R-390 Reflector March '02 Edited

From Llgpt@aol.com Fri Mar 1 00:03:34 2002 Subject: [R-390] storage

cbscott@ingr.com writes: << Finally. An explanation I can understand! Barry(III) - N4BUQ >> Thats because he forgot to add "Hammarlund" Les

From ba.williams@charter.net Fri Mar 1 00:30:20 2002 Subject: [R-390] storage (Hammarlund)

> Barry should contact the Discovery Channel, there may be a future in this.

You mean the other Barry. Hammarlund. The other other Barry

From rjcote@hawaii.rr.com Fri Mar 1 00:38:12 2002 Subject: [R-390] storage

You guys have too mych time on yor hands, but I love it!!!

From hankarn@pacbell.net Fri Mar 1 01:03:21 2002 Subject: [R-390] storage

If BS was a salable commodity the billionaires generated on this reflector would out do Bill gates in a flash. It is so deep the leather in my boots will be supple for years HiHi. Hank KN6DI

From twleiper@juno.com Fri Mar 1 02:32:53 2002 Subject: [R-390] storage (Without Hammarlund appended to the subject line)

<ba.williams@charter.net> writes: > >> Barry should contact the Discovery Channel, there may be a future >> in this. >> You mean the other Barry. > > Hammarlund. > > The other other Barry >

[Dead Hammarlund paragraph delimiter inserted here]

"Hello Mom, Hello dad. There's another dead Hammarlund paragraph delimiter inserted on the posting, Dad."
"Call the church..."
"Call the police"
"Call the Church Police"
Sirens blare, doors crash open...
"Major Strasser has been shot...Round up the usual suspects."
"That's the wrong Prefect of Police. Get back into this skit, please"
"Oh, all right...What's all this then, Amen?"
"There's another dead Hammarlund on the posting, Vicar Sergeant"

"What's it's model number?"

"How the devil should I know?"

"It's tatooed on the top of the turret." "JX-17" "And now, I ask you to all kneel" "Oh Lord, we beseach thee. Tell us who croaked JX-17" [Thunder] "IT"S THE BARRY IN THE CORNER...HE DID IT!" "Take him away" [Barry] "It's a fair cop, but the R-390 reflector is to blame" "We'll be charging them to." "Kill him! Kill him!" "My God, what have I done?" "Madness... Madness..."

From kd9kc@elp.rr.com Fri Mar 1 03:12:15 2002 Subject: [R-390] storage (Without Hammarlund appended to the subject line)

This is stuffed fuller than a Christmas Turkey.

From w7itc@hotmail.com Fri Mar 1 08:03:42 2002 Subject: [R-390] storage

RE: Spontaneous Human Combustion

Oh I know all about this. We run into it at the VA hospital I Work at. A recent case (I am not making this up). This gentleman whom I will call Mr. Plowed, was just that plowed out of his gourd. He also had a thing about old Zippo lighters. This well lubed Vet' was refilling his Zippo with lighter fluid. He was anesthetized enough to not feel he was pouring most of the fluid into his crotch. Well when he finished he felt the need for a smoke so he lit up. WOOOOM! ARRRRRRRRRRRRGH!!!!!!! The poor guy, the fire flashed right through his crouch and out the backside. I viewed his injuries the next day he looked like fried bologna. Sure walked funny. Kenneth Crips

From beral@videotron.ca Fri Mar 1 19:46:12 2002 Subject: [R-390] IF Subchassis Resistor Value R-390

Hi All, Need help with a resistor value. The installed resistor, R554, is 470 Ohm, 1 watt. It measures 800+ Ohms so it needs replacing. My problem is that the schematic indicates that R554 is 2200 Ohms. What is the correct value. This is the original resistor, no signs of desoldering in the entire IF Chassis except for the BFO module.

Radio Info. R-390 Collins Serial No. 2113 Contract No. 14214-PH-51-93

IF Chassis. Collins Serial No. 2571 Al

From JamesMiller20@worldnet.att.net Fri Mar 1 22:32:40 2002 Subject: [R-390] Need gear clamp - R390a The screw threads stripped on the gear clamp that attaches the gear train to the Xtal oscillator shaft. Actually I just need a spline head screw to replace the one with stripped threads, but I'll buy the entire clamp if I have to. Can anyone help. Thanks, Jim N4BE

From wewilson@knology.net Sat Mar 2 01:53:14 2002 Subject: [R-390] IF Subchassis Resistor Value R-390

> Need help with a resistor value. The installed resistor, R554, is 470 Ohm, 1 watt. It measures 800+ Ohms so it needs replacing. My problem is that the schematic indicates that R554 is 2200 Ohms. What is the correct value. This is the original resistor, no signs of desoldering in the entire IF Chassis except for the BFO module.

The following was stated in Hollow State News #36, page 5 [Metz]:

"R554 coming off Z503 is schematically 2.2K. In four IF decks, the installed value was 470 ohms (and looked original). I temporarily removed this resistor and used a substitution box to experiment. It seemed that the 470 sounded much better than the 2.2K or any other value for that matter." Walter Wilson - KK4DF

From beral@videotron.ca Sat Mar 2 02:14:06 2002 Subject: [R-390] IF Subchassis Resistor Value R-390

Hi Roy, Paul, Dave and Walter,

Well the consensus is that the R554 should be 470 Ohms. The out of spec R544, 800+ Ohms has been replaced. I thank you all for the response. What a great bunch you all are.

When I get the radio working I will let you know what, if any problems I have with the AGC. Al

From tetrode@worldnet.att.net Sat Mar 2 02:45:38 2002 Subject: [R-390] Need gear clamp - R390a

Jim, one trick you can try if the screw isn't too bad is to put a washer or two between the clamp and nut. This shims the nut to a different section of the screw which may still have good thread. It's worked for me a couple of times. John

From tetrode@worldnet.att.net Sat Mar 2 02:56:13 2002 Subject: [R-390] IF Subchassis Resistor Value R-390

Al, I've only seen the 470 ohm 1 watt in the several 390 IF decks I've worked on, and other folks on the list have told me the same. Maybe this little piece of info could be developed into a secret password or something to identify the 390 owners from the 390A owners. John "470"

From tetrode@worldnet.att.net Sat Mar 2 04:23:05 2002 Subject: [R-390] Interesting AN/SRA-50 antenna multicoupler on the E place Item # 1336334840 No connection to seller, just a FYI for the list so no flames! :^)

It's a BIG AN/SRA-50 receiver multicoupler which was reportedly used with 390s and may still be in use. It's been up several times without meeting the reserve, but the pics are definitely worth a look.

A friend of mine picked up a couple of the tuning units two Hosstrader, NH hamfests ago and I got to poke around inside them and take a look. Construction was classic high quality military, and the components look like they are sized for transmitting rather than receiving.

Referencing the top picture, you can see two shielded RF compartments each with an LC tank circuit. What is not readily apparent (but what I saw up close) is that the tank circuits are actually inductively coupled to each other through a small rectangular cut-out in the wall that separates the two compartments. Cool! One knob and gear train tunes the whole compartment.

Mounted on the top side of the wall (in the pic), right between the coils, and on top of the cut-out is a piece of fiberglass board which was partially covered with copper. It was mounted on a sliding mechanism that allowed it to moved up or down, thus changing it's position over the slot opening. My guess is that it served as an adjustable Faraday shield between the two tanks, or possibly as a means of adjusting the coupling between the two circuits. However, the copper section did not seem to be connected to ground which I thought was strange. 73, John

From beral@videotron.ca Sat Mar 2 04:43:20 2002 Subject: [R-390] IF Subchassis Resistor Value R-390

John and All, Right sounds good and thanks for the info. Just found another similar situation in the RF Deck. R221 in schematic is 27 Ohms. The resistor in the Deck is 68 Ohms but measures 73.6. Just within spec. Will not change. Thanks to all and have a good weekend. Getting late and must get my sleep. Attending the first Ham Fest of the season tomorrow here in Montreal. BA acquisitions not allowed this year. Al VE2TAS

From Bob Camp <bob@cq.nu> Sat Mar 2 17:36:54 2002 Subject: [R-390] Interesting AN/SRA-50 antenna multicoupler on the E place

Hi, I've bid on it each time it's been up. I have no idea how much the guy has on the reserve. There are various references on the net. It is definitely set up for transmit / receive operation up into the 1K region. Obviously it's intended for shipboard use. As I recall it or something very much like it is responsible for the classic front end coil failures we see on the R-390A's. There is a setting error you can make on it that basically puts the output of the 1KW transmitter directly into the input of the receiver. The front end coil for that frequency band more or less dies instantly in that case. Enjoy! Bob Camp KB8TQ

From w7itc@hotmail.com Sat Mar 2 22:43:07 2002 Subject: [R-390] (no subject)

I have been reading about the civilian underground "Continuation of Government" bunkers. These articles mention these centers have been almost unused since they were built. Now they have been activated, and I understand they are full of obsolete equipment which is being now being upgraded. It

would be interesting spectulate what short of comm gear might be coming out of these places. Kenneth Crips

From gunsrus@optonline.net Sat Mar 2 22:59:08 2002 Subject: [R-390] (no subject)

Ken, I was USAF from 1959 to 1963 and if my failing memory hasn't let me down I believe that they were built and supplied during my watch. I might be wrong and there are wiser people here then I, so I'll acquiesce to them. Tom N. W1ALZ

From W1JD@drix.net Sat Mar 2 22:59:24 2002 Subject: [R-390] (no subject)

Tom The idea was concieved during the early Eisenhower years, think they were built during the second half of his administration. Kenneth Crips

From dia@dia.reno.nv.us Sun Mar 3 06:26:12 2002 Subject: [R-390] Mech filter question

I just woke up one of my R-390As after a long nap, and it appears the 2 kc filter is dead, nothing on the .1, 1 or 2 kc filter positions. Wiring appears OK. Filter worked OK last time I used the radio, looks like this was a shelf failure.

Question number 1 is this: are ohmmeter checks on the mech filter input and output terminals dangerous to the filter? I checked my ohmmeter on the Rx1 scale, and into shorted leads, it puts out 50 mA, which seems like it might be too high for the mech filter. The higher ranges put out less current, which brings up question number 2:

What should the resistance of the input and output coils be? And yes, C-553 has been changed. Thanks Jack Jack Antonio WA7DIA

From w4foa@voy.net Sun Mar 3 12:48:42 2002 Subject: [R-390] New Subscriber with questions

Greetings to all from a brand spanking new subscriber. I am the proud owner of an R390/URR, Collins, ser no.465. As you might imagine, I'm full of questions and eager to know and learn more about this wonderful receiver.

First and foremost in my mind is the question regarding what is the normal way of dealing with the J108 balanced antenna input jack? I have nothing like that in my inventory, in fact I don't even recall ever seeing anything that will mate with it (although obviously there is!). Is there an adaptor (that is affordable) to adapt it to the standard PL259?

Was there/is there a cabinet enclosure for the R390 or is rack mounting the only way to go? This one has the dust cover on the top, etc...no feet on cabinet...(suggestions)?

A quick check shows that all controls/meters work, and I am assuming, "as they should". Are there any

recommendations (initial DO's and DON'Ts for a newbie owner)?

While in the USAF, I never was fortunate enough to get the R390 at my "position", although they began arriving shortly before I got out (1961). So it has taken 40+ years for me to "UPGRADE" from the beloved SP-600, but I finally made it! 8-)

I look forward to reading and learning more about the 390 now that I have subscribed to this group. Thanks to all for your suggestions and patience. Sincere 73 Tony Martin, W4FOA Chickamauga, GA

From pha@pdq.com Sun Mar 3 14:57:56 2002 Subject: [R-390] New Subscriber with questions

Tony Martin wrote: > Greetings to all from a brand spanking new subscriber. > I am the proud owner of an R390/URR,

You made an excellent choice!

> First and foremost in my mind is the question regarding > what is the normal way of dealing with the J108 balanced > antenna input jack? I have nothing like that in my inventory, > in fact I don't even recall ever seeing anything that will > mate with it (although obviously there is!). Is there an > adaptor (that is affordable) to adapt it to the standard > PL259?

There is an expensive adapter (\$15-\$30 depending) - a UG-970 and UG-971 (one goes to PL259, the other to "C"? from memory). There is an IBM network cable twinax adapter that works, that you can use to make one, too.

> Was there/is there a cabinet enclosure for the R390 or is > rack mounting the only way to go? This one has the dust > cover on the top, etc...no feet on cabinet...(suggestions)?

CY-979 and CY-917, I think - both are fairly expensive. I can dig out details of an ~\$120 enclosure that is a new model and will work, but may not be best for long term use, as it doesn't have good cooling holes, something your 390 6082 tubes won't enjoy.

> A quick check shows that all controls/meters work, and I am assuming, "as they should". Are there any recommendations (initial DO's and DON'Ts for a newbie owner)?

Don't worry too much about the cabinet - the covers will keep the dust and cats and kids out. Don't worry about the radium in the meters - it is at a level similar to old watches and clocks. Just don't eat the insides and you'll be fine (there are long threads on this every once in awhile).

Heat is a big, big problem on the 390. The 6082 tubes bake the AF deck badly. While it works now, it is likely the first point of failure. There are 4 47 ohm resistors coming off the base of the 6082 tubes in the AF deck, and 4 47 ohm resistors coming off the 26Z5W tubes (or the diodes) in the power supply. These should reasonably be replaced - folks here use 5 W replacements - I happened to have used 2W flameproof ones, and did ok.

There is a guy designing solid state replacements for the 6082 tubes. I'm not wild about solid state in a radio like this, but the chance to remove that much heat has to be a good thing.

If your radio dies - first thing to check is the B+ jack on the side - if it is more than 180+-5 volts, shut it

down immediately and check the VFO tube and the VR tube in the AF deck - if the filaments aren't working in either of those, your 6082 tubes stop regulating and you get unregulated 300+ volts on B+, which may damage capacitors, resistors and tubes. At any rate, track down and fix the problem before exposing the radio to any more unregulated B+ than absolutely necessary.

Other than the heat and poor voltage regulation, the design is robust - there aren't really any parts that will lead to some horrible chain reaction that will destroy the radio. On the R-390A, with mechanical filters, C-553 in the IF deck if it shorts will fry the expensive filters, for example.

> While in the USAF, I never was fortunate enough to get the R390 at my "position", although they began arriving shortly before I got out (1961). So it has taken 40+ years for me to "UPGRADE" from the beloved SP-600, but I finally made it! 8-)

Tbanks for serving, sir!

> I look forward to reading and learning more about the 390 now that I have subscribed to this group.

This is a great group - they get kinda noisy sometimes, but the level of experience is just amazing. Do spend time searching the archives at qth.net - there is a treasure trove of information, including all of what I've said in this message...

> Thanks to all for your suggestions and patience.

Good luck with your new 390! It is a beautiful radio, and well worth your time and patience taking care of and using it!

I'm restoring an R-391, which is very similar to the 390, but includes an 8 channel autotune. It is a lot of fun, because I just got it working reasonably well - still need to align it, and fix the line level meter, though. Paul Anderson

From w4foa@voy.net Sun Mar 3 19:26:42 2002 Subject: [R-390] Thanks a Million from the New Subscriber

Gentlemen, Thank you all so very much for the information. I've got so much info to read and check out I may never get around to firing up the new (old) R390. Sincerely, thanks a million to each and everyone for taking the time to answer my plea for assistance. Too many to send individual responses so please forgive me...a big thank you to: Dave Medley WA0HQQ Paul Anderson K6RQR DJED1 (this may be an undercover agent, hi) N2AQS KA6BGW You all are a wonderful resource and I can already tell that you are ready, willing and most of all, ABLE to help. Sincere 73 Tony, W4FOA

From tbigelow@pop.state.vt.us Sun Mar 3 23:42:03 2002 Subject: [R-390] New Subscriber with questions

Hi Tony - Congrats on the 'new' rig. Here are a couple thoughts:

<snip> > First and foremost in my mind is the question regarding > what is the normal way of dealing with the J108 balanced > antenna input jack? I have nothing like that in my inventory, > in fact I don't even recall ever seeing anything that will > mate with it (although obviously there is!). Is there an > adaptor (that is affordable) to adapt it to the standard > PL259?

Easiest approach(next to paying a lot of money for an adapter) is to make up a jumper with an IBM network connector on one end and the plug or socket of your choice on the other end. The IBM 'twinax' network connectors are available for somewhere around \$2-\$3 and you can run it out to a PL-259 on the other end for a switchbox connection if you wish, or directly to the antenna.

> Was there/is there a cabinet enclosure for the R390 or is > rack mounting the only way to go? This one has the dust > cover on the top, etc...no feet on cabinet...(suggestions)?

I'd suggest an old Air Force surplus rack if you can find one. They have a squirrel-cage blower at the bottom and a more typical fan on top for exhaust. Not only will a rack keep your rig cooler, it's also a good place to stash the R-390A and SP-600, as well as a speaker and other goodies.

> A quick check shows that all controls/meters work, and I am > assuming, "as they should". Are there any recommendations > (initial DO's and DON'Ts for a newbie owner)?

Don't use the 'standby' mode. I'm sure there are other things as well.

> While in the USAF, I never was fortunate enough to get the R390 > at my "position", although they began arriving shortly before > I got out (1961). So it has taken 40+ years for me to "UPGRADE" > from the beloved SP-600, but I finally made it! 8-)

Don't muster out the SP-600 - it comes in handy as a band cruiser for fast searches and the like. It's also more justification for that rack!

Welcome to the group, there is an incredible wealth of information available at your fingertips. Enjoy the rig, and keep us posted on your progress. 73 de Todd/'Boomer' KA1KAQ

From wjneill@lcc.net Sun Mar 3 23:46:24 2002 Subject: [R-390] New Subscriber with questions

Mention of the rack used for R-390() mounting brought back the memory that the std military rack, with brackets, for fixed station use was/is the CY-1119/U, of which I have three. Anyone ever see these relics at any auctions or surplus dealers? The racks used in the mobile GRC-26D, MRR-5, MRR-6. and MRR-8, to name a few, are identified in their respective TM's/TO's but I cannot recall their identities here and now. William J. Neill Conroe, Texas

From ba.williams@charter.net Mon Mar 4 00:50:08 2002 Subject: [R-390] New Subscriber with questions

> Don't muster out the SP-600 - it comes in handy as a band cruiser for fast searches and the like. It's also more justification for that rack! > Welcome to the group, there is an incredible wealth of information available at your fingertips. Enjoy the rig, and keep us posted on your progress. 73 de Todd/'Boomer' KA1KAQ

Tony, I have to agree with Todd. A lot of the members have SP-600s, like myself too. They are just neat radios and the audio is great. You will miss yours if you sell it. Glad you joined. Barry

From r390ch@bellsouth.net Mon Mar 4 02:16:02 2002 Subject: [R-390] R390 receive and frequency readout alignment question

Hi At the moment I have my radio tuned to 4965 khz here. It's actually reading 4967. What I want to know is exactly how I can readjust this reading to become accurate above each 500 khz part of the bands. It seems that after 500 khz (not just 500 khz on mw band) and up is tuned it is off by almost 2 or 3 khz. I don't have a problem with recieving signals all that much as I was hearing Radio Angola on 4950 clear as a bell tonight. Thanks Chris

From courir26@yahoo.com Mon Mar 4 02:41:53 2002 Subject: [R-390] R390 receive and frequency readout alignment question

Chris, A couple of things....

Sounds like your PTo may have the classic long error, i.e. it may require more than 10 turns to put out its spec 1000 kcs.

If this is the case your PTO needs this simple endpoint adjustment. Refer to an online manual (same for the 390A).

For any given calibration point, even with the error you described you can recalibrate at the nearest 100 kcs point by doing this.

- 1) place the dial at an even 100 kcs calibration point (like 5000 in your case).
- 2) turn BFO to ON
- 3) crank your zero set knob all the way in
- 4) turn calibrator to ON
- 5) rotate the dial until you hear a zero beat.
- 6) Then CAL OFF, BFO OFF, zero set cranked back out.

Now you should be calibrated for 5000 and nearby freqs, even if your PTO is long on the endpoint adjustment.

The error you described is very common with PTO aging. It is actually present at lower freqs, it just appears to be worse at higher freqs if you calibrate at a low freq. If you calibrate at 5000, it will be worse at a low freq.

It can be corrected easily with the endpoint adjustment in the manual. 73 Tom N5OFF

From r390ch@bellsouth.net Mon Mar 4 03:07:14 2002 Subject: [R-390] R390 receive and frequency readout alignment question

W2ZR@aol.com wrote: >> hearing Radio Angola on 4950 clear as a bell tonight. >> Hi, > What time did you hear them? Thanks. >> 73, > Steve W2ZR

Heard em tonight about 9to 930 pm est or 2 to 230 gmt Nice and clear strong signal.

From chashugg@earthlink.net Mon Mar 4 05:47:52 2002

Subject: [R-390] FS R390A PS

I have a very nice R-390A power supply for sale. It is a Stewart-Warner model, Part # SMD 248984, Order # 20139-PC-60-A1-51., SN 4664. It has the two 26Z5W tubes installed and the original tube shields. It works fine and looks very good. Price is \$45 plus shipping from 79602. Thanks, Charlie Hugg, K5MBX

From cbscott@ingr.com Mon Mar 4 15:25:18 2002 Subject: [R-390] Fan Power Supply Voltage and RTTY Question

List, Power Supply question: I built a simple power supply to drive a cooling fan for my R390A. I used an 18VCT in a "double half wave" rectifier configuration (the same way the R390A HV power supply is done). I slapped a cap across the output (20mfd as I recall) and it was delivering a clean 14VDC noload voltage on the scope. Fine, I thought. Good enough to drive some small fans. Well, when I connect the fan, the voltage drops to about 9 volts (according to the DVM). The fan is drawing about 120ma. What causes the sudden voltage drop? I need to look at the voltage on the scope, but I suspect the cap is discharged through the load between half cycles and the DVM "sees" 9VDC when, in fact, it is a rippled DC signal. Does this sound plausible?

RTTY question:

When tuning for RTTY, I know tha most all of them are LSB and tuning to the wrong side of the signal will invert the mark and space signals. When you tune through a RTTY signal -- say from a lower frequency, through zero, to a higher frequency, which "side" of the signal is the right "side": the one "below" the zero beat or the one "above" it? I think this may part of my inability to copy RTTY correctly. Last night I finally was able to get the "five number" coded patterns I've heard others talk about. Sadly, I don't remember which "side" of the signal I was on... Thanks, Barry(III) - N4BUQ

From cbscott@ingr.com Mon Mar 4 16:21:44 2002 Subject: [R-390] Fan Power Supply Voltage and RTTY Question

Thanks, Bob and Bill. Yeah, I figured the cap was too small. Thinking about it, the fan is supposed to draw 150ma at 12VDC which makes it somewhat equivalent to an 80-ohm load. This makes for a 1.6ms time constant -- not nearly enough. I should've known better -- however, I'm not sure it's a bad thing. This only causes the fan to run a bit slower and thus quieter. Maybe I'll leave it alone. Thanks for straightening me out, guys. 73, Barry(III) - N4BUQ

Barry, The problem is that the capacitor is too small.

The maximum no-load voltage you will get from a simple power supply is 1.414 times the rms secondary voltage (the peak value of the secondary voltage). Since you said you were seeing 14 volts and the transformer is supposed to be 18vct I assume you were using a full wave center tap configuration. This should result in 9 * 1.414, or about 12.7 volts, so the transformer is probably giving you a little more than 18 volts or you meter is off a little.

Anyway, the problem is that with your 120ma load and 20uf capacitor, the ripple voltage is very large. You can calculate what the ripple voltage will be for a given case this way:

Where:

Vripple ripple voltage (volts) Iload load current (amps) C capacitance (Farads)

If you rearrange things, you can find the capacitor needed for a given load and ripple voltage:

C Iload/(120*Vripple)

so for example, if you want 1 volt ripple at 120ma:

C .120/(120 * 1) .001F (which is 1000uF)

This assumes a full wave rectifier at 60Hz. If your supply is half wave, use 60 instead of 120.

You can see a description of why this works near the bottom of this page: http://courses.ece.uiuc.edu/ece343/zdesign.html larry/wa8ulo

From bill@iaxs.net Mon Mar 4 16:56:47 2002 Subject: [R-390] Fan Power Supply Voltage and RTTY Question

A 20 mfd cap with a load of 0.1 amp will drop 5000 volts per second or 40 volts per half cycle of the line. It might as well not be there. So yes, 9 VDC is plausible.

A 1000 mfd cap will drop about 1 volt per half cycle. OTOH, 9 volts causes the fan to run quietly. Regards, Bill Hawkins

From cbscott@ingr.com Mon Mar 4 19:33:42 2002 Subject: [R-390] ME26 D/U

Anyone know anything about this VTVM? I bought one recently and it looks like it may be an HP410 in different packaging. The manual I have with doesn't include a schematic, but the revisions that are included picture an HP410 instead of the unit I have. Just wondering... Thanks, Barry

From Richard.McClung@Dielectric.spx.com Mon Mar 4 19:41:00 2002 Subject: [R-390] ME26 D/U

Hey, MAAA!!!!!!!! Looks like this one's a keeper. Smart as a whip too!!!!!!!!! You got it. Electrically it's an HP410. The early models were exact HP's. But you know how the military is. They got to make it bullet proof..... RICH @B> }

From cbscott@ingr.com Mon Mar 4 19:54:25 2002 Subject: [R-390] ME26 D/U That's what I figured. I don't like the packaging on the ME26 as well as the HP410, but this one is is great shape. Looks like it was hardly (perhaps never?) used. In original box no less.

"Hey look. Here's an off-the-shelf unit that will work just fine!" "Nah. Use the design, but get it from the lowest bidder."

Time to hook it up to the VARIAC and hope the caps are still okay. At least this one has a complete set of probes. Barry(III) - N4BUQ

From beral@videotron.ca Mon Mar 4 20:20:38 2002 Subject: [R-390] Fan Power Supply Voltage and RTTY Question

Scott and List, I have installed a fan in my R-390A and plan to do so for the R-390 when the restoration is complete. I used one of those toy power suplies/chargers that plug into the wall, rated at 9VDC 300MA. The fan is 2.75 inch, 12VDC, 120MA. The P/S is mounted underneath, to the rear and to the left of the PTO. I used a large tie wrap about 3/8 inch wide cut to length. Holes were drilled in it. The screws that secure the partition between the PTO and the Audio chassis were used to support the P/S. I soldered wires to the AC plug on the P/S. The other ends of the wires are soldered to the AC input. I do not use the Function Switch to turn on power. The AC is switched externally. The DC O/P is connected to the fan with a small connector. Never did measure the DC O/P under fan load but the fan cools the radio very well and runs quiet. The fan has been running for 10 months about 10 hrs/day. Al

From mel.williams@charter.net Mon Mar 4 20:26:31 2002 Subject: [R-390] Speaker connections

I think I saw an article on one of the R-390 links/lists that showed how to use a 70v line transformer from Radio Shack to connect a speaker to the unit. Could someone please direct me to this information if it does exist. Thanks, Mel Williams

From mikea@mikea.ath.cx Mon Mar 4 20:50:54 2002 Subject: [R-390] Speaker connections

Mel Williams wrote: use a 70v line transformer from Radio Shack to connect a speaker to the unit.

It's a trivial thing; I did it w/o schematic. On the usual sort of 70V line transformer, there is a hi-Z winding. That goes across the Line Out terminals.

On the Lo-Z winding, there usually are taps to match various speaker impedances. Choose the one that fits your speaker. Simple. Easy. Even _I_ got it right, and that's saying something. Mike Andrews

From cbscott@ingr.com Mon Mar 4 20:56:31 2002 Subject: [R-390] Speaker connections

The RS xfmr has multiple taps on the primary side. One works better than the others. I think it's about 500-ohms but I don't recall which tap that it is.

From billsmith@ispwest.com Mon Mar 4 21:23:55 2002 Subject: [R-390] Speaker connections

A 70.2 volt line transformer will act as a 500 ohm-to-voice coil transformer at 10 watts. For general purposes, such transformers are suitable for transforming a 500 ohm audio output to a lower impedance such as with a 4 or 8 or 16 ohm speaker.

Simply, a transformer simply performs conversion, based on the ratio of primary to secondary turns, from one impedance to another. Since power is a combination of voltage and current, you are using the transformer to convert a ratio of some voltage and current (higher voltage, lower current at 500 ohms impedance) to another ratio (lower voltage and higher current at speaker voice-coil impedance) with a minimum loss of power (best match). In this case, the 70.2 volt line is the primary of the transformer. The primary (or in some transformers, the secondary) may be tapped in a series of wattage specifications, which is a simple way of setting individual speaker volume when a number of speakers are connected together in a public address system. You, of course, want the loudest setting.

Such transformers can have taps on the primary winding (70.2 volt) or secondary (speaker voice-coil). Some have taps on both primary and secondary. Many of the transformers have wattage specifications, just choose the highest wattage terminals.

If you are not sure which terminals to use, connect the R-390 to the "line" or 70.2 volt terminals, and experiment by testing for which ever terminals sound best with the speaker you have. Since more power is needed at low frequencies, listen for best "lows" and maximum volume from the speaker. 73 de Bill, AB6MT billsmith@ispwest.com

From w7itc@hotmail.com Tue Mar 5 02:37:16 2002 Subject: [R-390] 70 Volt transformer

The attachment is the spec' sheet for the 70 Volt transformer in discussion. Ken (Scrambled)

From metzd@intelos.net Tue Mar 5 04:23:30 2002 Subject: [R-390] FS: Tube Pullers, Chinese fingercuff

A couple of years ago, I advertised that I had some of the 7 and 9 pin tube pullers that were sent as standard equipment on the R390's. I still have some left if anyone is interested. Price is \$15 shipped conus for the 1st pair (1- 7 pin and 1- 9 pin) and additional sets are \$10. If you've got a 390A and don't have these, life is tough! Thanks. My address again: Dave Metz 832 Greenville Ave Staunton, Va. 24401

From w7itc@hotmail.com Tue Mar 5 04:13:10 2002 Subject: Fwd: Re: [R-390] 70 Volt transformer

Ok here we go, go here http://www.radioshack.com in the search engine put this number 9663 this will

take you to the spec sheet. Ken

From roy.morgan@nist.gov Tue Mar 5 14:59:09 2002 Subject: [R-390] Fan Power Supply Voltage and RTTY Question

You need 2000 uF not 20. Roy

From jlap1939@yahoo.com Tue Mar 5 15:18:10 2002 Subject: [R-390] Well, anyway

Friends, Back, and mean as ever...Didn't want to say too much when I left, but ended up driving 6600 miles, and visiting in So. Ca...Should have looked a few of you up, but mine was an emerg. trip in the beginning (but didn't need flying); when it turned out o.k., I just turned west...Went to a few surp. places on the way.. and also got a few parts..I had NO addresses with me..

Saw a few fine radios, but mostly looked at scenery.

My SP 600 was waiting on me and I bought another NRD 515 I found on the way..(Still my fav. of the sandy units...)I'm Listening....Have to pull my 390 for a little additional work, and havn't got to it...Got the NRD at a small shop in Poc. Idaho area...Saw very little in boatanchor for sale, but one re-built SX 73 for \$950 (?!?) ?

Had very little to answer, but MUCH to read upon return...To the ones who thought I was running away.. I didn't intend it to sound that way, but I didn't want to waste your time either, by your writing and I would be gone... My Best Wishes, John

From JamesMiller20@worldnet.att.net Wed Mar 6 04:33:10 2002 Subject: [R-390] RG-178 coax

If anyone is looking for the small RG-178 coax used in various places inside the 390a, I have found a ource: Sky Craft Parts and Surplus, in Orlando Florida.

http://www.skycraftsurplus.com \$0.50/ft, \$0.0.425/ft/100+ft, \$0.40/ft/500+ft, \$0.375/ft/1000+ft

Skycraft Parts and Surplus 2245 W. Fairbanks Ave. Winter Park, FL 32789 (407) 628-5634 Fax: 647-4831 Info@skycraftsurplus.com Visit www.skycraftsurplus.com

-- Original Message --From: "James Miller" <JamesMiller20@worldnet.att.net> To: <Info@Skycraftsurplus.com> Sent: Friday, March 01, 2002 11:17 PM Subject: RG-178 coax From ba.williams@charter.net Wed Mar 6 14:05:08 2002 Subject: [R-390] RG-178 coax

James, They are worth a visit to Orlando if they are on the Orange Blossom Trail (g). I noticed some other things in the Hot Deals area: 12vdc transformer 2.9 amp for under \$6 oxygen free 6 awg Monster Cable at \$0.50 a foot (that's right- OXYGEN FREE) Barry

From Llgpt@aol.com Wed Mar 6 14:31:39 2002 Subject: [R-390] RG-178 coax

ba.williams@charter.net writes: << oxygen free 6 awg Monster Cable at \$0.50 a foot (that's right-OXYGEN FREE) Barry >>

Uh Oh...here we go again Hammarlund Les Locklear

From anchor@ec.rr.com Wed Mar 6 14:29:39 2002 Subject: [R-390] Re: RG-178 coax - Sky Craft

HI Guys, Yes, they're definitely worth a visit, but not on "the trail". A little hard to find. my brother lives no. of Orlando, I make him take me there every time I visit. I can spend a cupla hrs just trying to take it all in, usually take a list & maybe samples of knobs, etc. There's a lot of stuff not listed on the site. They've even got some tubes. 73, Al, W8UT

From W2ZR@aol.com Wed Mar 6 14:45:00 2002 Subject: [R-390] RG-178

Hi Gang, RG-178 can be obtained from Nemal Electronics in Miami for 29 cents a foot. They can be reached at 1-800-522-2253. 73, Steve W2ZR

From ba.williams@charter.net Thu Mar 7 00:50:46 2002 Subject: [R-390] Re: RG-178 coax - Sky Craft

Al, I've only been on "the trail" once during daylight hours trying to find my way to the UCF Holiday Inn. It looks pretty shabby in the sunlight. Thanks for the recap of your happy times on the trail. Did you enjoy sampling the "knobs"? I used to get slapped a lot when I tried to sample "knobs". We called them sweater puppies back then. I guess you can see a lot in a couple of hours!!!

Did you ever make it to Sky Craft? Just curious here if you ever made it to the store. Barry Hammarlund

From twleiper@juno.com Thu Mar 7 01:06:31 2002 Subject: [R-390] RG-178 coax

You should check out Mouser, I think it may be cheaper. They definitely have it. Tom

From cbscott@ingr.com Wed Mar 6 19:27:13 2002 Subject: [R-390] RG-178

They also have C to BNC adapters. http://www.nemal.com/catalog/Pg20.jpg Barry(III) - N4BUQ

From cbscott@ingr.com Wed Mar 6 21:00:54 2002 Subject: [R-390] RG-178 coax

Is RG-178 the proper coax? I remember a thread about this a couple of years ago and according to the emails I saved, it was RG-179. I also have a quote from SkyCraft for RG-179. Which cable is correct? Thanks, Barry(III) - N4BUQ

From jamesmiller20@worldnet.att.net Thu Mar 7 03:40:31 2002 Subject: [R-390] RG-178 coax

Actually there may be two types in the 390a. I notice that the coax from the RF to the IF deck is slightly smaller diameter than others, such as the coax from the RF to the Xtal Osc. Are there actually two types in use? 178 and 179?

From jetemp@insightbb.com Thu Mar 7 20:09:07 2002 Subject: [R-390] Alignment help.

Hello to the group, I have owned a "massacre" R-390A since the end of Dec '01. Since that time I have spent many, many hours in cleaning, recapping, and generally solving one problem that reveals another problem. The solved problems generally relate to cleaning out the intrusive dirt and grime from the storage. Many problems have been solved by reworking grounds and intermittent contacts, as well as a few noisy caps and resistors.

I am at the point where only the alignment remains, I think. What I am experiencing is this:

1. The equimpent I have is a good freq counter, VTVM, and Heathkit signal generator. All work fine, except that as the alignment progresses, the radio becomes so sensitive at the higher bands, that the signal generator will not attenuate enough to keep the diode load at approx 7-8 volts. At this point I have been reducing the radio RF gain to reduce the voltage present at the diode load point. This works fine, except that the higher bands are ALIGNED WITH THE RADIO RF GAIN REDUCED to about 1:00 position.

Now, after alignment, with the RF GAIN CONTROL UP FULL, the lower bands work fine and the antenna peak control is fine. However, the higher bands seem to overload and oscillate with a screeching or motorboat putting sound. When detuning the antenna peak control the overload seems to reduce somewhat, but with rotation of the antenna peak control, there is much popping and static.

2. I am getting the impression that the alignment must be performed with the RF gain control up full, and the signal generator attenuated enough to present a diode load voltage of about 7 volts or so. If peaked with the radio RF gain reduced, my impression is that, after peaking, a normal RF gain position will introduce overload at the bands that were aligned with the RF gain reduced.

SO NOW MY QUESTION.....

Does the overload, screeching, and motorboat putt sounds seem to be a true alignment problem (obtaining an attenuator), or is there a remaining component problem that is preventing a good alignment???

Thanks for your past advice, and am looking forward to completing the restoration of this great radio. Sincerely, Jim 73, KF4ICZ

From cbscott@ingr.com Thu Mar 7 20:14:32 2002 Subject: [R-390] Alignment help.

Are you aligning the IF deck along with the RF deck? Sounds like the IF gain is too high. Barry - N4BUQ

From jetemp@insightbb.com Thu Mar 7 20:34:52 2002 Subject: [R-390] Alignment help.

Yes, the IF deck aligned like clockwork......filters, agc, and stagger tuned. Very straight forward. Of course, the signal is injected directly into the IF deck.

My confusion is whether or not the sensitivity will be affected. so radically, with the position of the RF gain control during RF alignment.

After the IF deck alignment, I can only approximate the 150uF input to obtain the baseline 7volts diode load. Perhaps this is a critical baseline to set before the RF alignment? I have been setting the IF gain control about 1/8 to 1/4 turn clockwise from full.

Would this affect the final sensitivity so radically? Jim 73, KF4ICZ

From cbscott@ingr.com Thu Mar 7 20:39:55 2002 Subject: [R-390] Alignment help.

Not sure, but that setting sounds a bit high for the IF gain pot. You might want check Chuck Rippel's site for a procedure for setting the IF gain. I don't have as much experience with this as others on the list, but it does sound like an IF gain problem (which is what I was referring to when I said IF alignment -- I was including setting the gain as part of the procedure). Barry(III) - N4BUQ

From jordana@nucleus.com Thu Mar 7 21:37:10 2002 Subject: [R-390] Alignment help.

The method I use to set the IF gain is by listening to white noise, and using the line level meter with the line terminated with a 610 ohm resistor... all I do is adjust the IF gain control to a point just before the carrier level meter 'takes off'...try it and you'll see what I mean...

Motorboating sounds more like a capacitor problem than anything else, and it could perhaps be due to the failure or leakage of the 2uF cap on the IF deck.. does this occur on all settings of the AGC switch..?

73 de Jordan...

From wewilson@knology.net Thu Mar 7 22:11:34 2002 Subject: [R-390] Alignment help.

Jim, An AGC problem was my first thought as well. With a strong signal output from your signal generator, how many volts do you get on the AGC terminal (back panel) to ground? I'd expect about 9 volts or more (voltage will be negative).

An easy way to check the 2uF AGC capacitor is to first inject a constant signal with AGC on fast, and note the carrier level. Move the AGC switch to med and slow, and note any change in the carrier level. If the carrier level indication drops in the slow position, your 2uF cap is leaking a bit. You'd probably also notice this as a change in the AGC voltage as measured at the back panel. Walter Wilson - KK4DF

From ezeran@concentric.net Fri Mar 8 04:36:49 2002 Subject: [R-390] Alignment help.

>Does the overload, screeching, and motorboat putt sounds seem to be a true alignment problem (obtaining an attenuator), or is there a remaining component problem that is preventing a good alignment??? >

I aligned MANY R390 and R390A radios at the Long Beach Naval Ship Yard, shop 67, back in the late '60s and what you state was not normal.....nor has it been on any sets I've workrd as a hobby since. Sumtin' be busted!!

From billsmith@ispwest.com Fri Mar 8 06:47:58 2002 Subject: [R-390] Receiver Overload?

I wonder what experts think...

I experience RF overload on the BCST band. I think I mentioned same when I first obtained the receiver. After detecting leakage from E207 on several bands (measured high resistance to ground when it should have measured open), I replaced mica capacitors in Z202 and others and the problem seemed to go away.

But now it is back. Symptoms are (1) intermod on BCST band. I wish to listen to a Los Angeles station from the SFO Bay Area, but with the antenna hooked directly through a small balun to the balanced input, the station is obliterated. If I feed the antenna through a lossy antenna tuner and balun, signal is heard fine. Local stations will pin the Carrier Level meter. Not hard, but meter will extend beyond 100.

I have measured many resistors in the RF section by testing between the B+ and tube pins, all seem close to values listed in the schematic. Same with screen and cathode resistors.

I get 9-10 volts from the agc terminals with strong signals, so there is apparently plenty of AGC voltage. I attached a RF choke to the tip of the VTVM DC probe and verified the same AGC voltage is present at E206 and E207.

Does this sound normal, particularly the 100+ reading from the Carrier Level meter? Otherwise, all

seems normal (I have removed the IF module and verified all seems well in that section).

Any suggestions are most welcome. I will next attach a strong signal generator to the unit and get better measurements. 73 de Bill, AB6MT billsmith@ispwest.com

From jlap1939@yahoo.com Fri Mar 8 15:29:00 2002 Subject: [R-390] R-390

Friends, Thanks to a few for kind comments...As for cond. (Speaking snow/ice, here), as I headed west, I didn't see a lot 'till Utah/Idaho... Was in south a lot and most in Highland, CA. area, then north thru Utah and Idaho, where I allowed myself to be snowed in for a few days, in a few neat places, 'cause I have little winter driving ex. They keep most major roads open these days anyway, it appears..

Yes, I have pulled my 390 out of rack to try to run down the prob.. Not as concerned as I do enjoy the 600, and am a bit interested in re-confirming my favorable memories of the 515 sandbx..The only "modern" receivers I have had in the past: an r-70, the 303 and 313, (by Heath), a 515, and my cheapo shack unit(394) I use as a freq. standard for the two big radios...

I found the 515 to be great, and so have several I have known..(A few of you may remember Cathy who was once on the list..she had a 515, and I believe it was her only ex. with receivers until she met my great nephew, 'tho her father was a ham...If any are interested, she finishes a Masters in Lib sci/Eng. this year..She married my great neph..(Frank), and I never see them anymore..don't know how much radio they do now..)

The 390 is dead above about 20, but also has a new audio prob, so I will take my time..Most things in it are new or re-built, so it shouldn't be much of a prob..It just took me some time, 'cause I needed help, as it was in the top of my rack, and I just put it off. My son helped me move it down a few days ago. This is already too long...Sorry....

By the way...Paid \$190 for 515...a real deal it that price, I think..?? Seems O.K., 'tho a few "skint" places, (as my old mom would have said...) Someone let me know.. Best Regards, John

From ai2q@adelphia.net Fri Mar 8 15:26:42 2002 Subject: [R-390] Alignment help.

My thoughts as well. I've never seen an instable R-390A due to misalignment. I worked on many of these sets when I was a 31E20 Spec.-5 Field Radio Repairman in Unc Sam's Signal Corps during the mid-1960s. Vy 73, AI2Q, Alex in Kennebunk, Maine .--.

From courir26@yahoo.com Fri Mar 8 16:21:56 2002 Subject: [R-390] Sync Detect Radio w/R-390A

Gentlemen? I'd like to hear comments from anyone who has used a sync detector equipped radio connected to a 390A to monitor the IF.

I have a Sony 7600 (gasp!!) which has sideband selectable sync detection. The lock range is about 2-3 kcs or so I'd guess.

I did a simple test today by tuning the Sony to 455 kcs in sync detect mode, and routed a wire from the 390A IF out nearby the Sony.

The internal ant on the Sony picked up the IF just fine and locked onto the signal. Seems like this has possibilities. Of course it sounded like cr*p due to the tiny speaker in the Sony, but fed to an amp?? Who knows . . . This may be a bit cheaper option than a dedicated sync detector accessory???

What is the best way to couple the 455 for best S/N?? Pontifications welcome. Great weekend to all!! Tom N5OFF

From JamesMiller20@worldnet.att.net Fri Mar 8 16:38:23 2002 Subject: [R-390] Receiver Overload?

This happened to mine once when I had inadvertently contaminated the insulated gear shaft on the antenna trimmer control. The antenna trim capacitor (inside the can) rides on the AGC line at the first RF amplifier. If the capacitor has contaminants on it (such as from the wrong kind of spray or moisture) or if oils or cleaner spray has gotten absorbed by the insulated gear shaft at the top of the radio, then it will drag the AGC down (at the RF amp). This could be your problem. You should never lubricate the antenna trim geating or the insulated shaft. If it has gotten oil on it, a good non conductive oil/moisture displacement spray will be needed (Like "Big Bath"). Even using the wrong kind of contact cleaner spray or Deoxit to clean inside the trimmer can has caused weird things on mine (with th AGC). It is a very high impedance circuit so it doesnt take much. Bill Smith wrote:

From jordana@nucleus.com Fri Mar 8 16:48:59 2002 Subject: [R-390] TS-505C/U Manual..?

Is there an online source for a TS-505 C/U VTVM..? Does anyone have a pic of the RF Adapter..? I think this is the same VTMV that is listed as Required Equipment for the 390/390A service bench... What is the input impedance/resisitance...??? 73 de Jordan...

From jordana@nucleus.com Fri Mar 8 16:51:59 2002 Subject: [R-390] Receiver Overload?

Does this IMD occur with both antenna inputs..? 73 de Jordan...

From cbscott@ingr.com Fri Mar 8 17:03:52 2002 Subject: [R-390] Need Meter Repair Help

I recently acquired an ME-26D/U VTVM. It is in excellent shape except the meter movement itself. The pointer drags against the dial plate ever so slightly near the zero-volts end. I took the meter out expecting to be able to open it and adjust the needle, but when I got it out of the box, I found that job to be a little more complicated than I first thought.

This meter has a ring that locks the back cover of the meter to the bezel/outer face plate. This is held together with a locking ring. The ring has four small slots that I assume provide the means for a special tool to unlock the ring by twisting it about 10 degrees.

The problem is I don't have a tool to unlock the ring. The shell is approximately 3.7" and the ID of the slots is about 3.8" making the tool that would be used to unlock this ring pretty special. Does anyone have experience with this type of meter? Any chance of anyone having such a tool to unlock the ring? Can it be done with a small punch and a hammer without hurting the meter? I hesitate to try this, but it might my only resort. Any suggestions on a makeshift tool to unlock it?

Any meter-rebuilding experts out there? Thanks, Barry(III) - N4BUQ

From roy.morgan@nist.gov Fri Mar 8 18:39:57 2002 Subject: [R-390] Need Meter Repair Help

you wrote: (The Meter Locking Ring) ... Any suggestions on a makeshift tool to unlock it?

Barry, Fix into a block of wood brads or screws with the heads clipped off to fit the meter mounting holes.

Sit the meter over the nails/screws and tap the ring with a screwdriver and a hammer. lightly. Squirt a bit of Windex into the area to lubricate the thing. If it's stuck, push down at many places on the ring from straight above with a screwdriver to loosen it. There is a rubber gasket to allow a tiny bit of play.

Once it starts it will go more easily.

If that fails, take the thing to the home store and search for some copper pipe the right size to make a wrench. Pipe a bit bigger can be bent in to fit. Ensure equal pressure from each of the four fingers by careful filing. Good luck. Roy

From jordana@nucleus.com Fri Mar 8 19:28:38 2002 Subject: [R-390] Re: TS-505C/U Manual..?

Hi.. Thanks to Dave Merrill I found an online manual for the TS-505C/U... !!! Couldn't have asked for a faster response...!!! 73 and thanks to all those who replied..... Jordan...

From courir26@yahoo.com Fri Mar 8 19:35:30 2002 Subject: [R-390] Sync Detect Results

Well, I had little to do today as will soon be apparent.

I went ahead and made an IF cable for the 390A, and made a coupler out of a piece of foil about the size of the Sony radio, and connected same to the cable. I sat the Sony on the foil to pick up the IF signal.

I then connected the Sony's line-out to my regular amp. Results were excellent.

The Sony locked no problem while sitting on the 455 coupling foil. In fact the signal was so strong it still locked three feet away, so the 390A is putting out gobs of 455 IF. The coupling contraption needn't be very large.

The sound through the amp is good from the line out, although I'm sure the Sony could use some audio

optimization. You can realy tell the difference between the fading on the headphones and the reduction of same through the amp.

Lock range is about 3-4 kcs. Allows you to tune around QRM, and select the best sideband. The filters in the 390A are naturally still effective. Radio New Zealand on 17675 will be the test subject tonight. 73 Tom N50FF

From jordana@nucleus.com Fri Mar 8 19:36:10 2002 Subject: [R-390] Re: TS-505C/U Manual..?

P.S... does anyone have a spare RF probe for this VTVM...? looks like it's complete except for the probe... it does contain two of the 1N70 diodes in the spares holders, one of them is broken, but the other is fine... 73 de Jordan...

From billsmith@ispwest.com Fri Mar 8 21:06:57 2002 Subject: [R-390] Receiver Overload?

> Bill it still sounds like you are fighting a AGC problem.

I wonder. I can turn the RF gain down, and recently adjusted the IF gain control. The intermod doesn't seem to be related strongly to either. In other words, the intermod is still there even if the RF gain is turned all the way down, and the IF gain didn't make all that much difference, though at higher levels the intermod worsened. I am listening around 1070 khz. I don't know yet if the problem is aggravated around that frequency, but I suspect it is. By the way, I tried tuning at 1070 and also +0.070 (or close) and experience the same problem, so it doesn't seem to be a problem with the 1MHz RF position.

> I would do 2 things first take a look at the 2 mf cap which is the big one on > the IF deck and then make sure there is nothing wrong with the antenna trim on > the RF deck that will cause havoc with the AGC.

The 2 mf cap was replaced with a polyester mylar some time ago. The original caps were both leaky. I was able to open the case of one of the caps and fit the new 2mfd inside.

> That antenna trim has a lot to do with the AGC circuit and that will cause your > signals coming in to over load. > I have serviced and refurbished many R 390a and I am currently working on a 67 > EAC unit as we speak. > It would be nice if you had spare decks that way you could isolate the problem > quickly . > Let me know and the group know if you find the problem.

Not so far. I inspected the fibre shaft, but it didn't look contaminated, and the section where it fits through the chassis was clean. The insulating washer against the chassis looked ok also.

I then used a VTVM to measure the resistance of the AVC circuit. Couldn't find any leakage whatsoever (tested using a 100MOhm indication). Also rechecked the IF module but found nothing wrong. Thanks for the suggestions! 73 de Bill, AB6MT billsmith@ispwest.com

From billsmith@ispwest.com Fri Mar 8 21:48:03 2002 Subject: Fw: [R-390] Receiver Overload? Roy, The AVC voltage at the RF trimmer cap shaft is exactly the same as pin 4 on the back panel. (Listening to a local AM station, AVC voltage was -7.5 volts in both cases.) Carrier meter reading is 90.

By the way, I think a question arose regarding antenna connections. I am presently feeding the antenna into the balanced input through a small home-made torroid balun. I tried the unbalanced input, but aside from a slight signal loss, the signal (and noise) is the same. Intermod improves if I only hook up one of the two wires from the balun to the balanced input, but then that can be explained by the attenuation of the input. Bill

From ba.williams@charter.net Sat Mar 9 00:39:47 2002 Subject: [R-390] Re: TS-505C/U Manual..?

> Hi.. Thanks to Dave Merrill I found an online manual for the TS-505C/U... !!! > Couldn't have asked for a faster response...!!! > 73 and thanks to all those who replied..... Jordan...

Where did you find it? Sounds like a good link to have if it isn't BAMA. Barry

From redmenaced@yahoo.com Sat Mar 9 00:49:26 2002 Subject: [R-390] Re: TS-505C/U Manual..?

This manual is on the R-390Y2K manual disk, at least I sent it to Jeff and some one else, too. Its out there somewhere! If not I have a copy of the manual. I think I remember sending it to Ken Grimm of BAMA fame. Joe

From jordana@nucleus.com Sat Mar 9 01:03:49 2002 Subject: [R-390] Receiver Overload?

Me thinks you have a problem with the Balanced antenna input transformer... Grease, dirt, a cold solder joint... or something in the capacitor... I've had that happen before... try the "C" input and see if it is still present... the transformers are very easy to remove if you need to check the guts... 73 de Jordan...

From jordana@nucleus.com Sat Mar 9 01:09:20 2002 Subject: [R-390] Re: TS-505C/U Manual..?

The Link is: http://www.logsa.army.mil/etms/find_etm.cfm

Type in TS-505 in the bottom dialogue box.... 73 de Jordan...P.S. Please be prepared to wait awhile as I'm sure the site will be flooded with requests as this gets out.... 73 de zJordan

From ba.williams@charter.net Sat Mar 9 01:14:23 2002 Subject: [R-390] Re: TS-505C/U Manual..?

Jordan, Thanks for the link! Barry

From billsmith@ispwest.com Sat Mar 9 03:54:50 2002 Subject: [R-390] Receiver Overload?

Yes, AB6MT :-) I do have a 160 meter dipole antenna, and this has always been a good radio location. It might also be interesting to hook up the spectrum analyzer in Communications Monitor to the antenna and see if I can determine just how much energy is out there, and where.

But that doesn't (yet) explain the receiver's operation. Think the next step is to hook up a 'scope and a signal generator and see what I can reproduce.

From billsmith@ispwest.com Sat Mar 9 07:31:57 2002 Subject: [R-390] Receiver Overload?

Good question, James. I get about 30 on the Carrier Meter, but apparently lower on the lower bands. I will have to check the calibrator - it is underneath, so I haven't done much with it. I recall tweaking it, perhaps I had better look at it more carefully. I had dismissed it because it looks like it is coupled to the receiver with only a 2pf capacitor. But I suppose even a component of that sort can go bad. Possibly there is something strange going on with the multivibrator circuit too. At any rate, can't do it tonight, will have to tackle it in the future.

I agree the receiver is operating as if one tube is running wide open. But I have checked the tubes in the RF section - I used an RF choke in series with the VTVM DC probe to look at AGC voltages at the 1st and 2nd RF stages. All is well, and looked at the AVC voltage on the antenna trimmer; good there also. I have checked through the IF circuitry and can't find anything to complain about there, either.

I would think, though, that if the problem was AVC, that backing down the RF control would improve the overload/intermod (don't know yet which it is). But backing down the RF control, while reducing the sensitivity of the receiver, does not affect the noise. Interesting, though, switching the Function switch to CAL does reduce the noise and allows the station to be heard. Of course that is likely because the input relay has disconnected the antenna when the Function switch is in the CAL position.

By the way, there is still signal leakage through relay K101 when it is activated by switching the Function switch to CAL. Pulling the unbalanced input (although nothing is connected to it) reduces the signal as shown on the Carrier meter, but does not silence the receiver. Pulling either one of the balanced antenna BNC connectors (J110 or J111) does remove the signal. Will have to look into that also, although that could simply be a factor of a ground loop between the back panel and the balancing capacitors in T201, T202, ect. (Gads, those caps are a bad idea!)

Anyway, thanks for the suggestion, and will keep looking. Might be interesting to pull the BNC out of the calibrator and see what happens. 73 de Bill, AB6MT billsmith@ispwest.com

From lal@metrocast.net Sat Mar 9 22:03:07 2002 Subject: [R-390] AGC

Hello all, While I had my 390A RF deck torn down this last week,I happened to read an article in an old CQ magazine that was telling about a neat way to improve the AGC action with out murdering the radio. Rather than making any changes to the RF deck I did make an easy change in the cable jack going to the RF deck which can be returned to normal very easy. Anyway I was testing this change out this

afternoon, I do think it gives you much better control with the RF Gain Control. What the change consists of is grounding the 220 ohm cathode resistor from the 6DC6, thereby, when you are backing off the RF Gain Control you do not change the gain of the RF Amp. I played with this setup by listening to many signals and switching back and forth between the stock way and the revised way, like I said, preliminary tests lead me to believe I like the new way best.

Wonder if anyone has tried this and if so I would like to see what your opinions are on the subject. Thanks for the bandwidth ! Merle

From roy.morgan@nist.gov Sun Mar 10 03:46:50 2002 Subject: [R-390] Re: TS-505C/U Manual..?

blw wrote: >> The Link is: >> >> http://www.logsa.army.mil/etms/find_etm.cfm

You will get three hits.. one is the spares parts list. one is for the 505 model.. one is for the 505, 505 A ... and through the 505D model.

The 505 has a battery compartment on the front and three binding posts. All the others have NO battery and one binding post (ground) My 505D is warming the corner of the dining room just now.. I was reminded of how nice a meter it is and dug it out for a little excercise. Roy

From bcotter@pop.uky.edu Sun Mar 10 14:25:34 2002 Subject: [R-390] LONG: Alignment, Overload and Distortion

Hi Bill, et al:

I read with interest the problems you have been dealing with, and they seem to be one of the tougher R-390A repair issues. I have been struggling with a very similar, and possibly related set of problems. I have an EAC that behaves in the most peculiar way and has given me fits in trying to correct the problem. This receiver is a '67 EAC sn#3669, and has been recapped, rebuilt and aligned. Here's what's going on:

Pick a strong station on any band, say 17mHz (problem occurs on all bands). Tuning into the station and the carrier level is around 90-100dB. With the RF gain at 10 and the AVC on, filters in the 8kHz position the station sounds fine as long as there is no selective fading. When fading occurs and the signal dips down to say 70-80dB, distortion begins. When the level falls to 30-40dB, sever distortion appears until the signal rises above 70dB or more. Tune in a weak station around zero to 10dB and it is fine until it gets stronger, upwards of 30-40dB.

Ok, figure it's the AVC, right?

Go to MVC, and tune back in on the strong station. Now the signal jumps way up and I need to drop off the AF gain dramatically. With the RF gain full open, the signal is fine until fading occurs, signal level drops, and the distortion creeps in once more. While looking for that RF Gain sweet spot, I notice that as I advance the RFG from say 5 towards 10, an odd thing occurs. The volume through the speaker increases as I approach 10. Right around 8 the volume suddenly drops 20db or so (gain-compression??), and distortion begins. Increasing the control further the volume increases along with the distortion. The distortion is worse when the carrier meter is in the 10-30dB range.

Now, I haul it up on the bench.

TEST 1 - IF Chain and AVC

Connect the HP-8640B to the IF deck J-518, HP-427C HiZ VM to the AVC line, Fluke DMM to the RF gain line, and a HP-332A Distortion analyzer to the Diode Load line. Dial in 455kHz +/- to peak with the filter at 100Hz, return selectivity to 8kHz, and 30% modulation at 1,000Hz. Controls AGC Fast, RFG wide open, and the following results (all AC Vrms):

AVC ON Vinput Vdload Vavc Distortion

10uV 0.75v -0.6v 18.0% 100uV 1.00v -3.5v 12.5% 1mV 1.5v -8.4v 13.0% 10mV 2.0v -14.9v 13.5% 100mV 2.75v -20.6v 14% 1V 3.5 -27.0 14%

All looks fine from the AVC operational point of view.

Now to test the influence of RF Bias on the IF-AVC system, in the MVC mode. The RFG control is set at different positions and RF bias is measured at the RFG point on the rear panel. Two different input levels (100uV and 1000uV) are tested. The results:

AVC OFF - MVC Vinput Vdload Vrfbias Distortion

100uV10.0v1.0v14.0%100uV6.0v2.0v14.5%100uV3.8v3.0v14.0%100uV2.5v4.0v15.0%100uV1.9v5.0v14.0%100uV1.5v6.0v14.0%100uV1.1v7.0v14.5%

AVC OFF - MVC Vinput Vdload Vrfbias Distortion

1000uV16.5v4.0v35.0%1000uV17.0v5.0v22.0%1000uV14.5v6.0v18.0%1000uV12.0v7.0v16.0%1000uV9.5v8.0v15.0%1000uV6.0v10.0v14.5%

Conclusion, the IF deck seems to be operating fine below 1000uV input at 6vdc and higher bias. However, as the bias decreases (RF gain control advanced towards 10) the distortion increases. Only if the input was held below 1000uV, will the IF deck function normally. This 'sweet spot' would be found by increasing the generator level with the RFG wide open until the distortion sharply rises above the 14% average.

Does anyone know offhand the signal level upper-limit entering the IF deck??

TEST 2 - Overall receiver test

Connect the HP-8640B to the antenna C-connector, HP-427C HiZ VM to the AVC line, Fluke DMM to the RF gain line, and a HP-332A Distortion analyzer to the Diode Load line. Dial in 17.5mHz, and 30% modulation at 1,000Hz. Controls AGC Fast, RFG wide open, and the following results (all AC Vrms):

AVC ON

Vinput Vavc Dist'n Meter

1uV -2.2v 12.0% 15 3uV -3.3v 5.5% 22 10uV -4.5v 4.0% 35 30uV -5.7v 3.5% 42 100uV -6.8v 4.0% 52 300uV -7.6v 4.0% 60 1mV -8.4v 4.5% 70 3mV -9.2v 4.5% 78 10mV -9.8v 6.2% 80 16mV -10.5v 25.0% 81 30mV -10.6v 45.0% 82 40mV -10.7v 35.0% 85 50mV -10.8v 40.0% 89 66mV -11.2v 22.0% 88 100mV -11.6v 8.5% 90 300mV -14.9v 14.0% 100+ 500mV -17.9v ****% 100+ 800mV -21.3v 9.0% 100+ -23.0v 10% 100+ 1V

As you can immediately see from the results above there is a spot in the input-range where the distortion rises dramatically, then falls off. The AGC action and the carrier meter both follow the received signal flawlessly through out the range.

I have done all the usual first steps: tighten connectors, DeOxit sockets, swapped tubes with known good tubes, etc. I also swapped in a second identical EAC IF deck and had the same listening results. What I am wondering about now is the possibility of parasitics in the RF AMP, or a breakdown of a component (ie: mica cap, etc).

Any Suggestions would be appreciated. All results will be posted for the benefit of the group. Thanks es 73 bill n4alg

From CORYHINE@msn.com Sun Mar 10 15:20:58 2002 Subject: [R-390] Another Deoxit Group, Have always used Deoxit from Caig. The other day they sent me a sample of R5..... I have an old Sola voltage regulator that I use on the tube radios. The plug used to get hot from resistance in the prongs. Put a little R5 on it and it now runs dead cold. Stuff works! Caig.com will send a sample for you to try. Something better to use on these old radios... Cory/N2AQS/AFA4TZ

From shadow@gilroy.com Sun Mar 10 18:40:18 2002 Subject: [R-390] News Flash... R-390 follows man home from swap....

Why is it everything I buy. Needs wheels or a fork lift to move it ?? Hello..... From the Heart of Silicon Valley...

I just purchased at swap in the valley today. My first R-390 "A" made by Motorola in 1954 according to the serial number list. This is a early production SN # 1583 with the silk screened front panel and I really do wish it was a later production model.

But, I think I was Very Lucky.

The only thing I'm missing is the top dust cover / shipping cover, a few top and bottom cover screws and a allen set on the band select. If I decide to install the receiver it in a cabinet, then it will not matter. At this time I'm not sure if I want to.

The unit has both the Original meters, Original Motorola ID Tag, complete set of factory knobs, no broken glass, good front panel. The mechanical Counter and PTO are Collins. But I'm not sure if Collins was the only manufacture to make the PTO. Some components still have the green depot marking paint and others have been serviced and or painted. I'm not sure if the are all the modules are Motorola. No major dents or extra holes drilled and does not show any signs of being hacked up or major problems at this time.

The more I look at the front panel. It is not that bad. It just looks flat because it is not a engraved panel. Paint is dull, but the lettering is nice, heavy and very white.. I need to repaint all the knobs. Only a few chips in the gray panel paint and one or two in a white letter. Easy to touch up, I just need to mix the correct shade. Just needs a front panel cleaning, a little touch up paint on the edges and a very good polishing. Being a screened front panel, I do not have any other choice. But... I open to any suggestions.. On how to make the front panel sparkle.

The top inside assemblies needs a little cleaning and dusting because of the missing cover and was stored in a garage. But the bottom inside assembly and gear train are very clean. I need to tighten a few screws.

A few of the local 390 guys looked it over for me and I knew the seller.

At one time, I had purchased a KLH audio system. Yea.... I'm one of the audio guys.

It's a working unit as of about 18 months ago when it was pushed into the corner and I have no drought that it is a working unit it just may not be perfect. Well at this time, but only time will tell. The radio is almost 60 years old.

If the collins filter has not been damaged, then I will be very pleased with my new receiver. I know that if I do not change some capacitors. I may have more trouble then I want to repair. So.... I have not even power it up. Until I do some preventive service and check out.

I'm really not sure if I need to rip the gear train down at his time. It as mechanical marvel and freighting to say the least. I just not sure, if I want to rebuild a motorcycle transmission.

A few months ago, I had posted some questions about the 25F signal generator given to me as a free gift at a flea market. I received lot's of great information. I guess I was destine to own a R-390 or two. Any information, help, service hints or things to look at... Will be appreciated. I'm open to any advice you can give me. Lot's of the group has been down this road before. I open to any help.

Before I start my project... I will post some photo's on my site and post a link on the list maybe later today. TKS Gary

From butrosg@bellatlantic.net Sun Mar 10 20:16:33 2002 Subject: [R-390] Receiver Overload?

I am ignorant of many of the differences between the 390 and the 390A, so if this is a well known fact, duh..sorry to waste your time....... My 390A measures about 1.5 meg from the antenna trimmer shaft to ground, with the IF module unplugged (P112). A quick look at the schematic shows that there's a 1.5 meg resistor (R234) connected between the trimmer rotor and ground. The rotor also goes to the AGC line via a 270K resistor (R201). With P112 plugged in, the resistance at the rotor drops to about 470K. I have grease and stuff on the helical trimmer gears, and don't seem to have any problems with AGC weirdness. Pete.

From bill@iaxs.net Sun Mar 10 21:41:02 2002 Subject: [R-390] LONG: Alignment, Overload and Distortion

Hope you are getting some good suggestions, but in case we're all waiting for someone else to step in, I'll make a basic suggestion:

Have you set the IF Gain pot on the IF Amp Assy? The Navy manual says to change the RF cabling so that the IF Out jack is connected to IF In on the IF Amp. Supply 150 microvolts at 455 KC, 30% mod to the external IF Out jack. Set Function to MGC and RF Gain to 10. Adjust IF Gain for -7 VDC at the Diode Load terminal, not the AGC voltage. See the Manual for further details.

Since the RF Deck has only one stage of gain (the other tubes are oscillators and mixers) it seems unlikely that the IF Amp would see as much as 10 millivolts input, but I don't know the design input range. Perhaps the Technical Report has it.

Usually, distortion comes from clipping, which can be from core saturation. In the 390A, it can also come from overdriving the mechanical filters.

Does anyone know the design input range for the IF Amp? Regards, Bill Hawkins

From eengineer@erols.com Sun Mar 10 03:47:26 2002 Subject: [R-390] Re: TS-505C/U Manual..?

you wrote: >This manual is on the R-390Y2K manual disk, at least I >sent it to Jeff and some one else, too.

Yes, It is on the ADDENDUM CD. Jeff, KG4RZM

From billsmith@ispwest.com Mon Mar 11 17:40:31 2002 Subject: [R-390] LONG: Alignment, Overload and Distortion

Hi Bill,

Now that sounds like a tough one! I'd look at the mixer stages, particularly oscillator injection voltage, but that is merely a guess. Ideas? You might have two problems, and see one, then the other with different signal levels. Also, check resistor values throughout the set, some resistor may have opened up somewhere (esp. B+ dropping or decoupling resistor) and stages are over-reacting somehow to make up the difference.

>From what you describe, it sounds like the set is operating normally when there is little or no AVC voltage, and it sounds like the set may not be operating normally with a strong signal, but the signal is getting through anyway. In between you hear distortion, where some stage is affected by AVC but can not operate normally.

Sounds like a "fun" problem to troubleshoot. You'll feel great when you find it! :-) 73 de Bill, AB6MT billsmith@ispwest.com

From bcotter@pop.uky.edu Mon Mar 11 19:07:47 2002 Subject: [R-390] Distortion troubleshooting

Thanks for the suggestions, Bill.

The idea of two problems has crossed my mind. Probability suggests that two un-related faults occurring at the same time would be significantly less likely than one problem causing two symptoms. All this is academic until the root cause is found. In the mean time, I'm trying to rule out what the problem is NOT. Of all the suggestions I've received, two suggestions dominate:

1) Limiter misbehavior - Tonight I plan to settle the Limiter suggestions by breaking the coax connection in the IF deck and picking off the audio (diode load) before any coax cable breakdowns can occur. The distortion analyzer will provide the numbers for comparison, and a signal tracer will allow me to hear the results.

2) AVC misbehavior - The distortion problem occurs with the AVC-OFF, zero volts on the AVC line. For the moment I feel confident ruling out any issues in the AVC amp, det, RC, etc department. I have also placed this IF deck in another receiver, and it worked well. Installing the second IF deck in the bad receiver made no difference in the problem.

There still exists a region in the RFG control range that produces severe distortion for a given signal. That range shifts downward with stronger signals and upward with weak signals. This tells me there is a signal level factor in the equation. The IF Gain has been set during alignment, but it can be retested for accuracy.

One theory that sounds appealing to explore is the parasitics possibility, is sounds so mysterious and ghostly. The second is an internmod problem in the mixers. Chasing both of these may cost long hours

of bench-instrument time, and since the RF deck would have to be removed, I think there is a better path to take first.

That's the one you suggested of examining all the resistors and capacitors for out of spec condition. Along with examining all solder joints, connections and, the grounds of all shields, sockets and posts. To all that replied - Thanks, bill n4alg

From bcotter@pop.uky.edu Mon Mar 11 19:08:01 2002 Subject: [R-390] Distortion Troubleshooting

Thanks, Bill -

Even though the IFG was set during final alignment, I will try to set it the 'Navy Way' with the sig gen input.

I am pleased to learn 150uV is the setting range, that makes the operating range likely to be closely above and below this number. Your reasoning about the stage-gain in the RF section would substantiate this idea. I will go about setting the IFG in this manner, and testing afterwards should lead towards either the IF deck or RF deck as the source. 73 bill n4alg

From cbscott@ingr.com Mon Mar 11 22:03:52 2002 Subject: [R-390] ME-26 Meter problem update

Well, I got the meter movement fixed in the ME-26D/U. Without a welder, milling machine, etc., I decided to try with the available tools. I mounted to the meter upside-down to a piece of wood with some neoprene washers to protect the finish. Using two large screwdrivers, I was able to apply pressure to two opposing slots and push the ring around to its unlocking position.

After fixing the movement (straightening one of the bends such that the needle moved about 0.020" away from the meter face), I started putting it back together. Simple -- just push the locking ring back into position with the two large screwdrivers. Was working great until one screwdriver slipped causing me to loose my hold on both screwdrivers. The problem is both hands were applying pressure towards the meter back. When my knuckles came into contact with the lugs, I managed to skin my knuckles quite nicely. Pain ensued (as well as some conversation with the meter which I'm sure it didn't understand but it helped me feel better anyway).

I resorted to tapping the ring back into place with a hammer and large screwdriver (I know! -- a screwdriver isn't a punch, but I don't have a nice assortment of punches). At any rate, it tapped back into place rather easily with no more lost flesh on my part and no damage to the meter. I put it back together and it is working smooth as ever. Thanks for all the suggestions. Barry(III) - N4BUQ

Hi Bill & gang --

This is a pretty dumb idea, but have you tried swapping tubes around -- not just subbing in new ones? They say that too hot a tube is problematical for the PTO -- could that be the case elsewhere, as in the

RF deck?

May also be a tube or two with particularly non-linear gain, maybe somewhat microphonic - stuff that doesn't necessarily show up on the tube tester. If you're drawing new ones from the same batch, the problem may apply to all or most of the run, whereas you have a well behaved, broken in older tube in the working circuit. Another dumb question -- did you try tapping the tubes as you stepped through the signal level testing?

Before you pull the RF deck, you might want to try some voltage measurements at the tube socket pins using a tube extender or two -- or use the wire-wrap technique. Don't rely on the voltages shown in the manual -- I would A-B them between the two RF and IF decks you have, looking for gross clues at the various signal levels.

'Nother dumb one: Did you check to make sure the RF gain pot is the correct one -- ohms/watts/taper? Might have been subbed out at some point.

Also, as has often been suggested -- give the tube socket screws a twist to clear any bad ground tie points that may have some resistance, capacitance -- or maybe even, uh diode-ence? My 2, er, $1 \frac{1}{2}$ cents worth. Told you these were dumb. ;-) Barry

From JamesMiller20@worldnet.att.net Tue Mar 12 02:48:38 2002 Subject: [R-390] Distortion troubleshooting

On the Collins list someone recently told the story of a 6U8 that tested very good on a tester, but was actually TOO sensitive. The elements had changed shape or spacing in some manner giving the tube excessive gain. Of course it tested real good on a tester, but behaved poorly in the circuit.

Another thing to consider is bad plate, screen or cathode resistors in the tube circuits. In my case I had both an IF and RF deck where resistors that carried power/current (i.e. plate or cathode, sometimes screen) had aged due to over heating and drifted way out of tolerance. Could a bad cathode resistor cause a tube's grid AGC action to not perform properly? Barry Hauser wrote:

From billsmith@ispwest.com Tue Mar 12 07:19:24 2002 Subject: [R-390] ME-26 Meter problem update

Congrats! Bet it has already found a spot on your workbench. 73 de Bill, AB6MT billsmith@ispwest.com

From hankarn@pacbell.net Tue Mar 12 14:53:50 2002 Subject: [R-390] FS R-39XX Line Level Meters

I have 20 actual replacement line level meters that are extra. I will sell one to a person for \$57.50 priority mail delivery confirmation in the Us to the first 20 requests with a time stamp on the email of no earlier than March 15,2002 at 0200 UTC so as to give every one a fair chance. Early birds loose in this case. I think I have about 15 Carrier level meters, but have to check them out first. The meters will checked as working properly prior to shipping. Payment by USPO Money order unless I have had prior dealings with you. Please include Name, Call, Address and ZIP. I will notify the 20 by posting the first

From roy.morgan@nist.gov Tue Mar 12 15:26:21 2002 Subject: [R-390] Distortion troubleshooting

wrote: >One theory that sounds appealing to explore is the parasitics possibility, >is sounds so mysterious and ghostly. ... the RF deck would have to be >removed,

Not necessarily. Get a scope onto the test points along the RF chain. Listen to the signals inside the radio with another radio. (Put the antenna wire near or around the tube of the stage you want to listen to.) Hook a little wire onto the grid pin of a tube and connect to that. Feed modulated signals from your signal generator into the test points with preceding tubes pulled out. Watch the audio output on a scope. Roy

From redmenaced@yahoo.com Tue Mar 12 17:19:55 2002 Subject: [R-390] Re: [Boatanchors] Peristent, annoying, intermittent, elusive QRN problem: help please!

Maybe,

But my guess would be that its "on" all the time and something else comes on, or the circuit causing the problem changes, and the interference is shifted to another frequency where its not a problem. Are you sure its "dark" related and not on a timer?

From rlruszkowski@raytheon.com Wed Mar 6 01:18:49 2002 Subject: [R-390] Mech filter question

Jack, Did you get some direct mail back to help you with the filter. I did not see any thing posted on the reflector.

Use the Hi range (less current) and measure the ins and outs, Compare them to the 4 or 8. All should have about the same. Most filters do not just pop open. Look for a switch wafer that got oxidized. Look for a spider web with under the deck or under the cover. Look for some crud shorting the trimmer cap. Roger. KC6TRU San Diego.

From rlruszkowski@raytheon.com Fri Mar 8 17:04:50 2002 Subject: [R-390] Sync Detect Radio w/R-390A [warning sand word used in text]

Gentlemen? What is the best way to couple the 455 for best S/N?? Pontifications welcome. Great weekend to all!! Tom N5OFF

Tom, The 455 output in the IF deck starts as a 50 ohm source from the cathode follower. The deck to back panel is 50 ohm connectors and 50 ohm coax.

I would carry that 50 ohms source from the R390 into the new sync detector box. In side there I would go for a transformer match to the higher input impedance of the detector circuit. Even if it is sand state

the input will be more than 50 ohms. I would go for a tuned IF deck transformer and work the winding ratio to get close.

If you can not rework the transformer, Then find a load resistor for the secondary that lets the most power be transfered over to load resistor. This is where the voltage across the load resistor is largest and the transformer will peak up a good 455 signal and by definition let out of band noise be passed to ground.

An inter stage IF that matched 5-10 K plate to a 1 meg grid would only match the 50 ohm up to 5 - 50 K. OK for a bipolar transistor. But still low for a FET or tube. Then you couple off the load resistor with a small cap to the still higher input impedance of the first active device. The small cap and high impedance then looks like a scope probe monitoring the signal at the load point.

Cheep broad band method would be as follows. If the detector input is real high (tube grid / FET) then you terminate the 50 ohm coax into a 50 ohm resistor at the detector end and couple the signal into the device through a small cap. Terminating the signal into a good load keeps trash on the signal line (distortion SWR noise) down. The small cap and high impedance then looks like a scope probe monitoring the signal at the load point.

Could we pull the 5814 Diode detector, and replace it with a sync detector plug in 9 pin thing. I forget what the other 1/2 of the 5814 does. A FET could go in to function as that triode.

Roger KC6TRU

P.S. I hurt my self working on my DX100 and have been told to just do not be working on anchors until I get over my tendinitis. This includes my solid state 6DC6 tube. I can listen, but I have to crank the MC knob left handed. No pulling the receiver out of the rack and getting it up on the bench.

From rlruszkowski@raytheon.com Fri Mar 8 17:12:08 2002 Subject: [R-390] TS-505C/U Manual..?

Please, I would like a manual copy also for my VTVM.

I also need some green meter lead wire.? The red and black hold up OK. But on one of my meters the green plastic is hopeless. Where can we get the probe tips? I think this is the same VTVM that is listed as Required Equipment for the 390/390A service bench Jordan.

True it is. Roger KC6TRU

From rlruszkowski@raytheon.com Fri Mar 8 17:39:04 2002 Subject: [R-390] Receiver Overload?

Does this IMD occur with both antenna inputs..? 73 de Jordan...

Jordan, The difference in circuit and receiver performance between the two antenna inputs presents such a mix that using this criteria to judge a trouble shooting procedure on is not easy.

When we do dial the antenna gain of peak, does the IMD decrees faster than the signal loss? This could then be excess RF hitting antenna. Then OK so how do you identify the over load signal frequency. It

may or may not even be a broadcast signal doing the overloading.

Just getting up the connectors to do antenna testing it is a problem. We need to think on this a bit.

Even on a meter test for oiled antenna shaft isolators it is hard to get a reading that reflects what is happening at RF.

You ask a real good question. I just do not think with every thing I have in my shack I can make a good assessment and report out an answer on my receiver.

Please do not drop this subject. I suspect I have it in my receiver. I am afraid the solution will come from doing a by the step ABC process to inspect test and replace until problem is solved.

I feel we are stuck with observing the problem and realizing it is between the antenna and the grid of the 6DC6. More observation and front panel testing is not going to further isolate the problem. I can be wrong on this.

Now after we check the voltages at the test points, how do we use the deviation high or low to properly conclude what has changed in the circuit so we replace parts to bring the circuit back into design limits. Thus fixing the observed IMD problems.

I think some of us have high AGC voltages and IMD and do not understand there is or were is the problem.

As an aside, I now have an IF deck where the gain is just hot as hell. The signal to noise is good. From my days on the bench, I just know this deck has a problem. It is not normal. It is just two good.

How do we check and decide if an IMD problem is internal or external? Roger KC6TRU

From rlruszkowski@raytheon.com Fri Mar 8 16:23:30 2002 Subject: [R-390] Alignment help.

Hello to the group, All work fine, except that as the alignment progresses, the radio becomes so sensitive at the higher bands, that the signal generator will not attenuate enough to keep the diode load at approx 7-8 volts. At this point I have been reducing the radio RF gain to reduce the voltage present at the diode load point. This works fine, except that the higher bands are ALIGNED WITH THE RADIO RF GAIN REDUCED to about 1:00 position. Sincerely, Jim 73, KF4ICZ

Jim, There is no reason the signal generator needs to be connected directly to the receiver. When we want to measure signal to noise and stuff, OK you need a setup where you know what is happening. But for the alignment, what ever, works OK. If your signal generator leaks to much to get you down to 1uv, you just are not going to do 1uv testing.

Put your real antenna on the receiver, string some wire off the signal generator to get a signal coupled into the receiver antenna. Your not going to radiate more than 1 watt from the signal generator, so do not worry about QRM. Vary the signal generator out put and antenna to wire coupling to get the lowest usable signal level you can. Low level just lets you find a sharper point in the alignment of any slug or cap your adjusting.

Jordan says, The method I use to set the IF gain is by listening to white noise, and using the line level

meter with the line terminated with a 610 ohm resistor... all I do is adjust the IF gain control to a point just before the carrier level meter 'takes off '...try it and you'll see what I mean...

This is a good way to finish up, or set the IF gain if you do not have a signal generator with known output level. What good does it do to tell you to put 150 uv at 455 into the IF and adjust for -7 volts if you can not establish what 150 uv is on your bench.

Jim, you have more than enough hardware and wetware in the shack to get your R390 up to snuff.

Motorboating sounds more like a capacitor problem than anything else, and it could perhaps be due to the failure or leakage of the 2uF cap on the IF deck.. does this occur on all settings of the AGC switch..? 73 de Jordan...

OK, so you have at least one more problem to find.

Stay with it, once you get the problems out two things happen. You become a very happy radio owner / operator / listener. Future problems occur one at time and can be fixed one at a time. Roger.

From rlruszkowski@raytheon.com Fri Mar 8 17:47:37 2002 Subject: [R-390] Need Meter Repair Help

Scott, Yes, there are spanner tools to do it. a 1 x 2 pin stake.

Drill two holes in the stake with 4 penny nails at the correct span to fit the ring. Grind end of 4 penny nails to fit the slots in the ring.

OR

You can put a pin punch against one of the slots and tap the ring loose. You will want to grip the meter in a big bench vise if you can. Just a challenge in tools. Tim Allen never addresses these real life problems. Roger KC6TRU.

From w5or@comcast.net Tue Mar 12 22:55:40 2002 Subject: [R-390] R-389 Sighting

Before attending the Puyallup WA hamfest this past weekend, we took a tour of Electronic Dimensions in Tacoma. There on the for sale shelf is a lonely R-389. Serial #152 has some front-end hacks and some mighty ugly former owner/call-sign engraving in many places but I believe restorable based on a short inspection. Also saw a Collins R-390 Non-A with the same cosmetic issues. http://www.el-dim.com/ for contact information. Don Reaves W50R

From redmenaced@yahoo.com Tue Mar 12 23:03:02 2002 Subject: [R-390] RE: [Boatanchors] Peristent, annoying, intermittent, elusive QRN problem: help please!

In a case like this it would be quick work to have a radio tuned to the "noise" while turning off breakers one at a time. Of course, that only works if you have some idea of where the circuit runs in the house.

Don't forget the aquarium heater! Joe

From hankarn@pacbell.net Wed Mar 13 16:14:34 2002 Subject: [R-390] Re: [Milsurplus] FS R-39XX Line Level Meters

As an add on to the above offer I will include a new PL-68 Mike plug with the meter for \$5.00 more. I will also provide a new rubber meter gasket with each meter. Thanks Hank KN6DI

From jam@sonic.com Wed Mar 13 16:42:04 2002 Subject: [R-390] EMC Model 215 Tube tester documentation?

I Picked up an EMC (Electronic Measurements Corp.) Model 215 tube tester at a swap meet last week. It doesn't have any documentation. Does anybody have documentation on this unit? I will pay for copying. Thanks. (No, BAMA doesn't have anything on it). James A. (Andy) Moorer Adobe Systems

From cbscott@ingr.com Wed Mar 13 17:00:32 2002 Subject: [R-390] Power supply fun

Some of you may remember my post a while ago about filtering on a simple 12V power supply. It is a gounded centertap full wave configuration and I had a 20mfd cap for a filter. When I applied the load, the voltage dropped (naturally as I realize now) and it was suggested 20mfd is insufficient.

Yesterday, I picked up a 1000mfd cap. Before I replaced the 20mfd cap, I did a little snooping with the scope.

Under no load, I was getting a nice flat 12VDC. Under load, the deep "valleys" would appear (as a result of the cap discharging through the load). This accounted for the 9VDC (approx.) reading I was seeing with the DVM.

Replaced the 20mfd cap with the 1000mfd cap.

Under no load, still the nice flat 12VDC. Under load, however, I now get a fairly flat line with just a hint of a ripple (maybe 1/2 volt).

It's funny, but you can read about these things, but they don't sink in until you actually do the "labwork". Next time, I'll be a whole lot less likely to make the same dumb mistake. I think what I was basing my original value on is the fact that the same rectifier configuration in the R390A only uses the 30mfd and 45mfd caps. What I wasn't taking into consideration, though, is the chokes and the overall filtering design. It makes quite a difference!

I realize this is pretty "ho-hum" for some (most?) on the list, but, like I said, sometimes you have to actually do the experiment before it sinks in. This was fun... 73, Barry(III) - N4BUQ

From rlruszkowski@raytheon.com Wed Mar 13 17:48:11 2002 Subject: [R-390] Power supply fun

Scott, It's this learning part of the field that I do like so much. This is the part that's fun, You feel so good when you get it right. A lot like how I feel when I stop banging my head against the wall. Roger.

From buzz@softcom.net Wed Mar 13 18:23:47 2002 Subject: [R-390] Power supply fun

I like the saying, "The journey is the reward". Buzz

From jordana@nucleus.com Wed Mar 13 19:30:05 2002 Subject: [R-390] TMC 6808 Receiver Multi-coupler and other helps..?

Hi I am looking for the manual for a TMC 6806 Multi-coupler... it is a LF/MF multi-receiver coupler that uses plug in cards for up to 16 receivers... does any recongize this unit.. ? It is all solid State and I could use some more cards , (for future expansion hihi..!)

Also looking for a Junker ELDICO SSB-100 MIL for some parts, specifically the Carrier generator crystals... I'm not too sure if I have subscribed properly to some of these reflectors since the big change... 73 de Jordan...

From w5or@comcast.net Wed Mar 13 20:05:49 2002 Subject: [R-390] Power supply fun

said: > I realize this is pretty "ho-hum" for some (most?) on the list, > but, like I said, sometimes you have to actually do the > experiment before it sinks in. This was fun...

On the contrary, Barry, I hear from many subscribers on this list who learn a lot from just these kind of documented experiments and experiences. Makes the list useful for everybody, regardless of where they fit in the R-390 knowledge spectrum. Thanks Don Reaves W5OR

From ba.williams@charter.net Thu Mar 14 01:06:55 2002 Subject: [R-390] Power supply fun

>> I realize this is pretty "ho-hum" for some (most?) on the list,

Barry, Don, etc, Me too, from cat urine to Simple Green to black unkumpukky to gear grease to Barry's cap experiments. Oh yeah, the Zippo lighter getter activation method too. And the R-390A survival kit. And adequate hammar sizes. Hammarlund. Barry (the other other Barry)

From tetrode@worldnet.att.net Thu Mar 14 02:22:02 2002 Subject: [R-390] U.S.S. Liberty attack on History Channel Thurs. 8 PM

Should be interesting for Body of Secrets fans. John

From cwells@floydvwells.com Thu Mar 14 03:25:31 2002 Subject: [R-390] R-30A Arrives!

I have been listening in for several months anticipating the arrival of my R-390A. Its a Collins Serial #

4435 restored to near new condition. Where do I find out what year it was made in? Chuck KG6JYK

From bill@iaxs.net Thu Mar 14 04:26:11 2002 Subject: [R-390] R-30A Arrives!

Well, you might be able to figure out about when the tag was made. It was common practice to scramble tags and assemblies at repair depots. Serial numbers were started over with new contracts, so you'd need to know the contract number (which should be on the tag) in order to find out when the tag was made. Regards, Bill Hawkins

From courir26@yahoo.com Thu Mar 14 12:51:48 2002 Subject: [R-390] R-30A Arrives!

The bathtub capacitor behind the PTO will have a date. This usually stays with the frame. The modules could have been swapped. The xtals will have a date as will the large caps on the audio deck.

From cbscott@ingr.com Thu Mar 14 14:23:04 2002 Subject: [R-390] Power Supply, Capacitors, and Dead Horses

Sometime during the night last night, I happened to think of something relative to the power supply filtering thread. With a single cap across the rectifier, when power is applied, isn't the current demand on the transformer and rectifier components nearly infinite? Is this a potential problem? Should there be some kind of current-limiting resistor (or other component) in series with the cap?

So far, it works okay and I realize this sudden current demand is short, but is this something to be concerned about? Thanks again, Barry(III) - N4BUQ

From djmerz@3-cities.com Thu Mar 14 16:27:53 2002 Subject: [R-390] Power Supply, Capacitors, and Dead Horses

Scott, there's always some resistance (wire in transformer, wire leads etc) so current is limited by this but no doubt the initial current surge can be very high, and this increases with input capacitance. Sometimes a resistor is put in to limit this surge. On my 25 volt supply for my R 392, I used brute capacitance filtering and I always blew the 3 amp 110 fuse when I turned it on unless I brought it up with a variac to limit the initial surge. I think I'm using about 20000 mfd. My solution was to wire in a relay that switched out a surge resistor once the voltage came up - this was my solution because my transformer (about 18 volts ac as I recall) didn't have enough extra volts to accomodate the voltage drop in the surge resistor if I left it in the circuit. There's probably a better way, but I had the relay on hand. Dan

From bill@iaxs.net Thu Mar 14 17:32:18 2002 Subject: [R-390] Power Supply, Capacitors, and Dead Horses

It only looks like a dead short on the schematic. The rectifier has internal resistance, the transformer windings have resistance, and the core has non-linear resistance. It definitely will not support infinite current. Capacitors are not perfect, either.

Rectifiers have a single cycle surge current rating that is 10-20 times the continuous rating. This, and the impedance of the components is what allows modern power supplies to work. If you add more resistance you run into lower output voltage than you'd think. This is because the rectifier only conducts during a small part of the cycle, determined by the ripple voltage. Regards, Bill Hawkins

From jordana@nucleus.com Thu Mar 14 19:24:17 2002 Subject: [R-390] Re: TMC 6808 Receiver Multi-coupler and other helps..?

wrote: > Hi I am looking for the manual for a TMC 6806 Multi-coupler

Hi.. this unit may be the same as the TMC AMC-16... The boards appear very similiar to the AMC-32 shown in the following link....http://www.geocities.com/tmcradio/amc-161.html I need a manual..!!! and if there are any plug-in cards that would be great..!!! 73 de Jordan...

From cthulhu@fhtagn.org Thu Mar 14 19:37:15 2002 Subject: [R-390] Yet another odd TMC rx multicoupler

While we are on the subject of TMC rx couplers..... Does anyone have any info on the AMC-21B receiver multi-coupler? I have posted for the past couple years on several mailing lists with not even an "I have no idea" reply.... Tom Norris KA4RKT Manchester, TN

From cthulhu@fhtagn.org Thu Mar 14 20:10:42 2002 Subject: [R-390] Yet another odd TMC rx multicoupler

Well. It looks just like the AMC-21 that is at the geocities TMC website listed under "Antenna Accessories." But... there is only a spec sheet there. Does anyone have a schematic for the cards or the whole unit for that matter?? Tom

From n4xy@arrl.net Thu Mar 14 21:37:26 2002 Subject: [R-390] Lucked out bigtime yesterday

Did I ever luck out yesterday!!! A couple of weekends ago, I brought home from a local QRP-club meeting two MIL units having something to do with tube synthesis. Both units were about 5 inches high, and weighed a ton. Each. I took them because I make it a firm policy to never tyrn anything down. You just never know... right?

Finally got around to snaping open the top and bottom panels on them yesterday. Neither one was ever goung to work again... both having cables and wires cut inside, and one with apparent partially complete homebrew mods. No serious timebase in either one (which was the main thing I had thought I'd find. In fact, no crystals at all.)

But... there were 26 IERC tube shields in one of them!!! Just what my R-390-A needs! Or my 51S-1... probably the latter now that I think about it. Lots of other good stuff... one medium voltage hermetic transformer each; about 25 tubes; 6 or 8 of those miniature (little-finger-sized) tubes with parallel wire leads; etc. The efforts were worth it just for the tube shields!!! 73 Ed Tanton N4XY <n4xy@arrl.net>

From cbscott@ingr.com Thu Mar 14 21:46:29 2002 Subject: [R-390] Lucked out bigtime yesterday

I'll bet those IERC tube shields are old and have lost most (if not all) of their shielding/heat-wicking ability. Those tubes probably are burned out, and those miniature tubes -- well, they're probably useless as well. And that transformer -- it's probably shorted out.

Besides, you'll probably have to actually pull out the tube shields and tubes yourself, not to mention you'll have to disassemble some of the unit just to get to that transformer.

Yep, I'd just close 'em up now and put 'em aside. They're just about useless. Better still, just pack them up and send them to me. I MIGHT could find some use for some of those spare parts. Of course, you'll have to pay shipping... ... (nice find, Ed) ... Barry - N4BUQ

From glittle@awod.com Thu Mar 14 22:16:54 2002 Subject: [R-390] Lucked out bigtime yesterday

I recently had a similar experience. I went to pick up a WJ receiver and some telemetry receivers. There was a RADAR indicator there and he asked me if I would give him \$20.00 for it. Took one look and said yes. I also do not turn much down. I counted over 70 IERC tube shields with the tubes in them! Even had coolers on the two 6080 tubes. I think I did ok with this one. 73 Glenn WB4UIV

From David_Wise@Phoenix.com Thu Mar 14 23:07:28 2002 Subject: [R-390] Power Supply, Capacitors, and Dead Horses

> With a single cap across the rectifier, when power is > applied, isn't the current demand on the transformer and > rectifier components nearly infinite? Is this a potential > problem?

At the instant of turn-on, if it happens at a point other than the AC mains zero-crossing, there will be a current spike limited only by impedance. During steady-state operation, the peak ripple current is limited not only by impedance but by the fact that the voltage is not changing instantaneously. I C * dV/dt. For 120VAC, the waveform is described by V(t) 170 * cos(377*t) so dV/dt -64090 * sin(t), so the peak rate of change is about 64V/mS. I'm doing this from memory, so take it for what you paid for it.

Bet you thought I wandered off. No, I'm just still messing around with VFO temperature compensation. I'll do a fresh post for that. Regards, Dave Wise

From David_Wise@Phoenix.com Thu Mar 14 23:11:54 2002 Subject: [R-390] VFO Temp Compensation update

It goes very slowly, interspersed with other activities. I found some time ago that my VFO's f/T curve is third order, meaning it goes up, then down, then up again. A typical set of deltas is +50 (1st hour), -100 (hours 1 through 4), +50 (hours 4-12). I have a frequency counter on my SE-3's PLL, a clock, and a thermometer. I aim a video camera at the readouts, slip a big tape into the attached VCR, and go away. Six hours later the tape's full, and I just take one more manual reading the next morning.

If anybody else has charted their radio's drift, I'd like to compare notes. I've reduced my expectations.

Now I'm trying to flatten the middle part by choosing compensation caps. Once I have it about right, I'll sort of flatten the first part by manipulating filament current. This will only track if the set is turned on from stone cold, but that's the usual regime at my house, so it's not as special-case as it sounds. To heck with the third part, that's about 10 cycles/hour. If I can't keep up with that, I must be dead :-) Regards, Dave Wise

From Bob Camp <bob@cq.nu> Thu Mar 14 23:44:26 2002 Subject: [R-390] Power Supply, Capacitors, and Dead Horses

Hi, There is one other thing that keeps this from happening - the way the transformer is constructed.

Prepare for long winded story it's the 390 reflector after all :)

Back a *long* time ago (as in before the 390 not an A) they invented a gizmo called a transformer. Fairly soon it became apparent that the closer the primary and secondary coupled to each other the better the transformer worked. They started off with the coupling being in the 70 or 80% range and worked up from there. Every couple of months somebody figured out a way to bump it up by another percent or two and they each had their 15 minutes of fame as a result. Playing with audio they got up above 90% coupling.

A bit later on (but still pre R-390 not an A) a guy named Edison and a guy named Tesla had a little dispute about how to move power around. As a result transformers became an even bigger item. The difference between 90, 98 and 99.999% suddenly looked like a *much* bigger deal than it had before. Now it wasn't just bragging rights, but money (as in lost power) that was the issue. They bumped things from 96 to 98 to 99 to 99.9% and started putting things up on poles.

An interesting thing happened. The tight coupling transformers started blowing up on the poles. Kind of an embarrassment if you know what I mean. It was an early example of the device protects the fuse. The solution turned out to be dropping the coupling back a bit and using the "loss" to current limit the transformer. You had a little less efficient system but one that was more reliable.

Fortunately they figured all this out before tubes came along so you are pretty safe on very short duration surge current in power transformers if it's a device that has tubes in it. Now aren't you happy you asked Enjoy! Bob Camp KB8TQ

From krk@ix.netcom.com Fri Mar 15 02:21:13 2002 Subject: [R-390] New kit website

This is just a note to let you all know that I built a new website to present information on Allied Radio KnightKits and EICO kits. It was inspired by Dale's (KB9JJA) Heathkit Matrix. My intention is to document by picture and specification all of the kits offered by these two companies. I am also going to try to document as much of the history of these two companies as I can. Why? Three reasons:

1. To help fellow hobbyists understand what may be available in the used market to enhance their enjoyment of their hobbies.

2. As far as I can tell, it hasn't been done.

3. I'm crazy.

I would appreciate hearing comments both good and bad from all of you. If you have any material that

you would like to contribute to the site, I'd be happy to include it. The site address is: http://www.qsl.net/kb7rgg/ Thanks, Ken kb7rgg

From cbscott@ingr.com Fri Mar 15 13:58:06 2002 Subject: [R-390] Happy Camper

Someone posted this to a newsgroup. Thought you all would get a kick out of it... http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=1320933653

From amcdonald@toyodatrw.com Fri Mar 15 14:19:35 2002 Subject: [R-390] Name Plate

Does anyone have an Amelco nameplate that you can part with? Also, there is some sort of a sticker that was originally on the back of the set and has been scraped off, does anyone have one of those for sale, as well? Thanks, Alex

From roy.morgan@nist.gov Fri Mar 15 17:27:20 2002 Subject: [R-390] Happy Camper

you wrote: >Someone posted this to a newsgroup. Thought you all would get a kick out >of it... > ><http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=1320933653>

I can't STAND it!! Laughed till I could not see my computer..then, I read the *rest* of it! The sellers final posting: "...we are in the process of making a video of setting the light on fire and running it over with a truck...please email for info ..it will be for sale on ebay...." Sooo.. does any one have the video? It has got to be good.. Roy STILL laughing! THANKS!

From shadow@gilroy.com Fri Mar 15 18:00:05 2002 Subject: [R-390] Tube Info Needed..

I looking for the following information. That after you have checked all you tubes in the 390. There is a list, about tube placement. It tells you where to put the best tube in the radio. Where you can put the weakest tube. Where to put the most stable tube. TKS Gary

From w7itc@hotmail.com Fri Mar 15 20:13:00 2002 Subject: [R-390] Lucked out bigtime yesterday

You share My philosophy I never ever turn down electronics. I don't care how big and heavy it is. If I blow a hernia so what, I have two friends who just happen to be surgeons and the VA hospital I work at. They are real good at such repairs, and My insurance covers the everything. Is it worth a linguini hernia hauling out a Johnson Desk Kilowatt, damn right. Ken

From tbigelow@pop.state.vt.us Fri Mar 15 20:50:53 2002 Subject: [R-390] Lucked out bigtime yesterday Noooooooooo, not *that* way Ken! Even if you can wrassle it out, chances are too good of breaking something in the unit (more difficult to fix than the hernia!). Get those two Dr. friends to come help out instead. First Desk I got was easily moved by myself an KK1L (who wasn't even licensed then, but I'm a bad influence). He got even a year or so back by getting me along to help move a piano, though. The last one I hauled home was expedited with the help of my big brother who happened to be visiting from Wyoming. He's only been back once since then though, and he stayed (hid) at our parents' place, just to be safe.

I'm with you guys - if they're ready and willing to part with it, the least we can do is be able. And the more you haul away, the more your legend(rumors) will grow. "...*psst*... *nudge*nudge*....That's him, over there...that's the crazy guy who hauls off heavy stuff...quick, go ask him if he wants it...." de Todd/'Boomer' KA1KAQ

From jamesmiller20@worldnet.att.net Fri Mar 15 22:11:26 2002 Subject: [R-390] RF Deck Mod 6?

I have a Collins 390a SN248 order number 375-P-54 with a Collins RF deck. The RF deck has "MOD 6" stamped on it (on top of the sub chassis in the rear). I can find no reference to Mod 6 in any of my manuals,...Does anyone know what Mod 6 was? Thanks Jim N4BE

From n4xy@arrl.net Sat Mar 16 01:55:20 2002 Subject: [R-390] Lucked out bigtime yesterday

Ain't it the truth!!! 73 Ed Tanton N4XY <n4xy@arrl.net>

From hankarn@pacbell.net Sat Mar 16 12:56:23 2002 Subject: [R-390] REF: R-39XX line level meters

Still have a few left. \$57.50 each mailed. Thanks, Hank KN6DI

From hbreuer@debitel.net Mon Mar 18 06:31:30 2002 Subject: [R-390] Is the list working?

I have not received any list message for the last 48 hours. Is the list down or is it my ISP again. 73 Heinz DH2FA, KM5VT

From John H. Gindlesberger" <jhgindle@wcnet.org Mon Mar 18 16:16:20 2002 Subject: [R-390] WTB: R-390A front panel

Does anyone have a front panel that's stamped that they could part with? I want to refinish it, so the condition of the paint isn't critical, but it stampings have to be deep enough to reletter. Thanks. John WA8FNJ

From tbigelow@pop.state.vt.us Mon Mar 18 15:36:34 2002 Subject: [R-390] WTB: R-390A front panel John - Try Dave Medley. I was looking for opne last year and located one before getting an email from him saying that he had a few available. Here is his page: http://www.davemed.info/ Good luck - de Todd/'Boomer' KA1KAQ

"John H. Gindlesberger" wrote:

From jordana@nucleus.com Mon Mar 18 18:18:52 2002 Subject: [R-390] North American Postal Delays.....

This is just a note for anyone dealing with Postal delays within North America.... I have just been informed that there are delays right now as far as incoming and outgoing Postal shipments.... these are due to new Postal Regulations and increased security that have been put in place since the tragic events of last fall...

All incoming mail into the U.S. has been directed through 3 Outgoing Canadian locations, (now increased to 4 since the re-establishment of Calgary as an approved outgoing port), and the limiting of Incoming (to the U.S.) Ports of entry to 4 locations.Prior to this , all outgoing mail from Canada was directed to Vancouver, Toronto and Montreal. Adding Calgary has just be approved, and things seem to be getting back to 'normal'. but this is nothing like it was 1 year ago. We now live in a changed world, and we should get used to the delays that are currently in place as it has been developed for our protection and security....

There are also ONLY 5 ports of entry for the entire U.S.... as opposed to the over 18 Ports of entry that were being used prior to Jan 1st 2001... This has caused backlogs for those who live far from one of these ports... Should you live far from both the outgoing and incoming ports , you can expect even longer delays, as much as 21-28 days in some cases...

Prior to the Olympic Games being held in Salt Lake City, mail had to go through even more stringent incoming mail scanning, X-raying and manual inspection of all items in the Postal system, including envelopes and postcards ebing X-rayed.

Right now mail coming into Canada has become more 'reliable' and the system is also under increased security.

Prior to last fall, Postal Services were allowed to use pretty much any Airline flight with available space, but now there are only 3 or 4 flights daily that will carry mail. This has added delays to the process of handling the mail. There is also now a "HOLD" placed on every piece of mail that was not there prior to the new International Postal Regulations before it can even be placed on an aircraft. The delay is 12 - 24 hours , plus the time of the flight... this might seem small, but the system has not yet caught up on the backlog of mail caused by tighter security and the re-training of postal personel to deal with , and actually carry out the new directives.

You may or may not have this confirmed by your local Postmaster, or Postal Superintendant, but this information was given to me in reply to some requests I have made regarding very slow incoming and outgoing mail, and packages that have been returned to me through the Postal Service. Again.. this is an FYI..... 73 de Jordan....

From jordana@nucleus.com Tue Mar 19 18:49:28 2002

Subject: [R-390] Transel Transalizer Schematic or manual help..?

Hell again... does anyone have any info, a schematic or a manual with schematic for the Transel Tran-Alizer...?? It is a simple Monitor scope with a Wattmeter built-into the front panel... My unit has several cooked resisitors in the HV ckt, and I would like to get i operating again... anyone have one of thse who could perhaps visually check the value if there is no schematic or maual available..?? Let me know... 73 de Jordan...

From rlruszkowski@raytheon.com Thu Mar 21 22:06:55 2002 Subject: [R-390] No mal today.

Fellows, I have no mail, Is my address trash again? Thanks Roger KC6TU San Diego

From anchor@ec.rr.com Thu Mar 21 22:31:54 2002 Subject: [R-390] No mal today.

It's been uncharacteristically quiet the last week or so. I was deleting 40-50/day b4 that, it seemed like. 73, Al, W8UT

From petros88@optonline.net Fri Mar 22 00:18:00 2002 Subject: [R-390] No mal today.

Hmm...was having the same thoughts myself..... Wha's hoppenin' ???

From goode@tribeam.com Fri Mar 22 00:25:48 2002 Subject: [R-390] LF converter for 390?

Ok here is a question for the group. Has anyone built the LF converter described in this months QST for their R-390? If so, did you just not short the 22k resistor in the oscillator? How well does the converter work? Steve, K9NG

From fraserbonnett@adelphia.net Fri Mar 22 00:21:40 2002 Subject: [R-390] Synchronous AM Reception

Having just recently got my R-390A back out of storage, I find myself interested in MW DX'ing again. I have re-read two articles on modifying the R-390A to acheive carrier synchronous demodulation, and was wondering if anyone has any experience with it, and if it is worth attempting:

An NRC reprint from 1992 uses: a coil of wire around the anode of V508 100K (or 47K) resistor a 5-50 pf trimmer grounded to the carrier meter adjust nut a 47K (or 22K) resistor in series and connected to pin socket 1 of V505 Once it's set up, how do you use it, what effects do you observe. Fraser, W3UTD From Richard.McClung@Dielectric.spx.com Fri Mar 22 00:26:21 2002 Subject: [R-390] No mal today.

YOU GUYS ARE COMING THRU ALL 5ERS...... Hammarlund RICH @B> }

From mikea@mikea.ath.cx Fri Mar 22 00:27:12 2002 Subject: [R-390] No mal today.

All working here. Maybe we just don't have much to say? Or does everyone else have the same stomach virus I do? Should I say "Hammarlund" here? Mike Andrews

From w7itc@hotmail.com Fri Mar 22 00:43:43 2002 Subject: [R-390] No mal today.

Well is it time to bring back the black uggamugga thread? Kenneth Crips

From mikea@mikea.ath.cx Fri Mar 22 00:46:26 2002 Subject: [R-390] No mal today.

ITYM "Ukkumpucky" or some such, and _no_, it is _not_. Mike Andrews

From Bob Camp <bob@cq.nu> Fri Mar 22 00:55:17 2002 Subject: [R-390] No mal today.

Maybe Radio Nibi Nibi

From Barry Hauser <barry@hausernet.com> Fri Mar 22 02:16:27 2002 Subject: [R-390] No mal today.

wrote: > Should I say "Hammarlund" here?

Hmmmm??? Yes, I think so -- seems to stimulate the frequency of communications behavior in certain species of boatanchorum perfectum. Let's up the stimulus level and see what happens, purely for scientific reasons of course Hammarlund, Hammarlund, Hammarlund

... and now one more highly experimental stimulus (strap yourselves in men!) Hallicrafters!!!!!

Oooh... I feel a little woozey.... Maybe I went too far? Barry

From jonandvalerieoldenburg@worldnet.att.net Fri Mar 22 04:42:54 2002 Subject: [R-390] No mal today.

> Hammarlund, Hammarlund, Hammarlund >> ... and now one more highly experimental stimulus (strap yourselves in > men!) >> Hallicrafters!!!!!

Yikes!!! this is going too far now. Black uppuckenneee, OK, but Hallicrafters????? How about eradication methods of free-range feline creatures while we're at it, that one got out of hand too! Jon AB9AH

From Barry Hauser

barry@hausernet.com> Fri Mar 22 04:51:44 2002

Subject: [R-390] No mal today.

<snipped> How about eradication methods of free-range feline creatures while we're at it, that one got out of hand too! Jon AB9AH

Uhhh .. you're not referring to, and pardon the expression, "the other white meat" thread of yesteryear are you Jon? Which reminds me -- anybody heard from Nolan? It's been a while. Barry

From courir26@yahoo.com Fri Mar 22 13:09:22 2002 Subject: [R-390] Synchronous AM Reception

I've never used that method, but it sounds to easy to be true. Seems like a true sync detector needs to measure and actively alter the BFO frequency needed to keep things straight. The best way is to use a Sherwood SE-III or similar device, but they are expensive and are getting hard to find.

I made a poor boy hookup recently, using a Sony portable with sync detect for a detector, tuning it to 455 khz, couple the IF signal to it with a whort wire nearby, and then route the line output to an amp. Worked well on a 390A and also on a 51J3 (500 kcs IF). Gives you selectable sideband sync detection in a small box with little fuss. I already had the radio. You can probably get a Sony 2010 or 7600G?? on ebay.

There is a kit out there offered by Steve Johnson, and the ARRL handbook has a homebrew detector. Bonne chance! Tom N5OFF

From tbigelow@pop.state.vt.us Fri Mar 22 14:55:38 2002 Subject: [R-390] No mal today.

wrote: <snip> > ... and now one more highly experimental stimulus (strap yourselves in > men!) >> Hallicrafters!!!!! >> Oooh... I feel a little woozey.... Maybe I went too far? >> Barry

No no, it worked just fine Barry! There was a slight jar, sure, then it made me think of a question I wanted to ask the group back when we were talking about R-389s....

Anyone out there own, operate, or have any experience with the Coast Guard R-649*? Covers 200 Kc-18 Mc or something like that. Looks like a LF SX-73, if you squint and tilt your noggin a bit. Similar gray, stamped panel like the typical R-390*. All I've been able to find out so far is that there were two small contracts let by the Treasury Department for (yup, you guessed it) an R-649 and an R-649A. Apparently custom made just for them, 50-100 total?

There....add that to it Barry, and I bet people will wake up. Better don the Kevlar suit though, in case they start throwing R-390 knobs or assorted modules! Hmmm...maybe a new group name for radios we like that aren't R-390? How about...Hammarcrafters! I've seen radios that would fit this category simply by appearance! de Todd/'Boomer' KA1KAQ

From David_Wise@Phoenix.com Fri Mar 22 19:49:08 2002 Subject: [R-390] Synchronous AM Reception

A sync detector needs to control the BFO slowly and continuously, so in between dropouts it remains at least approximately on frequency.

I don't think the NRC mod's worth trying. Judging from your description, it's more like a synchrodyne* detector than a true synchronous. The latter contains a PLL, locked onto the IF. The NRC mod locks the BFO to the IF (via "pulling", usually a problem, here used intentionally), but only when there's signal. On every little dropout it will instantly revert to its free-running frequency. The synchronous detector's PLL drifts too, but so slowly it doesn't make a beat note during most dropouts.

* Uses amplified, amplitude-clipped IF as BFO into a product detector.

If you can't find an SE-3 for a price you're willing to pay, Tom's recommendation holds. Use any syncdetector-equipped radio that can tune your IF. Once in a while you can find one really cheap because it has a blown front-end. It might still pick up the R-390A's _loud_ IF output. Regards, Dave Wise

From jbrannig@optonline.net Fri Mar 22 22:26:03 2002 Subject: [R-390] Synchronous AM Reception

Hello, What is synchronous detection and how is it different from zero beating the BFO against the carrier? Jim

From w7itc@hotmail.com Fri Mar 22 22:54:21 2002 Subject: [R-390] No mal today.

Does My R390G/URR made By Gonset count. Ken

From courir26@yahoo.com Fri Mar 22 23:57:24 2002 Subject: [R-390] Collins Front Panel FS

Gentlemen? I have a Collins R-390A front panel FS for \$20. This panel has the screened lettering, i.e. it is not stamped like the later production radios. That said, the paint is in good condition (not excellent or MINTY L@@K!!!!!).

There are no grooves in the paint from bandscanning or anything like that. I think it can be used with a bit of cleanup, or stripped, naturally. Buyer pays shipping, whatever that is, maybe \$7??? 73 Tom N5OFF

From courir26@yahoo.com Sat Mar 23 00:00:21 2002 Subject: [R-390] Cosmos PTO FS

Gentlemen? I have a Cosmos PTO FS, \$30. This gadget has not been checked and does not have a tube or shield. But it is otherwise complete. Has a small kink in the armor near the midsection of the oven cover. I have no reason to believe that it doesn't work. money back guarantee and all that. buyer pays

shipping. 73 N5OFF

From Barry Hauser

barry@hausernet.com> Sat Mar 23 00:37:29 2002

Subject: [R-390] No mal today.

> Does My R390G/URR made By Gonset count. > Ken

Absitively! So's my rare Farnsworth. Not allowed to tell about the R-391W by (Gee, Dad it's a) Wurlitzer. What about that limited run R-390A-Jumbo with the very large readout made by Bally? So .. finally we start my favorite thread -- Radios that never were. Which reminds me of Helga Rubenstern -- and THAT reminds me AGAIN -- where is Nolan!!??? Barry

From courir26@yahoo.com Sat Mar 23 00:54:38 2002 Subject: [R-390] Collins Panel Gone, Thanks!

From jlkolb@cts.com Sat Mar 23 01:45:14 2002 Subject: [R-390] Synchronous AM Reception

wrote: > Hello, > What is synchronous detection and how is it different from zero beating the > BFO against the carrier?

Sync detection is mainly for AM or DSB, not for SSB. With sync detection, the supplied BFO signal is phase locked to be exactly in phase with where the carrier should be. During selective fading, or with DSB, the carrier is weak, missing, or phase shifted from where it should be. With the BFO in phase with where the carrier should be, the highest possible audio output results. If the BFO is 90 degrees out of phase with the carrier, cancelation occurs and no signal is heard. That's the deep fades in the audio you get with the BFO on when receiving an AM station, and almost but not quite zero beat. John

From courir26@yahoo.com Sat Mar 23 13:18:35 2002 Subject: [R-390] Cosmos PTO Gone, Thanks!

From jbrannig@optonline.net Sat Mar 23 20:39:18 2002 Subject: [R-390] Synchronous AM Reception

Thank you for all the replies. I also did some digging on the WEB. Very interesting...... 73, Jim

From ea2ig@tiscali.es Sat Mar 23 22:00:29 2002 Subject: [R-390] Synchronous AM Reception

In the book "New Sideband Handbook" by Don Stoner W6TNS. published by Cowan Publishinh Corp. Fouth Printing March 1962 (The publisher of the CQ Radio Amateur, on pages 128 to 132 is a very interesting article about Sybcronous Detection. Best Regards from Spain Pedro EA2IG

From jonandvalerieoldenburg@worldnet.att.net Sun Mar 24 04:23:03 2002

> <snipped> > How about eradication methods of free-range feline > > creatures while we're at it, that one got out of hand too! Jon AB9AH >> Uhhh .. you're not referring to, and pardon the expression, "the other white > meat" thread of yesteryear are you Jon? >

That thread did end in Nolan's famous quote, but was started by Joe (if I recall correctly) with a report of a male feline marking a R-390A as his territory. Got pretty out of hand, with discussions of preferred weapons of destruction to be utilized. My input at the time resulted in a bunch of blazing e-mail. The group does seem quite reserved as of late in comparison with some of the early off the wall treads. Jon AB9AH

From kd9kc@elp.rr.com Sun Mar 24 04:44:03 2002 Subject: [R-390] No mal today.

Nothing reserved about it. The feral cat population in my neighborhood is about 20-% of what it was. And I am not a bit sorry. The grass is actually starting to grow again in the spot they thought was their private sandbox. Mike.

From courir26@yahoo.com Sun Mar 24 16:49:23 2002 Subject: [R-390] 51J AGC and PTO questions

Anyone ever slowed down the AGC action on your 51J? Mine is really fast and it has an annoying pumping action to it (don't know if it has any mods).

What cap on the AGC would be right to slow this thing down for SW broadcast use? 390A uses 2 uF for MED.

Also, did anyone notice that the PTO endpoint error varies with line voltage on the 51J?

I set mine spot on about 5 years ago. It is now 4 kcs long on 120VAC and 2 kcs long on 108 VAC (using a 12V bucking transformer box). This PTO moves faster than kudzoo weed, but I guess one could use a variac to a limited degree to tame the PTO endpoint until such time you could dive in again. Thoughts? 73 Tom N5OFF

From shadow@gilroy.com Sun Mar 24 17:19:45 2002 Subject: [R-390] Tube Info Needed..

I looking for the following information. That after you have checked all you tubes in the 390. There is a list, about tube placement. It tells you where to put the best tube in the radio. Where you can put the weakest tube. Where to put the most stable tube.

From r390auser@cox.net Sun Mar 24 17:32:45 2002 Subject: [R-390] 51J AGC and PTO questions

Tom, Dallas Langford wrote a series of articles for the Hollow State News letter dealing with changes

to the AGC circuit in the 51J-4. You may want to look at those. If you can't find a copy let me know. Kurt Holbrook

From ba.williams@charter.net Sun Mar 24 17:42:47 2002 Subject: [R-390] No mal today.

>> <snipped> >> How about eradication methods of free-range feline >>> creatures while we're at it, that one got out of hand too! Jon AB9AH

Yep, that was Joe who started the whole mess. He will deny it, of course. Barry

From Llgpt@aol.com Sun Mar 24 19:07:24 2002 Subject: [R-390] No mal today.

<< Yep, that was Joe who started the whole mess. He will deny it, of course. >>

Joe Foley "Beehive Kicker Extraordinaire" Les

From David_Wise@Phoenix.com Mon Mar 25 16:59:35 2002 Subject: [R-390] 51J AGC and PTO questions

> From: > > Anyone ever slowed down the AGC action on your 51J? Mine > is really fast and it has an annoying pumping action to it > (don't know if it has any mods).

Kurt already answered this, but here's my two cents. You can certainly increase the capacitance. How much depends on what resistance makes up the R part of the RC time constant, and your personal preference. Experiment. But it's likely to slow down the attack, as it does in the R-390*. If the 51J has a separate-channel AGC IF amp, it's probably possible to work around the problem with diodes like the R-390* Lankford mod. But to get the ultimate fast attack, you must introduce a PNP emitter follower and a negative power supply. Be sure to protect the input junction against reverse breakdown.

> Also, did anyone notice that the PTO endpoint error varies with line > voltage on the 51J?<Spock> Fascinating... </Spock> No other comment, sorry.

I'd better check this on my R-390A, because I'm trying to get flatter frequency/warmup by varying the heater current. What a joke it would be if that threw out the endpoint.

> I set mine spot on about 5 years ago. It is now 4 kcs long > on 120VAC and 2 kcs long on 108 VAC (using a 12V bucking transformer box). >> This PTO moves faster than kudzu weed, but I guess one > could use a variac to a limited degree to tame the PTO > endpoint until such time you could dive in again. >> Thoughts?

No positive ones. My guess is that it's the core; its permeability is changing as it continues to age. Collins worked very hard on the R-390 core, and was just beginning to get acceptable results when the Final Engineering Report was written.

I take it that the endpoint adjustment is hard to reach. Too bad we don't have a voltage-controlled inductance. Hmm. It's only a few MHz, it might be possible to wire up a wideband op-amp as an

inductance simulator. WWII design with space-age prosthetic, I like it just for the gee-whiz factor. The bionic radio... "We have the technology" :-)

I'm not going to work it out, but I wonder if you could get similar relief with a varactor diode. It would replace part of the fixed capacitance, and you could trim it from the outside. My guess: the temperature coefficient changes would scuttle you if the corrector stack didn't.

By the way, I'd like to align my terminology. Which way do you-all call "long" and which "short"? Regards, Dave Wise

From jimamos@cisco.com Mon Mar 25 20:58:14 2002 Subject: [R-390] Synchronous AM Reception

There was also a circuit in the 1999? handbook that was both a synchrous detector and external BFO / product detector. It did use a 455KHz IF input as well.

This circuit was nice in that it also provided for synchrodyne demodulation. This is a version of synchronous detection that amplifies and limits the carrier before applying to the product detector. It does not, however, phase lock a carrier generator to the incoming signal as true sync detection does. Interesting for comparison, however.

The drawback to this circuit is that some of the IC's were not as readily available as one would like. I'm working on a version that should be completed some time before the 75'th B'day of my R-390A that uses NTE available IC's. But this project is still in the planning stages and is a result of the following failure:

I was recently experimenting with a circuit originally published in Comm. Quarterly based on a Motorola Stereo Demodulation chip. It however, it not go well. The version of chips that I received would not lock over a wide enough range to make the circuit useful as an add on Sync Detector.

I also have a friend that was selling synchronous detector kits. His kits were based off of the IC used in the Sony receivers. They worked quite well, and provided for sideband selection of the AM signal. They were purely for AM demod however, and did not provide a SSB / CW product detector. Jim N8CAH

From rlruszkowski@raytheon.com Mon Mar 25 21:05:46 2002 Subject: [R-390] Tube Info Needed..

There is a list, about tube placement. It tells you where to put the best tube in the radio. Where you can put the weakest tube. Where to put the most stable tube. TKS Gary

Gary, What is is the question here. after you have checked all you tubes in the 390

What did you check? How did you check it. All the tubes? All of the tubes?

This is a 3 stage process.

Stage 1 find all the tubes you can and check them on a tube tester. Throw the bad ones away. What is a bad tube? How will your tester know? How will you know?

Stage 2 sub the tubes into the receiver to find the best low noise tubes.

Start with the 5749 6AU6 IF Deck tubes. Use the very first If amp. Sub them all in to find some good ones. Put the good ones into the deck. Check all the tubes again to rank them. Put the very best most quiet one in the first IF put the second in the PTO Put the 3rd in the BFO Put the next best ones in to IF strip down the IF chain.

Do the 6AK6's next. Put the best one in the IF deck Put the 2nd best one in the audio chain you will listen to (may or may not be the phone output) Put the 3rd best one over there on the other audio.

Do all the 5814's into the audio link. Pick a socket where both sides of the of the tube is being used. Do not use the limiter. Do not use the diode detector. Put the best ones in the audio chain. fill the AGC and limiter last. AGC is not listened to. Limiter is mostly off.

Do the 6C4, Do the 6AK5's Do the 6DC6.

Turn the lights off and look for the pretty blue glow inside the bottle. These will first become test spares until you acquire enough tubes with out blue glow to test your tube set. If you are desperate (who is not) there is a zippo process to conduct on the pretty blue glow ones to get the glow out of the bottle. Then these tubes become trash. If you are desperate (who is not) there is a zippo process to conduct on the pretty blue glow ones to get the glow out of the bottle.

Stage 3 install the best of what you have.

All ways put the best tube to the front end. Injecting a signal and metering signal plus noise to noise

will provide a better test than the tube tester will.

Start with 150 UV (what ever [need not be calibrated]) into the IF deck and get a 30 db difference in signal plus noise to noise in the If audio deck. You can hang an AC volt meter and 600 ohm resistor on the line out put. Do some math and determine what the voltage should be and difference is. signal plus noise is 455Khz with 30% mod at 400 - 1200 hertz. noise is 455 Khz is CW on the signal gen. 455 Khz is peaked into the 100 Hz .1 crystal filter of the IF deck.

You need .5 watt into a 600 ohm line load. You need -7 volts on the diode load. If you can not set these 3 things up, the If deck and audio deck are below space and nothing in the RF deck will over come the problem.

In the RF deck, just use the best tubes you can get. The first time you set the test up with 4 -5 UV into the antenna and measure the line out with the signal generator on and off to see the ratio, and then swap a tube, any tube, and see what the difference is, you become a believer for swapping tubes in socket for performance.

You can use WWV and watch the meter bounce between carrier and tones if you do not have a signal generator. Roger KC6TRU San Diego.

From courir26@yahoo.com Mon Mar 25 21:15:59 2002 Subject: [R-390] Synchronous AM Reception

Jim, thanks for the comments. I looked into building the handbook version, but was looking at about five different sources to round up the old chips needed. I'd like to build the one you are working one, so when you get it finished please publish it somewhere!! Thanks Tom

From rlruszkowski@raytheon.com Mon Mar 25 21:15:03 2002 Message-ID: <OFB96EF5EA.0DA0834E-ON88256B87.0073E5AC@rsc.raytheon.com>

Fellows, I want to blame the lack of mail on the Y2K manual. Two things have happened since the that awesome great book was made available to the world. One. Owners have learned it is the place to find all the answers to all the questions (even ukempuck and cats).

Two since it was released, the one or two typo's have been found and clarified so that just every thing is in it. So reflector mail is reduced to new owners asking, until we tell them where to find the Y2K manual The fall out from this is that it even becomes hard to inject an off topic subject line. Such a wonderful world it is. More time to listen to the R390's and less mail to read. Roger KC6TRU San Diego.

From beral@videotron.ca Tue Mar 26 04:13:37 2002 Subject: [R-390] Synchronous AM Reception

Jim, I don't know if you are referring to the same circuit that is in the 1996 ARRL Handbook. From what I can understand from the circuit description this is supposed to be a phase locked synchronous detector. But I am not an engineer, only a tech with a few years experience. So please don't take what I say with as the gospel as written by me.

I built this circuit about a year ago on a PCB. It did not work as expected as a synch detector. It worked well as a side band detector. The audio was very good. I put the project on hold when I purchased an R-390 non A that was entitled to my undivided attention. Let me know if the circuit you are referring to is the same one that is in the 1996 Handbook.

I did contact the author of the article, Jukka Vermasuori, OH2GF for any changes or updates to the article. He responded with no changes. If you want his email address let me know. Al VE2TAS

From jimamos@cisco.com Tue Mar 26 17:06:37 2002 Subject: [R-390] Synchronous AM Reception

Al, I believe that this was the one in the '96 handbook. I think that's the year that I have that I saw it in. I should have looked last night but didn't.

I'm interested as to why yours did not work. As it is similar to what I've been contemplating. If you'd like I would be willing to look at it for you and try to figure out why it didn't work. It could be a PCB layout problem, or even a noise problem on the VCO in the sync detect mode. Either way I'd be interested in seeing your artwork for the PCB. 73's Jim N8CAH

From jordana@nucleus.com Tue Mar 26 17:44:24 2002 Subject: [R-390] HEATHKIT Power Supply Wanted for HA-14 Linear

Hi does anyone out there have a working HP-24 (?) AC Power supply for the Heathkit HA-14 Mobile Kilowatt Linear..?? I think the model number is right, but if not, someone please correct me... Will swap or buy outright... 73 de Jordan...

From jetemp@insightbb.com Wed Mar 27 00:12:09 2002 Subject: [R-390] Fw: Alignment help. (update).

Hello to the group, I have finally found some more time to work on my R-390A. I have received several good suggestions, but find that I am stalled because I have no tube socket test adapters (for testing voltages and resistances). I have discovered that testing most voltages is impossible without some of these adapters.

Before I can proceed much farther, I need at least one of the 9pin and 7pin tube test adapters.

Perhaps someone on the list will assist me in obtaining the adapters needed to proceed, efficiently, with test measurements. Someone must have a few spares that they will sell. Thanks. Regards, Jim

From mikea@mikea.ath.cx Wed Mar 27 00:15:13 2002 Subject: [R-390] Fw: Alignment help. (update).

wrote: I need at least one of the 9pin and 7pin > tube test adapters.

You might give Fair Radio a call. If that fails, send me a note. Mike Andrews

From jetemp@insightbb.com Wed Mar 27 02:04:13 2002 Subject: [R-390] Fw: Alignment help. (update).

Hello to the list, The tube test adapters have been found. Thanks for the suggestions and offer to get some to me. I will be back after getting some voltages. So long for now. Jim

From rlruszkowski@Raytheon.com Wed Mar 27 17:01:33 2002 Subject: [R-390] Fw: Alignment help.more Jim, What are you doing to an R-390/A.

Since I was drafted and school trained as a repairman in 68 with 8 years in service doing it daily with a year as Instructor and now an owner, I have jus never needed tube extenders to fix an R390 or R390 /A.

The voltage get measured with the tube out of the socket. If you need to do injection, pull the next tube up and with a cap to isolate B+ from your signal generator, inject into the plate pin of the tube socket.

You can stand the receiver up on either end and lay any deck out on the bench and get under it to work on it live. You can drop the front panel and work it live. The PTO comes out and can be worked held in hand.

Pull the diode load jumper.

Inject some audio into (60 cycle hum) into the audio deck and get both audio paths sounding the same. (power will not be equal because of the attenuator in the line side)

Put 455 into the IF deck and get it all working.

Do the RF deck mechanical alignment. Get the band switch sync correct. Get the crystal deck switch sync right. Find the bands that work, Work the bands that do not.

If you do not have the parts to adapt the mini BNC to the signal Gen, put a cap on the wire lead and inject the signal Gen into the last test point of the RF deck. (use a whole lot less than 150 UV because it will get amplified in the last mixer) The last test point is a grid of the the last mixer (6C4).

You will make more progress measuring resistors gone high in value. doing visual inspection for bad solder, and replacing suspect caps by the number.

Once you get to a tube stage, It works, It does not work. If your trying to decide if one tube stage is OK not OK by measuring signal level in and out. you are really going at it will out regard to what Elmer's have learned about these receiver working on them several a day years at a time for now nearly 50 years.

In the mid 70's after 20 years of prime time big time use, I was still found that, there is no good table that says what the stage gain of any stage should be. It has big gain. If big gain is not found fix it.

You can read all about calibrated AN/URM - 25 signal generators all week. That is no where near a standard. It just says a tube device is adjusted close. You can read all about calibrated volt meters. That is no where near a standard. It just says a tube device is adjusted close.

We will talk about signal to noise like it was dead on, Its just what ever we got on the bench that day.

Once you get to a bad stage. Working from the head phones to the antenna, you go in and do some voltage checks, this will find the smoked resistors. You then do a very good eyeball. You know where you are looking and why you are looking there. You have isolated the problem to a bad stage. It is bad because it does not have a big gain as expected.

Get the ohm meter out and point to point verify every thing in the circuit. Crud in deck short. Cold solder joint. Broken wire. Over value resistor.

The caps are killing us after 50 years. You can not measure then, most have a lower resistor parallel path. So by the number you just swap them all out.

1 It is a 50 year old R390

2 Experience has shown these item to be problems in these receivers

3 A practical affordable test is not available to most owners.

4 Testing exceeds return on investment.

5 It is just been shown time and time again to do the replacement.

I am not saying change every cap on the bench.

You front paneled your receiver down to one two or three tubes. (Yes Alice, you can do that to an R390 or R390/A)

You jammed a signal generator into a plate pin or two.

You have decided a stage is suspect.

So now your under the deck and hunting in a circuit between two plate pin. This one is good. This one is bad. That is a fixed number of parts in a fixed space.

List your problems here and get some specific help. Quit trying to solve and reinvent it all by your self. It is more fun that way. I do agree.

What is your real objective? Do you want some tube extenders, or do you want to fix a receiver? Roger KC6TRU San Diego.