R-390 Reflector November ‘03 Edited

From K2CBY@aol.com Sat Nov 1 16:46:20 2003
Subject: [R-390] Capacitor Heresy

It has long been an article of faith that you begin to rehab an R-390/R-390A by yanking out all the paper capacitors particularly the notorious "Brown Buggers" and replacing them with Orange Drops. I recently went through this process with an R-390A Teledyne IF subchassis (Contract No. 3785C-PC-63, Serial No. 6369), and the results were surprising.

After about four hours of squinting, sweating and cussing I managed to excise all of the original capacitors and replace them with modern polyester and polypropylene types of equivalent capacitance and voltage rating (more on this later). Removing the BFO to access the capacitors connected to points beneath the tuning shaft was a particular nightmare because some clever techie (or maybe the factory) has Lock-tite-ed the set screws on the bellows coupling. I persevered and managed to finish the job without singing the wiring harness more than a couple of times (love that smell of scorched plastic) and a minimum of other collateral damage. I then tested the IF strip in the receiver and noted no real change in performance â€“in terms of either gain or noise figure.

This left me with a pile of 19 old capacitors on the bench. As I was about to sweep them into the trash bucket I started to wonder "Just how bad are these things?" so I started a little investigation.

They all looked OK mechanically. There were no cracked cases, oozing gunk or peculiar bulges. Nothing smelled out of the ordinary.

Although I hadn't paid too much attention to it when I pulled the capacitors, I noted that there were two distinct types. Teledyne (and probably all the other contractors) used the brown Bakelite cased tubular units only as bypass capacitors B plus line, cathode to ground, or screen to ground. The plate to grid coupling capacitors were all metal cased with plastic or epoxy seals â€“ the type Sprague used to call "Vitamin Q," although the ones in this unit were by Astron and General Instrument.

I started out by measuring the capacitors on an ESI capacitance bridge at a 1 kHz test frequency. Every last capacitor measured within 8% of rated value. Since the spec on many of these was only 20%, I thought this was pretty impressive. I then measured the dissipation factors. These ranged from a worst case of .013 for the brown tubulars to less than 0.01 for all the metal-cased units. For the 0.1 ÂµF capacitors, the computed series resistance was < 21 ohms in all cases; and for the 0.033 ÂµF capacitors the series resistance was less than 68 ohms. In all instances, the metal cased units had less than half the series resistance of the brown tubulars.

I then measured the insulation (shunt) resistance of the capacitors on a ZM-11 bridge. For the 0.1 ÂµF "Brown Buggers" the values ranged from 60 Meg to 75 Meg; and for the brown 0.033 ÂµF units, 800 Meg to 2,800 Meg. The metal-cased capacitors ranged from 8,400 Meg to 10,000 Meg (the limit of measurement). It should be noted that these measurements were taken with applied voltages (up to 500) substantially higher than the rated working voltages of the capacitors.

By way of comparison, new out of the box Orange Drops had a measured D of .004 and an insulation resistance in excess of 10,000 Meg (limit of measurement) for both the 0.1 ÂµF and the 0.033 ÂµF units.
I drew three conclusions from these tests. First, the Collins engineers were no dopes. They confined the brown tubular capacitors to non-critical applications and used premium-grade, metal-cased units where

leakage resistance and dissipation factor really made a difference. Second, the original capacitors aged remarkably well. There wasn't one of them in my IF strip that actually needed replacement. Third, unless you are a glutton for punishment or just love to see the orange sparkle of fresh capacitors glinting from inside the radio, it probably doesn't pay to re-cap unless the receiver is showing symptoms of distress.

The B plus and screen bypass capacitors are most likely to fail, and if they start to leak the plate and screen voltages will be noticeably low. The interstage coupling capacitors are pretty safe because they are higher quality. If they commence to leak, the failure will be obvious because the grid of the following stage will be driven into conduction, resulting in zero or positive grid voltage and vastly excessive plate current. The cathode bypass capacitors are least likely to fail since they operate at a tiny fraction of their rated voltage.
The only exception is the infamous C-552 (0.01 ÂµF 300 dcwv) that couples the plate of V501 to the mechanical filters. Because its failure will fry the filters, it should ALWAYS be replaced with a top quality new part with a voltage rating of at least 350. It's also easy to reach, and there is plenty of room to fit a replacement.

I have a couple of additional observations.

Capacitors come in small packages these days, and by 21st Century standards Orange Drops are pretty bulky. I instead used CDE Sub Miniature Metallized Polyester DME Types, which are about 1/4 the volume of an Orange Drop. The types are DME2P1K 0.1 ÂµF 250 volts (Mouser part no 5989-250V.1); DME 4S33K 0.033 ÂµF 400 volts (Mouser 5989-400V.033) and DME 6S1K 0.01 ÂµF 600 v (Mouser 5989-600V.01) for C552.

Although the capacitors looked pretty good in my IF subchassis, the resistors were another story. I measured each of them, and almost half were more than 15% out of tolerance. Invariably, the resistance was higher than it was supposed to be â€“ in a couple of cases, about 25% high. I also found a couple that were charred â€“ but amazingly enough one of these still on value. I left the grid resistors and AGC bus resistors pretty much alone since those values are non-critical but changed all the others that were more than 10% off.

From jmiller1706@cfl.rr.com Sat Nov 1 18:48:09 2003
Subject: [R-390] Capacitor Heresy

If the caps. were all pretty good, I wonder what it was that improved the performance of the IF strip?

My experience has been likewise in the IF strip. Here's a story from the RF deck. I had questionable performance on all bands, intermittant, heat-related. I had already replaced the .033 capacitor on the rear wafer of the bandswitch. I decided to go through the whole deck and replace ALL of the ,005 disc capacitors. I then checked the tightness of all chassis screws holding ground lugs or tube sockets... yes some were a little loose,

... Additionally, I sprayed the tube sockets top and bottom with "Big Bath", which is an oil and moisture displacement spray. Oil seeps down from the gears to the chassis and eventualley leeches into the porus material that the tube sockets are formed from... enough of an impedance change results to affect performance a little. After all this, Wow, what a difference in performance now! It is really "hot" on all bands. Most of the ,005 discs are used for screen and B+ bypass, a few are used to filterr the filaments (I didn't replac all of the filament caps.). I did not measure the old ones.

Another thing I discovered in this radio... on one band (the upper AM broadcast band) the carrier meter would change about 10-20 dB for no apparent reason, usually a function of how long the radio had been on. It would play solid 60 dB on the local station for 30-45 minutes, then suddenly drop 10-20 dB. It was a local station and this was not due to propagation changes. After much head scratching and deduction, this was finally traced to an intermittent failure in a capacitor in one of the band coils. It was in coil Z202-1, a 2400 pf cap (C-235-1)inside the coil can ... one end of this cap "touches" the B+ line feeding the V201 RF Amp via the coil in Z202. The other end of this cap. is in series with a 180 pf cap, both across the coil. My suspicion is that the radio was used a lot by the previous owner on the broadcast band, hence this cap. was subjected to B+ longer than any others, and developed a failure. Alternately, the higher value combined with aging resulted in a voltage breakdown of some kind. The failure didn't change the resonance of the coil greatly, but enough to reduce the signal coupled to the next stage. I bought a new can and it works well now. I suspect that any questionable performance on other specific bands could be traced to similarly failed capacitors in the coil cans for those bands (C232-1, C234-1, C238-1, etc). The moral is don't forget internal failures in these cans when diagnosing problems. (PS I got the replacement can from Fair Radio)... Jim N4BE

From Scott Seickel" <polaraligned@earthlink.net Sun Nov 2 00:30:54 2003
Subject: [R-390] Capacitor Heresy

Interesting. I restored a Teledyne unit about 1-1/2 yrs ago. Came to me in nice condition with all Teledyne modules and original meters. Well kept. I recapped the whole unit and tested all removed capacitors on a Sencore LC75 analyzer. I found about 2/3 of them to have had significant leakage. Several of the "Brown" caps also had cracks. I would not second guess recapping this set again. My experience with the resistors in my set was similar to yours. Scott

From larryshaw@alltel.net Sun Nov 2 00:45:09 2003
Subject: [R-390] RE: R-390 digest, Vol 1 #884 - 4 msgs

I agree about the resistors I worked on R-390's and the old Facsimile machines in St. Louis in 1961 at Jefferson Barracks. The resistors in both machines had almost become open. 1 meg to 18 meg. We went to a local electronics shop and fixed the problem so we could go home. It must have been a bad batch but we Got it fixed. Seemed to be the high value 1 meg and above that caused the problem. 20

From wf2u@starband.net Sun Nov 2 01:30:53 2003
Subject: [R-390] Capacitor Heresy

I have 2 R-390A's: one is a Collins contract and all Collins modules I bought almost 19 years ago and the other is a Motorola, with all Motorola modules I bought 15 years ago. They worked fine when I bought them and they still work just as well. There was nothing replaced in them since I got them. BTW they came to me with the original meters and covers. 73, Meir WF2U Landrum, SC

From theprof@texoma.net Sun Nov 2 03:33:57 2003
Subject: [R-390] Line Regulators

Our line voltage runs up at about 123. I use a variac and a topaz isolation transformer for the R390A.

I got a Marlin P. Jones (www.mpja.com) catalog in the mail today that had a handful of line regulators.

The ATVR2000 is 2KVA with 110V/4% output with input from 80-140 for $50.00 with meter. Looks kind of nice, but I did a google search and can't tell if it is isolated or not. Seems at 16 pounds shipping it might be. Anyone know for sure? 73 de Richard W5SRB.

From dpg@coe.neu.edu Sun Nov 2 21:13:33 2003
Subject: [R-390] Note on Krylon Appliance Paint

Some months ago, I reported on my experience with Krylon 'epoxy' appliance paint sprayed on my rebuilt meters, which indicated that it was not tough at all, and that wrapping them with soft paper and transporting them in a box had rubbed some spots to dullness. After that report, I put the meters on the shelf in defeat, promising myself that I'd get back to them toward the end of my (slow) restoration work.
This afternoon, then I look another look at the meters, I found something very interesting: The dulled spots had regained their shine, leaving only a slight roughness! Wow! Who would expect that - self healing paint. I'm not looking for an explanation, though one woulod be interesting. Just telling you what I've noticed. Dave Goncalves, N1XZB N.U. Wirless Club, W1KBN

From wa9vrh@mtco.com Sun Nov 2 22:06:33 2003
Subject: [R-390] Collins Collectors Association First Wednesday AM Night Nov 5th

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

Cedar Rapids, Iowa (QRZ) - Wednesday Nov 5th on 3880 kcs at 8PM local time marks the start of the latest chapter of First Wednesday AM Night, drawing hundreds of vintage stations from across the country.

The event is anchored by a "tall ship" AM station in each time zone, who runs the gathering for an hour, starting at 8PM in each time zone and starting on the East Coast. Stations check-in using Collins and other transmitters with AM capabilities, new and old. The idea is to revel in this nostalgic mode, enjoy giving vintage equipment a "run," and sharing some storytelling about classic vacuum tube homebrew and commercial designs.

In months past, anchor stations have included those running the beautiful Collins 300-G, pictured below, as well as those running the amateur KW-1 and other noted models.

http://www.amwindow.org/pix/jpg/300g.jpg

LISTEN for these anchors and stop by to say hello, won't you? You don't have to be running Collins or vintage gear to be welcomed into the group.

8P-9P East Coast Anchor: Joe N3IBX (Washington Crossing PA)

8P-9P Midwest Anchor: Tony W9JXN (Illinois)

8P-9P Rocky Mountain Anchor: Jim WA0LSB (Colorado)

8P-9P West Coast Anchor: Bill, N6PY (California)
comments please to wa9vrh@mtco.com

From Barry Hauser" <barry@hausernet.com Sun Nov 2 22:30:38 2003
Subject: [R-390] Note on Krylon Appliance Paint

Hi Dave & crew:

There was a thread on paint way back in which someone (Dr. Jerry, I think), pointed out that regular Rustoleum takes months to cure fully, even after baking. I believe it. That's why I like to use a extra panel for refinishing and then swap it on months later. It's also a good idea to wait until then before re-filling the stampings.

Regular Krylon dries and cures much faster than Rustoleum, but it's not as durable. I don't know just how different their epoxy paint is, but it may be a very slow curing paint like Rustoleum, and so has some tendency to continue to re-gel or settle, restoring the gloss. One rule of thumb someone had pointed out if it still has an odor, it's still curing. If it's still curing, it's not at maximum hardness.

It may be possible to decrease the curing time by baking longer or at a higher temperature. However, even after baking, the Rustoleum-ed panels I've done still have an aroma weeks and months lately, so I put them up to age, like wine. ;-)

(You would need to remove the bezels and paint them separately. Baking whole meters is not a good idea.)

Hope this sheds some light on the subject. Not so much a "self-healing" feature, as the stuff probably just takes forever to cure. (or it wasn't well mixed or you had a bad batch or maybe some other reason altogether ;-) I betcha if you made a mark in it now, it wouldn't self-repair. Barry

From stevehobensack@hotmail.com Sun Nov 2 23:40:47 2003
Subject: [R-390] variac

Using a variac to lower voltage for a boatanchor is overkill. The age old trick of using a filament transformer works great. Hook up the low side of the filament transformer in series with one of the AC lines going to the rig. Hook the high side of the filament trans across the ac line. Be sure to check the resultant voltage. If the polarity is wrong, you will boost voltage instead of buck. Be sure the current draw of the rig is not more than the filament trans low side winding can handle. Return the variac to the test bench. .....Steve....KJ8L

From billsmith@ispwest.com Mon Nov 3 00:40:28 2003
Subject: [R-390] Capacitor Heresy

I did need to replace several mica capacitors in R-390 RF cans which had either opened or developed leagage, or both. Many were of very small capacitance values, in the range of 10-300pf. Several resistors in the power supply failed, and others in the IF strip have likely been stressed by the power supply's failure, but values have not risen enough to warrant replacement, yet.

The R-390 unit here was built with Vitamin Q capacitors and none of them have failed. That isn't the rule for capacitors, however, it is the exception. Although Vitamin-Q types (hermetically sealed, metal case devices) have held up superbly, it is my experience that virtually all other types

fifty years and older have developed leakage. For example, WWII oil-filled bathtub types which have thought to be indestructable are now commonly found with excessive leakage. Square micas made of a pink moulded composite case are notorious. Many other old mica capacitors are open and/or leaky also.

Exceptions can be found. I have a Hallicrafers S-38B with original capacitors which plays fine. The electrolytics in those sets are a story in and of themselves (they are still working fine). But as a rule, all paper caps and 10% of resistors can be assumed to be need of replacement in virtually all equipment built before the 1960's. Unfortunately, several sets which hadn't been used for many years apparently worked well for the first several hours but could be observed to "tighten up" and begin to distort signals with use. 73 de Bill, AB6MT billsmith@ispwest.com

From cbscott@ingr.com Mon Nov 3 15:26:47 2003
Subject: [R-390] Dayton

I'm looking for information for hotels and other info for Hamvention 2004. If you have been and can suggest good places to stay, I'd appreciate it. My wife is giving me a trip to the event for my birthday! Barry(III) - N4BUQ

From tetrode@comcast.net Mon Nov 3 18:32:44 2003
Subject: [R-390] R390A slugology - Problem fixed

Roy, thanks for the feedback, it helped lead me to the problem with this 390A. It turned out that it had TWO wrong slugs in the Z206-1 and Z206-2 16-32 MC coils. In hindsight, it now seems obvious what the problem was because these two slugs had a shiny green coating instead of the dull chocolate brown color that the other RF slugs have; most likely they are from the 1st VIF.

The weird thing is that they appeared to work, sort of. The first one peaked at the same position as the good slug in T206, but the second one peaked several turns out with respect to the other. Tracking was also screwed up, and the gain was also down by almost 20 dB, even with all the slugs peaked on the same frequency.

I used the substitution method swapping in coils/slugs from a good radio to isolate the problem, and then borrowed two slugs from the 8-16 MC coils to test a little more. If anybody has some RF slugs they'd like to unload for a few bucks let me know, otherwise I'll be putting an order into Fair along with some other parts I need. John

From paul@pdq.com Wed Nov 5 03:47:18 2003
Subject: [R-390] R-392 calibrator

I'm working on an R-392 where the calibrator puts out a carrier wave that I can use the BFO to find at every 100KC, but with the BFO off, I hear no audio tone. What part of the circuit is supposed to generate the approx 1kc tone? I've heard this calibrator tone before on other R-392's. Thanks, Paul

From djmerz@3-cities.com Wed Nov 5 07:09:00 2003
Subject: [R-390] R-392 calibrator

Paul, my R-392 calibrator produces a tone via the bfo, and the schematics show no circuitry that indicate to me that a modulated calibrator tone is generated in the receiver. As far as I know, the only way to get a tone is to beat the calibrator output with another rf wave such as the bfo. Now I'll have to go down as a memory check and make sure my set works the way I described. Yes, it does - now discovered the set is not operating very well after setting for a year or so - better put that on my list to remedy. But I only got a tone when I had the bfo on and the bfo and calibrator operated ok and as I remembered. Dan.

From wf2u@starband.net Wed Nov 5 11:56:30 2003
Subject: [R-390] R-392 calibrator

The calibrator generates an unmodulated carries (CW) therefore you're only going to hear a tone when the BFO is on, or when there is a signal present, coinciding with the calibrator frequency and heterodyning with it, effectively acting as a BFO. 73, Meir WF2U South Carolina

From jmiller1706@cfl.rr.com Wed Nov 5 12:03:21 2003
Subject: [R-390] R-392 calibrator

I have a "quirky" 390a that apparetly has some oscillator leakage somewhere. With the BFO off and the calibrator ON, I do hear a faint but definite beat note (sounds like about 500 Hz) under the calibator signal. Probably leakage from one of the other oscillators mixing in the front end or IF. It's not normal, but does happen on this particular 390 I have.

From paul@pdq.com Wed Nov 5 13:05:53 2003
Subject: [R-390] R-392 calibrator

Interesting! I have another R-392 that has a strong and clear ~1KC (could be 500Hz) signal, and I was assuming that it was "normal" and that my other R-392 with the CW signal being the broken one. I'll go back and look more carefully at the other R-392. Thanks for the feedback, guys! Paul

From cbscott@ingr.com Wed Nov 5 14:31:24 2003
Subject: [R-390] Isolation transformer questions

Thanks to a list member, I'm the proud owner of a very nice isolation transformer (Model DU-1 shown in the following page) http://www.belfuse.com/Data/DBObject/pgs28_29.pdf

I'm wondering about connecting the secondaries. Normally, I would connect both 120V secondaries in parallel yielding the full 9A capacity; however, my line voltage is a bit higher than I'd like. I know I could use one secondary and one of the other secondary windings to "buck" 6 or 10 volts, but that would limit the current to only 4.5A.

My question is this: what would be the result of connecting the 120V secondary in parallel with the 110V secondary of the other winding? Is there an "averaging" effect? Will this damage the transformer? I've never thought about this before and wonder what will happen. Thanks in advance, Barry(III) - N4BUQ

From cbscott@ingr.com Wed Nov 5 15:54:42 2003
Subject: [R-390] Isolation transformer questions

Thanks to those who replied. I figured this would be too simple and probably would not work, but I thought I would ask. Since I want to keep all the smoke inside the transformer, I'll either stick to standard wiring or get a bucking transformer setup if it becomes necessary. Thanks again, Barry(III) - N4BUQ

From cbscott@ingr.com Wed Nov 5 16:50:05 2003
Subject: [R-390] Another xfmr question

At the risk of being chased off the list...

http://www.belfuse.com/Data/DBObject/pgs28_29.pdf The same transformer in question 1 has a primary tap at 110VAC. Is it unadvisable to run the primary at this tap given a line voltage of 123VAC? Using the 120VAC primary, the 110VAC tap is a bit too low. I was thinking if I run the primary at the 110VAC tap and use the 104VAC secondary tap, I might get closer to 115VAC on the output. I assume this isn't as horrible as my first question, but I assume there are some drawbacks to this plan as well. Is it simply an effeciency thing that won't harm the transformer or is there more smoke risk? Thanks again guys, Barry(III) - N4BUQ

From roy.morgan@nist.gov Wed Nov 5 17:21:34 2003
Subject: [R-390] Another xfmr question

wrote: >At the risk of being chased off the list... >
>http://www.belfuse.com/Data/DBObject/pgs28_29.pdf >The same transformer in question 1 has a primary tap at 110VAC. Is it >unadvisable to run the primary at this tap given a line voltage of 123VAC?
I predict it will work fine, for two reasons:
1) these are "industrial grade" transformers. That means continuous duty.
2) They are meant for 50 cycles to 400 cycles.. That means it has a larger core than would be needed for 60 cycle minimum operation.

>Using the 120VAC primary, the 110VAC tap is a bit too low. I was thinking >if I run the primary at the 110VAC tap and use the 104VAC secondary tap, I >might get closer to 115VAC on the output.

You will get (roughly) 104/110 of the input voltage, or about 95 percent. So if your input (line) voltage is 122 like it is at my house, you'll get about 115 volts out.

> Is it simply an effeciency thing that >won't harm the transformer or is there more smoke risk?

I predict no smoke. You could always send the folks at Signal Transformer company a short note asking if this is ok (say it's intermittent duty and you expect to not be drawing full rated load.)

Here is your link to their "Contact Signal" page. In about two minutes you'll be done:
<http://www.belfuse.com/signaltransformer/ContactSignal.asp>

Last notes:
1) Fuse at least the input of the thing.
2) Use three wire grounded line cord and ouput outlets.
3) House the thing in a case that protects you, the cat, and the kids from contacting the open terminals on the thing!

From bill.riches@verizon.net Wed Nov 5 17:24:56 2003
Subject: [R-390] Another xfmr question

I think if the core is not saturating it will be ok. A way to see if the core is saturating at the higher voltage winding - hook up the primary (110 ac winding) in series with a 50 watt light bulb. Connect nothing to the secondary. Hopefully the bulb will not light or just glow dimly. Now reverse the procedure - connect the power and bulb to the 104 volt winding. If the bulb is no brighter or just a little brighter or hopefully if it is a real good transformer the bulb should not glow - your can use the former to drop the voltage. BE CAREFUL - YOU COULD BE KILLED IF THE JUICE GOES THROUGH YOU. 73, Bill Riches, WA2DVU

From cbscott@ingr.com Wed Nov 5 17:36:36 2003
Subject: [R-390] Another xfmr question

Roy, Yes, I plan to do all three of your "end notes". I may drop the guys at Signal a note and see what they say. Thanks again, Barry(III) - N4BUQ

From roy.morgan@nist.gov Wed Nov 5 18:06:33 2003
Subject: [R-390] Line Regulators

you wrote: The ATVR2000 is 2KVA with 110V/4% >output with input from 80-140 for $50.00 with meter.

Richard, I am not familiar with the regulator you mention, but that thing *may* be a solid state switching type device, and if so it *may* product enough rf hash that you will not be able to listen to your radio any more. Roy

From Barry Hauser" <barry@hausernet.com Wed Nov 5 18:19:22 2003
Subject: [R-390] Isolation transformer questions

I dunno, Baaa... watch what you're doin' there. The text on that page reads as follows:

"As shown on the schematic diagram the "DU" line is designed with dual primaries and secondaries. All four windings are identically rated at 0/104/110/120 volts. This permits series or parallel connections on either primary or secondary. Therefore, a nominal 110 to 110 volt, 220 to 220 volt,110 to 220 volt, or 220 to 110 volt transformer can be set up. The winding taps permit intermediate series ratings such as 208, 214, or 230 volts. It is also possible to make auto-transformer connections by connecting a primary group in series with a secondary group. Such nominal ratings as 440 to 220 volts or 220 to 440 volts can be set up, in addition to the standard ratings described above. A further advantage to auto-transformer connection is the fact that the KVA rating of a particular type is doubled.

It looks like it has a full complement of multi primary and multi secondary taps. Says it allows for "intermediate settings, such as 208, 214, or 230." But I take that to mean that you can also do 104, 110, 120, or maybe even mix 'n match the two sets of secondaries to get 110+120/2115 which is what you're asking, I guess. They say you can do 214, for example, so it would seem that you could do that.

Now they say you can make autotransformer connections by connecting a primary group in series with a secondary group but (folks) correct me if I'm wrong what they don't say is that if you make an autotransformer out of it, it's no longer an isolation transformer.

If your line voltage is running something like 125-126, as it does here, I would go with the 120/110 primary/secondary arrangement which would give you about 115. If it runs down to 110, then that might be OK as well unless you swap that 1L6 back into your TO ;-). Barry

From cbscott@ingr.com Wed Nov 5 19:24:47 2003
Subject: [R-390] Isolation transformer questions

Bingo. 110 might be okay for some BA gear, but my TO's "new" 1L6 doesn't like the input below 115VAC. By the way, I got the following response from Signal about running the primary on the 110V tap and the secondary on 104V:

Dear Barry.

Thank you for visiting our website. Your input/output configuration would not caused any damages to transformer (may shorten life slightly, but usually we recommend to stay within 10% deviation range from nominal voltage. Should you have any further questions, please do not hesitate to contact us. Best Regards, Sergey Dubatov Very fast response to my question! Barry(III) - N4BUQ

From keng@moscow.com Wed Nov 5 21:08:41 2003
Subject: [R-390] Isolation transformer questions

I think Barry (X) asked about connecting two of the secondary windings, a lower voltage one and a higher voltage one, in PARALLEL, hoping to get an "average" voltage.

This WILL NOT work, as the winding with the higher voltage will simply try to pull the winding with the lower voltage up to the higher voltage, causing the higher-voltage winding to put out a lot of current, possibly overheating the transformer.

He could, possibly, GET an "average" voltage simply because the higher-voltage winding would be so heavily loaded that its output voltage would be lower.

I don't think this is a good idea.

Connecting various combinations of primary and secondary windings in SERIES is another matter and no harm should result from nearly any combination, whether phased adding or subtracting, as long as the total current drawn from the combination doesn't exceed the transformer's capabilities.. Ken Gordon W7EKB

From cbscott@ingr.com Thu Nov 6 14:46:49 2003
Subject: [R-390] Isolation Transformer update

I did some experimentation last night. With no load and the primaries connected in parallel at the 120V tap, the primary drew about 350mA. At the 110V tap, it drew almost 500mA.

I then connected the series 75W light bulb. The 120V tap caused a dull glow while the 110V tap produced about twice that brightness (although still quite dull).

I didn't attempt the primary at the 104V tap. I did notice the transformer produced a bit more hum at full voltage when at the 110V tap than at the 120V tap. I did not notice any heating, but I didn't leave it on very long either. Do these results sound typical? I've never examined the primary current draw on a transformer at no load. Thanks, Barry(III) - N4BUQ

From roy.morgan@nist.gov Thu Nov 6 17:01:22 2003
Subject: [R-390] Isolation Transformer update

wrote: >I did some experimentation last night. With no load and the primaries >connected in parallel at the 120V tap, the primary drew about 350mA. At the >110V tap, it drew almost 500mA. > >I then connected the series 75W light bulb. The 120V tap caused a dull glow >while the 110V tap produced about twice that brightness (although still >quite dull).

The change in brightness with current is very dramatic and non linear at the point where it's glowing dull-ly. so "twice the brightness" may be only 10 % more current.

>I didn't attempt the primary at the 104V tap.

With the light bulb in series, you can't hurt anything.. If the transformer is a dead short the bulb will turn on to normal bright ness and pass only half an amp.

And, measure the voltage at the transformer.. For low bulb brightness, it will be close to line (applied) voltage. At higher brightness, it will drop substantially you may have had only 90 volts on the transformer.

Your current measurement may be fooling you. the thing is VERY reactive at no load, so that 500 ma may be well out of phase with the applied voltage. You certainly should not expect to multiply the 500 ma by the transformer input terminal voltage to get the dissipated power. A one ohm resistor in series and a dual trace scope to watch voltage and current is very instructive here.
Roy

From cbscott@ingr.com Thu Nov 6 17:14:51 2003
Subject: [R-390] Isolation Transformer update

<snip> > And, measure the voltage at the transformer.. For low bulb > brightness, it > will be close to line (applied) voltage. At higher > brightness, it will drop > substantially you may have had only 90 volts on the transformer.

Yes. I did notice the input voltage at the xfmr was around 100V and fluctuated a bit. I assume the bulb does not provide a constant resistance at the low currents.

> Your current measurement may be fooling you. the thing is > VERY reactive at > no load, so that 500 ma may be well out of phase with the > applied voltage. > You certainly should not expect to multiply the 500 ma by the > transformer > input terminal voltage to get the dissipated power. A one ohm resistor in series and a dual trace scope to watch voltage and current is very instructive here.
Roy

The 561 is only single trace... :(Barry(III) - N4BUQ

From barry@hausernet.com Thu Nov 6 17:36:07 2003
Subject: [R-390] Isolation Transformer update

Don't know how typical that is doesn't sound unreasonable. But then, that's why power is switched at the primary .... except for a lot of new stuff.

Wherever wallwarts are used, there's a constant drain even when the devices connected to them are turned off. Originally, these were mostly for use with small devices that were otherwise battery operated and mostly on a part-time basis.. However, there are many AC only as well as portable equipment with wallwarts whether they make sense or not. That's so the manufacturers don't have to design for mains voltage and UL/CSA/CE approval for the unit itself which only "sees" low voltage AC or DC. Also makes it easier and cheaper to provide for various domestic supply voltages by simply packing the appropriate wallwart in the box.

Though well forgotten by now (pre-9/11), one of Dubya's early speeches about energy conservation called these things "power vampires" that consume even when not in use. And that's because the primary is connected 24/7. Look around most computer accessories, even tabletop communications receivers, cordless phone bases, you name it. Probably average about 10-20 of these things per household. Leave 'em all plugged in, turn everything else off, then go read your meter. I suppose it can add up. (Touch some see how warm some of them run on idle.)

While most of the wallwarts have some kind of approval marking, most all have no internal fuse or thermal breaker. If they fail, most will begin to burn up well before tripping a 15 or 20 amp breaker.

Gettin' old here. Just mention something about primary windings drawing current with no load .. and I run off at the keyboard on a wallwart rant. Don't you just love the ones that don't have the manufacturer's name or model number, so when you disconnect a bunch .... nevermind. I'm starting to sound like Andy Rooney. So you were saying? 350 ma unloaded? Don' t look know but .... ;-) Barry

From cbscott@ingr.com Thu Nov 6 17:40:50 2003
Subject: [R-390] Isolation Transformer update

I should have said *MY* 561A is a single trace. :) Barry(III) - N4BUQ

From cbscott@ingr.com Thu Nov 6 17:47:09 2003
Subject: [R-390] Isolation Transformer update

I agree. I don't like to leave wallwarts plugged in unless it is for something needful like charging the cordless phone, etc.

As far as this 1KVA isolation transformer is concerned, everytime I try to hang it on the wall, it falls out of the recepticle. :)

Seriously, the isolation transformer will only be switched on when the shack is in use. Everything goes dark when I leave the shack for the evening. Too many things to worry about out there that a single flip

of a big switch doesn't take care of. Barry(III) - N4BUQ

From hbreuer@debitel.net Thu Nov 6 19:14:07 2003
Subject: [R-390] Isolation Transformer update

Hi Barry,

didn't you mention before that the transformer is rated 9A or was this per winding and doubles if used in parallel? Anyhow you have either a 1kVA or even a 2kVA transformer and for something like this about 30W to 50W iron loss is quite good. You will get some cooper loss too at maximum current but this is well within specs. 73 Heinz DH2FA, KM5VT

From cbscott@ingr.com Thu Nov 6 19:19:45 2003
Subject: [R-390] Isolation Transformer update

Hello, Heinz, It is 9A with the windings connected in parallel (1kVA) (4.5A per winding). It is a very nice unit and I think it is okay, I was just a bit surprised that it drew that much current at "idle". Thanks, Barry(III) - N4BUQ

From hbreuer@debitel.net Thu Nov 6 19:49:28 2003
Subject: [R-390] Isolation Transformer update

Hi Barry, the current was probably not in phase with the voltage when running the transformer idle, so the actual dissipated power was less than 30W to 50W.

OTH I just checked my data books and found 93% efficiency for a 1kVA transformer, this is 70W total loss dissipated in heat for this kind of transformer. Iron loss alone is about 40W the rest is cooper loss both in primary and secundary windings.

The higher current at the 110 primary is expected because you have less windings per volt and the core gets a higher induction closer to saturation. Standard cores run at about 12,000 gauss, hypersil transformers at 15,000 gauss or even higher. If you go higher the cores hums louder. A welding transformer is a typical application were the transformer is rated very close to saturation. But it usually only runs a few seconds at a time. 73 Heinz DH2FA, KM5VT

From tetrode@comcast.net Fri Nov 7 03:41:30 2003
Subject: [R-390] R-390A and the Selenium Rectifier

I'd like to get some wisdom regarding the selenium rectifier used to make the DC for the relays.

I've got an Imperial (really mostly Teledyne) radio of about 1963 vintage, and the selenium rectifier seems to be working fine. However, I'm doing a top to bottom refurb (recap etc) on this radio for a friend and I'm wondering if this might be a likely failure down the road and would be worth replacing with a silicon bridge. If this was an R-390 it would be an easy decision as the copper oxide rectifier stack is always toast! thanks, John

From barry@hausernet.com Fri Nov 7 04:14:30 2003
Subject: [R-390] R-390A and the Selenium Rectifier

Hi John, Generally a good idea to replace all seleniums with silicon as a preventive maintenance. I'm not exactly on schedule in that department lot's of radios of various kinds with seleniums and even some copper oxide ones.

The cosmetically correct thing to "rectify" the situation is to bypass them, leave them in place and install the silicon rectifiers or bridge next to the original.

I haven't had a selenium fail lately last one I remember was when I was about 12 years old and the Se rectifier went in the little Motorola TV (a '47 model, I think). Boy did that stink to high heck! Very pungent. Lot's of smoke. I still can smell it more than 4 decades later. Not sure what the power rating was for that square-finned wonder - maybe about 5 deadhorsepower or maybe 3-skunkpower. My uncle knew immediately what it was that blew and replaced it with the latest technology one of those shiny-tiny top hat rectifiers I guess it was half-wave not sure. I was amazed how small it was. Barry

From eldim@worldnet.att.net Fri Nov 7 09:48:28 2003
Subject: [R-390] R-390A and the Selenium Rectifier

Hello Barry, I think you still got Sel rect poisoning. I know I do, the taste is still in my mouth. I say OM, "if it's working-leave it be". Check voltage or front to back resistance, and if its better than 10:1, leave it in. I've only worked on ten or so 390A's in my Air Force career, and never seen one go south. Of course that was 20-40 years ago, and a lot of signals have passed the airwaves in that time. I think the real experts should step forward at this time and relay their thoughts on the subject. 73, Glen Galati

From bjtatum@ev1.net Fri Nov 7 12:06:56 2003
Subject: [R-390] For Sale : Manson Labs Synthesizer GRC-129 for R-1147

Hello All- I have for sale the Manson Labs GRC-129 synthesizer set for the R-1147 { R-390A variant by Manson Labs} receiver. There are two pieces of equipment here that work together : { Listed Below}

Synthesizer, Electrical Frequency # O-1203 / GRC-129 by Manson Labs, serial # 71
Converter, Frequency, Electronic # CV-1693 / GRC-129 by Manson Labs, serial # 46

Both units are in nice condition.I popped the covers off and made a visual inspection of each unit.They are clean inside and look very nice.I noticed on the CV-1693 that the 12AT7 { near center of unit} was removed.The shield is there.Not sure why this was done.Also, 2 of the Zeus fasteners on top cover are missing on this unit.I surely will not power them up and they will be sold as-is, please.

Anyway, I have no other accessories, cables, etc. I also brought back a large amount of military manuals on this trip, will double check them in case the GRC-129 manual may be there. Thanks, Byron.

From Barry Hauser" <barry@hausernet.com Fri Nov 7 13:09:54 2003
Subject: [R-390] R-390A and the Selenium Rectifier

> Hello Barry, Uhh, h-h-hi Glen...

> I think you still got Sel rect poisoning. wha .. wha wha.. what makes you say that, huh?

> I know I do, the taste is still in my mouth. I didn't eat the thing but they do put Se in vitamin pills, d-d-d-don't they?

> I say OM, "if it's working-leave it be". Is that, uh, like, if it ain't broke, don't fix it?

> Check voltage or front to back resistance, and if its better than 10:1, leave it in.

Dunno, having a little trouble with the concept, y'know front/back? (Might have somethin' to do with why I don't know whether I'm comin' or goin' and location of various body parts.) Lemmeseee now. Y'mean if it's 0.0011 ohms in one direction and .00010 in the other, keep it? Ditto if it's like 4 megs in one direction and 41 megs in the other? You wouldn't be holdin' back essential info, would ya'?

> I've only worked on ten or so 390A's in my Air Force career, and never seen one go south.

Me neither. Hey, wait a minute. I wasn't in the Air Force are you tryna trick me, Glen? Also, better watch out with those sideways regional remarks. How would you like it if people said stuff like "Say Jeeter, what happened to your ol' pickup?" "Well it was runnin' great, then all of a sudden it went northwest!"
> Of course that was 20-40 years ago, and a lot of signals have passed the airwaves in that time.

I've been through about a dozen A's in more recent times and all the Se rectifiers were good in those. So were all the C553's I pulled out. Got a bunch of Zenith tube TO's, all with their seleniums still working. There may be a one in a 100 chance that the cap will short and take down a filter or the rectifier will smoke and, uh, I dunno, end life as we know it ... so it's an ounce of prevention vs. a pound of cure by that method of reckoning.

> I think the real experts should step forward at this time and relay their thoughts on the subject.

I wish they would too Glen, 'cause then I wouldn't feel compelled to make these marginal replies. But, y'know what for the last several months I've seen questions posted from time to time and refrained from replying because I know there are guys on the list who know more about the subject than I do but then ... nothing. Fewer and fewer posts and finally .... poof.

Maybe the real experts are replying off-list. But that would be like some ham going "CQ, CQ, CQ etc." to no avail, but then his cell phone rings or he gets his reply via Yahoo or IM. OK, I guess it conserves bandwidth and avoids arguments due to differences of opinion and so on.

Anyway, the real truth is that the real experts were abducted by aliens and replaced with replicants. Look like the originals, except can only handle one light beer a day and don't post. Might expose an inconsistency, anomaly or possible clue for the MIB (Men in Black, not "mint in box") who monitor the 'nets and the airways 24/7.

Hey! Wait a minute. The real Glen Galati has an electronics store, was complaining about slow traffic and wouldn't discourage people from buying silicon rectifiers and bridges or maybe even NOS seleniums amongst all that stuff you have in the back there! OK, who won the world series in 1959? How about 1859?

Gets very foggy there in Tacoma, doesn't it. Makes it easy for the grays to sneak up on a guy.

BTW the thing about pre-emptive replacement of seleniums came from the experts, back in the good ol' ancient days of this list. Last thread on it was maybe 2 years ago before the aliens. Feel like a walking book - as in Fahrenheit 451. Barry

From Scott Seickel" <polaraligned@earthlink.net Sat Nov 8 06:38:01 2003
Subject: [R-390] R-390A and the Selenium Rectifier

For safety reasons it should always be replaced. If it goes the fumes are very toxic.. Scott

From K2CBY@aol.com Sat Nov 8 13:03:59 2003
Subject: [R-390] R-390A and the Selenium Rectifier

I had the selenium rectifier fail one leg to open on my Motorola Contract 363-PH-54 chassis about 10 years ago. No short, no smoke, no smell. The symptom was a very loud buzz from the antenna relay and a failure to pull in completely when the FUNCTION was switched to CAL. I assume the same symptom would appear if BREAK IN was enabled and the ptt line grounded. The symptoms of a failed selenium rectifier are so obvious and it is so easy to get to that I wouldn't bother with pre-emptive replacement. Miles, K2CBY, Sag Harbor, NY

From sparks@codepoets.com Sat Nov 8 22:16:45 2003
Subject: [R-390] Rack mount speaker wanted... any interest in a reproduced one?

Hi all, I'm looking for a rack mount speaker for an R-390, I used them in the Navy on a Tin Can with two speakers in the panel. That was 30 years ago and I don't remember the LS- ###. Anyone have a spare? Also is there any interest if someone were to reproduce a similar type of speaker panel with one or two speakers? Email direct off the reflector. Thanks guys.. 73 Tom K4NCG

From odyslim@comcast.net Sat Nov 8 23:00:54 2003
Subject: [R-390] Rack mount speaker wanted... any interest in a reproduced one?

Miltronix sells them, It is the LS206A/U. His are brand new. Mine sounds great.
www.dxing.com/r390/mish.htm 73, Scott W3CV

From bjtatum@ev1.net Sat Nov 8 23:17:41 2003
Subject: [R-390] Manson Labs GRC-129 Units Updated Info

Hello All-
Here is some more details of the two units comprising synthesizer and frequency sources for GRC-129 system : Remember the GRC-129 used 2 of R-1247 receivers and a separate SSB receiving converter. Regarding the Synthesizer, Electrical Freq. serial #71 O-1203 / GRC129 Manson Labs { Rack mount, about 4" tall}

Front Panel has : Power Switch KC. Change crank knob and 1 KC. Change smaller knob, mech. coupled in set. { Turning 1 KC. change smaller knob will step KC change large knob in 1 KC. steps} 4 digit mech counter, about 1-1/3 size of R-390A 10 KC. Test push button and zero adj. pot knob

Synth. Level pot knob Meter Selector 8 position knob Test meter is " 0-5-0 " scale, round about 1-3/8" OD
Rear Panel has : 2.455 to 3.455 MC. Output pair of BNC conn. 100 KC. Input BNC conn.
115 VAC 60 CPS power input Amphenol 3 pin conn. Terminal strip with 4 term. labeled " GND- FIL.- FIL.- B+" Stamped " Unit 9" in white lettering

Regarding the Converter, Frequency, Electronic serial # 46 CV-1693 / GRC129{ Rack mount, about 5" tall}

Front panel has : MC. Change knob 0-31
3 Loop Warning lights
Test Meter " 5- 0 -5"
Meter Selecror switch
Power Switch
Has fan grill / filter in front center

Rear Panel has : Power Input 115VAC 60 CPS Amphenol Qty. of 8 BNC conn. as follows - 2 are" 9 to 17 MC. Output" 2 are " 17 MC. Output" 1 is " 455 KC. Output " 1 is " 100 KC. Output" 1 is "100 KC. Input "1 is " 100 KC. To Synth. "Stamped " Unit 10" in white lettering

Please accept my apologies for no pricing. In all fairness, as I believe that this is probably a pretty rare set and I doubt I will run across another in my lifetime, I would like to accept a trade on this :

EAC R-390A late model cherry set, I would be critical of condition- original meters, no water or restored pieced together types, etc.I believe that would be a fair trade and would keep money out of it.But realize that I have a couple of days time, money and 850 miles of driving involved. So, that is that, thanks everyone for my intrusion. Byron.

From R390rcvr@aol.com Sun Nov 9 01:17:58 2003
Subject: [R-390] Best angle for slug rack ends

Good evening all: Just looking over the RF deck in a 67 EAC, and noticed quite a bit of variation in the included angle of the of the slug rack ends. Most were close to 90, some were significantly narrower, perhaps as little as 85 degrees. Is there a theoretical, and practical ideal? How tight are the tolerances?

I am sure that was specified in the original drawings. Does anyone have such info available? Thanks Randy Stout

From richey2@mindspring.com Sun Nov 9 12:57:37 2003
Subject: [R-390] Bracket

Morning everyone, does anybody have that bracket that holds the IF gain adj. and the CXR meter zero adj on the IF module, I sure could use one if its available. Tnx Joe W2DBO

From bjtatum@ev1.net Sun Nov 9 20:50:46 2003
Subject: [R-390] Twinax assemblies

Hello- Have 4 twinax assemblies from military. Each cable has a nice twinax connector on each end

such as fits R-390A ant. relay. Cable is 100 ohm Belden about 10 feet each one. 35.00 for all. Thanks.

From bjtatum@ev1.net Mon Nov 10 00:25:01 2003
Subject: [R-390] FS -NOS Twinax Conn.

Hello- Here are some NOS twinax conn.of the same type as on the R-390A ant relay. Not sure if any use for these except possibly for building external accessories that you may wish to have same type conn. as on receiver. :
UG-423/U A chassis mount female that cable assembles into. Qty. of 5 Ampenol in sealed pkg's.
UG-422/U A chassis mount female, standard type with solder pins. Qty. of 17, as above.
These are nice silver plated connectors. Will place a few UG-421/U cable males that are incomplete {NOS, missing pins} . All for 40.00 plus shipping. Thanks.

From flderoos@mmmpcc.org Mon Nov 10 01:24:03 2003
Subject: [R-390] A Bunch of Questons About an R390A

I've been working on a R390A that I got through a trade and have several questions. It is basically a Stewart Warner receiver (RF deck and chassis), but the IF module is an EAC, the audio and power modules are Collins and the PTO is Cosmos. So far I've recapped it and checked the values of most of the resistors. I've replaced the power cord with a 3-wire cord and cleaned and the gears, bearings and slides. As soon as the Deoxit arrives and I can clean switch contacts and assorted sockets, I'll put it together and see if it works, then align it. Now to the questions.

I decided to measure the resistance from the AGC lines to ground. The IF module showed infinity, as it should. I then measured the AGC line on the RF deck and found approximately 80 K ohms (way too low). I don't know why I did this, but while troubleshooting I removed V203 and V204 and found that the resistance went up to 3-4 megs (better). Well that suggested some pretty bad tubes if they could show low resistance from grid to ground without the filaments on. After checking them and finding them to be ok (no shorts and not gassy) and subbing them with known good tubes and finding the same decrease in resistance, I started looking at how they were wired. The first thing I noticed is that the 27 ohm resistors that go to the grids were connected to pin 1 on each tube. A quick check of the base drawing shows that pins 1 and 5 are internally connected, so that explained why with the tubes inserted I got the low resistance. I was measuring the resistance of the B+ line to ground! Well, with further checking, I found that the cathode resistor/capacitor was connected to pin 2 of V203 and to pin 7 of V204 and there was a jumper to pin 2 on V204. So, it appears that the jumper was left off of V203. Now the real strange observation, pin 6 (grid) of V203 and V204 were both connected to ground!!! I've never heard of a grounded grid convertor. So, the first question is does this mod look at all familiar to anyone? Was there a mod that just didn't get completed correctly or was there a tube change?

Now the second question. The AGC line to V201 goes through R201, which is listed as a 270k resistor. My deck has a 3.3 meg in parallel with a diode for R201 with the cathode toward the transformers. It also has R233 replaced with a 3.3 meg resistor and another 3.3 meg resistor from E208 to ground. I seem to remember a change in the AGC for the RF amp, but can't remember it.

And the third question is what is the purpose (if there is one) of an added diode between terminals 3 and 5 on TB102? This is the AGC DIV/NOR connection on the back. I forget the number, but it is a 3-digit number and looks like it might be a germanium diode.

And the final question is what should the DC resistance of the mechanical filters be? Three of mine

measure 50 ohms for the input and output and the other one (8 khz) measures 40 ohms for the input and the output. I think I've seem 40 ohms listed several times, but am surprised that I would have three bad filters that measure so closely. And, if there were shorted turns, the resistance should be lower.

These are quite the receivers. I can't wait to get it working and actually use it. Thanks in advance for any help/suggestions. 73, Fred WA0GMH

From jlkolb@cts.com Mon Nov 10 05:42:00 2003
Subject: [R-390] A Bunch of Questons About an R390A

wrote: > And the final question is what should the DC resistance of the > mechanical filters be? Three of mine measure 50 ohms for the input and > output and the other one (8 khz) measures 40 ohms for the input and the > output. I think I've seem 40 ohms listed several times, but am > surprised that I would have three bad filters that measure so closely. > And, if there were shorted turns, the resistance should be lower.
I've measured resistances of both 50 and 40 ohmes on working R-390A filters - anything in that range should be good. When checking filter coils, I only check to make sure they are not open, and that neither coil is shorted to ground. John <http://members.cts.com/king/j/jlkolb>

From cbscott@ingr.com Mon Nov 10 14:49:53 2003
Subject: [R-390] Another isolation transformer question

Please indulge me one more question. Are there any problems connecting the transformer as in the schematic at the bottom of the following page? http://members.aol.com/n4buq/r390a/

I'm thinking it might be nice to have two different output levels from the same transformer. I thought about a switching system, but this seems simpler.

Of course, grounds, fuse, etc., will be included, just not shown here. Thanks again, Barry(III) - N4BUQ

From bjtatum@ev1.net Mon Nov 10 15:29:46 2003
Subject: [R-390] FS - R-390A Miniature RF Conn.

Hello- Here is an assortment of the same type series of miniature RF coaxial fittings as found on R-390A IF / RF decks.I guess these could be used to replace damaged ones or mostly to build up your own cables for testing, etc.Are connectors are NOS in the packages, made by Amphenol and Automatic Metal. Jack, chassis mount { threaded single hole mount} has solder pin , Qty of 14
Plug, for cable { not right angle}, Qty. of 10 Jack, for cable { not right angle} , Qty. of 2
All for 40.00 plus shipping, thanks.

From roy.morgan@nist.gov Mon Nov 10 16:12:49 2003
Subject: [R-390] Another isolation transformer question

you wrote: >Please indulge me one more question. Are there any problems connecting the >transformer as in the schematic at the bottom of the following page?

I think that will work fine. Roy

From bjtatum@ev1.net Mon Nov 10 16:17:11 2003
Subject: [R-390] Twinax Cable Assemblies and R-390A miniature conn.

Hello- These items are spoken for : Set of Twinax cable assemblie Set of Miniature RF conn. for R-390A

I still have the set of Twinax chassis connectors Thanks, Byron.

From bjtatum@ev1.net Tue Nov 11 01:14:41 2003
Subject: [R-390] FS - Amphenol Connectors

Hello- I put together a 1 gallon plastic bag full of the Amphenol type connectors similiar to the types as used to interconnect the modules in the R-390A. These connectors came out of Collins built military gear. There are cable plugs and chassis jacks of various sizes . All are cut-offs. Nice condition, not corroded, etc. Bag weighs about 8 pounds. Buy this for lass than what one conn. costs from Nebraska - price is 45.00 Thanks, Byron.

From bjtatum@ev1.net Tue Nov 11 02:07:22 2003
Subject: [R-390] Amphenol Conn.

Hello- Amphenol conn. spoken for, thanks.

From bjtatum@ev1.net Tue Nov 11 02:28:19 2003
Subject: [R-390] R-390A Min. Conn.

Hello- The R-390A miniature RF conn. are spoken for, thanks.

From g4gjl@btopenworld.com Thu Nov 13 22:04:51 2003
Subject: [R-390] LF on the R-390 etc

I know there have been several solutions to the problem of wanting to receive MF/LF/VLF on the R-390 series. I tried the cheat wire into the RF Deck test point and whilst this works, there are birdies introduced by that mod and it affects the HF performance adversely.

The solution I use instead is an outboard convertor from the Jackson Harbor Press see: http://jacksonharbor.home.att.net/lfconv.htm

I built the PCBs inside an hour and had the convertor working fine immediately on power up. Its is very economical at USD15 shipped to UK...less if you are in the USA!

The unit has n IF amplifier and has ample gain, without overloading the front end of the receiver. There are 7, 10 and 14MC IF versions available. I chose 7MC and was surprised that there is little if any discernable HF breakthrough, and Im using a 40 metre resonant dipole as the LF antenna.

I think this little kit represents the best soultion I have seen so far...It receives Alpha down at about

11.1kc and othere stations well up above 500kc, the 'official' lower limit of the R-390 series. It is really something to hear the VLF Alpha at 7011 kc on the Veeder Root of my R-391!

Saves 6U rackspace for an R-389 too! I have no connection whatsoever with the supplier: Im just a very satisfied customer. 73 to you all Pete G4GJL

From w5or@comcast.net Sat Nov 15 00:37:41 2003
Subject: [R-390] LF on the R-390 etc

Nice find, Pete. Thanks for sharing this site and your direct experience. There are numerous vlf converters available from different sources - 'vlf converter' in google brings up thousands of hits. Also see QST, April 2002, for the AMRAD LF converter project.

I picked up a scruffy red Palomar converter at Dayton. The specified input range is 10-500KC, but it actually works well up into the BC band. So, there are plenty of options for those who don't have a R-389 handy. Don

From bjtatum@ev1.net Sat Nov 15 04:24:06 2003
Subject: [R-390] FS - Crystal Osc. Deck R-1247

Hello- For sale : Collins R-1247 crystal osc. deck with crystals. Cond.fair. 85.00 Thanks.

From bjtatum@ev1.net Sun Nov 16 01:33:21 2003
Subject: [R-390] Amphenol Connectors

Hello- I have another bag of Amphenol connectors put together. These look handy as there are both cable plugs and jacks, etc.Anyway, I think it is a good deal.

I put together a 1 gallon plastic bag full of the Amphenol type connectors similiar to the types as used to interconnect the modules in the R-390A. These connectors came out of Collins built military gear. There are cable plugs and chassis jacks of various sizes . All are cut-offs. Nice condition, not corroded, etc. Bag weighs about 8 pounds. Buy this for lass than what one conn. costs from Nebraska - price is 45.00 Thanks, Byron.

From pwokoun@hotmail.com Mon Nov 17 00:03:58 2003
Subject: [R-390] R390A schematics

Hi all: You probably all know about the R390A Y2K manual. The Y2K manual is already in its second release. This endeavor was undertaken by several dedicated 390a enthusiasts: Al Tirevold, Barry Hauser, and myself. I volunteered redrawing the schematics and sketches into a hopefully, more easily read format using standard-size paper. The originals were done using Visio and converted into the manual's PDF format that you download to save a lot of file space. Well, file compression is functional, you do get the information but it distorts the drawings a little.

What I have available are the originals, updated and presented in their original Visio format. If you have Visio they will download into good-looking drawings where circles are round, junction dots are clearly visible, and text stays readable in its intended fonts and doesn't run over into

adjacent lines. If you don't have Visio, you can download a free viewer from Microsoft. They will open in your browser window where you can view and print them.

I also measured the DC current levels on the various B+ lines going to the different modules using an HP428B Clip-on DC Milliammeter. These values were added to Fig. 5-11 (Power Distribution Diagram) from the Y2K manual. This new diagram is called Power Distribution Current Levels and is included as an additional troubleshooting aid.

These visio drawings are available from my website:

http://www.qsl.net/kh6grt/page4/r390aschematics/r390aschematics.htm

They are available as self-extracting zipped files to save space. Just double click on them after downloading to extract the original .vsd file.

I also have links to the microsoft down-loadable visio viewer and both Barry's and Al's websites that have the complete Y2K manual.

This whole undertaking is my first attempt at creating a website so bear with me as I try to work out any bugs. Feel free to let me know of any errors you come across or tips on how the schematics could be improved. regards, pete KH6GRT

From jmiller1706@cfl.rr.com Thu Nov 20 03:14:06 2003
Subject: [R-390] Clavier IF Module - Ugh !

Wow! Working on a EAC 390a that has a Clavier IF module, ... unbelievable. Couldn't get the IF module to behave, occasionally it would slowly loose gain then it would come back again. Plus some strange intermittants. I discovered that one of the IF amplifier tubes would loose filament (making the gain go away slowly) then it would come back. Found that the ground lead to the filament pin had not even been soldered at the factory! Wire was looped through the socket pin, but not soldered! That explained the intermittent filament. Soldered it and that particular problem went away, but now another intermittent around another tube. Again, another pin not soldered, and three loose screws holding ground lugs. While I was in it, I did a complete check of all joints, and found 3 more suspect/cold solder joints as well. Well finally, the IF module works fine now, but Clavier must have had miserable quality control! Didn't they also make electric organs?

From courir26@yahoo.com Thu Nov 20 13:04:32 2003
Subject: [R-390] Clavier IF Module - Ugh !

Jay, All modules were supposed to be inspected by a govt inspector so sounds like the system broke down. I suspect your module was an over run and never made it to service. What is the contract/s.n.??? Tom

From jmiller1706@cfl.rr.com Thu Nov 20 22:40:39 2003
Subject: [R-390] Clavier IF Module - Ugh !

The order # on the Clavier IF is DAAB05-70-C-1194 SMC 343621 SN 15

Wow! Could this be a collectible?

I bought this radio a couple years ago from a guy who said it was EAC, just now getting around to rejuvinating it. Everything else appears to be EAC except for the IF and the Cosmos. IF works fine now so I guess it doesn't matter except to the purists.

I'm refurbishing the radio to the point where I want to sell it back into the "pool". Replacing the "problem" caps, linearizing the PTO, etc. I have two others (a Collins and a Stewart-Warner), which is already one too many. If anyone is interested in this EAC with a Clavier IF, fixed and working when I finish going thru it, let me know. This is not a mechanical rebuild as Mish or other experts would do, but it will be working well electrically when I finish, a good starting point to continue from. The front panel probably needs a repaint - it's the etched variety. Knobs and dial cover probably could use a repainting too. I'll probably take a loss selling it, but I need bench space in the garage.

From courir26@yahoo.com Fri Nov 21 13:34:05 2003
Subject: [R-390] Clavier IF Module - Ugh !

James, This is the only example of 1970 Clavier parts I've seen. R@RE!!! L@@K!!! 73 Tom N5OFF

From w5or@comcast.net Fri Nov 21 15:58:20 2003
Subject: [R-390] Clavier IF Module - Ugh !

> This is the only example of 1970 Clavier parts I've seen.

Wouldn't this be the newest piece of R-390 gear we have documented? Don

From courir26@yahoo.com Fri Nov 21 16:11:09 2003
Subject: [R-390] Newest 390A Gear?

Obviously the 1984 Fowler rigs are the latest. However, Hacking Labs of Menlo Park, CA made power supplies in 1980. That is the latest parts contract I've seen (save for the Hank Arney contracts). 73 Tom N5OFF

From Tarheel6@msn.com Fri Nov 21 16:12:08 2003
Subject: [R-390] Clavier Crystal Deck

Well ... I have a Clavier Crystal Deck that our "friends" in the govt. demilled. Meaning someone took a ballpean hammer to the top of it in two places and to the bottom of it. It's ugly. But they did not touch the side of the deck where the nomenclature shows the following:

Clavier Corporation
Order No. DAA G05-67-C-0136
FSN 5820-644-4437
SM-D-249007
Serial No. 121

If I sent you guys a photo of this wretched thing, no doubt it'd brings tears to your eyes! 73's, -tom

From courir26@yahoo.com Fri Nov 21 16:17:48 2003
Subject: [R-390] R-390A parts contracts URL

http://www.geocities.com/courir26/390a_makers.htm This is where I keep the 390A contract info. I need to update for the Clavier thing. 73 Tom N5OFF

From w5or@comcast.net Fri Nov 21 17:40:44 2003
Subject: [R-390] Newest 390A Gear?

I forgot about the oddlot Fowlers. Who has one of those? Anyone report about the build quality of the Fowler? Don

From JMILLER1706@cfl.rr.com Fri Nov 21 19:06:32 2003
Subject: [R-390] R-390A parts contracts URL

I'll take a picture of the Clavier IF and post it tonight. Or email to anyone interested. Let me know. Wonder what Antiques Roadshow would say it's worth? It's untouched (except for my repairs).

From dpg@coe.neu.edu Sat Nov 22 15:22:39 2003
Subject: [R-390] Scanning Meter Faces

Every so often I ask this, so here I am again. First, in cooperation with a list member I produced a Visio file that you can print out onto self-adhesisve paper to redo your meters: http://www1.coe.neu.edu/~dpg/R390Face.vsd The Visio plugin is free for download.

They fit very nicely onto PRC-47 meters available from Fair Radio Sales.

Also, is there anybody out there (the Boston area is best) that would be willing to lend me thier meters for a weekend to scan? While the scans in the Visio file are OK, I'd like to get the 'final word' on this scanning issue, and generate a set of excellent quality scans for others to use in meter work (redrawing meter faces, or printing/sticking).

1. I understand the risks in handling an open meter, and have come up with a method to nearly eliminate exposure to particles. Yes, I know there is radium in there.

2. I'm not just some JF off the street asking for your meters. I am (for now, nearly graduated) president of the Northeastern University Wireless Club (W1KBN) and as such, you will recieve a guarantee from myself, the senior E.E lab tech (doing the scanning work under his supervision) and the faculty advisor that your meter will not be subjected to any unnessasary risks or adjustments.

3. And if something should happen to your meter, I offer to compensate by giving the donor my own converted meters AND all of my R-390.

4. Shipping to and fro (if not dropped of by hand) I pay for. I pack well.

I'll happily accept scans from owners (hey, less work from me!) but I ask that they be nice scans

without lossy compression - TIFF files are OK, JPG are not. If you can get a scan of the removed dial plate face down onto the scanner, you'll have done it. Acceptable is scans of the unremoved dial plate, if you take two scans with the meter needle in two positions. Please don't send digital photos of the meter in the case, I have quite a few already. Thanks, and hope somebody out there is willing. Dave Goncalves, N1XZB

From richey2@mindspring.com Sat Nov 22 15:44:33 2003
Subject: [R-390] Bracket for cxr adj pot./

Tnx to all who offered one of these, I wasn't able to respond to everybody who offered, now Iam looking for the 8KC filter for the R390A if anyone has one they would like to sell I would be interested as long as I don't have to get a 2nd mortgage on the homestead. Got a question, the cxr meter pegs on strong sigs and funney thing is it does it with different IF modules, behaves the same with either of 3 IF modules I have, anybody seen this before.. Tnx 73's Joe W2DBO

From jlkolb@cts.com Sat Nov 22 17:19:58 2003
Subject: Mechanical Filter --Was [R-390] Bracket for cxr adj pot./

wrote: now I am looking for the 8KC filter for the R390A

See <http://members.cts.com/king/j/jlkolb> and follow the links to the For Sale - Mechanical Filters and Crystals page.

I've also got plots of the R-390A filter responses for anyone that might find them of interest. John

From buzz@softcom.net Sat Nov 22 17:15:02 2003
Subject: [R-390] Scanning Meter Faces

I have some meter faces at: http://webs.lanset.com/buzz/meters/faces.html Buzz

From David Hallam <dhallam@rapidsys.com> Sun Nov 23 15:27:06 2003
Subject: [R-390] R-390 Meters

I know every one is looking for R-390 meters. I don't need a whole meter but just the metal cover. I have carefully repaired the broken case and a local glass shop cut a new glass for the meter. But the metal cover for my carrier level meter is damaged beyond repair. Does anyone out there have a left over cover they might part with? David C. Hallam

From wwarren1@nc.rr.com Sun Nov 23 22:37:00 2003
Subject: [R-390] Wavetek 3001 Sig Gen

Anybody have a manual for the Wavetek 3001 Signal Generator, including the option of 1 kHz to 1 mHz coverage? There were a couple of variants, of which the original 3001 covered from 1 mHz to 520 mHz. Later, an option was added to cover from 1 kHz to 520 mHz, and I need information on the latter option. On the one I recently bought, the 1-520 mHz work fine, but the 1 kHz to 1mHz doesn't.

I'm willing to pay for the manual or if you feel especially generous, I'd like to borrow it to make a xerox copy. Does anybody work on these things? Tom, W4PG

From mparkinson1@socal.rr.com Mon Nov 24 06:06:33 2003
Subject: [R-390] OSC Deck

Does anyone know it the R-1247 Osc deck is the same on the R-390a deck and if so are the all the cables the same to do a direct hook up . Some one ask me this and I have never seen a R-1247 so I could not give them an answer. Surely someone other might know this question. thanks . Matt

From cbscott@ingr.com Mon Nov 24 16:25:43 2003
Subject: [R-390] OT: Leakage testing a 1L6

Can someone give me some general advice for checking leakage in a low-voltage tube? I have a Zenith Transoceanic with 1L6 for the converter tube. It isn't working properly and checking the control-grid voltage shows zero volts between cathode and control-grid. This should be approximately -5 volts.

I checked the voltages to the cathode and the control-grid with respect to B- and they show the same voltage (approximately 2.7 volts). I began to suspect something with the tube and put it in my Hickock 752A. One of the "Leakage Test" positions showed a definite reading. This particular test position checks (among other things) cathode to first grid. I assume I have a bad tube.

The thing that puzzles me is I don't get a reading between cathode and control-grid with my ohm meter. Is this to be expected? Can it be the case where the cathode must be powered up in order to see a short (leak?) here? I know some heaters are known to sag when hot and touch other electrodes but I figured in a 1.4 volt tube, this wasn't very likely. Is the leakage something other than one electrode touching another?
By the way, one of the symptoms the radio displays is that it works (rather weakly) for about 30 to 45 seconds and slowly fades into nothingness. I sort of assume this is heat-related and the leakage is "building up" after warmup, but I'm just guessing here. Thanks for the OT help! Barry - N4BUQ

From Barry Hauser" <barry@hausernet.com Mon Nov 24 17:11:39 2003
Subject: [R-390] OT: Leakage testing a 1L6

wrote: > I know some heaters are known to sag when hot and touch other electrodes but I figured in a 1.4 volt tube, this wasn't very likely. Is the leakage something other than one electrode touching another?
I don't know about the low filament voltage vs. "sagging", but the 1L6 is one of those tubes you are NOT supposed to tap during the shorts test. Never could fathom that fully, as these are mostly all used in portable equipment. But if it is already questionable a light tap or two might be in order. (If you had Nolan's trick hammer you could probably fix the thing.)

> By the way, one of the symptoms the radio displays is that it works (rather > weakly) for about 30 to 45 seconds and slowly fades into nothingness. I > sort of assume this is heat-related and the leakage is "building up" after > warmup, but I'm just guessing here.

Sounds like it. I wonder what would happen if you ran the T/O on its side. Sounds dumb, but ... well, yeah, probably is a dumb idea. As I recall, you have an H-500. Could be worse. If it were a 600-series,

you'd also have a ballast tube (50A1) to worry about.

Incidentally, it's a better value to buy another TO that's a tad shabby but works. Pay about $50-60 and get a good used 1L6 with radio included for another $20. Trouble with that plan is then you need another 1L6 for THAT radio.

You might want to consider getting a 1LA6 loctal tube and making up an adapter out of a loctal socket and 7-pin tube base or plug. (pretty much pin for pin except the one extra.) The word is that they are electronically identical, though the extra lead length involved in the adapter may complicate alignment a bit.

Someone has also designed a solid state replacement for the 1L6. Circuit and photos are on a website which you can find with a search pretty easily. Barry

From cbscott@ingr.com Mon Nov 24 17:24:16 2003
Subject: [R-390] OT: Leakage testing a 1L6

> I don't know about the low filament voltage vs. "sagging", but the 1L6 is in order. (If you had Nolan's trick hammer you could probably fix the thing.)

I didn't know one isn't supposed to tap the 1L6. I usually only thump lightly with my finger so I doubt I damaged it but it's possible.

> Sounds like it. I wonder what would happen if you ran the > T/O on its side. > Sounds dumb, but ... well, yeah, probably is a dumb idea. >

I was wondering if there might be loose thingees in the tube that cause it to short out in the vertical position but not when held upside-down for my ohm-meter testing. Hmmm...

> As I recall, you have an H-500. Could be worse. If it were > a 600-series, > included for > another $20.
> Trouble with that plan is then you need another 1L6 for THAT radio.

My problem is my H500 was a $50 shabby one *without* a 1L6...sigh... Cabinet is restored and now working on guts. It works on BC band with the 1R5 substitute but I want it operational on all bands with the 1L6.

> You might want to consider getting a 1LA6 loctal tube and making up an 1L6. Circuit and photos are on a website which you can find with a search pretty easily.

I've seen the SS replacements. I don't think I want to go that route, but I have contacted the guy who makes the LOCTAL to 7-pin adapters for the 1LA6. I'm thinking I may just have to go that route.

I GOTTA get this thing done so I can get back to my next R390A restoration-project-in-waiting!
Thanks, Barry(III) - N4BUQ

From cbscott@ingr.com Mon Nov 24 19:14:34 2003
Subject: [R-390] Leakage Testing 1L6 Resolved

It helps to read the tube tester data sheet. The leakage tests for this tube are to be performed without the filament voltage applied. I turned the filaments off and no leakage so tube should be okay. Thanks, Barry(III) - N4BUQ

From mahlonhaunschild@cox.net Tue Nov 25 14:10:41 2003
Subject: [R-390] Re: Leakage Testing 1L6 Resolved

Barry, I too have a H500 waiting in line for re-work. Your 752A data sheet really says that? The only admonishment my 539C data sheet has is "Plate Volts - Low" when testing the "Pentode Section". Might have to re-test that "shorted" 1L6 I have lying around here somewhere... regards, Mahlon - K4OQ

From rickmurphy1001@earthlink.net Tue Nov 25 14:11:31 2003
Subject: [R-390] R390 IF strip conversion

Hi group Does anyone know where I can get information for converting a R390 IF strip for use in a R390A ? Thanks in advance Murph

From R390rcvr@aol.com Tue Nov 25 14:27:29 2003
Subject: [R-390] R-390 IF Strip into R-390A

Good day: Tom Marcotte did an article in ER , Dec,2000 on the process. Someone probably has that article, or perhaps you could contact Tom directly. courir26@yahoo.com Randy

From courir26@yahoo.com Tue Nov 25 16:10:48 2003
Subject: [R-390] URL for R-390 IF conversion

Murph and group: I've posted the requested text to this URL:
http://www.geocities.com/courir26/r725conv.htm

Hope this helps. I've been running this 390 IF deck in a 390A for a couple of years with no problems. 73 Tom N5OFF

From djmerz@3-cities.com Tue Nov 25 16:14:37 2003
Subject: [R-390] R390 IF strip conversion

Hi, I strongly recommend the ER article by Tom. I successfully did this conversion and was very pleased with the result. It's stayed installed since I made the conversion. The toughest part for me, besides finding the 390 i.f. chassis in the first place and soldering in cramped quarters, was finding the adapters for BNC to mini MB connectors for the two cables. Since then they are showing up on eBay all the time, under $20 each - I made mine up using a small junction box with 2 chassis mount mini connectors from Fair Radio connected directly to the bnc cable coming thru small holes in the box going to bnc connectors on the other ends of the cables. The adapter you need is the type that is chassis mounted on the 390a for the i.f. output at the rear if you don't want to fuss with building a box like I did. Hope this helps, Dan.

From DWADE@pacbell.net Tue Nov 25 18:05:53 2003

Subject: [R-390] Clevite Filters WAS: R-390 IF in 390A

Gentlemen, Thanks Tom for posting the article. I've been considering this conversion for a while, of course, deck availability is an issue.

A related question comes to mind. Most of us have heard about the Clevite ceramic filters that one contractor (I forget who) tried to use in a run of 390A IF decks. These were subsequently removed and the proper mechanical filters installed.

I remember looking at the bandpass curve of a typical ceramic filter and noticing it was much smoother over the top (less ringing?) and much gentler skirts than a mechanical filter.

Can anyone comment on the audio quality of a Clevite equipped 390A vs. the mechanical filter? I know some have survived.

I have an almost full set of Clevite filters and was considering an experiment to answer that question...but if I can avoid that kind of surgery I will. Dennis Wade KG6ZI Carmichael, CA

From R390rcvr@aol.com Tue Nov 25 18:16:03 2003
Subject: [R-390] Clevite Filters

Dennis: The Clevite filters were used in the 1960 EAC contract (23137-PC-60).

I seem to remember only several hundred were so fitted. The consensus is that they were a failure, but I don't recall why. I would be disinclined to go to the trouble of putting them in.

Perhaps someone with personal experience with them can comment on their sound? I doubt if there are a lot of them still out there in operating rigs. Randy

From jlkolb@cts.com Tue Nov 25 18:50:32 2003
Subject: [R-390] Clevite Filters WAS: R-390 IF in 390A

wrote: > A related question comes to mind. Most of us have heard about the Clevite ceramic filters that one contractor (I forget who) tried to use in a run of 390A IF decks. These were subsequently removed and the proper mechanical filters installed.

I don't have any experience with the Clevite ceramic filters, but have plotted curves of the R-390A mechanical filters and a number of ceramic filters - plots available at <http://members.cts.com/king/j/jlkolb/site/mfcurves.htm>

The ceramic filters are indeed smoother, although very rounded and thus attenuate high freqs more - easily corrected with the tone controls if feeding the 390 audio output through an external amp. John

From davidmed82@yahoo.com Tue Nov 25 20:00:22 2003
Subject: [r-390] Wonderful R-390 pics

This is the best R-390 restoration I have ever seen. Go to this website and be amazed: http://www4.ctktv.ne.jp/~aogucci/R390/R390.htm

I was approached via email by Tadashi (Taddy) for some advice re the alignment of the R-390 and he quickly got the job done. He reports the radio works as well as it looks. Dave Sincerely David Medley

From djmerz@3-cities.com Tue Nov 25 22:15:32 2003
Subject: [r-390] Wonderful R-390 pics

Hi, this is very nice. I was curious what it looked like before he started - is there a "before" pic? , Dan.

From Scott Seickel" <polaraligned@earthlink.net Wed Nov 26 01:06:27 2003
Subject: [r-390] Wonderful R-390 pics

Looks like he might of started with a really mint unit to begin with. Pictures sure do look good. I would love to see it in person. Scott

From sdman@cableone.net Thu Nov 27 01:46:42 2003
Subject: [R-390] Serial #

Info on a 390A with a SN EX-1. Been out of the loop for a long time and just starting back. Sam

From scfitzgerald@verizon.net Wed Nov 26 17:44:31 2003
Subject: [R-390] Amelco

Hello, I am new to 390's and was wondering if the Amelco Manufactured 390's are considered a "better or worse" radio. I see on one of the web sites that the Amelco manufactured was not produced in great numbers. Thank you and Happy Holidays from Tampa!! Steve Fitzgerald N4KQR Tampa FL

From Tarheel6@msn.com Wed Nov 26 17:55:00 2003
Subject: [R-390] Amelco

Actually IMHO the Amelco is one of the better R-390A's. Amelco and Teledyne were made by the same company; so both are high up on my list of good mfrs. I base that on several that I have and all of them are first-rate 390A's. I would certainly rank them higher than a Stewart-Warner, and for the most part better than my Capeharts. Though, I have one Capehart that is a winner, and I think Tom Marcotte has had a lot of success with Capeharts. But I digress!

You'll find an interesting oddity. The bigger of the two plugs on an Amelco AF module is placed exactly 180 degrees from all the other manufacturers. The Amelco AF modules will work in other mfrs radios, and vice-versa, but you have to turn the plug 180 degrees for it to mate properly. And sometimes that seems to put an extra strain on the wiring. I wouldn't want to have that as a permanent installation. 73's, -tom

From scfitzgerald@verizon.net Thu Nov 27 16:15:38 2003
Subject: [R-390] Thanks

Hello, I received several nice testimonials regarding my Amelco manufactured 390A. I guess this one

will be a keeper for my station. Thanks to all of the respondents and Happy Thanksgiving! Steve Fitzgerald N4KQR Tampa FL

From David Hallam <dhallam@rapidsys.com> Thu Nov 27 16:41:28 2003
Subject: [R-390] Lacquer-Stik

I don't know if anyone is interested, but Skycraft Parts & Surplus, Inc. in Winter Park, FL (407 628-5634) has the original white lacquer sticks made by Lake Chemical Co. This is the white fill-in paint for the knobs and panel in stick form. They are selling them 3 for $1.00. I picked up several last weekend. David C. Hallam

From cthulhu@fhtagn.org Thu Nov 27 18:57:09 2003
Subject: [R-390] Funky R-390 (non-A) Must See

It's listed on you know where, item 3059954182 The colors, man, the colors!!! Tom KA4RKT

From r390a@bellsouth.net Thu Nov 27 19:15:50 2003
Subject: [r-390] Wonderful R-390 pics

>This is the best R-390 restoration I have ever seen. >Go to this website and be amazed: >http://www4.ctktv.ne.jp/~aogucci/R390/R390.htm >I was approached via email by Tadashi (Taddy) for some advice re the >alignment of the R-390 and he quickly got the job done. He reports >the radio works as well as it looks. >Dave

Oh my! Very pretty and shiny!! Looks like he did a wonderful job. I was lucky in getting a 390a from Don Reaves some years ago in almost as good a shape, still use it, honestly has been the best 390A i have used, even better than the All Collins unit that I blasphemously sold on Ebay a week or two ago. I say let the collectors have the Collins sets, I will take the ones that just work nicely. :-) And don't worry, it didn't go to Japan (though I'm not sure why that is such a bad thing, I love Collins gear too....) it is now in the loving hands of Bill, KA4ZIW down in Florida.

From r390a@bellsouth.net Thu Nov 27 19:22:28 2003
Subject: [R-390] Clevite Filters

>Dennis: >Perhaps someone with personal experience with them can comment on their >sound? I doubt if there are a lot of them still out there in operating rigs. > >Randy

Just a few years ago I had a 1960 EAC 390A with the Clevite filters. The "sound" was more like the 390 non-A. Not as sharp as the mechanical filters, but they did seem to attenuate the higher freqs. I should have at least kept the IF deck, but I rebuilt and sold the radio some years ago. As to why they were a failure? That was apparently a contract issue, the characteristics of the ceramic filters are quite a bit different than those of mechanical filters, and I believe an action taken against EAC for not meeting specs on that run of receivers. Tom KA4RKT

From mikea@mikea.ath.cx Wed Nov 26 13:59:11 2003
Subject: [R-390] Serial #

wrote: > Info on a 390A with a SN EX-1. Been out of the loop for a long time and > just starting back. Sam

Welcome back. Sounds like it's not part of a normal production run. Who made it? What was the contract number? Care to put pix of the box and the nameplate up on a website somewhere? I'm really quite interested in this one. It may be even _more_ of a keeper than the usual R-390A. Mike Andrews

From barry@hausernet.com Fri Nov 28 02:30:23 2003
Subject: [R-390] Funky R-390 (non-A) Must See

That @RARE@ bird has already been thorougly "evaluated" on the non-abridged list.

Apparently someone got mixed up. The white acrylic is for the lettering, not the panel, pilgrim. Either that or the laquer stick or wite-out got very badly out of control. That doesn't explain the green knobs, though.

Possibilty they were out of Rustoleum Smoke Gray and Satin Black that day, or were $3.99 a can, but there was a sale on Sooper Duper white and metalic green for 99 cents in the bargain bin.

Another possibility Unfinished Christmas Radio - missing red accents. Radio forensics ain't easy, y'know Barry

From wa6knw@sbcglobal.net Fri Nov 28 19:51:31 2003
Subject: [R-390] Funky R-390 (non-A) Must See

Say isn't Merrit Island in South Florida? Is it anywhere near South Beach? RICH WA6KNW

From craigmc@pacbell.net Fri Nov 28 20:27:23 2003
Subject: [R-390] Funky R-390 (non-A) Must See

It's near Patrick AFB

From sdman@cableone.net Sat Nov 29 09:52:21 2003
Subject: [R-390] Deoxit?

Which type of Dexoit is the best to use on the 390?,and where to get it, Thanks, Sam

From barry@hausernet.com Fri Nov 28 22:07:33 2003
Subject: [R-390] Deoxit?

Hi Sam, Probably the most useful overall is the 200 ml D5 spray can, which sells for anywhere between $8 and $12. It is the 5% solution, but with 20% cleaning agents. You can spray a small amount on a cotton or foam swap where spraying isn't a good idea.

They also make very small "portable" cans of the D5 and small tube of the D100, which is full strength.

Full strength refers to the protective coating it leaves. That formulation apparently has no cleaning action. You would only apply it after cleaning contacts thoroughly.

There are also kits with a variety of their products, including Cailube which is for pots and ProGold. You can find more info on the manufacturer's web site which is http://www.caig.com They used to offer a 150ml pump spray bottle that was D20, or something intermediate. That would be a good choice, but I don't see it offered now.

I haven't found many places locally to buy it. Microcenter, the big computer retailer, carries some of the line, but when I last went there, they didn't have the big D5 cans. Antique Electronics Supply carries it. Radioshack.com used to, but I can't find it anymore on that site. Used to be one of the better prices, like $7.98.

The mfr. lists some sources on the web site and you can order directly from them as well. Barry

From w9lwc@charter.net Fri Nov 28 22:29:18 2003
Subject: [R-390] Funky R-390 (non-A) Must See

well henry Kissinger was asking whered he go only just the other day or it seems your uncle connie took offn with the till just the other day -----From: Richard M. MC Clung <wa6knw@sbcglobal.net>

From sdman@cableone.net Sun Nov 30 02:28:43 2003
Subject: [R-390] Deoxit

Thanks everybody for the info on the Deoxit. Another question: What's a good signal generator for the 390? Looks like the URM-25 series is a good choice, also the HP8640 might be a good one. Thanks, Sam

From wewilson@knology.net Sat Nov 29 15:00:05 2003
Subject: [R-390] Signal Generators (was: Deoxit)

I had the URM-25 for a while, but it is harder to use and does not get down to the low signal levels you need to measure sensitivity on the R-390A. Even with attenuators inline, it leaks too much signal to be accurate for low levels.

I now have the HP 8640B with options 1 and 3. This is a really nice signal generator, includes a frequency counter, is accurate at low levels, etc, etc. If mine ever broke beyond repair, I'd have to quickly find and buy another one. Hope this helps, Walter - KK4DF

From chacuff@cableone.net Sat Nov 29 15:56:33 2003
Subject: [R-390] Signal Generators (was: Deoxit)

Another excellent option and much more inexpensive than the 8640B is the old HP-606 A/B. They are built like a tank and seem to last forever. Very easy to use and a true boat anchor in it's own rite....

From w5or@comcast.net Sat Nov 29 17:18:46 2003
Subject: [R-390] Signal Generators (was: Deoxit)

I second the HP-606 boatanchor nomination, especially the HP-606B model. It has a high level secondary output, independent of the calibrated output, that is useful for connecting to a frequency counter. As Cecil says, they are built like tanks, and the only trouble I've had with mine is that the grease in the band turret got old and gummy and finally prohibited easy band changing. I used a degreaser to soak out the old grease over a period of a week and then applied new lubrication. Works like new. Be careful buying signal generators - they often have the attenuator fouled up and you will need a functioning calibrated output for tweaking your R-390.

The URM-25 is the genny called out in the manuals. They are much smaller and compact and a bit harder to work on should you need to repair one. But it is the classic choice.

I've never owned an 8640B but you can trust Walter's recommendation. 8640s are on the workbenches of Chuck Ripple and Rick Mish. Be sure you get one that does not have the attenuator burned out.

A friend who is tuned into the used test equipment market says prices for high quality older test equipment are just absolutely sinking. So it's a great time to upgrade your workbench. At a recent Texas hamfest test equipment was nearly being given away. For example, I picked up an HP-3586B Selective Voltmeter, an HP-3330B Synthesizer, and several Watkins Johnson counters. The pile was less than $200. Manuals for this stuff will probably cost more than the equipment.

DeOxit.
For a while, you could find DeOxit on their web site in ten dollar sample kits, which was enough to cure several R-390s of oxidized contacts. They furnished an assortment of their products in 2cc plastic tubes in the kit. Part number 2C-SAMP. Included CaiLube (for pots) and R-5 (good for flashlight batteries). I just checked, they still have web specials, called survival kits (hehe). K2C is the closest match to what they used to offer. Still ten bucks. www.caig.com Don Reaves

From chacuff@cableone.net Sat Nov 29 19:17:44 2003
Subject: [R-390] Signal Generators (was: Deoxit)

Hi Guys, Just as an addition to my earlier comments. I own both the 8640B and an 606A and love them both. (use them in my R-1051 business) I know it's not proper to mention it a lot but I purchased just about all the test gear I own from the "Auction" site and have had nothing but good luck with the folks I have dealt with. Test gear is very reasonably priced there.

You can expect to pay probably around $800 for a good working 8640B and can pick up a nice 606 when you can find them for no more than $100-$125 usually. I found the URM-25 not as straight forward to use and had to keep opening it up to fix little problems that showed up! I prefer to fix radio's instead of test equipment.... Cecil...

From chacuff@cableone.net Sat Nov 29 19:25:38 2003
Subject: [R-390] Signal Generators (was: Deoxit)

Well just another update....I was wrong on the pricing of the 8640B's...the market has gotten softer than I knew...Looks like one can buy a nice one for $300 to $400 bucks...that is a steal of a deal on a very nice generator....They were double that 2 years ago! I may buy me a spare just for the parts at those prices! Cecil...

From jmiller1706@cfl.rr.com Sat Nov 29 21:15:38 2003
Subject: [R-390] WTB R390 Knobs

I need 2 medium and 2 small knobs. The solid metal variety,, with Bristol screws. The medium knobs are the size used on the On/Off/Function switch, the filter BW switch, BFO, etc. Any out there for sale?

From jlkolb@cts.com Sat Nov 29 23:59:45 2003
Message-ID: <Pine.BSF.4.44.0311291558130.36429-100000@king.cts.com>

wrote: I own both the 8640B and an 606A and love them both.

I've got a HP 606A I'd sell reasonably to someone that would pick it up in the San Diego, area. Don't want to pack and ship. John jlkolb@cts.com

From wb5hak@sirinet.net Sun Nov 30 00:14:38 2003
Subject: [R-390] WTB R390 Knobs

James, If no one comes forward, I noticed on the Fair Radio site today that they still show some of the small and medium ones. 73, Don, WB5HAK

From bernice@videotron.ca Sun Nov 30 00:11:20 2003
Subject: [R-390] WTB R390 Knobs

Jim, Check Items 3062080971 & 3062081958 at the auction store. Al

From mikea@mikea.ath.cx Sun Nov 30 03:37:27 2003
Subject: [R-390] Deoxit

wrote: > Looks like the URM-25 series is a good choice, also the HP8640 might be a > good one. Thanks, Sam

The URM-25 (I have a "D") is OK, but hands down the 8640B is at the top of my personal "best affordable siggen" list. Mine has Options 1, 2, and 3, and it is an absolute mainstay here, along with the Tek 465B scope and the Fluke counter.

Now I gotta get some more Good Stuff. Mike Andrews

From jmiller1706@cfl.rr.com Sun Nov 30 03:38:19 2003
Subject: [R-390] Deoxit

I have an 8640B with all except the low freq. option. It doesn't go below 500 Khz now, and it would be real nice to have it go down to 455 khz to do IF deck alignments. How hard is it to find a low freq. option and add it to an 8640B?

From mikea@mikea.ath.cx Sun Nov 30 15:12:29 2003
Subject: [R-390] Deoxit

wrote: > I have an 8640B with all except the low freq. option. It doesn't go below > 500 Khz now, and it would be real nice to have it go down to 455 khz to do > IF deck alignments. How hard is it to find a low freq. option and add it to > an 8640B?

As I remember, the HP designers _explicitly_ built the 8640B so that the real low end would be 455 KHz or a bit lower, just so it _could_ be used for tweaking IF decks. I know mine goes down below 455 KHz: the low end is 447.8774 KHz this morning.

Mine only has options 1, 2, and 3, and so there's no LF option involved. Maybe yours needs some retweaking, or to be looked at, or something? I certainly don't claim to be anything more than a user/ operator when it comes to the 8640B. Mike Andrews

From tetrode@comcast.net Sun Nov 30 15:37:15 2003
Subject: [R-390] Deoxit

I'll ditto Mikes's remark, the couple I've used in the past made it down to 450 KC or so. John

From chacuff@cableone.net Sun Nov 30 16:16:44 2003
Subject: [R-390] Deoxit

I agree with mike...mine goes below 455Khz as well...It has options 1,2 and 3 too...but I don't think it is any of those options that cause it to do that... Cecil...

From chejmw@acsu.buffalo.edu Sun Nov 30 17:30:58 2003
Subject: [R-390] Deoxit

Hi guys, try the Audio output bnc connector and the "Modulation Audio" output it has the same specs as the regular audio oscillators from HP. You just can't sweep the audio frequencies. However, and I am doing this from memory, I am pretty sure you can get down to around 5 - 10 Hz at the low end on the HP-8640B, with the audio out function. Jim WB2FCN

From jmiller1706@cfl.rr.com Sun Nov 30 17:27:08 2003
Subject: [R-390] 8640 was Deoxit

Well I must have had a brain slip. I tried it and yes 447 khz. Wouldnt you know. The manual says 500 khz is the low limit, and I never bothered to try it lower in the over coverage region. Thanks guys.

From chejmw@acsu.buffalo.edu Sun Nov 30 17:32:39 2003
Subject: [R-390] Deoxit

Sorry for the repeat, Also note the operators manual and also the service manuals are on the ETM LOGSA site, full manuals in PDF and free! Jim WB2FCN

From chacuff@cableone.net Sun Nov 30 17:57:56 2003
Subject: [R-390] 15th Radio Squad.

Greetings group, I hope this somewhat off topic post will not be an annoyance to the group. I have been meaning to ask this question for some time and have just not gotten around to it.

Is there anyone out there that served in the 15th Radio Sq. Mobile of the USAF Security Service during the Korean War. My Dad was a cook for that group in the early 50's and has told me stories about the radio equipment and the "Elephants Cage" antenna farm at the base there in Japan. He was no more than 17 or 18 at the time. He joined the Air Force at 17 and Japan was his first deployment after Basic Training. He has seen my SP-600's and R-390A's and says they look like what he remembered from back then.
What has prompted me to ask about this at this point is his Passing yesterday evening after a nearly 10 month battle with brain cancer. He was extremely healthy until age 69 when he was diagnosed with a terminal brain tumor. He died at age 70 at home with all his children and grandchildren gathered around him....

God has indeed blessed us!

He had attended several reunions in the last several years and this year was to help sponsor the 2003 reunion on the Gulf Coast where he lived for the last 33 years or so. He did help arrange the location but got sick and couldn't finish with the arrangements nor attend when it came to town.

If you served with this group during this time and may have known Bobbie Acuff...please drop me a note off list! Thanks...and sorry for the OT post! Cecil Acuff

From hankarn@pacbell.net Sun Nov 30 17:33:49 2003
Subject: [R-390] Deoxit

The spec's say minus 10% on the low side and plus 5% on the high end. Hank KN6DI

From ToddRoberts2001@aol.com Sun Nov 30 18:14:22 2003
Subject: [R-390] R-725 On The E-Place

There is a nice looking R-725 on the E-Place, item no. 3062352336. There are some nice pictures of it if you ever wanted to see what one looks like. 73 Todd WD4NGG.

From R390rcvr@aol.com Sun Nov 30 20:57:30 2003
Subject: [R-390] Forward of question about audio distortion

Good day all: I am forwarding an email I got. If anyone can help James, please contact him directly. Thanks for your help. Randy

Name: James
Callsign: WA2QIN
E-mail: jbischof@nycap.rr.com

The response is: Randy , I need some help. I have a r390a, and there seems to be rf distortion in the audio. If I use fast agc I can hear the distortion mostly on the high frequencies. I have tried two different rf decks and if modules. One of the if modules is not to good. I tried a separate audio amp connected to the diode load and still have the problem . Seems like low frequencies are ok . When listing to music I can hear the distortion. Sounds like rf distortion. Any help would be apreacheted. James