillators before connecting it to a TTL Frequency counter. This was before microprocessors. Another allowed the oscillators to be sync'ed to a Master Oscillator. Used by NASA. Nothing went into major production, probabily because the R-390A just worked so well. I was in when the Army was getting rather desprate to replace it with a solid state receiver. They would buy hundreds of Watkins-Johnsons, Collins, Racals, even JRC's. Each time after comparing sensitivity, selectivity, maintenance requirements, reliability, and operator preferences, they kept going back to the R-390A. Finally, in the early eightys, they gave up and bit the bullet because of replacement costs and the growing requirements to remote control radios via data links and went with the Racal 6030A. Even then, a few R-390A's somehow fell off the back of the garbage truck to end up in out-of-the-way racks for when the listening got serious.

From ezeran at ezeran.cnc.net Sun Jun 5 23:20:03 2005
Subject: [R-390] Please spare us

I agree. Enough about which radio.... Yep! T Fk'n Hee! My BC-348 and WWII Navy Rxs all work too (to a degree) so who cares...!8^o EdZ

From ToddRoberts2001 at aol.com Mon Jun 6 00:25:51 2005
Subject: [R-390] US Army ads with picture of R-390A

Does anyone else remember as late as the 1970's the U.S. Army was running recruitment ads showing a picture of someone operating an R-390A? I think these ads were turning up in various magazines as well as TV guide in the middle to late 70's. I was wondering if anyone might have saved one of these ads and could post it somewhere we could see it? I think those may have been some of the last pictures ever showing the R-390A being used by the military. 73 Todd WD4NGG.

From vk2abn at bigpond.net.au Mon Jun 6 01:02:47 2005
Subject: [R-390] cost reduction

I think Andy Moorer is Right, Has anyone seen one of these units OR are they still on the secret list Hi, On cost reduction, the 390a is a simpler RX but the 390 was designed in 1948 and by the early 50 s there were improvements in Tubes ie 6DC6 and mechanical filters and the same performance or better was available at reduced cost with less stages and no series regulators and much less power into the bargain, I have both rxs in my possession and I can say that if you are listening to sideband on 40 meters in amongst the broadcast stations there is NO substitute for the 2KHZ filter in the 390A, I have Watkins Johnson harris racal ect nothing comes close, also it is so easy to use with a TX having its own Ariel change over and muting circuit, sorry Guys but when it comes to the 390A, I run out of Superlatives Hi

From CRIPS01 at MSN.COM Mon Jun 6 01:43:11 2005
Subject: [R-390] A Sign of the End Times

ONE HUNDRED AND FOUR DOLLARS!!!!!!!!! This is crazy I have at least six websites in my favorites that have this info' for free. Ken

From roy.morgan at nist.gov Mon Jun 6 10:35:51 2005
Subject: [R-390] Please spare us

wrote: >... Instead of arguing which radio is better the discussion sho(uld) >center on what is different and why they are different.

Ken,

There is a fellow in my antique radio club (www.maarc.org) who has had a long and varied career in radio, both military and civilian. He's VERY knowledgeable about all sorts of radios. I heard him say once that the Racal RA.17 was ten times more sensitive than the R-R90A. At the time, I though "probably not!" Then later I got a manual for the Racal (and later yet a radio itself) and found that the specifications for sensitivity are very similar.

I have not yet repaired and aligned the Racal RA.17 UC that I have, so I can't report on it's performance.

I was interested to see in a Navy training manual, "Cryptological Acquisition Equipments" (or some such title) that both the R-390A, and the Racal RA.17 under a military number, are described.

>...the Lysco model 600 Transmaster which has to be one of the worst >transmitters ever produced for sale, the engineers who designed this turd >must have been drunk.

OR ... under directions from their employer that were a severe compromise of quality and performance in the interest of cheapness to make and/or production schedules.

I have just acquired an RBB and an RBC, Perhaps the original Boatanchors at 85 pounds each plus 55 pounds each power supply. Designed in the late 1930's, these have been described as a "dream project" for the RCA engineers, with no cost spared for quality and reliability. I look forward to the day that they are restored and aligned and pulling in the moderately high signal levels they are only capable of. Roy

From roy.morgan at nist.gov Mon Jun 6 10:47:49 2005
Subject: [R-390] R-390 "B" model

wrote: >Has anyone actually seen one of these? Did they ever build any?

Based solely on the test of the "Cost Reduction Report", and on the assumption that Collins delivered what the contract called for, I think they made one and only one "B Model", and that it never went into production. Roy

From jmiller1706 at cfl.rr.com Mon Jun 6 11:09:52 2005
Subject: [R-390] R-390 "B" model

Maybe there wasn't really a 390B, since the report says:

2.6 Phase F: Delivery of Models

In accordance with the terms of the contract, 2 "B" model R-390 receiver Item 5) and one "A" model R-390 receiver (part of Item 3) were shipped February 24th. The two "B" models were actually two of the receivers supplied by Signal Corps for use on this job, unmodified. On March 10th another "A model R-390 (rest of Item 3) was shipped. In September the "A" model R-391 (Item 4) and the "B" model R-391 (Item 6) were delivered.

From Lester.Veenstra at intelsatgeneral.com Mon Jun 6 11:13:25 2005
Subject: [R-390] Please spare us

Problem with the Racal's is not sensitivity which as a practical matter is not significant, but rather, the number of spurious responses it had. Lester Veenstra

From crips01 at msn.com Mon Jun 6 13:33:38 2005
Subject: [R-390] Collins Mechanical Filter History

This is the type of posting I would like to see more of. A historical discussion on Collins mechanical filters is a good start. In technological history you do not concentrate on the technical aspects of such a device, this is well known to all of us. Getting inside the heads of the engineers that designed it is what is important. This type of discussion could be expanded to such things as the Permeability Tuned Oscillator, which I believe is what made a Collins designed receiver the great radios they are. Such things as why a product detector was not installed in later models of the R390A would be fascinating. There are a couple of former Collins employees who have been run off of this forum. These engineers may be able to shed some light on why this wasn't done. When you have a inside knowledge of how a rig was designed when ever you work on any part of it not only are you thinking about the repair but in the back of your mind is the knowledge of who designed this section and why. Which again goes back to what I have said else where radios like the R390 series are like a book written by engineers and understanding what is written there is what makes the care and feeding of these fine old radios so interesting. Ken de W7ITC

From courir26 at yahoo.com Mon Jun 6 13:44:53 2005
Subject: [R-390] Location of R-390 "B" model

We know the current location of the sole R-390B, and will divuldge the information only when the owner dies. Woodward and Berstein

From roy.morgan at nist.gov Mon Jun 6 13:54:52 2005
Subject: [R-390] Location of R-390 "B" model

wrote: >We know the current location of the sole R-390B, and will divuldge the >information only when the owner dies. The readers are cautioned to not entertain any thoughts of bumping off the owner to incite a riot on "the auction place" when the estate gets sold.

>Woodward and Berstein

Clearly the names of a law firm. No doubt they can be bought off. (Name withheld for security purposes.)

From n4buq at aol.com Mon Jun 6 14:35:00 2005
Subject: [R-390] Location of R-390 "B" model

Woody,

I don't know where the sole R390B is, but I'm guessing there's some guy on eBay selling the manual to it on a CD. Barry - N4BUQ

From jsullivan10512000 at yahoo.com Mon Jun 6 14:43:22 2005
Subject: [R-390] R390 (non "A")--question on mechanical regulation

In cleaning up my R390 (non "A"), I installed the "green gear" to gear train, prior to removing the RF sub-chassis from the main frame. I cleaned up the gear train, lubed it, as the original military manual showed, but am now wondering if that gear train is "regulated" as it should be. In trying to follow the military manual, I set the dial to 02000, to see if the holes in lobes at rear of sub-chassis would line up with lines engraved beneath them. THEY DON'T, to my surpise, so now I wonder if someone messed it up prior to my getting it. With green gear in place, shouldn't lobe holes line up with engraved lines, or do I not understand this whole thing correctly?

From bipi at comcast.net Mon Jun 6 14:53:29 2005
Subject: [R-390] Location of R-390 "B" model

OK, I will come out in the open on this one. I have the one and only R-390B model. I have been keeping it under wraps for obvious security reasons. However, I just can't stand the stress anymore. So I have decided to sell it to the highest bidder that bids over $500,000.

There is one catch, however. The unit will not be available for one year after I receive the funds because of the intense design activity, ops, I mean careful packing that must be carried out to ensure the high bidder receives this unit in good condition. There is a packing charge of $5000 plus actual shipping costs. And, as with all "good" auctions, the buyer will not be allowed to return the receiver for any reason. Please note that I do not have 115V source here so I cannot test the unit but it is guarenteed to "light" up when turned on. So bid away all! 73 de Mike K7PI

From bipi at comcast.net Mon Jun 6 15:10:42 2005
Subject: Fw: [R-390] Location of R-390 "B" model

I am sorry, but the R-390B has been sold. A Brinks truck just pulled up to the house and delivered an acceptable payment. So, I guess the we're back to where we started! 73 de Mike K7PI

From stevehobensack at hotmail.com Mon Jun 6 15:27:03 2005
Subject: [R-390] R-390 (NON A)

I agree. I was a ditty chaser in the Navy in the late sixties. They were all called "R-390". The vast majority of the rcvrs were the A model, but the "A" suffix was never added in casual conversation.

....Steve...N8YE

From: "Ed Zeranski" <ezeran@ezeran.cnc.net> Date: Sun, 5 Jun 2005 09:24:50 -0700
Subject: RE: [R-390] R-390 (NON A)

My opinion is that the phrase "R-390" in casual use can be interpreted either generically, meaning either the R-390/URR or the R-390A/URR, without distinguishing between them

Thats the way it was when I was in the Navy then the shipyard. They were all '390s'. EdZ

From eldim at att.net Mon Jun 6 15:55:42 2005
Subject: [R-390] R-390 (NON A)

I agree with Steve. In my years with the Air Force we "ONLY" had the "A" Model R-390's and always referred to then as R-390's. We did however, have a TWIX come down from higher headquarters to refer to them as R-390"A" when in the presence, of our Canadian counterparts, on NORAD Sites, Overseas Canadian Listening posts, or when north of the U.S. boarders.

Now on the subject of the "B" Model. I recently parted with a Collins R-390A that had a custom Panel with several changes, which included miniature lights, toggle switches, and a rear connector. The previous owner who fabricated this panel and made these mods also included the original engraved front panel if I wanted to restore it to original. I wish I had taken pictures before the trade. I wish I would have at least take a picture of the Data Tag!!! :<(Several people wanted to cash me out, but I have trouble handling large sums of cash, not to mention the short term capital gains tax that I would have to fork up. I'll keep my eyes open to see if the second one shows up out this way. 73, Glen Galati, KA7BOJ Tacoma, WA

From stevehobensack at hotmail.com Mon Jun 6 15:58:42 2005
Subject: [R-390] Please spare us

If the R-390a has 1 uV sensitivity and the RA-17 has Â½ uV sensitivity, Is that twice as sensitive? There are some frame-grid tubes one can insert in the front end to improve sensitivity. I have tried them, but I always go back to the good old 6DC6. It is resistant to imd (overload, cross modulation). The R-390 is my only receiver(as compared to 51J4, SP-600, Icom720A) that will pick up daytime WTOP in washington DC 1500 kc 360 miles away ?10kw, against a local station 1490 kc WMOA 1 kw 5 miles away. I have to zero beat 1500, 2 kc bandwidth selected, bfo offset 1.5 kc. ...Steve...N8YE

From dathegene at hotmail.com Mon Jun 6 16:08:19 2005
Subject: [R-390] Location of R-390 "B" model

Watch out for scam artists selling high priced 390Bs of late.

Original Collins 390B nameplates will quickly be available from the regular sources..."Black face" are the rare ones... Gene 73 de NA0G

From richardlo at admin.athabascau.ca Mon Jun 6 17:10:26 2005

Subject: [R-390] R-390 (NON A)

wrote: TWIX come down from higher headquarters to refer to them as R-390"A" when in the presence, of our Canadian counterparts, on NORAD Sites, Overseas Canadian Listening posts, or when north of the U.S. boarders.

Is that where the Canadians boarded? Some where up North of where the U.S. people boarded? Richard Loken VE6BSV

From Llgpt at aol.com Mon Jun 6 16:56:05 2005
Subject: [R-390] R-390 (NON A)

writes: Is that where the Canadians boarded? Some where up North of where the U.S. people boarded?

Forgive them, they know not of what they speak....:-) Formerly of Duluth, Minnesota. Ole Olsen

From eldim at att.net Mon Jun 6 18:30:56 2005
Subject: [R-390] R-390 (NON A)

I JUST LOVE IT!

From g4gjl at btopenworld.com Mon Jun 6 18:31:21 2005
Subject: [R-390] Please spare us

.....Two spurious responses if my memory serves me. And those barely audible with the antenna (aerial over here) disconnected. Peter G4GJL

From eldim at att.net Mon Jun 6 18:37:42 2005
Subject: [R-390] Please spare us

Hello Peter,

You just need to check the sensitivity of your receiver or increase your RF Gain in the MGC Mode. Plus you must make sure your aerial is connected. Check you ground too! 73, Glen, KA7BOJ Tacoma, WA

From shoppa_r390a at trailing-edge.com Mon Jun 6 18:39:36 2005
Subject: [R-390] Megacycle detents, nominal B+, and bad tube brands

The megacycle detent on my 390A seems not as tight as it should be. Especially tuning around bands with a "cusp" (e.g. middle of 15MHz) in the cams the Megacycle knob will occasionally twist out of the detent as I tune the kilocycle knob around. Is it a good or a bad idea to bend the megacycle detent spring a little bit to help out? Or any ideas for a more permanent solution?

My 390A has had its power supply solid-stated, and a 100 Ohm dropping resistor put in. The B+ I measure (audio B+) is 227V in AGC or MGC and 252V in Stand-By. This is with 120VAC power in. This seems to me to be on the high side, although I don't know what the official number is supposed to

be. There's real nicely regulated 150V on the regulated supply. To lower the non-regulated B+, is the answer more dropping resistance (200? 250? Ohms?), a 40V 10W Zener, a bucking transformer, ???

Oh, I ordered some 12BA6's to eliminate the ballast tube issue.

And on bad tube brands: "JJ" (Eastern European manuf) ECC82's/12AU7's are not too good in the 5814A spots. I've had two develop filament-to- other-element leakage that gave intermittent hum, just in the past week. Luckily I have a good supply of JAN 5814A's. Tim.

From Flowertime01 at wmconnect.com Mon Jun 6 19:58:40 2005
Subject: [R-390] R-390 "B" What No ballast Tube.

Mike,

Here in 2005 on good old USA power lines, the ballast tube seems like over kill.

Back in 1969, 1970 around Phi Bhi where we did every thing our selves includeing generate the electricity, the ballast tube was a definite plus.

A year later in Korea, every thing on the DMZ was running on even smaller local generators 24 x7.

The ballast tube was a good idea in it time and worked well in some pretty sorry environments. Roger KC6TRU

From Flowertime01 at wmconnect.com Mon Jun 6 20:14:26 2005
Subject: [R-390] R390 (non "A")--question on mechanical regulation

Jack,

Are you on the wrong zero? I have not found my R390 manual after my move yet. Memory is not good.

I thought it lined up on the 2 +000.

Is it way off, or just a little off. Read the manual again and check what you did.

If its only a little off, It could be the cams need some adjustment. We would inspect the mechanical alignment for a semi annual preventive maintenance ever 6 months. I was amazed at how often the mechanical alignment would need a bit of adjustment. Roger KC6TRU

From CRIPS01 at MSN.COM Mon Jun 6 20:59:05 2005
Subject: [R-390] Please spare us

This is great now we are starting to discuss radios like we should.

It is interesting to look at what happened to some of the Radio companies in the post WWII era. A case in point is Radio Manufactures Engineers of Peoria, Illinois (RME). I have a RME 45 which was built in October of 1946. It is a well made radio. RME was purchased by Electro Voice in the early 1950's and the RME division of Electro Voice continued into the late 50's when production stopped. In the

early 70's some of the engineers who started with the RME division retired and instead of going fishing they when on to form Tennessee Technical now known as Ten Tec. This Electro Voice connection explains why most Ten Tec rigs operating with in spec's sound so good on the air. Ken

From dsmaples at comcast.net Mon Jun 6 21:05:35 2005
Subject: [R-390] R-390 "B" model

All: Considering that SAC replaced one of the vacuum-tube computer elements with a solid-state device in 1983 (I remember the article in Aviation Week and Space Technology, as well as other places) it's easy to understand why they hung on to the 390s et al for such a long time. Dave WB4FUR

From vk2abn at bigpond.net.au Mon Jun 6 21:30:39 2005
Subject: [R-390] Cost reduction Ect Ect

Hi guys I have three 390a rx s and a 391 and I also have one of the last racal Ra17 rx s made the Aust. army date code for manufacture is 9th month 1974, its a nice reciever and it is very slightly more sensitive than a 390A, when evaluated with a signal generator {The American RA17 RX s Had A FRAME grid tube in the RF section and the rest of the world got a Cascade Double triode } BUT in practical terms the the 390A outperforms it due to a FAR better signal to noise ratio which is a function of the 2khz mechanical filter, [I am Talking SSB reception here] if I wanted to listen to a broadcast station the racal RA17 has nicer audio, the dynamic range of the 390A is Much better than Ra 17 around 20Db in fact, the 100Khz I F in the Ra17 Just cant compete with the mechanical filter for ssb and neither can the I F stage in the 390 rx, I know that the 390A project was to save money and it achieved that end BUT between the time of the original concept and the 390A project Mechanical filters were invented By Mr Adler at Zenith radio Corp and it became possible to exceed the original performance specsof the 390 with less stages and also to take advantage of more modern tube design, overall I see many advantages for owners of 390A receivers, The tubes are Plentiful and easy to source, here in Australia 6AJ5 /6BJ6 /6082, are in the same supply status as rocking horse droppings and from what I hear in the states people who have these tubes want an arm and a leg for them, on the minus side with the 390A there is an ongoing problem whith the mechanical filters, the foam rubber packing inside the filter with the passing of the years has De -materialised and also become corrosive, especially the 4khz filter,I have replaced a couple myself in the last few years but I bought a few spare IF modules many years ago, summing up I would say that there is no BEST receiver it all depends on what ones interests are, BUT if you want to work DX on forty meters at night in amongst the broadcasters on SSB or CW the 390A is the way to go !!!!!!!!!!!!!!!! PS I wonder how much Collins Paid Zenith for the Mechanical filter production licence??????????? Best Regards to everyone BERNIE N

From r390a at bellsouth.net Mon Jun 6 21:41:20 2005
Subject: [R-390] Fwd: Looking for R390A

Don't reply to me, reply to the other Tom, N3LLL below.

From brookbank at triad.rr.com Mon Jun 6 21:53:52 2005
Subject: [R-390] R-390 (NON A)

Maybe we should have a r-390A@mailman.qth.net for the R-390A model

From redmenaced at yahoo.com Mon Jun 6 22:25:29 2005

Subject: [R-390] Megacycle detents, nominal B+, and bad tube brands

> wrote: > The megacycle detent on my 390A seems not as tight as it should be. Especially tuning around bands with a "cusp" (e.g. > middle of 15MHz) > in the cams the Megacycle knob will occasionally twist out of the > detent as I tune the kilocycle knob around. Is it a good or a bad idea to bend the megacycle detent spring a little > bit to help out? > Or any ideas for a more permanent solution? ++++
Sounds like you need to lube the whole transmission.

The MC CHANGE detent is adjustable, just loosen the screws and move it closer to the detent wheel.

Some times the wheel will wear a slot in the detent spring, if this is happening you can move the spring to another area to wear on by putting washers between the spring and its mounting plate. Joe

From eldim at att.net Mon Jun 6 23:46:38 2005
Subject: [R-390] Cost reduction Ect Ect

Hello Bernie and crew,

I'd sure love to hear more info on ZENITH'S invention of the mechanical filter.i.e. History, Dates, etc.73, Glen Galati, KA7BOJ Tacoma, WA

From CRIPS01 at MSN.COM Tue Jun 7 01:39:09 2005
Subject: [R-390] Please spare us

The R388/URR (51J3) has crystal filtering, and the R388A/URR (51J4) has mechanical filters. I have never had the opportunity to compare these two radios side by side. If anyone has been able to do this how do the two radio compare. My SP-600 has both kinds of filters but it needs a serious tune-up, it is real deaf so it just isn't possible to compare using it. I must say I like the phasing control the crystal filtering has. Ken

From djmerz at 3-cities.com Tue Jun 7 03:16:50 2005
Subject: [R-390] Please spare us

Hi, the crystal filtering in the radios you mention is of the type that dates back to the early thirties and is not the passband type of filter with a relatively flat top that passes a range of frequencies uniformily. Rather the top is very sharp and the passage of some range of frequencies is further down on the skirts of the response. This was early on called a "signal signal response" filter because the bfo could be positioned relative to the passband to produce only one side of the beat response and the other side was suppressed. One side of the filter has a very steep curve. This was very useful for cw and eliminated interfering signals that were otherwise received. Later, passband filters were made with multiple arrays of crystals that produced flat-topped passbands but I don't think this type of filter is used in either of the two radios you mentioned. The 51J4 has passband filters of the mechanical type that are similar to the mechanical filters in the 390a, though in different holders. The 51J3 relies on tuned i.f. transformers for filtering other than the sharp cw crystal filter. Of course the crystal filter can be used for ssb but the audio response is somewhat restricted because of the sharp filtering characteristic. There are some vintage tube receivers with passband type crystal filters. The only one I have experience with is the Mackay 3010 which has a crystal lattice filter of about 6 khz bandwidth in the 2nd i.f. stage and this is

backed up by selectable narrower mechanical passband filters in the 3rd i.f. stage.

The R388 has somewhat broader skirts when the transformer i.f. selectivity is used, compared to say 390a mechanical filters or 390 transformer i.f. selectivity. This difference is mostly important only when two signals are very close. I added a 500 khz ssb mechanical filter to my 388 to see the difference; it helped some but wasn't world shaking. Though it was a Collins filter, it may not have been as good as the ones used in the 51J4. I would think the 51J4 is capable of separating ssb signals better than a 51J3 but for cw there may be little difference using the crystal filter of either. Dan

From CRIPS01 at MSN.COM Tue Jun 7 03:29:49 2005
Subject: [R-390] Please spare us

Thank you that was very interesting. To say any of these radios R388 or R390 do a good job on SSB is not really true. They are AM receivers that as a secondary thing can receiver SSB. I did run the auto from the R390A into my computer using a freeware DSP processor and it did make a difference. If you want to play with it here is the link. mmhamsoft.ham-radio.ch/dsp/ put the W's in front I hope this makes it past the filters. Ken

From jonklinkhamer at comcast.net Tue Jun 7 08:02:50 2005
Subject: [R-390] Break-In Relay (K601)

Does anyone have a Break-In Relay (K601) that I could purchase or know where I could get one. Thanks, Jon KB1DC

From chacuff at cableone.net Tue Jun 7 09:12:03 2005
Subject: [R-390] Please spare us

I've never seen an SP-600 with mechanical filters.... That would be rare for sure... Cecil...

From n4buq at aol.com Tue Jun 7 09:16:43 2005
Subject: [R-390] Break-In Relay (K601)

If no one on the list has one for sale, Fair Radio has them for $10. Barry - N4BUQ

From roy.morgan at nist.gov Tue Jun 7 10:05:02 2005
Subject: [R-390] Megacycle detents, nominal B+, and bad tube brands

wrote: >The megacycle detent on my 390A seems not as tight as it should be.

Tim,

The detent spring, and to a lesser extent, the detent disk (whatever the right name is) are the culprits. Bending the spring is a start. Do check that it is not worn out and making little shavings from the disk (unlikely). You may be able to bend it sideways a bit to bring a new portion of the spring to bear on the detent disk.

>Or any ideas for a more permanent solution?

New spring and or disk. Also, check lubrication of the gears/clutch etc. between the KC actions and the MC actions. Just a bit of oil or grease in the right spot may reduce the friction enough to to the trick.

>... The B+ I measure (audio B+) is 227V in AGC or MGC and >252V in Stand-By.

We hear advice to avoid standby for any but brief periods. The tubes that have no cathode current can develop a dreaded condition called "cathode interface" were in the thing acts as if a resistor has been magically inserted in the cathode lead. The magic is chemistry of the cathode emitter coating, of course.

>... To lower the non-regulated B+, is the answer more dropping >resistance (200? 250? Ohms?), a 40V 10W Zener, a bucking transformer, ???

The bucking transformer is a very good idea, in my opinion. Measure the filament voltages in a number of places accurately to see if they are mush above 6.3. If so, add a current inrush limiter and then a bucking transformer.

>And on bad tube brands: "JJ" (Eastern European manuf) ECC82's/12AU7's >are not too good in the 5814A spots. I've had two develop filament-to- >other-element leakage that gave intermittent hum, just in the past week.

Thanks for the experience report on these tubes. If I remember right, the JJ brand is sold into the hi fi and musician amplifier markets. It's possible that those folks don't fuss as much as we do about tube life and the cost of replacements. Also, it's possible that JJ simply got a bad batch of tubes. (I suggest you send them back to them to see what their response might be. Of course the minimum correct response is a set of replacement tubes by return mail.) The reputation of eastern European tubes of recent manufacture is generally quite good with a few exceptions (e.g. the "7199" tubes that turned out to be another type altogether, enveloped with altered pinout and having remote cutoff in the tetrode instead of the linear one in the real 7199.)

>Luckily I have a good supply of JAN 5814A's.

Shhh! Don't let on. Your security contractor will scold you! Roy

From David_Wise at Phoenix.com Tue Jun 7 13:19:36 2005
Subject: [R-390] Please spare us

> Hi, the crystal filtering in the radios you mention is of the type that > dates back to the early thirties and is not the passband type > of filter with > a relatively flat top that passes a range of frequencies > uniformily. Rather > the top is very sharp and the passage of some range of frequencies is > further down on the skirts of the response. This was early > on called a > "signal signal response" filter because the bfo could be

Typo. "Single signal". You leave out the important fact that the crystal had not only a sharp peak, it also had a sharp notch. The Phasing control affected the spacing between them, so you could peak up on the desired signal and simultaneously null out an interfering signal nearby. There must have been some shortcomings or side-effects, because later crystal filter designs (such as in the R-390x) make a point of doing away with the notch, by means of a neutralization adjustment.

[snip] > very close. I added a 500 khz ssb mechanical filter to my 388 to see the difference; it helped some but wasn't world shaking. Though it was a Collins filter, it may not have been as good as the ones used in the 51J4.

It depends a lot on how you install it. "Blowby" is a big issue, and you have to take a lot of care with shielding to get anywhere near the out-of-band rejection the filter is capable of. That's why the R-390A filters are in those double-ended flange-mount cans. This is discussed in the Cost Reduction Report. 73, Dave Wise

From djmerz at 3-cities.com Tue Jun 7 17:51:34 2005
Subject: [R-390] Please spare us

Hi, thanks for the correction, "signal signal" was a typo - that'll teach me to do late night replies!! Should have been single signal. My first real ham band receiver was a simple homebuilt thing with 1700/1700.5 Khz crystal pair front end filter for the i.f. It was better than most commercial inexpensive sets with only 2 or 3 i.f. transformers. The R-388 even when operating with only i.f. transformers has better selectivity. The single crystal filter when implemented well does a nice job, the SX-28, early Super Pro's, SP-600 come to mind within my own experience. I spend little time using receivers that were actually designed for ssb though I listen to ssb most of the time. I must actually prefer to twist knobs, which probably orignates from using an S-38 Hallicrafters to discover and receive ssb - not even an external bfo adjustment. Radios designed for ssb are somewhat boring to operate in comparison, though I have a couple. I must admit at times I miss the HQ-180 I had for a while but opted to keep the SP-600 instead and ride the r.f. gain. The SP-600 kept the phasing control, so it's not that phasing control wasn't still regarded as a useful front panel control in 1950. Maybe the Hammarlund engineers were just better at implementing it than the Collins guys (better here means either it was cheaper, quicker, or proven in their shop so don't think I'm belittling the C guys). Occasionally, I have used the crystal filter in the SP-600 for ssb. I haven't studied the single crystal circuit in the 390 enough to comment other than to say that 2 degrees of selectivity in that mode were considered sufficient. Best regards, Dan.

From stevehobensack at hotmail.com Tue Jun 7 18:21:25 2005
Subject: [R-390] Please spare us

Here is a way compare receivers: Find a local AM broadcast station. Can you hear a distant station 10kc away from it? 20kc away? Which receiver does it best? One must use tight selectivity to remove the other sideband, then listen on the sideband furthest away from the local bcst stn.

From djmerz at 3-cities.com Tue Jun 7 18:34:51 2005
Subject: [R-390] Please spare us

Hi, since the 51J-3 (R388) has phasing control for the single xtal filter, as does the Collins 51J-4, my comment about Hammarlund vs Collins engineers was nonsense. Evidently, phasing control for notching was still a desireable feature on some Collins radios in 1950. Perhaps the 390 and 390a eliminated this feature to preclude the operator from notching out a desired signal by mistake while having the frequency dial set on the known signal frequency. Others may know the story here. I don't recall a discussion of this but haven't looked for it. Dan.

From Flowertime01 at wmconnect.com Tue Jun 7 19:46:17 2005

Subject: [R-390] Please spare us

Fellows,

>From my military education, by 1950, Post W.W.II our military was moving away from dits. RTTY imposed a level of "security" on our communications, You just were not going to copy RTTY by ear with a stick in hand. So the R390 was just great for that RTTY use. The linear PTO let you deal with drift and other facets of radio reception.

Post W.W.II the Spooks were closed down, we did not need to listen to any one except our commanding officers. And you did not need a radio to do that.

The rest of the world just was not up to RTTY, so they still used a lot of dits. Once it occurred to the command that we may like to receive the dits or others, the spooks were stuck with the existing hardware. Spooks never got to pick their receiver with an essay question test. The spook choices were do you want these or not?

A lot of communications were still dits, even if the official line was we do RTTY.

While the signal corp used lots of R390 or R390/A for long haul communications, short haul was done on telephone lines. Most of the com work was via a RTTY link. And spooks were using the only stock military receiver available in production to copy dits. The spooks could buy any radio in the warehouse with a military stock number. We were not calling it a NSN yet. By the late 50's when spooks got to radios in a big way, there were very few choices on the shelf to be acquired by the hundreds being requested. So more R390 and Later R390/A receivers were built just for spooks. Never mine that the receiver was a poor spook receiver. It was what was in stock and in production. End of story solider, go listen to your receiver and get those dits. Its a receiver good enough for the military brass and its good enough for you. How dare you even think the military brass has not provided you the best receiver money could buy. Troops were told the R390/A was an improved receiver, not a cost reduced receiver.

While the spooks done lots of dit intercept on the R390 and R390/A the military never considered the receiver a ditty catcher. They also did not consider it an Arm Forces Radio catcher or a SSB catcher either.
What management was thinking when the receiver were being designed and purchased had no relation to how they were to actually be used over the next 40 plus years of their life. That is not what management expected to happen but then reality bits every one now and then. And reality rules. Roger KC6TRU

From levyfiles at att.net Tue Jun 7 20:47:56 2005
Subject: [R-390] Please spare us

I would like to second Roger. In the world in which we live, the A and B models are improvements. The Pommies call is the MK 2 and the MK3 It doesn't matter if it has more tubes or less tubes. A is better than non A. B is even better.

The KWM-1 was in Francis Gary Powers U2 that got shot down. The KWM2a suitcase was in every Embassy and all over Vietnam and the Mars bases. The KWM 380 was an improvement. You want to argue? Go ahead and nitpick. You can't prove the existance of God either.

Doesn't matter to me. Its called progress even if we are luddites and the world was better when we were 18 and we had 3 girls as our roommates and one was our lover and the other two could cook! Of

course it was better THEN but then is a moving target!

Good as Roger says is good enough! When it breaks its a piece of crap. So say I, Bill N2WL

From jlkolb at jlkolb.cts.com Tue Jun 7 23:33:22 2005
Subject: [R-390] Please spare us

The 51J-4/R-388A has the same crystal filter and phasing control as the 51J-3 as well as mechanical filters. The change was made by removing one of the stages of IF amp and replacing it with a module containing the filter switching, filter sockets, and two IF amp tubes. This module was also sold seperately to convert 51J-3's to 51J-4's.

The modules show up occasionally on ebay. John

From shoppa_r390a at trailing-edge.com Wed Jun 8 17:22:42 2005
Subject: [R-390] Sources for meter movements?

I know Surplus Sales of Nebraska and Fair Radio have the stylistically correct meter movements for R-390A's, but are there other cheaper sources of meters that maybe don't have the right dial calibration or even the right coloring but do fit in the meter holes?

I don't mind making a new dial scale and/or putting a small network in line with the meter to give VU readout.

Even better would be a meter movement with a pilot light (or a clear back to allow a pilot light). Not nearly as correct as the radium dials but would be a lot more useful to me at night. Tim.

From n4buq at aol.com Wed Jun 8 17:28:56 2005
Subject: [R-390] Sources for meter movements?

http://www.leedselect.com/images-meters/DeJur_model131.JPG Barry - N4BUQ

From n4buq at aol.com Wed Jun 8 17:30:43 2005
Subject: [R-390] Sources for meter movements?

I guess it would make more sense to post this: http://www.leedselect.com/parts-meters.html

Look for the second entry: DeJur 0-100 microamp

I have a couple of these that I have had the trim powder-coated black. I still need to make faces and appropriate circuitry, but they are an inexpensive "fit" for the R390A. Barry - N4BUQ

From n4buq at aol.com Wed Jun 8 17:35:29 2005
Subject: [R-390] Sources for meter movements?

Hmmm. Looking at the selection, the "Ideal VU Meter" as well as the "Simpson 1 ma fs 100 ohm"

meters might be candidates as well. They don't state the size of them, but the Simpson looks a lot like the ones I've seen on R390A's. You'd need the faceplate cover, though, and I doubt they have those. Barry - N4BUQ

From shoppa_r390a at trailing-edge.com Wed Jun 8 17:41:10 2005
Subject: [R-390] Re: Panel meters

[...] http://www.leedselect.com/parts-meters.html

Cool. Those ought to be a good start!

As long as we're discussing meters, my R-390A has a VU meter with the markings "59.1034" in the lower right of the face and a Carrier Level meter with the markings

"ABM INST MOD.135-299" in the lower left and "FS=1MA" in the lower right

Were these "standard" meters in 50's/60's equipment, or are they later repros made to match the R-390A, or what? I'm merely the custodian of this machine and do not its history in previous custodian's hands :-). Tim.

From mikea at mikea.ath.cx Wed Jun 8 18:33:37 2005
Subject: [R-390] Sources for meter movements?

wrote: > Hmmm. Looking at the selection, the "Ideal VU Meter" as well as the > "Simpson 1 ma fs 100 ohm" meters might be candidates as well. They don't > state the size of them, but the Simpson looks a lot like the ones I've seen > on R390A's. You'd need the faceplate cover, though, and I doubt they have > those.

You may find that the "Ideal VU Meter" isn't ideal for use as an S-meter or what-have-you in an R-390 or R-390A[1], because the damping on a VU meter is specified rather carefully and isn't the damping you'll see on most anything else.

[1] See! I avoided the "non-A" debate. -- Mike Andrews, W5EGO

From vk2abn at bigpond.net.au Wed Jun 8 21:09:08 2005
Subject: [R-390] re cost reduction ect ect

Thanks for the comments, Re the 390 series being AM receivers this is true but the only mods required are a product detector and a minor mod to the AGC attack and decay times to turn these radios into SSB radios PAR excellence, and the parameters of the mechanical filters in the 390A especially the 2KHz filter as regards stop band attenuation and overall bandwidth characteristics make it pretty hard to beat even today especially for something in this price range, what I am trying to convey is the fantastic signal to noise ratio from this combination and lets face it signal to noise ratio is DIRECTLY related to BANDWIDTH and LC filters at this frequency cant compete with these parameters, my radios all have product detectors fitted as per HAM Radio Mag 1975, I have tried the 6BE6 circuit in the BFO socket and also the better arrangement is the 12AU7 circuit as per THE FUNDAMENTALS OF SSB in the ballast tube socket, one IF module has been also modified with asymmetrical upper and lower sideband filters in the 2Khz, and 4khz positions and 455.00KHz crystal BFO this also is a excellent ssb receiver,

far superior to my 51S1 ect ect and far superior to my 390 rx, Anyway guys that's MY Rave in the subject Hi

From vk2abn at bigpond.net.au Wed Jun 8 21:44:17 2005
Subject: [R-390] Re: Racal RA.17 Receivers

Guday Roy,

My receiver is a RA17L these radios are all very similar the American radios had a 6AS6 as the third mixer the British radios had a 6F33 which is very hard to find these days and I have substituted the 6AS6 in my radio it has different socket connections, the radios are easy to service if you have the right gear, the ceramic bypass caps in the IF stage give a lot of trouble and also the 100 KHz IFT s are wound with Litz wire under tension and after many years of heating & cooling some strands give way and effect the Q of the transformer and when you re align you cant obtain the shape in the handbook, I have fixed these by disassembly and running solder up the wires, you can get a good idea what is happening in the Wadley loop by connecting a CRO probe to the O/P of the 3rd mixer and tuning the MHZ dial you will see the one mhz pips going across the screen as you tune the VFO from 40 to 70Mhz, also the 40mhz filter and the 37.5 mhz filter need to be swept, I use a HP 141T and tracking gen and this combo does a great job, I also have the ISB adaptor for this radio which has an input of 100KHZ and splits off bath sidebands at 18KHZ and demodulates with 2 product detectors, I have bought many pallets of these receivers at our AUST gov. surplus auctions and have never found one that I couldn't fix, A very common prob is an open circuit 100k resistor associated with the 6As6 screen or plate, I cant remember, also here in Australia, in the late sixties and early seventies lots of hams in OZ made there own Ra17 rx s it was called the Deltahet and I have scanned the articles into my computer if you would like to see them, Do you have broadband Roy? as they are a few Megabytes, My project of the hour is re manufacturing an ART 13 tx by Collins, I have got it all back together and its taken a fortnight,{ I am a retired Electrician }and I powered it up last night and its working, today I am going to align it

From RLucch2098 at aol.com Wed Jun 8 22:23:14 2005
Subject: [R-390] FS: AN/URM-120 WATTMETER w/1 Element & Pics!

Hi All;

I bought this Military(US Navy) Wattmeter, thinking it was easy to use & fast but I really don't like it. It comes with the metal carry case, all correct s/n/s. Has one element that covers 2-30 mcs, 50-100-500-1000 watts. Meter reads fine but sticks at times, depending how you hold the unit, sometimes its fine. Seems accurate to. It looks like the meter can be taken apart & the needle shaft oiled, if thats what they do?

It does'nt appear the needle(pointer) is rubbing the glass or it would stick everytime the same, thats not the case! Anyway, the Meter itself in in real nice condx, the carry case tags are exc. but overall case has marks, etc! Price is $50 + UPS(about 13lbs from 11758) Any takers?
Pics:
http://www.myradioroom.com/urm120meter1.jpg
http://www.myradioroom.com/urm120meter2.jpg
http://www.myradioroom.com/urm120meter3.jpg
http://www.myradioroom.com/urm120meter4.jpg
Tnx & 73.. Rich WA2RQY

From CRIPS01 at MSN.COM Thu Jun 9 00:25:11 2005
Subject: [R-390] Re: Panel meters

There are a bunch of places to get digital meters that would fit in the holes on an R390.I don't know how digital meters would go over with the orthodox R390 crowd. Ken

From barry at hausernet.com Thu Jun 9 00:55:20 2005
Subject: [R-390] Re: Panel meters

wrote: > There are a bunch of places to get digital meters that would fit in the > holes on an R390.> I don't know how digital meters would go over with the orthodox R390 > crowd.

Be fine as long as the digits are white on little black wheels.

Or put little LCD's in the holes that render an image of the traditional meters. How about a pair of 6E5's? Single digit nixie tubes? Those LED bargraph things? Nevermind. Barry

From CRIPS01 at MSN.COM Thu Jun 9 01:01:21 2005
Subject: [R-390] Re: Panel meters

Now that would be an interesting thing to do. You have seen those LCD wrist watches that have hands like a regular analogue watch. I wonder if anyone make such a panel meter. Ken

From ai2q at adelphia.net Thu Jun 9 08:25:23 2005
Subject: [R-390] re cost reduction ect ect

Hi Bernie:

For your reference, you can see my R-390A product detector circuit at this URL:
http://users.adelphia.net/~alexmm/Prod_det/detector.htm Vy 73, AI2Q, Alex in Maine
http://users.adelphia.net/~alexmm/ai2q.htm

From DJED1 at aol.com Thu Jun 9 09:09:07 2005
Subject: [R-390] Re: Panel meters

ICOM makes a LCD display in their new radio (IC781) that is supposed to look just like an analog meter (actually there are two in the radio). I don't know how much of the radio's $10,500 price we should allocate to the meters. I wondered about this because it would seem cheap enough to put two analog meters into a $10K radio. Ed

From CRIPS01 at MSN.COM Thu Jun 9 09:27:19 2005
Subject: [R-390] Product detector

Wow nice saved to my favorites. Thanks!!!! Ken

From CRIPS01 at MSN.COM Thu Jun 9 09:30:00 2005
Subject: [R-390] Re: Panel meters

I see you picked up on that as well 10K radio with such meters, well I sure know I don't have to worry about it to rich for my blood. I am, however, interested in the new IC-7000. Ken

From roy.morgan at nist.gov Thu Jun 9 11:11:10 2005
Subject: [R-390] Sources for meter movements?

wrote: >You may find that the "Ideal VU Meter" isn't ideal for use as an S-meter or >what-have-you in an R-390 or R-390A[1], because the damping on a VU meter >is specified rather carefully and isn't the damping you'll see on most >anything else.

Mike and others,

The characteristics of a "correct" VU meter are tightly specified in an official specification. Basically:

1) the meter must indicate within one percent of "100 or 0 VU" within 0.3 seconds of application of the signal
2) The overshoot must be more than 1% and less than 1.5 %.
3) The impedance of the meter may also be specified but I am not sure.

Ah yes, I have an RDH4 at hand (Radiotron Designer's Handbook Volume 4). In Chapter 19, Section 2, page 823, I find:

" The Volume Indicator is a root-mean-square type instrument with a copper oxide type of rectifier. The rectifier law is intermediate between linear and square-law, having an exponential of 1.2 +/- 0.2. It's dynamic characteristics are such that if a sinusoidal voltage of frequency between 35 and 10,000 c/s and of such amplitude as to give reference deflection under steady state conditions is suddenly applied, the pointer will reach 99% of reference deflection in 0.3 seconds (+/- 10%) and then should over swing reference deflection by 1% but not more than 1.5%. ... It will give a reading of 80% on an impulse of sine wave form as short as 0.025 second. .. "

The reference given for most of this is: "American recommended practice for volume measurements of electrical speech and program waves" C16.5 - 1942 American Standards Association

I think it's unlikely that a small meter such as in the R-390 type receivers could meet these specs. The 0 VU calibration would, but none of the rest. I have a genuine Weston VU meter about 4" across. It is VERY heavy. I suspect that the large magnet is needed to meet the ballistic specs above. at: http://yarchive.net/phone/decibels.html

I find the author (Al Varney)varney@ihgp2.ih.lucent.com tells his sources for VU meter information: " much of my VU information was from the Bell System Technical Journal, Vol 19, 1940, p. 94-137, "A New Standard Volume Indicator and Reference Level", by D. K. Gannett (Bell Labs), H. A. Chinn (CBS) and R. M. Morris (NBC). This was also presented at a joint AIEE/IRE meeting in San Francisco (June 1939) and at the IRE Convention in New York (September 1939). Additional material was from the June 1940 Bell Labs Record and several prior documents relating to the Bell System's "program transmission networks" and work of loudspeaker/public-address systems."

At: http://www.sfu.ca/sonic-studio/handbook/Zero_Level_VU.html I find:

"0 VU is +4 dbm and represents a voltage level of 1.228 volts."

Note that 0 DBM in 600 ohms is one milliwatt or 0.733 volts, and no doubt these definitions can be found in many EE texts or engineering handbooks. Roy

From brookbank at triad.rr.com Thu Jun 9 11:22:15 2005
Subject: [R-390] Re: Panel meters

Yea that would make the R-390B

From jamminpower at earthlink.net Thu Jun 9 11:56:57 2005
Subject: [R-390] Sources for meter movements?

> At: > http://www.sfu.ca/sonic-studio/handbook/Zero_Level_VU.html > I find: "0 VU is +4 dbm and represents a voltage level of 1.228 volts." Note that 0 DBM in 600 ohms is one milliwatt or 0.733 volts, and no doubt > these definitions can be found in many EE texts or engineering handbooks.

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Boy, not any more - I went through an entire MIT then Stanford Electrical Engineering education without anybody telling me what a dBm was. I had to take a class in the music department (!) to learn that (!!!). I guess building computers and making integrated circuits doesn't need dBm any more . . .

The funny thing is that Stanford was the home of Prof. Terman, and the EE building is called the "Terman Engineering Center". Terman was the author of a dozen or so classic EE texts that mostly dealt with building radios. I don't think Stanford has a course in RF engineering any more. I guess with cell phones, wireless internet and RFID the whole subject is starting to come back now. James A. (Andy) Moorer

From peuhs at bellsouth.net Thu Jun 9 14:01:23 2005
Subject: [R-390] R-390 and SP 600

Friends, Thanks for your interest...The two radios have been sold. My Regards, John

From jsullivan10512000 at yahoo.com Thu Jun 9 16:11:33 2005
Subject: [R-390] What is exact Bristol wrench size to use for the Collins R30 knob set screws/collars on gear-train?

Wondering what the exact size is for Bristol wrench on knobs/collars on gear train. Since I don't need Bristol wrenches for any other purpose, why should I buy a whole set? I want just the one or two wrenches to fit aformentioned, so what size do I buy? Anybody have ones they want to sell? Plan to use them just one time, so don't need impressive/expensive ones.

From shoppa_r390a at trailing-edge.com Thu Jun 9 17:05:30 2005
Subject: [R-390] What is exact Bristol wrench size to use for the Collins R30 knob set screws/collars on

gear-train?

> what the exact size is for Bristol wrench on knobs/collars on gear train #8 is evidently the "old" designation. Modern catalogs list this size as "0.096-6".

Common sources are Xcelite, and McMaster-Carr (http://www.mcmaster.com/). I think a smaller size is used for some PTO adjustments, haven't gone there yet. Tim.

From k3pid at sbcglobal.net Thu Jun 9 20:18:47 2005
Subject: [R-390] Product detector NOT FAIR!!!

OK Ken, what did you save to your favorites????? Not fair to not share! You guys are great! This is a great group too! Ron H. K3PID

From dsmaples at comcast.net Thu Jun 9 20:30:24 2005
Subject: [R-390] Re: Panel meters

All: ICOM designed their latest radio, I believe, with the LCD equivalent of panel meters because they believe that panel meters will in the not too distant future become non-available. I read that in the QST review. Not sure if I believe it or not, but it's way easier nowadays to do an LCD thingie than build a D'Arsonval meter movement... BTW I like the 6E5 idea! Dave WB4FUR

From barry at hausernet.com Thu Jun 9 21:18:31 2005
Subject: [R-390] Re: Panel meters

wrote: <snipped> > BTW I like the 6E5 idea!

One problem with 6E5's or other eye tubes of the winky blinky variety -- the mounting depth needed. One thing would lead to another -- mount the sockets as way back as possible and let the tubes protrude from the meter ports, maybe with protective shrouds. But then the receiver would take on a bug-eyed look, maybe even amphibious. Next thing y'know there would be posts with subject lines reading "Frog '390 Not Yeasu".

I guess that means using those sideways tubes, but good ones are probably rarer than original meters.

Many moons ago, I built a standalone stereo VU meter adapted from a magazine article for a friend. It was driven off the full output of the power amp -- fairly simple circuit as I recall, but not much else. It was rather large -- on purpose -- so it could be read from a distance. I believe the circuit was basically a linear/op amp type of thing. I suppose a miniature version could be made with LED arrays if available or very small LED's arranged in an arc, like a meter scale. Not sure if the LED's blinking would also make noise.

Then again, there's that "Deep Sea Detective Series" on the History Channel. Maybe we could convince the producer(s) to hunt for wherever it was that they dumped all those meters when they de-milled the gear. I can see it now ... "Nahhh! Toss those dubloons back over the side and get back down there -- we're lookin' for little black meters!"

Look, worse comes to worst, eventually we can mount little Blackberries in the meter ports... use 'em to

stay tuned to the reflectors/chat rooms F/T and, on when the mood strikes, log onto two streaming videos of someone else's meters. Sort of like the "Yule Log" concept. I better go now ... Barry (not me -- one of the other ones.)

From N4BUQ at aol.com Thu Jun 9 23:07:13 2005
Subject: [R-390] Re: Panel meters

I've wondered about "retrofitting" a magic eye tube with the R390A. I bought a 1629 and plan to try it. I realize it won't fit where the Carrier Level meter is, but I was thinking about a "sit-on-top" box. Not fancy and maybe not all the practical, but it would have a cool factor. Barry - N4BUQ

From barry at hausernet.com Thu Jun 9 23:33:17 2005
Subject: [R-390] Re: Panel meters

> I've wondered about "retrofitting" a magic eye tube with the R390A. I > bought a 1629 and plan to try it. I realize it won't fit where the > Carrier > Level meter is, but I was thinking about a "sit-on-top" box. Not fancy > and > maybe not all the practical, but it would have a cool factor. > > Barry - N4BUQ

Kiwa makes (made) one for $249. The web page is still there: http://kiwa.com/kiwaeye.html .. but apparently no links to it from their product list page, so maybe it's history. A tad pricey. Barry

From bhagen at msn.com Fri Jun 10 18:12:36 2005
Subject: [R-390] retrofitting

Nah, you've got to go back to the late '60's and get yourself a color organ. It just connects across the speaker terminals. Hotter signal gives brighter flashing colors. Bruce Mot 390

From g4gjl at btopenworld.com Fri Jun 10 15:47:07 2005
Subject: [R-390] re cost reduction ect ect

I wonder if you have recordings of SSB resolved barefoot with the 390 and then with the adaptor added? Many of us would be interested I suspect. Pete G4GJL

From ai2q at adelphia.net Fri Jun 10 16:19:16 2005
Subject: [R-390] re cost reduction ect ect

No, sorry Pete, I have no recordings.

However, suffice it to say that the ability to listen to SSB stations, where are some are weak and some are very strong, without having to twiddle any knobs, really makes the outboard detector shine. Vy 73, AI2Q, Alex in Maine http://users.adelphia.net/~alexmm/ai2q.htm

From shoppa_r390a at trailing-edge.com Fri Jun 10 17:21:47 2005
Subject: [R-390] retrofitting

> go back to the late 60's and get yourself a color organ.

Nah, that'll just detract from the neon-red color scheme on the front panel and the blue spinning LED's installed around the freq readout. (Believe it or not, blue LED's are already passe in the consumer market!) Tim.

From odyslim at comcast.net Fri Jun 10 18:03:54 2005
Subject: [R-390] off topic. E.H. Scott Radio

Well, I got my hands on an E.H. Scott RBO receiver. Fedex broke it up pretty good. I need a window for the front and maybe a manual. The dial needle only moves so far before binding up. So my question is.1, Does anybody on this list have any spare parts? Or have any friends that may? I was told this is a morale receiver that was used on Navy ships during WWII. True? Scott W3CV

From CRIPS01 at MSN.COM Sat Jun 11 23:20:34 2005
Subject: [R-390] off topic. E.H. Scott Radio

I see BAMA has the manual for the Scott RBO-2 receiver. Scott was really high end stuff in the 30's into the 40's If you look at The National Geographic magazine you will find ad's for Scott electronics. I seem to recall ad's for Scott Televisions in the early '50's. Ken de W7ITC

From CRIPS01 at MSN.COM Sat Jun 11 23:59:24 2005
Subject: [R-390] re cost reduction ect ect

This forum really paid off several years ago. I got a bunch of stuff from the estate of a local Ham. among the stuff I got was the ELDICO SBA-1. I have long felt the reason why I got it was nobody knew what it was.

I have this forum to thank for the fact I did. After My brother (KI7TS) and I unloaded all of this stuff in my back yard this gray box came out, Judging by the strange look from my brother he must have thought I was all knowing when I pounced on the SBA and had it running on the R390A about 20 minutes after first spotting it. I lucked out in that it worked from the get go. Ken

From pomerol at mocha.ocn.ne.jp Sun Jun 12 03:54:45 2005
Subject: [R-390] R-392 Power Connector

Hello All,

I'm still thinking about how to do with the power connector (164-4FS). A source ask me $30 for the connector, so "making" the connector by myself would be the best.

If so, what receptacle contacts would suit for the pins? I recall someone advised it before but I lost it after I drunk some shots of "Wild Turkey"(Rare Breed) :-) Osamu Hazawa

From barry at hausernet.com Sun Jun 12 12:16:21 2005
Subject: [R-390] R-392 Power Connector

Hello Osamu,

There are two types of crimp-on connectors I've used and a possible third. One type is a "butt" connector. This is the kind that is used to splice two wires together. You crimp the wire side and slip on the other. They usually come with insulation which extends beyond the metal. The receiver side needs to have that trimmed. At first it will be loose, so you use the crimpers to make it a little smaller and test-fit until it is snug enough. The insulation on the butt connector prevents shorting to the other pins in the R-392 panel connector.

The second kind is a round "snap" connector that comes in mail and female, often used in automotive installations. The male version has a taper to it -- a narrow spot that snaps and holds in the female one. They usually have blue or yellow transparent insulation. You'd need the female.

I haven't tried this, but you might also be able to use modified "Molex" connectors. These are the nylon multi connectors also used in automotive applications, but most familiar as the 4-conductor versions used in computers to supply power to the hard drives, CD-Rom drives, etc. If you have some of these around, you can try cutting them lengthwise to separate them into individual units. You can also pick up two-conductor Molex connectors and, it might be that the spacing will allow connection to two of the pins in the R-392 jack. Or you can remove the metal terminals inside (they float around a bit), solder them onto the supply leads and use heat shrink tubing to insulate them.

First step is to look around in your junk box.

Of course, another approach is to use alligator clips with the insulating boots, making sure that the boots are pushed forward. Then use tape to keep them from accidentally getting pulled off. This is the messiest.
You'll probably want to go for the connector eventually to keep things solid and professional looking. Have you checked with William Perry? His prices are supposed to be reasonable, but it could be expensive with the shipping to Japan.

To make things clearer, here are the links to the terminal types on the Radio Shack web site

Butt connectors:
http://www.radioshack.com/product.asp?catalog%5Fname=CTLG&product%5Fid=64-3037

These are the round crimp on terminals:
http://www.radioshack.com/product.asp?catalog%5Fname=CTLG&product%5Fid=64-3086

Here is a two conductor female "molex" -- Radio Shack calls them "interlocking" connectors:
http://www.radioshack.com/product.asp?catalog%5Fname=CTLG&product%5Fid=274-154

You probably have other electronics stores that carry these. Probably all are also carried by auto parts stores. If you have one of those Check the diameter of the R-392 power connector pins.

Sometimes you can find a plastic bottle cap that will fit over the outside of a mil connector -- maybe even a green one ;-). Then you can use that to provide a finished look to it. Of course, if you're concerned about that, even after the creativity, you'll probably go and order that $30 connector. Hope this helps Barry

From shoppa_r390a at trailing-edge.com Sun Jun 12 14:58:15 2005

Subject: [R-390] R-392 Power Connector

> You can also pick up two-conductor Molex connectors

In fact they're available in single-conductor connectors too. e.g. Molex 03-06-1011 for a single-conductor 0.062" housing and Molex 03-09-1011 for a single-conductor 0.092" housing. I've only ever used the single-conductor ones for a quick-try at hooking up to random unavailable connectors. Tim.

From pomerol at mocha.ocn.ne.jp Sun Jun 12 22:41:13 2005
Subject: [R-390] R-392 Power Connector

Barry and Tim,

Thanks for the detailed and comprehensive explanation. Actually, I have some "Quick Disconnects" connectors in my junk box, and I was going to use them. But alas, they are naked, without any insulation. So heat shrinkable tube work is needed (I hate it!).

So, as Barry advised me, I'll try "Butt Splices/Connectors" or "Fully Insulated Quick Disconnects". Any DIY stores might have them.

Yes, after I confirmed that the R-392 is up and running, I eventually have to buy "that" connector for safety purpose and a finished look. Regards, Osamu Hazawa

From barry at hausernet.com Sun Jun 12 23:07:16 2005
Subject: [R-390] R-392 Power Connector

Hi Osamu,

Some follow-up -- see my comments:
> Actually, I have some "Quick Disconnects" connectors in my junk box, > and I was going to use them. But alas, they are naked, without any > insulation. So heat shrinkable tube > work is needed (I hate it!).

Well, the good news is that you can solder them. If you don't want to use heat-shrink, you can "borrow" the insulation from some heavy wire and stretch it over the connector and lead. I have also resorted to using pieces of plastic soda straw. Regular ones might be too large in diameter, but the small ones that come glued to the side of those small drink cartons or the "little milk" cartons that don't have to be refrigerated -- might be the right size. Of course, I don't know the dialectric/insulating properties of polyethylene soda straws, but ...

You can also coat the connectors with silicone sealer which is flexibile when it cures so will expand with the connector. Also very tough.

> So, as Barry advised me, I'll try "Butt Splices/Connectors" or "Fully > Insulated Quick Disconnects". Any DIY stores might have them.

Yes, they're pretty common.

> Yes, after I confirmed that the R-392 is up and running, I eventually have > to buy "that" connector for safety purpose and a finished look.

Couple of other things. Probably just as important as the connections themselves is to provide some kind of strain relief. Loop the power supply wires below the connector and use a nylon wire tie or wire clamp (no doubt they are in your junk drawer/box, left over when you bought a packet of five and had 3 left over. ;-) What you want to avoid any chance of is snagging the supply cable and causing it to pull off the R-392 and possibly shorting your power supply.

I forgot the exact pinout on the R-392 for the DC supply -- nominal 24 volts (24 v. vehicular power is just under 28 when the engine is running fast enough). There are three relevant connections: A single ground and two 28 v inputs -- one for filament and one for B+. The usual practice is to strap the two together -- usually at the p/s end of the supply cable. However, it has been written that the R-392 is optimized with something higher than 28 on the B+ -- like 32 vdc as I recall, however the filaments are best run at no more than 24 to maximize tube life. It may not be worth the bother to build a special P/S or use two supplies, but you can run the R-392 at 24 with somewhat reduced performance while being more gentle on the tubes. I think I have conveyed this accurately. If I'm wrong, someone please correct me. Barry

From CRIPS01 at MSN.COM Mon Jun 13 02:12:16 2005
Subject: [R-390] R-392 Power Connector

For sealing wire splices I prefer the adhesive/sealant called Seal-All. It has advantages over some silicone adhesive/sealants one of which is some silicone compounds are corrosive while curing. You can tell if it is by smelling it. If it have a vinegary smell then it is corrosive. Seal-All is far more useful in many areas.

One of the uses I put it to in repair the plastic forms used in old open air induction coils. As you all know the plastic on these old coils gets very brittle and in many cases in already broken Seal-All does a fantastic job of fixing these. This stuff dries harder then silicone but it is still flexible. Seal-All can be purchase at any hardware store, Automotive parts store etc. Ken

From ghayward at uoguelph.ca Mon Jun 13 08:12:35 2005
Subject: [R-390] R-392 Power Connector

I used Molex female plug inserts with heat shrink tubing. Worked and looked great. The audio is on the bottom connector too, so absolutely no blacksmithing is required. Cheers, Gord, VE3EOS

From pomerol at mocha.ocn.ne.jp Mon Jun 13 19:26:24 2005
Subject: [R-390] R-392 Power Connector

Hi Barry, I'm supprised at your plentiful ideas!

>you can solder them. If you don't want to use heat-shrink, you can >"borrow" the insulation from some heavy wire and stretch it over the >connector and lead.

If I failed to make decent connection, I'll follow your idea (soldering).

>Probably just as important as the connections themselves is to provide some >kind of strain relief

Yes. "Experiment" sometimes converted into "Permanent Fix" ;-)

>you can run the R-392 at 24 with somewhat reduced performance while being >more gentle on the tubes. I think I have conveyed this accurately. If I'm >wrong, someone please correct me.

24VDC power supply that I got from an auction is 24VDC version. So it won't whip the tubes. But I'll try to boost up to variable limit (25 or 26?) whether the perfomance changes or not. Osamu

From roy.morgan at nist.gov Tue Jun 14 11:20:13 2005
Subject: [R-390] R-392 Power Connector

wrote: >>you can run the R-392 at 24 with somewhat reduced performance while being >>more gentle on the tubes. ... >24VDC power supply that I got from an auction is 24VDC version. >So it won't whip the tubes. But I'll try to boost up to variable limit (25 >or 26?) >whether the perfomance changes or not.

Osamu,

The filament and plate connections at the power connector are separate (if I remember correctly). So, you can increase the output of your supply to 27.5 or 28 volts and apply this to the plate supply. Then put some silicon diodes in series from there to the filament supply to drop the filament voltage down to the correct amount for the tubes for best tube life. Make the diodes big enough to carry the filament current, whatever that is. Figure 0.7 volts per diode.. using four as a test would be a good start. Roy

From JEEPER at netins.net Wed Jun 15 06:36:07 2005
Subject: [R-390] NEED HELP R-390

HELLO TO ALL .HOW DOES A R-390 RECEIVE WHEN BALLEST TUBE [TUR]3TF7 IS WEAK OR BAD?

From lester.veenstra at intelsatgeneral.com Wed Jun 15 07:15:15 2005
Subject: {Spam?} Re: [R-390] NEED HELP R-390

Bad = No receive
Weak = receiver OK

From dcsfree at worldnet.att.net Wed Jun 15 08:29:50 2005
Subject: [R-390] NEED HELP R-390

this guy has real nerve???????

From courir26 at yahoo.com Wed Jun 15 10:01:17 2005
Subject: [R-390] NEED HELP R-390

The PTO will not work. Tom

From tshoppa at wmata.com Wed Jun 15 11:46:05 2005

Subject: [R-390] NEED HELP R-390

>> HOW DOES A R-390 RECEIVE WHEN BALLEST TUBE [TUR]3TF7 IS WEAK OR BAD?

> The PTO will not work.

I've pulled the (good) ballast tube from a working R-390A and I was surprised how long the PTO continued to "work":

A few seconds after pulling the tube, the PTO begins to drift enough to be noticeable. For the first coupld of seconds, I don't hear the PTO drift even when listening to CW.

For ten or so seconds after that, the PTO drifts maybe a few hundred Hz but keeps on working.

There's another few seconds where the PTO is drifting way way out from where it originally was oscillating.

After about 15 seconds, finally the PTO stops oscillating and the radio goes quiet.

My guess is that there is enough "gain margin" in the PTO design that even though loop gain drops dramatically as filament emission drops, still the oscillator keeps on running. Tim.

From n4buq at aol.com Wed Jun 15 12:07:06 2005
Subject: [R-390] NEED HELP R-390

I wonder what the output voltage on your PTO runs with the 3TF7 in place? Both of mine only put out a couple of volts, but I think they're supposed to generate about 7 volts. Apparently it takes very little injection signal to keep things going and even my 2 or 3 volt units provide plenty of signal. Not sure, though, how long the loop will continue after mine loses filament power. Perhaps I'll try that.

Sadly, one of my 3TF7s died recently. I was aligning the IF and in the process of pulling the xfmr shields at the time and I think something shorted to the shield in the process. Yeah, I should've turned off the power when doing this, but I didn't think there would be a point that would touch anything. At any rate, the 3TF7 died when I heard the "buzz" while pulling the shield off of one of the transformers. Since the 3TF7 only regulates the two filaments, I'm not sure how this would have caused the 3TF7 to blow. Perhaps it was just its time to go? At any rate, it is now replaced with my trusty 47-ohm resistor bundle until I find another reasonable replacement. :(Barry - N4BUQ

From dhallam at rapidsys.com Wed Jun 15 13:42:22 2005
Subject: [R-390] NEED HELP R-390

Why replace the ballast tube at all? Dallas Lankford's work showed that the ballast tube didn't do a very good job of stabilizing the PTO filament voltage anyway. The resistor or 12BA6 substitutions require no modifications and do just as good or better job. Besides they cost less than the $20-$30 you have to pay for a new ballast tube. Unless a person is a fanatic about original condition, I don't see any reason to keep the ballast tube. David C. Hallam KC2JD

From n4buq at aol.com Wed Jun 15 14:38:46 2005

Subject: [R-390] NEED HELP R-390

That's what I was referring to as a "reasonable replacement." I'm thinking of modifying this one for 12BA6 operation. The only thing I don't like about this is it means there is a dependency between the IF and PTO modules. Not too bad and if the jumper is replaced with a 3TF7, it won't burn the filaments out so it's relatively "safe". I may try the 12BH7/12BY7 route too.

I'm sort of planning on modifying the power supply for 12BW4s so this might be my "modded" radio. Thanks, Barry - N4BUQ

From Llgpt at aol.com Wed Jun 15 14:42:52 2005
Subject: [R-390] NEED HELP R-390

writes: I'm sort of planning on modifying the power supply for 12BW4s so this might be my "modded" radio.

Uh Oh, the Collins Radio Gods will find you and then it will just be a matter of time.....:-(

Art Coalins
Coalins Steam Radio
Cedar Lake, Ohio

"Steam powered Radios fueled by clean burning coal are the wave of the future."

From tshoppa at wmata.com Wed Jun 15 15:05:51 2005
Subject: <<<SPAM>: Re: [R-390] NEED HELP R-390

wrote: > I wonder what the output voltage on your PTO runs with the 3TF7 in place? > Both of mine only put out a couple of volts, but I think they're supposed to > generate about 7 volts.

I have about 5V P-P with the 3TF7 in place. I'll try putting in 12BA6's and taking out the 3TF7 and see if I notice anything different. Tim.

From mhuss1 at bellatlantic.net Wed Jun 15 19:12:37 2005
Subject: [R-390] NEED HELP R-390

David is right. I repeated Dallas Lankford's work and found that the receiver PTO is much more stable with a 42 Ohm resistor than the origional 3TF7. Unless you have AC power that varies more than about 7 volts, use a 25 watt 42 ohm resistor. It generates some heat, but no more than the origional 3TF7. And if you have a fetish about drift of a few hertz, use a Voltage Regulator and a good heat-sink. You have to add a ground wire to the socket, but it was staple to the point that it was unmeasurable on my equipment.
I tried the 12BA6 with a 1 ohm resistor in series to measure current rush, and saw quite a spike in current on turn-on. Makes sense as filiment resistance goes up as the filliment heats up. Enough that I decided to stick with the resistor to keep the filliment surge down. It helps, I noticed that the PTO takes about two seconds longer to come up than normal.

If anybody is interested, I did the design work up to Breadboard for a plug-in Voltage Regulator. it is

designed for 40Volt Peak input voltage and 80 degrees C. ambiant at 20% overcurrent.

From pomerol at mocha.ocn.ne.jp Wed Jun 15 20:25:25 2005
Subject: [R-390] R-392 Power Connector

Roy,

Sorry for the late reply. And thanks for your useful advice. I appreciate it.

Dropping down the voltage for filaments using only one power supply is surely a good idea. However, it was a bit difficult to find a good and less expensive power supply outputs over 24V at an auction. Acutually, there are bunch of 30VDC power supplies but their price tends to soar (I got the PS for just $9).
Anyway, I'll supply maximum voltage for the plates as far as I can and 24V for the filaments using several diodes. Thanks, Osamu

From westerman at cableone.net Wed Jun 15 21:33:45 2005
Subject: [R-390] Original Antenna Used with R-390 and R-390A

What was original antenna used by the military with the R-390 and R-390A? What do you current R-390 and R-390A owners use? Thanks -- Craig Westerman westerman@cableone.net

From mikea at mikea.ath.cx Wed Jun 15 22:23:20 2005
Subject: [R-390] Original Antenna Used with R-390 and R-390A

wrote: > What was original antenna used by the military with the R-390 and R-390A? > > What do you current R-390 and R-390A owners use?

There was no single antenna; you would find everything from a whip on a vehicle-mounted receiver, through shipboard long-wires or dipoles, to the AN/FLR-9 Wullenweber "Elephant Cage".

I use a 60' long wire for stuff below 10 meters, and a resonant dipole for 10 meters. -- Mike Andrews, W5EGO

From CRIPS01 at MSN.COM Thu Jun 16 02:23:04 2005
Subject: [R-390] Original Antenna Used with R-390 and R-390A

I just use my G5RV which has been up for years. I have it fixed so I can switch it between radios. This is also my main transmitting antenna. There are other designs I want to try but this one works so well I have little reason to change it. Ken

From n4buq at aol.com Thu Jun 16 16:47:27 2005
Subject: [R-390] NEED HELP R-390

Mark,

Just curious why you suggest a 25W resistor? 300mA through 47 ohms is just a little over 4W, right? Bigger is better, I suppose, but you can get by with less, I think. Barry - N4BUQ

From Flowertime01 at wmconnect.com Thu Jun 16 17:20:02 2005
Subject: [R-390] Original Antenna Used with R-390 and R-390A

Craig,

If you were an 05H in the Army Security Agency, you used your receiver with a whole antenna farm of Rhombic antennas. You shared your antenna farm with some few hundred other 05H's through some CU 872 antenna couplers.

Your antenna farm covered 360 degrees. Your Rhombic's shared there two side towers with adjacent Rhombic. They were likely 100 to 130 foot towers depending on the lay of the land. Your farm field formed a 180 degree vista.

If you were a signal corp communicator doing both sending and receiving. Likely operating RTTY, you had a dipole cut to your exact operating frequency. You were likely operating over 15Mhz and had a couple 50 ft telephone poles for mast. You may have had a curtain antenna or two for diversity operations.
You likely had a farm field of antenna's to work different links at different directions.

I just know aver one of those antennas was a kit and had part numbers and nomenclatures.

Today I just have as long a wire as I can get into the air. Roger KC6TRU

From mhuss1 at bellatlantic.net Thu Jun 16 20:31:42 2005
Subject: [R-390] NEED HELP R-390

We design and build Military Electronics. Rule#1 is to design it so that no matter what, when the 'Grunt' pulls the trigger, bad things come out the naughty end :) As a rule, I design with 65 degrees C (150F) as the absolute minimum outside ambient temperature. You would be amazed at how hot the inside of a Bradley can get sitting in the Sun! So when I am grabbing parts for a 'quickie', the mindset is thinking 65C. Add to that the heat generated by an R390A inside a rack samwiched between two others, and Ambient gets quite warm. Since i mostly have heat-sink resistors laying around, did not want to bother with heat-sinking to the chassis, and it will be situated vertically (basically doing everything wrong;)), a 10W would derate to about 4 watt at 25 degrees C. Its life would be short at anything around 35-45 degrees ambient. Next higher rating is 25 watt. with that, i am comfortable that it will take 80 degrees C ambient at 5W no problem. If you go for Ceramic Wirewound, you will still have to derate because it is vertical, but not near as much because it is much larger. Realistically, my R-390A sits open so i can enjoy the glow and keep it cool. so 40 degrees would be worst case. Using a good piece of aluminum or mounting it to a chassis, I could drop down to 5W mounted horizontally on the chassis, 10W mounted vertically on a small plate. You haven't lived until you see the end plugs shoot out of the Dale Resistors on the 'Avenger' Gun Servo Board cuse you left it on for thirty seconds of troubleshooting!!! Mark

From westerman at cableone.net Thu Jun 16 21:56:51 2005
Subject: [R-390] Original Antenna Used with R-390 and R-390A

Roger

Do you use a long wire balun and antenna tuner or run the long wire direct? I've been looking at these: http://www.palomar-engineers.com/MLB-1/mlb-1.html Craig Westerman

From n4tua at aol.com Fri Jun 17 06:55:39 2005
Subject: [R-390] New Owner

Hello Friends,

I am new to the list and am the new owner of an R-390A (Motorola, 14-PH-56, #651). It looks like mine has all chassis with the same contract number too. But, I have a few questions.

Has anyone ever seen a case were the bfo pitch and selectivity switch shafts were not aligned with the front panel holes? Is there an adjustment to align these? When I got mine the bfo pitch would not turn due to alignment. Now that the IF chassis is out it turns fine.

What are some good or critical things to do before applying power for the first time? I have removed the audio, power supply and IF chassis and inspected and am doing some clean up now. Thank you, Collin

From tshoppa at wmata.com Fri Jun 17 08:04:58 2005
Subject: [R-390] New Owner

wrote: > Has anyone ever seen a case were the bfo pitch and selectivity switch shafts > were not aligned with the front panel holes? Is there an adjustment to align these? > When I got mine the bfo pitch would not turn due to alignment. Now that the IF > chassis is out it turns fine.

There's a certain amount of misalignment between any module and mainframe, but usually the worst is that it makes turning the knob a little stiff. Maybe a hard knock to the chassis (in shipping?) caused things to go out of alignment worse than this.

The "usual suspect" is to remove the knob, loosen the bushing mounting nuts, wiggle everything into realignment, and retighten.

> What are some good or critical things to do before applying power for the first > time? I have removed the audio, power supply and IF chassis and inspected > and am doing some clean up now.

Replace the "killer cap", C553 on the IF chassis, with a higher-voltage unit. Also the electrolytic cans on the AF chassis and C609 on the AF PCB. Check the fuses for proper values. (I've seen 5 Amp fuses in the 1/8A position! Augh! I suppose a penny didn't fit...) Tim.

From flash at skybird.biz Fri Jun 17 08:34:16 2005
Subject: [R-390] not ballast tubes again!

I mostly lurk here, keeping my mouth shut where I am a class A ijit. I am a geek though, and radio geeks are the best. Unfortunately I am the only one here, and in 1986 my antenna blew down. These lots are small though, but I got a full 100 x 50 and I think an inverted V might do the trick. But I digress.

We keep some topics for summer reruns. Even though some horses (like ballast tubes) have been beaten to dog food, I always read the whole post (but not the endless reposts of posts contained in each post.

Re the gentle 3FT7...A friend has promised me 2. Not because he had to, but because he had two. But my buddy is depressed, so I won't see them for a while.

The 6ba6 or whatever some guys say is great in theory, but it requires mutilation and modification. I hate to tell you how many radios I modified and smoked, until my soldering gun got confiscated (Kid, you'll burn the house down!) So thus I have 3/4 of a roll of kester, which makes a nice security camera mount (It sits on a 35 inch toshiba tubed box)

So after all that, we get back to the R390A which I have mounted in a rack with other electronic goodies.
Every time the topic comes up, someone has a similar mod.

I just want the radio to play and none of the Old Timers will help me (That's why you don't hear me running full legal power on 3950 0r 3923 or other watering holes any more)

So can it be simple as putting a 42 ohm resister between pins 2 and 7 of the 3ft7? What about power rating, I have heard anything ranging between 5 and 25 watts, and is that with or without the 6BEAWHATEVER-GT.

I just want my radio to play again and let out no smoke. You know someone ought to make "Essence of vacuum tube" for a cologne. I would buy it!

So what say, gents? My long term plan is to buy the Ripple solution. I would do it today but I don't have a tech, and don't look at me, I CAINT DO IT!). And I don't have the money right now. maybe a project for winter, since the ionosphere does not exist up here during Aroura blackout in the tundra.

BTW Marquette is a wonderful place to live, you should move here. I run an internet radio station (and a C band Satellite channel) 24 hours a day. If you are an OT, you would like the music, at least some of it, we play everything except hiphop, and that other boom boom boom noise that shakes my house when they drive by.

Anyone here a Linux Geek? I am having problems with audio and video in fedora core 3. It used to work, but that was in Mandrake.

Thanks for listening to my ramble, and hopefully we can define a simple one resistor mod, I can live with drift until I can afford Chucks Mod. TNX ES 73 DE WB8EOH THE ECCENTRIC OLD HIPPIE

Please do not overquote this message, your net poster mabob works like a word processor. You can Highlight text and remove it and just keep the specifics of what you are replying to. We could take it off line, that would make the list happy.

From n4buq at aol.com Fri Jun 17 09:02:12 2005
Subject: [R-390] New Owner

Make sure someone has not put washers or other spacers between the IF module and the frame. That could cause a misalignment. The IF module is designed to mount directly to the frame. Just a thought.

Barry - N4BUQ

From KA4PRF at peoplepc.com Fri Jun 17 08:52:25 2005
Subject: [R-390] not ballast tubes again!

Gary,

I have one good 3TF7 tube left. It cost me $37 plus shipping. I can't afford to purchase these tubes every couple of months just to listen to a R390A. I live in an area where there's power failures weekly. Although I finally wised up and plugged my R390A into a surge protector, I am not sure I have solved the problem. So I am using a 47 Ohm resistor instead of my last 3TF7 tube. So far there hasn't been any problems. Chuck Florida

From roy.morgan at nist.gov Fri Jun 17 10:11:19 2005
Subject: [R-390] not ballast tubes again!

wrote: >I have one good 3TF7 tube left. It cost me $37 plus shipping. I can't>afford to purchase these tubes every couple of months just to listen to a >R390A. I live in an area where there's power failures weekly.

GET A SOLA!

> Although I finally wised up>and plugged my R390A into a surge protector, I am not sure I have solved the>problem.

It won't.

>So I am using a 47 Ohm resistor instead of my last 3TF7 tube. So far there>hasn't been any problems.

GOOD! Maybe you found the best solution. Roy

From n4buq at aol.com Fri Jun 17 10:20:36 2005
Subject: [R-390] AGC question

When listening to a moderately strong station in the 15mc band, if I switch to AGC, the signal drops significantly from the MGC position, regardless of the AGC speed. With a signal generator as input and the RF gain all the way CW, I can adjust the signal generator to get -10V on the Diode Load in MGC. Switching to AGC, the Diode Load drops to about 3.4V to 4V (depending on the AGC speed position).

I assume this is an AGC problem and if I check the AGC voltage, I'll see it's generating too much AGC voltage, right (I didn't check this last night but will)? If this is the case, where do I start debugging this? I assume checking tubes, pin voltages and resistances is the right place to start? Thanks, Barry - N4BUQ

From kgordon at moscow.com Fri Jun 17 14:18:25 2005
Subject: [R-390] Racks for sale - Pick up only.

I have six each 6' tall standard 19" wide racks for sale. Price is $50.00 each.

These are all-steel racks, and have been used. Some are painted black crackle, others are grey. One has had the door damaged, but it is easily fixed.

Some have a 6' length of Plug-mold strip for 115 VAC installed inside them. These would be especially handy if you have more than one R-390(*) or R-389. Put one in each at operating height. They have to be picked up in Missoula, Montana before July 31, or in Moscow, Idaho after that. I will not attempt to ship these. Photos available on request. Ken Gordon W7EKB

From shoppa_r390a at trailing-edge.com Fri Jun 17 18:10:13 2005
Subject: [R-390] WTB: 4KC Filter

My yellow striper arrived today. A little banged up but mostly working, will be a good summer project. But it does need a 4KC mechanical filter. Willing to pay some cash or trade some good 3TF7's. Tim.

From JEEPER at netins.net Fri Jun 17 19:14:47 2005
Subject: [R-390] R-390 BALLEST/HELP

IF I REMOVE THE BALLEST,WHICH WAY WOULD BE RELIABLE AND SAFE. REPLACE THE TWO 6BA6 TUBES WITH 12BA6`S THEN ADD JUMPER WIRES IN BALLEST TUBE SOCKET.OR KEEP THE 6BA6 TUBES AND PUT IN THE 47OHM RESISTORS?

From jmiller1706 at cfl.rr.com Fri Jun 17 19:58:47 2005
Subject: [R-390] R-390 BALLEST/HELP

One popular mod. is to substitute a 12BH7 tube in the ballast tube socket, with jumpers at pins 2-4 and 5-7 of that socket. The 12BH7 filament provides the voltage drop. The mod is simple and easily reversable, and you won't miss the 3TF7. By the way, you can still use a 3TF7 if you want to in place of the 12BH7. Here's an old thread on ballast tube and replacements: http://209.35.120.129/Pearls/ballast-tube.pdf

From ToddRoberts2001 at aol.com Fri Jun 17 20:48:52 2005
Subject: [R-390] R-390 BALLEST/HELP

writes: IF I REMOVE THE BALLEST,WHICH WAY WOULD BE RELIABLE AND SAFE. REPLACE THE TWO 6BA6 TUBES WITH 12BA6`S THEN ADD JUMPER WIRES IN BALLEST TUBE SOCKET.OR KEEP THE 6BA6 TUBES AND PUT IN THE 47OHM RESISTORS?

Simplest, easiest and safest is replace the 6BA6's with 12BA6's and add a jumper wire across the terminals used in the Ballast tube socket.

From wli98122 at yahoo.com Sat Jun 18 16:19:33 2005
Subject: [R-390] New Owner

Welcome to the group, Collin

Good reviews on what to do with a newly acquired R-390A may be found on Chuck Rippel's Web site

www.r390a.com, and Don Reave's owners manual Aug 2002.

Both are good places to start. Next, www.r-390a.net has a FAQ and lots of detailed info from the various listserv members as well as gov't pdf's for download. Best current all-round reference is the Y2K rev 2 manual, available at www.r390a.net as well. W. Li Mercer Island

From shoppa_r390a at trailing-edge.com Sun Jun 19 15:54:35 2005
Subject: [R-390] Mech filter repair, big knob refurb

OK, I'm taking stock of my yellow-striper from Fair Radio.

They were pretty quick about getting it to me and did a great job packing it. Despite the packing job one tube (a 5814A) did get cracked in shipment. There's other physically-banged-up-damage that obviously occured far earlier in its life - a corner of the front panel is a bit bent, the side panel and back panel of the mainframe show some evidence of it getting dropped on a back corner, etc.

The guys at Fair Radio did a pretty good job checking it out even though it was a "Used-reparable" and not a "checked" unit. Green dots on the power supply, IF, and AF assemblies indicate that they actually were checked before shipment. The green dot on the IF says the 8KC filter is broken, but actually it's the 4KC filter. That's not so bad - I'm likely to use 8KC or 16KC when listening to MW and SW broadcasters, and to shift to 1KC when listening to CW. (SSB and I have never got along).

Some knobs, pots, and fuseholders were broken but Fair shipped me a little box with suitable replacements.

Both the main tuning (MC and KC) knobs have some damage. Between the two of them I can swap a clamp around and get a good one. The other one, which has damage to the slotted part, I will probably drill out, insert a piece of stainless steel tubing, slot the tubing, and put a non-original clamp on. I think I saw this method of repair mentioned here before... any advice before I start hogging away with the drill press?

And the 4KC filter is open circuit on one end. The other end measures about 50 ohms. I guess this means that either the really skinny wire has come undone or has burnt out. Is mechanical filter repair by an average guy like me feasible? My guess is that the mechanics are still in good shape and I all I have to do is somehow replace the skinny wire. But I don't know how to begin.

Oh, and the guys at Fair already replaced the killer cap in the IF. Ohming around the resistors in the modules shows some leaky caps and out-of-spec resistors that I'll probably take on next.

Incidentally, Fair claims to be out of big knobs, big clamps, and IF filters... not coincidentally what my unit needs :-). But I'm sure I'll figure something out. Tim.

From beerbarrel at cox.net Mon Jun 20 11:51:50 2005
Subject: [R-390] (no subject)

Need a tuning knob for a r-392. Is this the correct place to ask? Thanks, Tracy

From tshoppa at wmata.com Mon Jun 20 12:17:34 2005

Subject: [R-390] Knobs (was: no subject)

> Need a tuning knob for a r-392.

Fair Radio still has big knobs for the R-392. See http://www.fairradio.com/hfrece.htm.

> Is this the correct place to ask?

Conceptually yes :-).

And as long as I have everyone's attention: the shaft into a R-390A tuning knob is 5/16", right? Tim.

From crips01 at msn.com Mon Jun 20 17:38:34 2005
Subject: [R-390] Knobs (was: no subject)

I would suggest give Fair Radio a call. They have some parts for the R392 they may just have knobs as well. They do have a 24 volt switching power supply that will power the R392. Ken de W7ITC

From RLucch2098 at aol.com Thu Jun 23 10:59:44 2005
Subject: [R-390] Anyone Know about this FSK device & Value?

Hi All;

When I bought my last Motorola R-390A, the seller included this device. He said it was used with the R-390A's but would like to get any info I can, like value, etc! It is an FSK converter CV-116C/URR, no cables & untested. Made by ONEIDA Electronics, same as my R-390A speaker I got a few weeks ago. Here are some pics, last one shows tag:
http://www.myradioroom.com/fskconverter1.jpg
http://www.myradioroom.com/fskconverter2.jpg
http://www.myradioroom.com/fskconverter3.jpg
Any info will be apprechiated. 73...Rich WA2RQY

From roy.morgan at nist.gov Thu Jun 23 11:38:15 2005
Subject: [R-390] Anyone Know about this FSK device & Value?

wrote: >When I bought my last Motorola R-390A, the seller included this device. >He said it was used with the R-390A's but would like to get any info I can, >like value, etc! >It is an FSK converter CV-116C/URR, no cables & untested.

Rich,

Yup, sure enough. It's a CV-116 terminal unit. these things apparently preceded the URA-8A with it's pair of CV-89 converters (though it might have been the other way around.)

The CV-115 is more or less half of a CV-116, with only one channel. I have a CV-115 and a manual for the CV-116.

As you can see, it is a tube- and mass- intensive device. The 115 is about all I want to lift at one time.

And apparently they really DO need all those fans.

If an R-390A owner wants an authentic period companion tuning unit for his/her radio, this is a prime candidate. I plan to get my CV-115 running for the experience, then will perhaps pass it along to someone else as part of a long-term weight and volume reduction program here.

I can't say a thing about the performance of these things, unfortunately. I think they are slope (discriminator) type units, and will not outperform a Dovetron by any means. The 116 seems to contain a comparitor of sorts for two-channel mulitplex. Very likely it will drive your 60 ma machine(s) directly.
As to the value, quite some years ago, I paid about $100 for my CV-115, and that may well have been too high. At that time, the Hamfest price might have been much less. I don't know of any being sold other than mine, though, so this is only one spurious data point.

I suggest you try the electrolytics if you can find any, the fire it up. Those little metal cans in among the tubes are capacitors, and may well be paper caps that are subject to failure/leakage. If so, any would-be operator will have quite a restoration project on his hands. Roy

From tshoppa at wmata.com Thu Jun 23 13:04:39 2005
Subject: <<<SPAM>: Re: [R-390] Anyone Know about this FSK device & Value?

wrote: > As you can see, it is a tube- and mass- intensive device. The 115 is about > all I want to lift at one time. And apparently they really DO need all > those fans.

What's inside a CV-115? I did some RTTY stuff with surplus Bell datasets, and they were maybe a dozen transistors with some big inductors for LC filtering of mark and space. There was a not-small power supply for 60mA current loop but even then it wasn't all that big. I could imagine doing all that with a half-dozen 12AU7's. (In fact, I think the 1960's ARRL handbook did it that way using surplus telco inductors). So what's all that mass for, espcecially if as you surmise it was actually a slope converter? Tim.

From tshoppa at wmata.com Thu Jun 23 14:00:34 2005
Subject: [R-390] Toasted R216 (2nd mixer plate resistor)

In my yellow-striper's R-390A RF deck there's an obviously toasted, baked, and swelled R216. It's changed value to something in the hundreds of ohms from its original 2200 ohms.

If this was part of a pentode mixer I would think that bad voltages on a control grid was causing too much plate current. But it's part of the V203 2nd mixer. Could really wacky AGC voltages (which sets the DC bias on the 2nd mixer) have caused so much current flow that the plate resistor smoked? I'd think that this would take tens of volts

An alternative explanation might be a short in V203 (a 6C4), plate to filament, and that doesn't sound likely. Or (and this is the scariest) a short to ground inside Z216?

R215 on the cathode seems fine. Normally whatever DC current goes through R216 would go through R215 too. Any thoughts, experience? Tim.

From crips01 at msn.com Thu Jun 23 15:48:25 2005
Subject: [R-390] Anyone Know about this FSK device & Value?

I was looking for a photo of this FSK device and ran across this site tpub.com/content/signalgen/ this site has the service manual for this device. I abbreviated the address so it would get through the filters. Ken de W7ITC

From roy.morgan at nist.gov Thu Jun 23 16:16:51 2005
Subject: [R-390] Anyone Know about this FSK device & Value?

wrote: >I was looking for a photo of this FSK device and ran across this site >tpub.com/content/signalgen/ this site has the service manual for this >device. I abbreviated the address so it would get through the filters.

Ken,

I ran into that site some time ago. .they seem to only have one page from each of the items on the index of the pub. I thought maybe I am using an old browser and it would show me all the rest with another one but no, I get the same thing. What's up with that? Roy

From mikea at mikea.ath.cx Thu Jun 23 17:05:38 2005
Subject: [R-390] Anyone Know about this FSK device & Value?

wrote: wrote: > >I was looking for a photo of this FSK device and ran across this site > > I ran into that site some time ago. .they seem to only have one page from > each of the items on the index of the pub. > What's up with that?

They want to sell you the .pdf file; try the "Download" link, and you'll see a "Download after you pay" (or some such) page, with shopping basket facilities. -- Mike Andrews, W5EGO

From Flowertime01 at wmconnect.com Thu Jun 23 19:45:06 2005
Subject: [R-390] Toasted R216 (2nd mixer plate resistor)

Tim,

Past live stories are that the tube went shorted and smoked the plate resistor, Since then some has changed the tube. Did not pull the RF deck for inspection and left you with toast.

Not such a strange thing to happen. Tubes die and kill plate resistors on a regular basis. This is why PM was done ever six months. To get the tubes before the tubes got the resistors. Roger KC6TRU

From tetrode at comcast.net Thu Jun 23 21:43:21 2005
Subject: [R-390] Toasted R216 (2nd mixer plate resistor)

Tim,

actually it's easy to toast R216, and also R212 in the first mixer and R205 in the RF Amp by accident.

In all of these Variable IF or RF stages the coil electrically closest to its associated tube has the B+ going through it, which means the trimmer cap and its adjusting screw in that coil assembly are hot with B+ as well. So if someone adjusted the cap with a metallic screwdriver it would be easy to cause a short circuit to ground and fry these decoupling resistors. Same situation with the R-390 too, that's why they say in the TM to use an insulated tuning tool. 73, John

From shoppa_r390a at trailing-edge.com Thu Jun 23 21:50:18 2005
Subject: [R-390] Toasted R216 (2nd mixer plate resistor)

> that's why they say in the TM to use an insulated tuning tool

Very good advice! Now that you give a "causality chain" right out of a three stooges episode, I can easily see doing the same thing myself :-).

Hey Moe, there's electricity in this pipe! ("A Plumbing We Shall Go").

Of course it's possible that a short in a tube could've taken it out too. I found about a half-dozen other resistors in the IF deck out of tolerance by 50 to 200%, all but this one were in the "high" direction. Tim.

From CRIPS01 at MSN.COM Fri Jun 24 04:20:01 2005
Subject: [R-390] Anyone Know about this FSK device & Value?

As with all such military equipment you can often find these manuals in their original form at a well stocked Government Repository Library to find one look here .libraryspot.com/governmentlibraries.htm The one over at the University of Wyoming has the tech manuals for such stuff as M4 Sherman Tanks, M5 White Scout cars, etc. I see Fair Radio Sales has the manual: CV-116 FSK Converter repro 17.00. Ken

From crips01 at msn.com Fri Jun 24 10:29:50 2005
Subject: [R-390] Anyone Know about this FSK device & Value?

I thought my Techtronix 549's scopes had a lot of tubes this FSK device put my trusty 549 to shame, even if these things are trashed what a tube mine. Ken de W7ITC

From chejmw at acsu.buffalo.edu Fri Jun 24 10:46:42 2005
Subject: [R-390] Anyone Know about this FSK device & Value?

Hello fellow heavy lifters, couldn't help but notice the reference to CV-116 FSK Converters and thought I might be of help.

First it is a Dual Diversity FSK converter, used in the AN/GRC-26D of R-390 and T-368 fame! Second it would be a geniune waste to scrap one if it works.

If you are really interested in a Manual I have the complete sets ala Military Manuals in PDF and can email them to you, if you like.

I believe I also have a picture and short description on my web pages at
http://eshop1.chem.buffalo.edu/T-368.html Good on Ya mates> Jim WB2FCN

From dwade at pacbell.net Sun Jun 26 18:52:06 2005
Subject: [R-390] Re capping an IF Deck

Good Afternoon,

I spent some quality time with my Motorola '390A yesterday and this afternoon. I actually got the cleaned and recapped RF deck back in the frame and everything is synced up nicely now. Some may remember my last post as being PTO woes...I'll be posting a follow up to that saga just as soon as I finish eating my crow. :/ I did learn some good lessons though.

In the meantime however, I have now pulled the IF deck in preparation for recapping. This is an EAC unit, the only non-MOTO module in my rig. This one was factory(?) mod-ed to use a product detector module mounted behind the function switch. A new connector was added to feed the new module.

I mention this because it appears that at least some of the recapping may have been done for me. I find no "brown beauties" in this deck at all. In (some of) their place have been installed "Westcap" units, however I can't tell if they are still paper units or not. They do appear to be in good physical shape. These are in places such as C-531, C-549 and C-533. My inclination is not to replace these.

Other caps are Aerovox units that are probably wax paper jobs. These live in places such as: C-528, C-529 and C-521 among others. Some of these seem to be in good physical condition, but some have deformed from their original round shape to oval in some cases. Which if any of these should I replace? My general feeling is that knowing my (lack of) experience I don't want to go into places in this crowded deck I don't need to be.

The only symptom I think I have, at the moment in this radio, is low AGC voltage.

AGC cap. The replacement unit I have has rather short leads. What is the best physical arrangement for putting this guy in. Lift one lead from the old cap and put it across the old? Advice would be appreciated. Thanks all in advance for your collective wisdom. Dennis

From redmenaced at yahoo.com Sun Jun 26 21:29:26 2005
Subject: [R-390] Re capping an IF Deck

> In the meantime however, I have now pulled the IF deck in preparation > for recapping. This is an EAC unit, the only > non-MOTO module in my rig. > This one was factory(?) mod-ed to use a product > detector module > mounted behind the function switch. A new connector was added to feed > the new module.
++++++++
If this is a '67 EAC the chances of it needing any caps replaced are slim. Unless it has seen abuse or damage of some sort. The only cap that should be replaced without consideration on the IF deck of a '67 EAC is the one that protects the mechanical filters. Joe

From Flowertime01 at wmconnect.com Sun Jun 26 21:29:55 2005
Subject: [R-390] Re capping an IF Deck

Dennis,

There are variations of four choices for the ACG cap.
1. Do nothing or similar more nothing.
2. The slow 2uf AGC cap can be replaced in the can like rebuilding power filter caps. Not more or less messy than power filter caps.
3. Add a new cap under the deck. Leave or remove the above deck can. C551
4. Install a socket in the deck hole and mount the cap in a crystal oven can and plug that into the new socket. An 8 pin octal socket will mount nicely and the other C548 cap will also fit in the oven can.

Along with these rebuilds it is suggested that C548 be increased from .1 uf to 1. uf. Pushing C548 up into the new can fits nice. After recapping the IF deck, there is much more space under the deck. Those brown tubes were "big" in their own way.

It is C553 that keeps the 1st IF B+ out of the crystal filters. Inspect this cap to see if it looks like a 600 volt rated cap. You may want to replace this cap if it even looks like less that a stellar quality item in your deck. Some time now for peace of mind over the next 50 years is a small price and some quality time with your receiver.

There are ranges of paranoid for your IF deck. Real severe leaves you unwilling to even apply power to your receiver. Not real common but known to occur. Less sever cases accept nothing less than a real full rebuild with nothing less than orange drops. Some will not even accept a self build and require the work be performed by a real "professional restorer."

Having a radio is supposed to bring you joy and not anxiety and misery. Lesser degrees of paranoid will let you install almost any current good brand of cap in the deck to get the brown tubes out and keep the receiver receiving.

Real caviler owners will run the receivers until the smoke escapees and then only replace the minimum carbon needed to return the receiver to operation.

As with all preventive maintenance the objective is to put in the minimum up front work to avoid even more work later. So changing caps is good.

Only the brown and black tube caps in the R390/A are known to be more likely bad than good today given there age. Also for ever bad cap found some will post here that there old caps are still hanging in and working good.

As you do not have the brown tubes, your deck either never had them or has been rebuilt. A look at the solder will likely provide some clue as to originality. Some fried wire at the terminals is a clue someone got there with a solder iron after the wire had aged many years.

You will likely be OK with what is in the deck. Do inspect the cap to the filters, C553, you may want a good 600 volt cap in there. Something you have some confidence in. An orange drop is good. A Radio Shack part not so good.

Other than that you just need to reach a comfort level you can be happy with.

There are reasons to change lots of the caps. Some value changes have been offered over the years to improve the frequency response mostly in the audio deck.

Changing C553 to a break down voltage of 600VDC to protect the mechanical filters.

Changing C548 .1 AGC to 1. For less AGC pumping are a few.

Caps like resistors have their own popcorn noise. Parts have been hunted down and changed out just to get a better receiver noise floor.

As you have no brown tubes in your deck, you have no known issue driving you to make any changes. Now you get to make choices based on satisfaction and enjoyment. Enjoy Roger KC6TRU

From Flowertime01 at wmconnect.com Sun Jun 26 21:32:42 2005
Subject: [R-390] Re IF Deck Product Detector Add On

Dennis,

Do you have any pictures of the product detector as installed in your receiver? I am exploring product detectors in general and looking specifically at what has been done to R390's. Thanks Roger KC6TRU

From dwade at pacbell.net Sun Jun 26 22:31:48 2005
Subject: [R-390] Re capping an IF Deck

Yep, you're right Joe. Its an EAC deck from '67. Funny how I never checked that detail before.

So, the AGC cap may be the only one I do (well, and C553). Wonder if I can just float that AGC cap in there, with leads appropriately insulated of course..... Dennis

From CRIPS01 at MSN.COM Mon Jun 27 02:07:00 2005
Subject: [R-390] Re IF Deck Product Detector Add On

There have been discussions on this list for years about adding a product detector to an R390A. My feeling is why bother with it. The R390 series are all fine radios but for whatever reason they didn't build them with product detectors. As you know I have the Eldico Electronics SBA-1 SSB adapter this unit vastly improves the side band performance of My 1967 EAC R390A, it adds a notch filter and a good 2 watt audio amp. If you want to improve the side band performance of the R390 get one of the many side band adapters that where made instead of modifying the receiver. For SSB reception There are so many good receivers and transceivers out there with product detectors as part of their original design I can't see adding one to the R390A. Ken

From tshoppa at wmata.com Mon Jun 27 08:03:57 2005
Subject: [R-390] Re capping an IF Deck

>I mention this because it appears that at least some of the recapping may have been done for me. I find no "brown beauties" in this deck at all. In (some of) their place have been installed "Westcap" units, however I can't tell if they are still paper units or not.

Those westcaps are very similar to Sprague "Vitamin Q"'s. Paper-and-oil capacitor that's hermetically sealed in a can.

One of my EAC IF decks has a mix of brown beauties and Westcaps and Aerovox caps. I think they're almost all original... my guess is that they are arranged according to allowable leakage current.

My gut feeling is that the Vitamin Q's/Westcaps are superior to the others but that they do go leaky over time. And they probably were installed in the locations most sensitive to leakage to begin with. I say that if you're doing a mass replacement of everything else, you oughta do these too just to save the effort of going back in later.

The other EAC IF deck I have is all brown beauties. So maybe the ones with the others truly are replacements done by the military. They don't look like re-work but then again it was done decades ago...
> Other caps are Aerovox units that are probably wax paper jobs. These live in places such as: C-528, C-529 and C-521 among others. Some of these seem to be in good physical condition, but some have deformed from their original round shape to oval in some cases.

I thought that they originally came oval? (And my head was always bald too...)

New yellow wax paper caps are certainly available in oval. Handy when there is low chassis clearance with a PCB. Tim.

From G_Jacobs at wfec.com Mon Jun 27 11:17:57 2005
Subject: [R-390] RE: R-390 Digest, Vol 14, Issue 37

Does anyone have a clamp that fits the Oldham coupler that I can buy. TNX Gordon KA5ZTI

From wd8kdg at worldnet.att.net Mon Jun 27 11:50:52 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

Thought I'd stir the pot.

Took about a year for radio-mart to find (paint) this item (5784730863) on the e-place to match the CIA spec receivers. I'll pass, but will watch to see which way the money flows. High bidders ID kept private, another chance to own a piece of history. later.....craig, wd8kdg73's

From tshoppa at wmata.com Mon Jun 27 12:02:20 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

> Thought I'd stir the pot. Took about a year for radio-mart to find (paint) this item (5784730863) on the e-place to match the CIA spec receivers. I'll pass, but will watch to see which way the money flows. High bidders ID kept private, another chance to own a piece of history.

Does radio-mart at least do quality (Earl Scheib) paint jobs?

I'll never buy anything from him (I'd rather have a radio with a big yellow or blue stripe across the

front... just watch, if he reads this list next thing he'll do is start adding those stripes!) but I'm curious. Tim.

From w9wis at yahoo.com Mon Jun 27 13:46:25 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

I'm almost positive that this is one of the reproductions Rick Mish was making, not an original. I have exactly the same one except gray that I got from Rick several years ago. Notice the jacks instead of switches... all Rick's were designed like that.

A couple of months ago when Martin sold one of Rick's receivers he sent Rick mail wanting to swing a deal. He'd provide receivers and Rick would refurb them for him and he's sell them on eBay. Anyone who knows Rick could guess what the reply ws <grin>... and it wasn't too polite. Mike

From tshoppa at wmata.com Mon Jun 27 14:36:30 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

> A couple of months ago when Martin sold one of Rick's receivers he sent Rick mail wanting to swing a deal. He'd provide receivers and Rick would refurb them for him and he's sell them on eBay. Anyone who knows Rick could guess what the reply ws <grin>... and it wasn't too polite.

Turning a hobby into a business is a big step. I did it once, had a lot of fun for a few years and made a lotta bucks, but moved into a "steady job" and now I have different hobbies/interests (actually they more closely match what I was doing at age 13!) Becoming the "back end" of a dealer/frontman, especially one you don't trust, is an enormous step, and I can't blame Rick for not going there, especially since he already has such a good reputation and apparently plenty of work.

Right now I'm spending so much time learning about the guts of my yellow striper that even at $700 profit per radio I'd be making way less than minimum wage. I imagine those who are "in the business" - whether respected or not - have a lot more productivity than me! In my previous hobby-turned-business venture the minimum profitable contract was $500 to $1000 after you figure in the time to make the sale, do the work, do the billing, etc. Tim.

From w9wis at yahoo.com Mon Jun 27 16:39:47 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

> Right now I'm spending so much time learning about the guts of my yellow striper that even at $700 profit per radio I'd be making way> less than minimum wage.

Amen.... anyone that refurbishes any of these sets, especially if repaint and chassis / guts cleaning is involved is loosing their butt. Mike

From crips01 at msn.com Mon Jun 27 18:30:36 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

My god this Radio-mart outfit is crooked and a dogs hind legs 1465.00 for a new ICOM 706MKIIG that is at least 750 dollars more the most other ham stores are getting for this rig, 500 bucks for a TS 520S!

They are worth no more then $300 and can be had at a hamfeast for $200 or so. What a crook. Ken de W7ITC

From drewmaster813 at hotmail.com Mon Jun 27 19:47:08 2005
Subject: [R-390] C-551 Replacement

Hello,

Another method for replacement of C551, the oil-filled ACG can capacitor: I removed the leads running to the can's terminals under the chassis. I used a Cornell-Dubilier (CDE) DME series (available from Mouser) mylar cap rated 2.2 uF at 400 volts. I cut the new cap's leads to about 1/4 inch and bent them into hooks. The new cap was secured with RTV to the divider running lengthwise under the chassis on the side of the divider facing the old C551. The leads which formely wento the old C551's terminals were wrapped and soldered to the hooks formed into the new C511's leads.

The old C551 remains bolted to the IF chassis but is not electrically connected.

C548 was formerly connected from one of the old C551's terminals to ground. A new C551 (.1 uf, 600 volt Cornell-Dubilier DME) was connected right at the socket for V506, between a convenient ground terminal and the grid terminal for V506A. The new location is different mechanically, but identical electrically. The new cap's very small size makes the relocation practical.

A sharpie marker was used to add a note about relocation underneath the chassis to make matters simpler for the next poor unsuspecting soul who works on the radio. Drew

From mikea at mikea.ath.cx Mon Jun 27 20:41:02 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

wrote: > My god this Radio-mart outfit is crooked and a dogs hind legs 1465.00 for a new ICOM 706MKIIG that is at least 750 dollars more the most other ham stores are getting for this rig, 500 bucks for a TS 520S! They are worth no more then $300 and can be had at a hamfeast for $200 or so. What a crook.
I prefer to think of it as I do of the lottery: a tax on those who don't do all the research they should have. I mean, someone who willingly forks over $500 above the going rate ... . Mike Andrews, W5EGO

From crips01 at msn.com Tue Jun 28 10:29:32 2005
Subject: [R-390] C-551 Replacement

On the subject of attaching new parts: I have a Viking II transmitter that has a very nicely done PTT mod' and the relay and such where attached with hot glue. I suppose if I ever have to replace any of these parts it will be a pain but in the mean time I sure don't have to worry about them coming loose. Ken W7ITC

From W1RC at Verizon.net Tue Jun 28 11:54:53 2005
Subject: [R-390] FS: R-1051 Modules

Hi Gang:

I found a box of 28 R-1051 modules in my garage and probably have no real use for them. There is also a small electric motor (about the size of a R-390A mechanical filter) and a couple of vacuum tubes; one is a 6AN5 and I don't remember the other). Looks like a lot of good stuff but I don't need 'em!

I would think that $80.00 plus shipping would be a fair price. Anyone interested? 73, Michael, W1RC

From DWADE at pacbell.net Tue Jun 28 13:43:59 2005
Subject: [R-390] C-551 Replacement/AGC trouble?

The hot glue concept or similar is actually what I'm considering doing with the new AGC capacitor. Lead length doesn't seem to be an issue since the two tubes involved aren't even next to each other. I think just lifting the connections from the old cap and attaching the new one to one wall will work out ok.

From looking at the AGC line, I think there may be some leakage somewhere as there doesn't seem to be enough there. Any quick troubleshooting hints? Dennis

From W1RC at Verizon.net Tue Jun 28 12:54:15 2005
Subject: [R-390] R-1051 Modules - Whoa!!!

Gang:

Geez! I got over 10 replies in less than an hour on the R-1051 modules. Now I gotta figure out who to give them to. 73, Michael W1RC

From westerman at cableone.net Tue Jun 28 13:49:28 2005
Subject: [R-390] Tell me about Single Sideband Converters

Currently there is a CV-591A/URR model MSR-4 on ebay that probably doesn't work. Bid is now at $300 and will probably sell higher. Looks like a hint of blue paint on the face. Doesn't look like a good buy to me.

From what I can find on the net several different Single Sideband Converters were used with the R-390A.
Question: Of the many models available, which one works the best and what is the going price for one in working condition? Thanks Craig Westerman

westerman@cableone.net Date: Tue Jun 28 14:26:19 2005
Subject: [R-390] C-551 Replacement/AGC trouble?

wrote: > From looking at the AGC line, I think there may>be some leakage somewhere as there doesn't seem to be>enough there. Any quick troubleshooting hints?

Dennis,

Put an ohmmeter capable of reading high resistances on the AGC line to ground (notice if it reads the same with the nagative polarity on the line as with the positive polarity on the line)..then

unplug each module (RF, and IF) in turn to see where you might be getting leakage. Knowing how the AGC wires run from teh source in the IF module to the rear panel terminal and the AGC switch and to the RF module will help figure out where any excess leakage is.

(One way to measure low levels of leakage is to hook up a 9 volt battery to simulate AGC voltage with a DMM on low voltage (or current) range in series plus side to ground, negative to the AGC line.. You'll be able to detect microamperes of leakage and normal AGC line currents. If the tubes are all cold, you may not detect a leaky tube, but you will find any leaky caps or cable leakages. A warmed up tube may leak more than if it's filament is cold.)

THEN, with the offending module connected, remove each of the tubes involved to see if you have a leaky tube. If you find one, you are lucky. If you don't, remove the module and find the (likely) leaky cap in there.

Cable wires can be leaky, too, so don't discount that possibility. Teflon wire in the AGC line would be a good idea. Roy

From chacuff at cableone.net Tue Jun 28 14:24:07 2005
Subject: [R-390] R-1051 Modules - Whoa!!!

> Geez! I got over 10 replies in less than an hour on the R-1051 modules.

No Surprise,

Lots of folks have them sitting around I guess used for door stops in non working condition. A difficult radio to work on and many hope to revive theirs by a module swap. Maybe, maybe not....never seen one come up to spec. with a module swap though. Usually require a bit of massaging all over. Not many folks willing to spend any money on them though....Kinda sad...a great SSB radio...does need better filters though.

From roy.morgan at nist.gov Tue Jun 28 14:56:06 2005
Subject: [R-390] Tell me about Single Sideband Converters

wrote: >Currently there is a CV-591A/URR model MSR-4 on ebay

Craig,

I cannot find it. Can you send an item number, or correct text from the listing title?

>... probably doesn't work. Bid is now at $300 and will probably sell >higher. Looks like a hint of blue paint on the face. Doesn't look like a >good buy to me.

Nope, it does not, But.. most of them need their caps replaced big time, and often have bad relay contacts that need attention. Nothing impossible, but any CV-591 that works right off the bat has had SOME attention lately.

>...several different Single Sideband Converters were used with the >R-390A.... which one works the best and what is the going price for one in >working condition?

They all work more or less well, but others have had more experience with a variety of them and can tell you more.

I've not followed prices lately but here are some guesses on the ones we hear most about:
- CV-591, complete and working or restorable: $300 and up
- HC-10 Hammarlund separate box: $400 and up
- The SPC-10 (rack mount - meant for use with the SP-600): $600 and up

That's all pretty discouraging, BUT, if you have a rice box that covers 455 kc, use a 60 db pad and run the IF output from your R-390 into the receiver. Folks who've done this report good results. All you need is a bit of wire and a couple of resistors. Roy

From ghayward at uoguelph.ca Tue Jun 28 15:27:11 2005
Subject: [R-390] Tell me about Single Sideband Converters

> That's all pretty discouraging, BUT, if you have a rice box that> covers 455 kc, use a 60 db pad and run the IF output from your R-390> into the receiver.

> Folks who've done this report good results. All you need is a bit of wire and a couple of resistors.

I used a pair of balanced modulators (Motorola chips) and a crystal BFO as a product detector on the IF out. The two modulators get the BFO 90 degrees apart and run into left and right amplifiers. The stereo effect on noise is neat - sounds like water drops rather than a hiss. It becomes almost pleasant. Beats a rice box. Cheers, Gord VE3EOS

From crips01 at msn.com Tue Jun 28 15:38:33 2005
Subject: [R-390] Tell me about Single Sideband Converters

This should be an interesting thread. In all of the years I have been on this list I do not remember an in depth discussion of these hollowstate Side band adapters. I only have experience with my Eldico SBA-1. I would like to learn about the other such units manufactured.

The CV-591A/URR is a Collins made unit. As you know most anything Collins puts a premium on the price working or not. The only unit I can comment on is the Eldico Electronics SBA-1 adapter I have. The bottom line is works great it makes the tuning of SSB on an R390A just like any modern rig. I am sure the engineering on the Collins adapter might be better; I have not been able to do an A-B comparison. Being able to tune a side band phone round table without having to ride herd of the RF gain is really nice. The SBA-1 has a 4 watt audio amp, a noise blanker, which isn't as good as the one on the R390A which really is no surprise, a notch filter, and a AVC setting fast/slow, as well as the usual controls for audio volume, mode, IF gain, standby/receive. On the back panel there are connections for AVC, muting, speaker connections For 4 and 600 ohms, and IF signal inputs for hi and low impedance.
>From a boatanchor pilot mind set I like these units because they where a contemporary hollowstate solution to the SSB deficiencies of the R390A. As I have reported the when you place the SBA-1 on top of the R390A the controls on the SBA-1 match the flow of the controls on radio. Ken de W7ITC

From w9wis at yahoo.com Tue Jun 28 15:58:08 2005
Subject: [R-390] Tell me about Single Sideband Converters

> The CV-591A/URR is a Collins made unit.

Mine is TMC... aren't they all ? Mike

From Llgpt at aol.com Tue Jun 28 16:03:33 2005
Subject: [R-390] Tell me about Single Sideband Converters

writes: > The CV-591A/URR is a Collins made unit.

They were designed and manufactured by TMC = Technical Material Corp. Les Locklear

From crips01 at msn.com Tue Jun 28 16:11:49 2005
Subject: [R-390] Tell me about Single Sideband Converters

I have never seen one but the info I have on them is they where at least a Collins design, however my info sources might be flat wrong. Ken

From federico at dottorbaldi.it Tue Jun 28 17:40:45 2005
Subject: [R-390] Tell me about Single Sideband Converters

Hi to all, my is a CV-1982/TSC-26 by KAHN LABORATORIES RESEARCH INC. with manu nuvistors on board. You can see on my website. 73 de Federico IZ1FID

Visit my website entirely devoted to military radio and aircraft clocks : www.dottorbaldi.it/militaryradio

From brookbank at triad.rr.com Tue Jun 28 17:56:12 2005
Subject: [R-390] Tell me about Single Sideband Converters

Mine CV-591A/URR serial 3082 was manufactured by The Technical Materiel Corporation, Mamaronek NY contract 81020. Have had it for many years and after replacing all of the capacitors with orange drops and some resistors that looked a little overheated has worked wonderfuly, it is a pleasure to use it.

From CRIPS01 at MSN.COM Tue Jun 28 03:35:42 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

I stand by what I said. This is flat dishonest. While you can argue over the value of a used piece of equipment. The price he is trying to get for the IC 706MKIIG is a total rip off. If he is trying to misrepresent an refinished R390A as a rare CIA black faced model how honest is that. Sorry the buyer beware argument just doesn't hack it. Ken

From wd8kdg at worldnet.att.net Tue Jun 28 19:41:35 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

Too All,

Just took another look at the "Black Faced R-390(A) Thingy" on that e-place. Still listed as "Super Rare Black Model CIA, time 4:27 PDT June 28, 2005. As pointed out to me in another e-mail, the first photo shown on the e-place of this item in question is the rear. Notice the terminal strips and the method of lettering above. Then go to Rick Mish's web site and check out his Miltronix LS-206 A/U, the rear view. Sure looks like twins to me!

So, did Radio-Mart purchase one of these and is misrepresenting the item, or maybe Radio-Mart is now a front man for Mish? Guess other possibilities exist, also.

I did question Radio-Mart as to proof of past CIA ownership, he said contact Rick Mish for better information. Will foward that e-mail to those interested.

In any event buyer beware. A fool and his money are soon parted. later.....craig, wd8kdg 73's

From shoppa_r390a at trailing-edge.com Tue Jun 28 19:48:49 2005
Subject: [R-390] Too quiet lately! Another "BlackFaced R-390(A) Thingy"

> did Radio-Mart purchase one of these and is misrepresenting the item?

One? He pulled the exact same thing before, if I stretch my memory back half a year or so. Tim.

From R390rcvr at aol.com Tue Jun 28 19:49:39 2005
Subject: [R-390] Cardmatic repair

Good evening all:

I finally decided to send my USM-118 to Chris Haedt for repair, and was saddened to find that he passed away in January. I then thought of Wendall Hall, but he just passed away 6/15.

I suspect a number of people on the list have 118s, and I would appreciate hearing from anyone about whom you would recommend to service them. It seems like the passing of a generation. Randy Stout

From dhallam at rapidsys.com Tue Jun 28 20:00:04 2005
Subject: [R-390] Tell me about Single Sideband Converters

I have a CV-571A/URR serial # 3323 that I bought a little over 30 years ago. I have done nothing to it since and it is working fine. David C. Hallam KC2JD

From jupete at bigpond.net.au Tue Jun 28 20:07:29 2005
Subject: [R-390] Slug wanted

My R-392 has a broken slug in the 2 - 3 mHz variable IF rack.. would there be any one with a replacement, please ?-- I imagine a similar one would be in the 3 - 2 variable IF rack for R-390 A. The broken piece not seen alive so can't glue it. A cash award applies . ! Thanks Pete D . Williams METUNG 3904 Australia jupete@bigpond.net.au

From vk2abn at bigpond.net.au Tue Jun 28 20:30:01 2005
Subject: [R-390] ssb converters

The Collins SSB converter is a BEHEMOTH, it has twin motor driven BFO s driven by phase discriminators, FORESTS of Tubes, and I have seen smaller power transformers in 2KW linears the unit also weighs MORE than a 390, BUT they do work, I have repaired lots of converters for people in OZ and the best and simplest unit is the TECHNICAL Material Corp MSR 591, with this unit and using the 2KHZ filter in the 390A the Signal to noise ratio is the best I have heard on any receiver EVER, my personal Bias is towards the IF module conversion as per HAM RADIO Magazine, BUT using a 12AU7 double triode in the Ballast tube hole as a product detector, I also have removed the 2KHZ & 4khz filters from a module and substituted dedicated asymmetrical USB&LSB filters and Crystal controlled the bfo with a 455.00 khz crystal from the 1khz filter can, I use a High resistance relay to switch the Audio line either through the product detector or for AM it reverts to the original circuit using the supply to the BFO, so only the module needs to be modified and the unit can be transferred from one RX to another [I have 3 receivers the 390a type and quiet a few spare modules] my favourite RX is this 390 a with SELECTABLE Sideband, the agc has also been modded to give attack and decay times more compatible with ssb I use the Slow switch position for this, Hope this info is of interest Regards to ALL

From westerman at cableone.net Tue Jun 28 21:12:12 2005
Subject: [R-390] Tell me about Single Sideband Converters

Hey guys. Thanks for all the replies. I see Rick Mish works on these models - CV-591A, CV-657A, CV-1722A and CV-1758A. Is there a big difference between them in ease of use and reliability?

I was told that the CV-157 was "the best", but that they are impossible to find.

Looks like the CV-591A is the most common and probably easiest to find parts for. Anyone have a picture of the inside of one of these? Thanks Craig Westerman

From w6ger at uci.net Tue Jun 28 22:01:08 2005
Subject: [R-390] CV-591A/URR Manual

RE: Tell me about Single Sideband Converters

Well I can tell you about the CV-591A/URR Manual... It is available for download from my web page at: http://www.qsl.net/w6ger/pdfdocs/docs.html Hope this is a help... 73 Al - W6GER

From chacuff at cableone.net Tue Jun 28 23:02:22 2005
Subject: [R-390] Panel Lettering question

Hey Folks,

Anyone have any experience with baking a painted panel with the lettering filled with lacquer stick? Will the lettering set or harden when baked?

My hope is to overshoot the panel once cooked with a clear satin acrylic.

I tried a nice ultra white acrylic craft paint to fill the letters but the stuff dried so fast it was near impossible to get off the panel just seconds after wiping it into the engravings. While working to get it off the panel it pulled all the paint out of the engravings. It's water soluble until it dries....like in seconds when thin. Had to use polishing compound to get the stuff off. Lacquer stick worked fine but I'd like to be sure it's going to firm up and be able to take the overspray of acrylic. Cecil...

From bill at iaxs.net Tue Jun 28 23:14:40 2005
Subject: [R-390] Tell me about Single Sideband Converters

The CV-157 is the best? Well, that depends on your tolerance for heavy equipment, about 110 pounds.

I have one from a guy who shipped it in a paper towel carton packed with peanuts, stuffed with random tubes. Cost me $300, but I was young and foolish. Guy seemed to have stopped taking his meds when I told him that one corner of the works in a drawer looked like someone had stepped on them. Completely unreasonable.

So here I am with a complete CV-157 with a rebuild tag and mostly the wrong tubes. I have lost my fascination with the servo controlled carrier centering device, but it's all there. I started to unhook wires to the drawer in order to remove it and fix the squashed 100 KC amplifier. I did isolate the filters and check them with a scope and HP 200CD, all looked good, made by Orion. Yes, there's a copy of the manual.
Anybody want to make an offer over $150 plus shipping? Hate to see a rare piece of gear languishing in a corner of the warehouse. Preference to pickup in Bloomington, MN 55438 but can ship it. Regards, Bill Hawkins

From n4buq at aol.com Wed Jun 29 09:32:34 2005
Subject: [R-390] Panel Lettering question

> Anyone have any experience with baking a painted panel with the > lettering filled with lacquer stick? Will the lettering set or harden when > baked?

I used an acrylic lacquer. After it sets up, I wiped the excess off with some thinner. Since the panel was powder coated, it worked great - otherwise, the thinner would have stripped the panel paint too. Barry - N4BUQ

From Flowertime01 at wmconnect.com Wed Jun 29 09:54:13 2005
Subject: [R-390] C-551 Replacement/AGC trouble?

Roy, Read your suggestions to Dennis, I like your procedure. Roger KC6TRU

From tshoppa at wmata.com Wed Jun 29 11:00:59 2005
Subject: [R-390] R-390(A) gain distribution

I grew up on 70's era QST's and ARRL handbooks with W7ZOI receivers. These are extremely simplistic and generally don't have any more gain than needed. What gain there is almost always comes after the mixer. (Except for maybe the high bands where there'll be a RF amp on the front of the receiver).

Obviously the R-390/390A had a different set of critera and were working with differently-capable components.

One criteria that I understand immediately is that you don't want any of the local oscillators leaking back out to the antenna in a military setting. So the RF stage before the first mixer is a necessity. It just so happens that there is plenty of selectivity around it too. I'm just a few blocks from a powerhouse MW broadcaster and I never have intermod problems in my R-390A! So even though there is an active stage before the first mixer I've never had problem with IMD there. This is one point where the W7ZOI designs have to deviate: the transistors just never have nearly the dynamic range of a tube.

But 4 stages of 455kHz IF... why so much gain there? Most receivers of the era had 2 (cheapie) or 3 stages and do just fine.

How much gain is typically the 3-mixer chain capable of? Each mixer gets fed from the AGC control line, right?

It's been a while since I looked at the Collins cost reduction report... is there any thought given in there as to eliminating an IF stage? Tim.

From dwade at pacbell.net Wed Jun 29 11:15:55 2005
Subject: [R-390] C-551 Replacement/AGC trouble?

> Roy, > Read your suggestions to Dennis, > I like your procedure.

I like them too, and hopefully I'll get a chance to try them out this weekend....unless the weather cooks me out of my garage/shop. :((Mid/upper 90's expected) Thank you all, Dennis

From jamminpower at earthlink.net Wed Jun 29 12:05:32 2005
Subject: [R-390] R-390(A) gain distribution

You misunderstand what the IF stages in the R-390 series do. Don't forget that the original R-390 had 6 (!) stages of IF.

Several of the IF stages have very low gain - no more than 1 or 2. These stages provide additional selectivity - not additional gain. In the R-390 and the R-392, there is even a stage with 3 (!) tank circuits, coupled by 1 pf capacitors. You lose a lot of gain with low coupling like that, but you gain in selectivity.
The overall IF section needs to provide a gain of 1000 or so, but the IF selection is almost entirely responsible for rejection of adjacent signals. The Collins engineers needed to isolate the tank circuits from each other so they would resonate independently and each contribute another 6 dB/octave of rejection. If they are coupled too well, they stop acting as separate circuits and behave as a single tank circuit. James A. (Andy) Moorer www.jamminpower.com

From G_Jacobs at wfec.com Wed Jun 29 12:23:35 2005
Subject: [R-390] R390 Project For Sale or Trade

For Sale Or Trade: Teledyne R 390 A. Order number 37856-PC-63. No s/n. This is a project that I am

not going to be able to complete. The R 390A has all Teledyne modules and has had the following done.
1.all paper Caps changed in the IF and AF modules.
2.Power supply has SS mode.
3.SSB mod, Diodes and cap added.
4.12BH7 mod
5.10 turn carrier zero pot
6.Chuck Rippel Audio Mod.
7.Panel repainted

The parts needed to complete the cap replacement, Stainless steel screws, new covers, original meters, paper work, knobs, are included. I have not done anything to the IF or PTO. The only parts needed to complete the project are the handles, nuts for the panel bushings and switches, and a clamp for the Oldham coupler. This is too good of a radio to part out. I have $340 invested and I would ship to the lower 48 for $35.

I would trade for equal value? It needs to be smaller and weigh less. I am down seizing my shack. I also have a Jan Skirrow SSB detector kit (unassembled) for $70. Please help me find this fine radio a good home, I do not want to go to the bay. TNX Gordon KA5ZTI g_jacobs@wfec.com

From crips01 at msn.com Wed Jun 29 16:51:02 2005
Subject: [R-390] BFO question

I am going to get the BFO working on My R390A, once and for all. I have the Y2K manual, of course, but I need a little advice. Here is what I have; the BFO does not work, there is no calibration tone in the R390's audio but I can hear it from the SBA-1 side band adapter, I can see a calibration carrier in the signal strength meter on the R390. The tubes on the IF/RF module test good, if I can trust my tube tester that is. Where do I start on this to figure out what is going on. I have replaced the two questionable caps in this module. The radio works fine otherwise. I have not been too motivated to repair the BFO because of the side band adapter. Ken

From jupete at bigpond.net.au Wed Jun 29 18:27:19 2005
Subject: [R-390] Fw: Fill in engravings

Don't know about the lacquer sticks vs baking but have found that it hardens up in time. my experience with R-390A panel is to follow the proceedure that is outlined in a back copy of "ER".
1. Prime and paint the panel -lightly.
2.Use artists white latex based paint. only do a few engravings at a time .
3. Take windscreen squeegee and wipe off excess on one pass only.
4. using a barely damp rag, wipe of the squeegee lines without disturbing the areas just filled .
5. wait about 15 mins and using a barely damp rag. lightly wipe over the engraved areas until fairly clean. Don't press heavily and use a rag with minimum nap - i.e hairy .
6 leave for a few days to harden up and use a fine abrasive car polish to remove the last of the white paint. - don't use excessive force/pressure on any of these operations.
7. wash with soap and water and you're thru '

Works every time for me and I wouldn't worry/bother with any over spray of satin anything Cheers Pete VK 3 IZ

From jmiller1706 at cfl.rr.com Wed Jun 29 19:22:37 2005
Subject: [R-390] BFO question

It is possible that the BFO knob could have been turned multiple times either way putting the BFO frequency way off. It could be oscillating OK but be way off frequency.

From vk2abn at bigpond.net.au Wed Jun 29 20:15:43 2005
Subject: [R-390] ssb converters

Ok Todd Most of the CV 157 s that I have repaired for people have lots of faults due I think mainly to the Heat build up causing component deterioration, also they were designed for SSB with Pilot Carrier so that the Discriminator can Lock on, in the fifties in the days before frequency synthesis, this was necessary to stay on frequency for SSB as we know it today there is a lot of redundant electronics in the CV157, I have a similar unit designed for the Racal RA17 and it only has about 10 tubes and is very reliable and takes 4 inches of rack space and only weighs 25 pounds,so you can see what I mean about over engineering, The TMC device is an elegant little gadget and works really well and has a low component count making it VERY reliable, and you can tune about in passband of what ever Mechanical filter you have selected, I have never owned one but I have repaired them and always been impressed with their simplicity operation, Regards to every one

From pomerol at mocha.ocn.ne.jp Wed Jun 29 22:41:06 2005
Subject: [R-390] BFO question

Jim, My BFO doesn't work too. How can I find the center of the BFO frequency? Is there any mark for mechanical center point on BFO? Osamu Hazawa

From JEEPER at netins.net Wed Jun 29 23:11:03 2005
Subject: [R-390] R-390 POWER CABLE CX-1358U

HELLO TO ALL, I AM LOOKING FOR THE POWER CABLE ON MY R-390.CX-1358U.I DO NOT WANT TO USE THE PUSH IN WIRE TERMINALS.CLARENCE jeeper@netins.net

From jmiller1706 at cfl.rr.com Wed Jun 29 23:22:42 2005
Subject: [R-390] BFO question

Mine doesn't have a center detent, but if I turn it on and turn the knob several turns clockwise the beat tone will get higher and higher and then go away (it is too farr off frequency), but I turn it back the other way several turns and I hear it again. Just don't force it if it reaches the "stops" at either end. This may or may not be your problem, just a thought I had. Could also be a bad contact on the BFO switch.

From wd8kdg at worldnet.att.net Wed Jun 29 23:28:58 2005
Subject: [R-390] BFO question

To All,

Chuck Ripple has a great description on IF Deck Alignment. The last thing to do is the BFO, here is the link. http://www.r390a.com/html/if_deck.html later.....craig, wd8kdg73's PS: Hope the link works.

From jlkolb at jlkolb.cts.com Thu Jun 30 01:10:52 2005
Subject: [R-390] Tell me about Single Sideband Converters

The CV-157 wasn't really intended as a voice SSB converter - it was intended for applications where a pilot carrier was transmitted. By phase locking to the pilot, the transmitted audio frequencies were recovered within a couple of hertz of error. We had a couple aboard the USS Providence in the Navy for use in receiving multiplex RTTY transmissions. These had, as I recall, an 85 hZ shift, so the receiver had to be pretty exact. I believe a set of two CV-157 and two R-390s in a single rack was known as a FRR-39. The production numbers for these would have been very low. No the other hand, many of the R-390's I saw aboard ship (early/mid 60's) were in a cabinet along with TWO CV-591's. John http://www.jlkolb.cts.com

From W1RC at Verizon.net Thu Jun 30 07:08:42 2005
Subject: [R-390] R-1051 Modules

Hello Everyone:

I apologize to all those who replied to my posting regarding the box of R-1051 modules I offered in a previous posting.

I have had an overwhelming response to the posting offering to sell the boxful that I found in the garage. Several suggested that I offer them in pairs for and the general consensus agreed that a fair price would be $20.00.

Therefore I have decided to take this advice and offer them in this manner to make sure that it all doesn't go to one lucky person and everyone gets something. I regret having to disappoint so many of you but I want to be fair to everyone here including myself. My daughter wants a Media Center pc and perhaps that's what's in this box.

I see that each module bears a number and assume this is the part number. So if you have any specific needs please send them to me and I will do my best to accommodate you.

Anything left over will be offered up to the best offer or ePay. 73, Michael, W1RC

PS: I have a very clean R-1051B receiver out there as well and would entertain offers. Pickup is preferred but would deliver to Hosstraders in NH in October. I would reluctantly ship it but buyer would have to pay for all expenses including packing and pickup.

From wtw at rti.org Wed Jun 29 12:03:42 2005
Subject: [R-390] Panels

I've had quite a bit of challenge relettering panels too. Some are OK, but overall it's a chore and with very mixed results.

HOWEVER, one local buddy of mine came back from the Akron hamfest with information that he'd run

across a guy from the Maryland/DC area who does a superb job of refinishing panels with crayon (maybe laquer stick) and various steps of baking. Evidently it's a very detailed procedure of refinishing the panel, then doing the lettering.

UNFORTUNATELY, the buddy doesn't have the name or phone number of the Maryland/DC guy. Any clues out there to who really does a superb job of refinishing panels, essentially every time. Any help??? Tom, W4PG

From wjneill at mail-ext.txucom.net Thu Jun 30 12:27:06 2005
Subject: [R-390] Tell me about Single Sideband Converters

For the sake of correctness, two R-390( ) and two CV-157 were known as AN/FRR-41 and one R-390( ) and one CV-157 were known as AN/FRR-40. Bill Neill Conroe, Texas

From brookbank at triad.rr.com Thu Jun 30 13:12:31 2005
Subject: [R-390] Receiver 51J-4

Not an R-390 question, but with all of the knowledge here, perhaps I can get some help.

The 51J-4 has tunning slugs about 1 1/2 inches long, what would be the impact on replacing broken ones or all of them with slugs that are 1 1/4 inches long? (R390 type) I can make the length of the flexible cable the same as the one on the 51J-4...or should it be 1/4 inch longer??? Thanks in advance to any and all advive. Regards, Pat

From mikea at mikea.ath.cx Thu Jun 30 13:23:09 2005
Subject: [R-390] Receiver 51J-4

wrote: > The 51J-4 has tunning slugs about 1 1/2 inches long, what would be the > impact on replacing broken ones or all of them with slugs that are 1 1/4 > inches long? (R390 type) > I can make the length of the flexible cable the same as the one on the > 51J-4...or should it be 1/4 inch longer???

I can't see that it will be a drop-in replacement. If the 51J-4 slugs are the same material as the R-390 slugs, then I suspect the inductance will go up some -- maybe a lot -- with the R-390 slugs. If they're not the same material[1], then you'll need to experiment.

OTOH, if they _are_ the same material, then you should be able to cut the R-390 slugs down to the right length for the 51J-4. I'd try a Dremel and a cutoff wheel. Wear eye protection.

But try to find some 51J-4 slugs first, please. R-390 slugs aren't all that common any more, and there probably won't ever be any new ones.

[1]Just how does one go about determining this? GDO, standard coil, etc., and measure inductance change per unit length? -- Mike Andrews, W5EGO

From djmerz at 3-cities.com Thu Jun 30 13:47:36 2005
Subject: [R-390] R-390 POWER CABLE CX-1358U

Hi, I got mine recently from Fair Radio for about $15. There are other providers at somewhat higher prices and maybe they have the cable already attached. I had to add the power cord to the one I got from Fair. I don't think these connectors are scarce, just overpriced like most good stuff, hi. Dan

From djmerz at 3-cities.com Thu Jun 30 14:09:35 2005
Subject: [R-390] Receiver 51J-4

Mike, we're all waiting to see how the 1 1/4 inch 390 slug can be cut to the 1 1/2 inch length of the 51J4 slug ? I can't tell on my working receivers which type is longer but I'm assuming Pat had both out to compare the length. I agree with you that searching for more 51J4 slugs would be the best path, even more so if the 390 slugs are shorter. best regards, Dan

From mikea at mikea.ath.cx Thu Jun 30 14:23:42 2005
Subject: [R-390] Receiver 51J-4

wrote: > Mike, we're all waiting to see how the 1 1/4 inch 390 slug can be cut to > the 1 1/2 inch length of the 51J4 slug ? I can't tell on my working > receivers which type is longer but I'm assuming Pat had both out to compare > the length. I agree with you that searching for more 51J4 slugs would be the > best path, even more so if the 390 slugs are shorter. best regards, Dan

No doubt.

I'll be happy to lease any or all of you one of my patented combination slug-stretcher/foot-extractor devices, as soon as I finish using the foot- extractor part.

I got the numbers backwards, _obviously_.

<sound type="slap" location="forehead"> D'Oh! </sound> -- Mike Andrews, W5EGO

From Flowertime01 at wmconnect.com Thu Jun 30 14:52:55 2005
Subject: [R-390] BFO question

Fellows,

Two of you were working on your BFO problems.

It was suggested that you loosen the shaft coupler between the deck and the front panel to back the knob off the stop washer so the BFO could be adjusted from full end to end. The Idea being your BFO was running fine and just way off 455.

One of you ask if the BFO had some kind of mechanical center. Sorry not so. The coil will run from end to end and there is no "center" you just cranked the shaft to move the coil from end to end. Once you found the 455 point, you set the front panel knob and extension shaft up on zero. You adjust the knob, shaft, and clamp to not cause undue friction and stop against the stop washer. The bushing in the front panel has some play and can be adjusted to give a better center. Loosening the green screws on the IF deck and moving the deck a bit may improve the mechanical alignment of the BFO and band switch shafts.
If these simple checks did not get you in line, there are more things to do. Pull the tube and run around

the socket for voltage checks. Check that the BFO on/off switch is turning the B+ on and off at the tube socket. Check your screen and grid voltages. The filaments are good as they are in series with the PTO and the receiver does play.

Before you go for a coil can replacement, heat all the solder joints. Cold solder joints are known to happen. The likely one are on the pins of the coil can.

If this has not got you going the BFO coil can is known to fail. Back when you just replaced them. Nothing actually went bad in the coil can that could not be fixed. You can get the cans open and do an inspection and repair. Most problems were in the form of cold solder joints or little broken wires.

The coils have a good range so fixes will not push them beyond the range where they will not tune 455 plus and minus 3 as expected.

The coil can is work to get it out and back in. It can be done. I have done it a few times. Let us know what you found your problems to be. Or if you got this far and still need some more help. Roger KC6TRU

From roy.morgan at nist.gov Thu Jun 30 14:53:25 2005
Subject: [R-390] Panels

wrote: >I've had quite a bit of challenge re-lettering panels too. ... >HOWEVER, one local buddy of mine came back from the Akron hamfest with >information that he'd run across a guy from the Maryland/DC area who >does a superb job of refinishing panels with crayon (maybe laquer stick) >and various steps of baking.

Howard Mills offers R-390A panels in BLACK POWDER COAT and white lettering. The last price I heard from him was $150 plus exchange of a useable panel. He may also do panels in gray, but I don't know. Here is contact info for him: "Howard Mills W3HM" <w3hm@nfis.com> 304-876-6483 Roy

From eldim at att.net Thu Jun 30 15:35:16 2005
Subject: [R-390] Receiver vs 51J-4etc SLUG CORE SIZE, COLOR CODING ETC.

Hello Group,

Is there a size difference (Length & Diameter) of the powdered iron SLUG COREs for the 51J4, R-389, R-390, etc. Radio Receivers? Can the color coded dots be deciphered to a value associated with each core? Is there a central archive for each type receiver explaining the different core materials and which color coded slugs go to which Transformers? I'm definitely interested in knowing. 73, Glen Galati, KA7BOJ Tacoma, WA eldim@att.net

From w5or at comcast.net Thu Jun 30 17:22:40 2005
Subject: [R-390] SAQ Annual Transmission

It's that time of the year to listen for SAQ, the Alexanderson Alternator in Sweden, which will be fired up July 2 and 3. So break out your R-389s in preparation! Stick a VLF converter in front of your R-390 if you have no working R-389!

http://www.alexander.n.se/

Transmissions with the old Alexanderson Alternator SAQ will take place both on Saturday 2nd July 2005 at 12.30 UTC (official inauguration of the World Heritage Grimeton) and on Sunday 3rd July 2005 at 08.15, 09.15, 12.15 and 13.15 UTC (the Alexanderson Day). The frequency is as usual 17.2 kHz CW. QSL reports can be given via: - E-mail to: info@alexander.n.se

Click on the English Flag (to switch the web pages to English), then The Radio Station link for more info.
For me, there is little chance of hearing it here in the Deep South, surrounded by daylight absorption, thunderstorms near and far, and summer humidity, but still worth a try. Don Reaves W5OR R-389, SN 157

From W1RC at Verizon.net Thu Jun 30 19:39:00 2005
Subject: [R-390] R-1051 Modules

Hi Gang:

Well, it looks like the "modules" I have are not what folks are expecting.

I know it is a gross breach of mail reflectors to attach or embed image files so I cannot send photos. These are apparently some kind of RF circuitry that measure 3-3/4" long strips with a PC board with some coils and capacitors on a turquoise plastic base that obviously plug into some other assembly.

If anyone wants a photo please e-mail me and I'll send directly. w1rc@verizon.net 73, Michael

From paul at pdq.com Thu Jun 30 19:49:35 2005
Subject: [R-390] Fw: Fill in engravings

wrote: > my experience with R-390A panel is to follow the proceedure that is > outlined in a back copy of "ER".

I use Testor's model airplane white enamel paint. I just put too much in, wipe off with a very lightly thinner dampened tissue. If you bake it, it gets rock hard just like the panel paint should. Paul

From saglek at videotron.ca Thu Jun 30 20:47:08 2005
Subject: [R-390] R-390 Panels

Tom,

Try this site. Walter Wilson's site is very detailed. I am sure that you will find all you will need here. Also follow the link at the top of the page, great info there.

PS. To all of you south of our southern border. Have yourselves a great July 4th Weekend. Be happy, drive safely, God bless you and the United States of America. Al

From redmenaced at yahoo.com Thu Jun 30 21:41:00 2005
Subject: [R-390] BFO question

wrote: > Mine doesn't have a center detent, but if I turn it > on and turn the knob > several turns clockwise the beat tone will get > higher and higher and then go > away (it is too farr off frequency), but I turn it > back the other way > several turns and I hear it again. Just don't force > it if it reaches the > "stops" at either end. This may or may not be your > problem, just a thought > I had. Could also be a bad contact on the BFO > switch.
++++++++++++++
If everything is assembled correctly this knob DOES have a center detent!

But it is inside the knob itself. If the knob is too far off the front panel the small protrusion inside the skirt of the knob won't contact the stop. Pull the knob off the shaft, you'll see what I mean. Joe

From brookbank at triad.rr.com Thu Jun 30 22:38:23 2005
Subject: [R-390] Receiver 51J-4

The 51J-4 has tunning slugs about 1 1/2 inches long, what would be the impact on replacing broken ones or all of them with slugs that are 1 1/4 inches long? The length of the flexible cable would be tha same...or should it be 1/4 inch longer??? Thanks in advance to any and all advive. Regards, Pat

From brookbank at triad.rr.com Thu Jun 30 22:43:47 2005
Subject: [R-390] (no subject)

Does anyone knows if an overlay for the 51J-4 (51J-3) Megacycle drum is available enywhere? Any hel in abtaining one would be greattly apreciated. Thanks and regards, Pat

From w5or at comcast.net Thu Jun 30 23:47:45 2005
Subject: [R-390] J3 drum overlays

Pat, you can get them from Howard Mills. Contact info below. The 51J3 is the same as the R-388.
I think both J3 and J4 models use the same overlay, but check with Howard.

Howard Mills, W3HM
RT 3 Box 712
Harpers Ferry, WV 25425
(304) 876-6483
E-mail: w3hm@nfis.com
Drum dial overlays for 75A-4 and 51J-4 and R-388. Don Reaves W5OR