R-390 Reflector April ‘03 Edited

From ezeran@concentric.net Tue Apr 1 00:08:39 2003
Subject: [R-390] Mitchell - B-25

> Nice plane, too! I talked with a fellow some years back who flew them in > Viet Nam and possibly later (or earlier?) for the CIA?

There is a good one, a Black Cat, on display at Hickam AFB in Hawaii. The SAC Museum just west of Omaha has a neat restored one and the Marine Air-Ground Museum at Quantico has a nice fuslage section display. That needs some light inside so folks can see the ARC-5 set up which is different than the Smithsonian. I worked with a guy who was a mechanic for Air America back in Nam time. He mentioned '26s. I think they may have had a couple at Marana in AZ back then. EdZ

From r.tetrault@attbi.com Tue Apr 1 00:09:09 2003
Subject: [R-390] Mitchell - B-25

Pima Air Museum in Tucson has an A-26 along with many many other planes.

From ence-ack@rio.com Tue Apr 1 00:12:28 2003
Subject: [R-390] A-26/B-26 OT-what else!

>The Martin B-26 was a four engine bomber with the same type of twin >tail as the B-25 Mitchell

Nope. B-26 was two engine. Both of them had a pair of P&W R2800's Spence

From R390rcvr@aol.com Tue Apr 1 00:25:41 2003
Subject: [R-390] B-26 Martin Maurader, URL

OK guys: I have included a URL to a page about the B-26, Martin Marauder, as I mentioned in my original post. I believe the designation for the Havoc was A-20. I believe they were used extensively by the Brits. Randy

<A HREF="http://www.squadron13.com/B26/B26archive.htm">B-26 Martin Marauder</A>

From gpewitt@execpc.com Tue Apr 1 00:33:03 2003
Subject: [R-390] What a beautiful sight, slightly OT

wrote: >snip > >Could be. I know the F-82 "Twin Mustang" also shot one or more >down. Nearly ALL F-82s were essentially "used up" in that conflict, >BTW. Another beautiful plane shot to hell.

Last time I was at Lackland AFB in San Antonio there was an F-82 on outside static display.

From dsmaples@comcast.net Tue Apr 1 01:01:30 2003
Subject: [R-390] A-26/B-26 OT-what else!

All: I think the Consolidated B-24 was the 4-engine bomber with a tail like a B-25... Dave Maples

From dsmaples@comcast.net Tue Apr 1 00:55:43 2003
Subject: [R-390] What a beautiful sight, slightly OT

We had a B-17 appear here at the Manassas, VA, airport. Lots of fun to look around in...particularly the BC-348 and the Command hardware... Dave Maples

From hankarn@pacbell.net Tue Apr 1 02:08:47 2003
Subject: [Fwd: Re: [R-390] A-26/B-26 OT-what else!]

Bob, You should read my previous post. The Martin B-26 had only 2 engines. If I remember correctly they were C/W (Curtiss Wright R-2600 radials).

The Douglas A-26 Invader was a follow on if the A-20 Havoc that was built originally for the RAF in the early stages of WW II. The USAF later renamed it the B-26. There were several versions for the USAF used in the Korean war and a few in Nam. Most were modified by ON-Mark Aviation at the Van Nuys, CA airport worked there for some time. We also modified a bunch of them with Pratt-Whitney R-2800 CB-16 making 2400 HP at take off with Ham Standard full feathering props , water injection, tip tanks and pressurized with a cruise speed of 340 Knots at altitude which I have flown non stop west to east coast and one stop westbound. I hold an ATR Type rating in the B-26 along with some 20 other type ratings and over 20,000 logged hours.

I flew one of the Martin B-26's owned by Pemex in Mexico City in 1963 when I was flying a Martin 404 that I flew for Frank Sinatra for over 2 years. The Martin had been modified with P?W R-2800 CB-16's also with Ham Stds. full feathering props. One of those crashed near Mexico DF and the last I heard the other one was in or near Houston TX. These were the long wing version and had been modified for the TVA prior to going to Mexico, DF for PEMEX. Hank KN6DI None of them had a R-390.

There are several Douglas B-26 aircraft still flying in different parts of the US. The first time I flew in the A-26 was as a radio operator in the LA ANG based at New Orleans Lake Front Airport in 1948/49.

From scr-287@sbcglobal.net Tue Apr 1 02:07:31 2003
Subject: [R-390] A-26/B-26

Can't resist a couple of nitpicking comments on this thread,

> The Martin B-26 was a four engine bomber with the same type of twin tail as the B-25 Mitchell
>
> Nope. B-26 was two engine. Both of them had a pair of P&W R2800's

Nope again, the B-25 Mitchell used the Wright R-2600 in all marks. The only twin tail 4 engine bombers I'm aware of were the Consolidated B-24 and the prototype Consolidated B-32s. Production B-32s had a single tail.

>The Douglas B-26, (Yep! Both had the same designation for some reason.) ,

They had the same designation, but not at the same time. When the USAF was founded (1948), they dropped the A for attack category, and the Douglas A-26s in service were redesignated B-26, as all the Martin B-26s were phased out of the inventory pretty rapidly at war's end.

Didn't the only flyable Martin B-26 crash a few years ago?

>>A factoid for the P-51 states that the plane flew just 126 days after they started drawing lines on paper... Sounds like North American knew what they were doing.

Well, yes and no. Not to take anything away from North American, because the job they did on turning out the prototype Mustang was superb and rapid, but the design engineers responsible for the Mustang had done quite a bit of preliminary design on a fighter, as a "back of the envelope, lunch hour" unofficial type project. When the British Purchasing Commission walked in, they just made all that official and went from there. Still an awesome job though. Look for the book "Mustang Designer" which was the biography of the major player in the design of the plane. Nitpick mode off. Jack Antonio WA7DIA scr-287@sbcglobal.net

From hankarn@pacbell.net Tue Apr 1 02:33:11 2003
Subject: [R-390] What a beautiful sight, slightly OT

Ken, i flew in the F-82 at McGuire AFB, NJ in 1950 in the 52nd Ftr Interceptor wing. with a big fat Radome that stuck between and in front of the props on the Merlin engines. Replaced by the F-94. Hank KN6DI

From hankarn@pacbell.net Tue Apr 1 02:39:15 2003
Subject: [R-390] A-26/B-26 OT-what else!

Correct, B-24 had twin tails and also the C-87. Navy version was PB4Y with single tail. I flew on one as co-pilot while flying firebombers. Hank, KN6DI

From n1vbn@bit-net.com Tue Apr 1 03:02:59 2003
Subject: [R-390] What a beautiful sight, slightly OT

Minigun???

Hey Boomer it's not a Minigun, it's a Rotary 30MM CANNON firing as you stated depleted uranium rounds to take out any sort of armor in it's path. AKA A hydraulically powered Rotary cannon. Mr. Gatling's big brother he never even dreamt about. The Minigun fired a 7.62 MM rifle round at 2-4 or 6,000 rounds per minute. miniguns are generally electrically powered versus the cannon sized big boys toys. Had the chance to see what three miniguns could do when Spooky made one pass over an area crawling with enemy troops. Just like mowing down corn. They all go down. Hi-tech gunsight on Spooky too gunsight circle painted on pilots left side window, pull trigger with all three weapons online and 18,000 rounds per minute later it was over.

I noticed today the Iraqi's are claiming we're using "Illegal" weapons now, Spooky grand Daddy. The US Air Force Reserve AC-130H series. The Ultimate in reach out and touch someone (from afar!!).
James Shanks n1vbn@bit-net.com

From redmenaced@yahoo.com Tue Apr 1 03:16:52 2003
Subject: [R-390] What a beautiful sight, slightly OT

B-25 H! Well,... Ok, maybe a "G" Joe

From ezeran@concentric.net Tue Apr 1 03:38:20 2003
Subject: [R-390] Mitchell - B-25

Pima is a good one! I went in at 11:00 and was still looking when they chased us out. Subject: RE: [R-390] Mitchell - B-25

From ezeran@concentric.net Tue Apr 1 03:52:27 2003
Subject: [R-390] What a beautiful sight, slightly OT

> minute later it was over. I noticed today the Iraqi's are claiming we're using "Illegal" weapons now, Spooky grand Daddy. The US Air Force Reserve AC-130H series. The Ultimate in reach out and touch someone (from afar!!). gun in the nose....

I remember 'Spooky' and 'Puff' from Hue, Dong Ha, and Qua Viet during TET 1968, maybe a few places over the line but of course we never went there ;^). The technoogy just gets better! Lots of those folks now are from Hurlburt or Pope. Fly the dot into the circle then make stuff go away. EdZ

From wa5jci@flash.net Tue Apr 1 03:49:20 2003
Subject: [R-390] Mitchell - B-25

The AFB outside Rapid City, SD (I forget the name now) has a small air museum and Eisenhower's stripped down B-25 is on display. es 73 de Pete WA5JCI EM21jv

If the universe contains advanced life forms where is everybody? Fermi's paradox

From rbethman@comcast.net" <rbethman@comcast.net Tue Apr 1 03:56:58 2003
Subject: [R-390] A-26/B-26 OT-what else!]

Yes sir! An old age "brain dump". Too many pieces of old "iron" on the brain. Confused the B-26 with the B-24 and/or Lancaster. The B-26 definitely has TWO engines and a single vertical fin. Oh well. Won't be the first nor will it be the last - I'm sure! Bob - N0DGN

From w5or@comcast.net Tue Apr 1 04:18:06 2003
Subject: [R-390] List notice

Good grief! When you guys get off topic you beat it to death. No more aircraft threads.

Don Reaves R-390 list administrator <mailto:r-390-admin@mailman.qth.net>
Rules:

1. Stay on topic
2. Be civil and courteous

From hankarn@pacbell.net Tue Apr 1 04:24:01 2003
Subject: [R-390] [Fwd: [Milsurplus] RE: R-390-A Engraved Panels]

Bob, Well after sitting on the sidelines for some length of time I decided to see if an engraved panel could be made at some kind of reasonable cost.

First I talked to some stamping houses that would use a 250 ton press to hit the panel plus the trip to even the stamps out. Stamp die estimate at 15 to 17 K for starters.

I then went to the CNC house that did the SX-88 Bezels for me. They estimate 6 to 8 hours to program the CNC plus proof test on the quality of the engraving. not cheap. After spending some time in costing I came up with a turnkey estimate of $150.00 per panel.

My guess was an order of 30 units would give me (God Forbid) a small profit for my effort. So I posted an honest offer to provide a Quality job for all of the comments from the people wanting an engraved panel. Guess what the old saying of "Money Talks and Bull S--- Walks" still stands. I have had 3 legitimate offers to order, 3 to sell panels to the needy, for to just engrave his existing panel with 4 direct replies that I am ripping people off.

So I challenge anyone to get off of their dead A$$ and do a quality turnkey job as I have offered.

"IT BOILS DOWN TO PUT UP OR SHUT UP"

So if the this not work any other posts with reference to engraved panels should be assigned to the circular file 26, or delete key. This should then make for a lot of silk screened panels.

If I do not get the required orders by 4-15-03 then this price/offer is down the drain. My original post says it all. Hope this gets by the censor. Thanks es 73 Hank KN6DI

From r.tetrault@attbi.com Tue Apr 1 04:44:28 2003
Subject: [R-390] [Fwd: [Milsurplus] RE: R-390-A Engraved Panels]

Dan, Over and over I see guys on this list do the legwork to cook up a good deal for everyoneonly to see their efforts discounted by the cheapo's. I was/am still sincerely interested in your EK-07's but I just haven't got the scratch. But you'll notice that I didn't whine about it that you must be jacking the price up. It seems like a good deal but I haven't got the dough. End of story. Ditto for the engraved panels. A reasonable price considering the job. I have never seen a scratch-built or widget product for the amateur market succeed without humongous marketing $$; too many cheapo's cry about it. The major equipment makers such as ICOM and the like are largely subsidized by the other markets that they serve, or the military markets for other countries, so they don't have to recoup all their development costs on the cheapo's.

I'd still like to have a Zippo with a 390 silkscreen, but Joe Foley couldn't swing the cost/committed order gap. But keep that thinking cap on, Dan. Not that you'd take it off at my suggestion! Bob

From R390rcvr@aol.com Tue Apr 1 15:59:12 2003
Subject: [R-390] Quality shipping containers from Hank

Gentlemen: I just shipped four R-390s from Florida using Hank's shipping boxes. They all arrived in great shape. FedEx did its best to beat the boxes up, but other then some minor dings, the boxes came through great.

I won't hesitate to use them several times again. I was really impressed by the foam fitted interiors. He even includes good quality strapping tape and Fragile stickers to seal them up with. Drop the rig in, seal them up and ready to go. They are not cheap, but I feel they were a good value for what they did, and will continue to do in the future. I have no financial affiliation with Hank, just a satisfied customer! Randy Stout

From redmenaced@yahoo.com Tue Apr 1 17:21:23 2003
Subject: [R-390] [Fwd: [Milsurplus] RE: R-390-A Engraved Panels]

Actually, Bob, The response was enough to make a run for it. One guy even offered to front money to get it started. The company was just too difficult to deal with, they just couldn't get the artwork right! This after Barry Williams did the illustration for them!!

What they were showing me was NOTHING like what I gave them. Joe

From G4GJL@btopenworld.com Tue Apr 1 22:49:32 2003
Subject: [R-390] R391 channel lock keys

Im sending this on behalf of Neil Cline, G8LIU, of mans radio / boys radio fame...The R390 was the mans' and the 390A was the boys'.....and yes the '392 the gorillas'! Neil has gone and got himelf an R391 which is missing the two tuning lock keys.

soooo.....

1 Does any one have a set of keys they would sell to Neil (or exchange for something of similar value?

2 Failing (1) above, does anyone have a drawing or a verbal description sufficiently detailed for us to make a pair of keys from scratch?

Please mail me and I will pass responses on verbally to Neil, who does not have email yet.73 de Pete G4GJL

From rickmurphy1001@earthlink.net Tue Apr 1 22:58:06 2003
Subject: [R-390] Line Filter and R390 IF strip

Hi Group My R390A has a line filter problem (little tingle hooking up the ant while the ac is connected to a non grounded plug). Does anyone know where I could purchase one? Wanted - R390 non A If strip. Thanks in advance Murph

From wa9vrh@mtco.com Tue Apr 1 23:58:51 2003
Subject: [R-390] Collins Collectors Association First Wednesday AM Night April 2nd

Hi everyone This Wednesday April 2nd , 2003 is the next First Wednesday CCA AM night on 3880 kcs. Join us for some outstanding AM signals! REMEMBER you DO NOT have to be running Collins gear to check in

Everything is welcome!When checking in please give your name, location and equipment you are running.We will have 4 main ncs. One on the East coast, Midwest, Mountain area,and West coast. The main ncs will have others in their area helping with their hour. (Please note ONE HOUR). At the end of their hour the main ncs for that region will contact the next regions ncs and turn ncs over to them etc. etc. etc. Each ncs will start at 08:00pm in their time zone.
Starting at 8:00pm EST (01:00 UTC) East coast ncs will start the net

At 02:00 UTC East coast ncs will turn ncs to Midwest ncs

At 03:00 UTC Midwest ncs will turn ncs to Mountain ncs

At 04:00 UTC Mountain ncs will turn ncs to West coast ncs Starting off in the Eastern time zone will be Bill K2LNU, Jim W0NKL & Dean KA6BGW in Central time zone, Jim WA0LSB in Mountain time zone and last but not least Bill N6PY in the Pacific time zone. comments please to wa9vrh@mtco.com Have fun and enjoy the great sounding AM signals. 73's Larry WA9VRH

From Barry Hauser" <barry@hausernet.com Wed Apr 2 00:20:04 2003
Subject: [R-390] R391 channel lock keys

Hi Pete: It's already been done -- Dan (Hank) Arney had some repro keys made up. He should be chiming in soon. Yo! Hank! (maybe if we holler) Barry

From ba.williams@charter.net Wed Apr 2 01:18:52 2003
Subject: [R-390] [Fwd: [Milsurplus] RE: R-390-A Engraved Panels]

> Actually, Bob, The response was enough to make a run for it. One guy even offered to front money to get it started. The company was just too difficult to deal with, they just couldn't get the artwork right! This after Barry Williams did the illustration for them!! What they were showing me was NOTHING like what I gave them. Joe

Hope it is okay to post about this, but it is a little bit radio related. The resolution that they offered Joe would make it not much more than an oblong shape. No details or anything like that.

I can still do the work again if anyone else finds a good source. I think I still have the basic files on it. Joe got the runaround and spent a lot of time visiting or calling that guy. A good laser print should bring out reasonable detail for something that small.

By the way, since I'm venturing off from R-390 talk already, I've noticed that a lot of members take pics of their gear. I thought I would throw in a recommendation for the Nikon Coolpix 5700. Bought one a few weeks ago and have taken over 1000 shots with it now. It is a fantastic camera and a great improvement over the Coolpix 880. Thought I would throw this out in case anyone is thinking of buying

a digital camera to take pictures of their shacks. Barry

From bill@iaxs.net Wed Apr 2 02:51:41 2003
Subject: [R-390] Line Filter and R390 IF strip

Sigh. Off we go again. Not your fault, Murph. I don't know how you'd have found this in the archives. There is nothing wrong with the filter. Look up the impedance of 0.1 mfd at 60 Hz. It will tingle. The problem is that you are not thinking like a person in the fifty's. The first thing that you do is to ground the receiver frame to a water pipe. Violins, no more tingle. (wait, maybe that's viola) Regards, Bill Hawkins

From billsmith@ispwest.com Wed Apr 2 02:53:41 2003
Subject: [R-390] Line Filter and R390 IF strip

Probably means it is working. The little tingle is a little AC current which is supposed to be bypassed to a solidly grounded receiver. 73 de Bill, AB6MT billsmith@ispwest.com

From rodney_bunt@yahoo.com Wed Apr 2 07:40:38 2003
Subject: [R-390] Line Filter and R390 IF strip

The bypass capacitors on the mains go leaky and you are fealing this.

I have a problem in Australia, as we have "earth leakiage" circuit trip relay's in the switch board of my house, this goes off ALL the time when plugged directly into the 240v. Had to put the receiver on a isolation transformer, and doesn't trip the switch board anymore. Will get around to replacing those caps soon. Rodney VK2KTZ

From w7itc@hotmail.com Wed Apr 2 08:07:09 2003
Subject: [R-390] [Fwd: [Mil] RE: R-390-A Engraved Panels]

Can these front panels be made with on of the many CAD/CAM machines. I was thinking of laser routers, CAM engravers, etc. I know with the laser equipment the object to be duplicated is scanned with a laser and it's dimensions are loaded into the computer controlling the cutter. I suppose this has been thought of and is very expensive.

From chg111@hotmail.com Wed Apr 2 13:28:05 2003
Subject: [R-390] R391 channel lock keys

Gents- Yeah, ; I got a set of 'em from Hank- like all his work, they're second-to-none. Do yrselves a favor-save up your butter 'n' egg money & get one of those EK-07s from him. Sure they're expen$ive-but I'd do it again in a heartbeat. Mine, at least, really is THAT good.-Sandy G.; C.H.(Sandy)Geiger III

From dpg@coe.neu.edu Wed Apr 2 15:46:28 2003
Subject: [R-390] R-390(nonA) Photos?

Hello, I'm digging around for replacement parts for my R-390, and figuring out what I need to get would be easier is I had a good set of color photos of the chassis - the manual photos arn't very clear.

So, does anybody out there has a good set of color photos (digital) up on a website? I'm looking for good shots of the power supply, the 4 green scres that attach it to the chassis side, the rear PTO mounting screw, and the cover for the RF section. Thanks, David P. Goncalves

From roy.morgan@nist.gov Wed Apr 2 20:54:32 2003
From: roy.morgan@nist.gov (Roy Morgan)

wrote: >The bypass capacitors on the mains go leaky and you are fealing this.

They are (probably) NOT leaky.

Will get around to replacing those caps soon.

You may be wasting your time. You'll have to unsoder the sealed metal can they are in, and un-pot the contents. Assuming you use similar valued new caps, when you get it all put back together again, you'll find the same or similar "leakage" current in the ground wire. Roy

From w9wis@charter.net Wed Apr 2 21:17:01 2003
Subject: [R-390] OT: That's One For Colin Powell

I received this from an English friend this morning:

"Here for a conference, your Colin Powell was asked by the Archbishop of Canterbury if America's future plans for Iraq were just an example of empire building by George Bush. He answered, "Over the years, the United States has sent many of its fine young men and women into great peril to fight for freedom beyond our borders. The only amount of land we have ever asked for in return is enough to bury those that did not return." It reportedly became very quiet in the ~~r~~oom. Mike

From jetemp@insightbb.com Wed Apr 2 22:07:49 2003
Subject: [R-390] OT: That's One For Colin Powell

List administrator... Permission to reply, sir. I'm chomping at the bit to publicly reply to this political challange. Sincerely, Jim Temple 73, KF4ICZ

From mark.richards@massmicro.com Wed Apr 2 22:28:10 2003
Subject: [R-390] OT: That's One For Colin Powell

Me too... I replied off list but would love to chime in on that one.

From bill@iaxs.net Wed Apr 2 23:07:20 2003
Subject: [R-390] Line Filter and R390 IF strip

Rodney Bunt said, "The bypass capacitors on the mains go leaky and you are fealing this."

I say again, a bypass capacitor with infinite resistance (no leakage) will give the same tingle. There Is No Leak. Nothing is wrong, except that you, the operator, have not grounded the receiver. You did read the installation manual, right?

A capacitor of 0.1 mfd has a reactance of 27K Ohms at 60 Hz. You will get the same tingle if you hold one end of a 27K Ohm resistor with a dry hand and touch the other end to a hot mains lead.

There were no ground fault interrupters being made when the R-390 class of equipment was designed. Do Not Use A GFI. Rely instead on the good ground that you have used for the radio.

But if the bloody GFI is built into the power entrance panel, then you must either use an isolation transformer or disconnect the filter. It will not help to replace the capacitors. Regards, Bill Hawkins

From redmenaced@yahoo.com Wed Apr 2 23:23:26 2003
Subject: [R-390] OT: That's One For Colin Powell

http://news.bbc.co.uk/2/hi/europe/2907701.stm

http://www.timesonline.co.uk/article/0,,5944-631671,00.html

From Miguel Bravo" <mbravoc@wanadoo.es Thu Apr 3 06:57:01 2003
Subject: [R-390] OT: That's One For Colin Powell

There is a war out there. I have my own opinion about but do keep it for myself. Please do the same with your. I DO NOT NEED YOU WAR RELATED INFO. Miguel Bravo

From Miguel Bravo" <mbravoc@wanadoo.es Thu Apr 3 09:02:07 2003
Subject: [R-390] Line Filter and R390 IF strip

In Spain and probably in all CEE countries the GFI is compulsory and once it fired down and you only get a very small shock you love them.

But nobody tell you not to have more than one, so I had put one before any of the breakers. It is expensive but each piece of home covered by a breaker can have those 30 mA max. leakage before its GFI open.
If kitchen open its, the computer still work. And I can check a radio without risk from those watching TV. You only need to push the check button once a month or so if didn't get a shock in between. Regards Miguel Bravo

From drewmaster813@hotmail.com Thu Apr 3 22:16:03 2003
Subject: [R-390] Line Filter

wrote: >My R390A has a line filter problem (little tingle hooking up the ant >while the ac is connected to a non grounded plug). <snip>

One of the key phrases is "non grounded plug". It is essential that you use a 3 wire power cord with

green (safety ground) connected to radio's chassis. Otherwise, a line fault to chassis could render chassis live and you dead.

Check your outlets; safety ground should show a low impedance to neutral. Unless you are using an isolation transformer, a separate earth ground alone will not do; most separate earth grounds have too high impedance to sink sufficient fault current to trip a panel breaker or even blow the radio's fuse.

The R-390 series line filter has capacitance from line to ground and neutral to ground. If ground is not connected, this forms a voltage divider putting chassis at about 60 VAC. The line filter capacitors are paper type; these are just as susceptible to leaking and failing shorted as those Black Beauties used elsewhere in the radio. It would be a good idea to not use those caps as line bypasses. A proper safety ground would protect against shock in a failure event but why put it to the test?

Some have replaced caps inside the filter (reportedly potted in beeswax); opening soldered housing requires patience, a torch, and a small hole drilled in filter housing through which pressure will vent and scalding melted potting will spew. When replacing those caps, only use types specifically rated for line bypass service. Regular caps will not cope well with the sometimes huge transient voltages found on the line..

If the radio is powered from a circuit having a GFCI (ground fault circuit interruptor) device, that GFCI will trip even with good caps in the filter. A GFCI senses line and neutral currents; if they are different then GFCI trips (the difference current is that which leaked out through another path; possibly someone's body). GFCI's trip at milliampere levels, hence the R-390 series filter will trip one by design.

Here are some proposed/ tried solutions to line filter problems. If using original filter recapping it is still a good idea.

1. Power from non-GFCI protected outlet. Installation of non-GFCI protected outlet may violate local electrical code.

2. Use Isolation transformer.

3. Insulate filter from chassis. Filtering will not be as good, but no cap breakdown/GFCI difficulties.

4. Recap filter with smaller caps for compatibility with GFCI's. Filtering will be degraded; whether or not significantly I do not know.

5. Recap filter and change configuration so as not to annoy those GFCI's. Bypass line to neutral, then neutral to chassis (grounded). Original values may be used.

6. Remove filter entirely. A pair of caps (AC line rated of course) wired as in (5) above may be added. With resultant inferior filtering, line noise may or may not be a problem.

7. Fabricate adaptor plate and replace filter with IEC chassis mount filtered connector (available inexpensively from Mouser). The connector's internal filter uses large inductors and small capacitors; good filtering and GFCI compatibility result. Units rated for lower current carrying ability have larger inductors; a 3 amp or 5 amp unit would be good. A standard computer power cord is used with these connectors, making for a neat and clean installation.

Rumor has it that some recently surplussed R-390A's had this setup installed by the Gov't.

The hot side of line always goes to fuse and power switch. Do not fuse neutral. When in doubt, check routing with ohmmeter.

Wei-Li has done us all a great service by compiling by topic the traffic through this list over the years. For a lively and informative discourse on line filters and related topics, goto r-390a.net . Click on "References" , "Pearls of Wisdom", "Power Supply". You will find line filters mentioned beginning at about page 40. Drew

From ah7i@atl.org Fri Apr 4 16:22:08 2003
Subject: [R-390] WTS: R390A IF deck, missing parts.

I bought an R390A IF deck because I needed the BFO can and bellows. The mechanical filters, matching caps for the filters, tubes, and shields had already been appropriated, further up the ownership chain.
So, It's got everything except, mechanical filters and matching caps, BFO can, bellows, shaft, tubes, and tube shields.

Stewart Warner Sn 4603 pn SM-D-343621 order number 20139-PC-60-A1-51 $25 to any of the 50 USA states. -Bob ah7i

From buzz@softcom.net Fri Apr 4 17:10:31 2003
Subject: [R-390] My ISP changed my URL, please change your links

My ISP changed my URL from: http://www.lanset.com/buzz/index.html to: http://webs.lanset.com/buzz/index.html Please change any links that you might have. Thanks, Buzz

From r390auser@cox.net Sat Apr 5 02:12:12 2003
Subject: [R-390] For Sale

I have the following items available:

1 complete set of IERC tube shields for a 390A. These are open top type with folded insert(not the finger type). The condition is very good. $56.00 shipped to a US address.

1 top cover for a 51J-3. The condition is good with no dents and the schematic decal is clear and readable. A small portion of the decal has been removed where a name may have been otherwise the decal is complete. $35.00 plus shipping.

1 KMS-101(CU-1424/U) Antenna coupler. This unit is like new. I removed it from a sealed box and put a power cord on the power connector to test it. It has never been mounted in a rack or cabinet. It covers 2-30 MHz with one antenna in and eight out. Includes original box and packing, power cord with connector attached and two copies of the manual. $225.00 plus shipping. Thanks, Kurt Holbrook Phoenix,AZ

From wgittere@buffnet.net Sat Apr 5 03:14:02 2003
Subject: [R-390] Distortion

Hello R-390A Fans, Can anyone tell me a probable cause for an R-390A going into distortion when the

RF gain is turned up above 5? Any ideas are greatly appreciated. Bill K2LNU

From Jim Shorney" <jshorney@inebraska.com Sat Apr 5 03:02:48 2003
Subject: [R-390] AN/URM25D moisture in meter

Hi gang, I picked up a AN/URM-25D to tune up the 390A with, and because I needed a decent sig generator anyway (can anyone say 'Eico'?).

After cooking it in overnight, I noticed condensation on the inside of the meter glass. What's up with that? Do I need to bake this sucker for a week, or what? Also have a busted 6AH6. Anyone got a spare you can let loose of? TIA Jim

From ba.williams@charter.net Sat Apr 5 04:40:46 2003
Subject: [R-390] Distortion

> Hello R-390A Fans, Can anyone tell me a probable cause for an R-390A going into distortion when the RF gain is turned up above 5? Any ideas are greatly appreciated. Bill K2LNU

Bill, Somebody wrote about this maybe a month ago. I thought I had saved the fix but I guess I had a b/f and trashed the message. Barry

From myoung76@bellsouth.net Sun Apr 6 19:49:36 2003
Subject: [R-390] R390 Filament Wiring

Does anyone know why the military chose series wiring for the filament chain in the R390? Does the R390A use series or parallel wiring? TNX Mike

From ham@cq.nu Sun Apr 6 20:23:10 2003
Subject: [R-390] R390 Filament Wiring

Hi, In theory the R-390 was going to have a configuration in which it ran off of 28 volts DC rather than 110 volts AC. They put extra pins in the cable harness and such to make this possible. The AC supply was going to come out and a dynamotor plug in to the same location on the chassis. All of this must have seemed like a good idea at the time since it justified adding extra cost to every radio built.

The problem came when they tried to find a DC source that was quiet enough. I suspect that the 28 volt DC supply was something of an issue all by it's self. Once they got the dynamotor brushes into the act the RF noise went up quite a bit. A big spinning dynamotor must have shook the chassis a bit as well. Conventional wisdom is that they tried the trick on a couple of radios. Once they tried to use them in this configuration they gave up on the project and just ran them off of 110 instead.

By the time the R-390A came along the whole idea was long dead. That allowed them to wire the filaments in a little more conventional fashion. It also lead to the development of the R-392 which is a pure 28 volt radio. Given that the 392 is a tuned IF radio rather than mechanical filters I tend to look at it more as a 390 clone than as a clone of the 390A. If you look at it that way then the 392 is the box that goes where a 28 volt 390 would have gone.

Quiz time - does any of that make sense ? Take Care! Bob Camp KB8TQ

From ross@hypertools.com Sun Apr 6 20:48:50 2003
Subject: [R-390] R390 Filament Wiring

Bob & the gang - Bob's statements about the R-392 being a follow-on to the R-390 bring to mind some thoughts about the R-391 & the GRC-19 set.

The GRC-19 amounts to a R-392 paired with a T-195 - the T-195 is a Collins-designed 100W AM/CW/RTTY transmitter with eight Autotune channels. The R-392 is of course manually tuned. What's the sense of having an automatically tuned transmitter paired with a manually tuned receiver?

I'd bet that the GRC-19 radio set was originally intended to have a 'hardened' R-391 as it's receiver. By 'hardened' I mean packaged like the R-392 is - watertight case with seals on all the knob shafts, that sort of thing. And it would use the DY-78/URR plug-in 28VDC dynamotor power supply which was already available for the R-390.

Having a suitably modified R-391 paired with the T-195 would provide eight Autotune channels both transmit & receive. Drawbacks of course would be the size & weight of the hardened R-391. The size of this hefty R-391 version was probably what killed the idea - doggone GRC-19 would be too large to fit in it's intended target, the back of an M-38 Jeep... just a thought... Dave Ross N7EPI
ross@hypertools.com

From terryo@wort-fm.terracom.net Mon Apr 7 02:09:10 2003
Subject: [R-390] powerline noise - it's dead, I've killed it!

I want to thank everyone for their suggestions on finding my horrible noise generator. And Dave Maples gets a big thanks for his right on the money suggestion. Today was the perfect day to tackle his suggestion because I had to rest all the clocks anyway.

I found the noise generator and it was not some marginal piece of junk. It is a one year old Linksys 100 Base-T, 4 port hub. This thing spent the eight months of it's life three feet from my receiver rack. I'm going to complain to the manufacturer otherwise I'd take it out in the street and drive over it with my VW microbus for the sheer satisfaction of hearing the case shatter. I guess the foil FCC Part 15 sticker was not big enough to do it's job.

I am so relieved. I was ready to give up on the SW/MW/LW bands as a hobby. My present QTH is still noisy, but not the S9 to +20 noise I've had for the last year. It really made me wish I was still in the farmhouse in Barneveld, WI set on a narrow ridge of iron bearing sandstone and yielding European LW broadcasters several times every winter (on a 40 meter dipole used as a T no less). Thanks again, Terry O' WB9GVB

From r.tetrault@attbi.com Mon Apr 7 02:26:39 2003
Subject: [R-390] powerline noise - it's dead, I've killed it!

Many of you might not know that 100 Base Ethernet is a spread spectrum signal source with a differential voltage swing of several volts into 100 Ohms, in other words, several milliwatts, with a (catch the big words here) Power Spectral Density ranging from 300kHz to over 65MHz. If there is any non-linearity in the circuitry or the isolation transformers, or the twisted pair wiring, the differential

(non-radiative) quality can be degraded into common mode and the CAT5 cabling radiates. Terry just saw BigFoot. Bob

From jbrannig@optonline.net Mon Apr 7 03:20:52 2003
Subject: [R-390] powerline noise - it's dead, I've killed it!

Thanks for the heads-up. I use Linksys Routers and their Wireless access point. No problems with noise or RFI while running a KW. I will file this information away for, hopefully never, future use. BTW Linksys was just purchased by Cisco... Jim

From terryo@wort-fm.terracom.net Mon Apr 7 03:33:14 2003
Subject: [R-390] powerline noise - it's dead, I've killed it!

In retrospect, I should have suspected the network all along. But I put it in when I was relatively inactive as an SWL and never put two and two together. The CAT-5 wiring stuffed into this house made an excellent antenna for the crud the hub generated. This Linksys unit is definitely defective. I have other Linksys equipment in the house and they all appear to be dead quiet. The defective hub puts out one hell of a harmonic loaded buzz in the 410-430 kHz range. 73 Terry O' WB9GVB

From pha@pdq.com Mon Apr 7 13:37:27 2003
Subject: [R-390] R390 Filament Wiring

wrote: > Bob & the gang - Bob's statements about the R-392 being a follow-on to the R-390 bring to mind some thoughts about the R-391 & the GRC-19 set. What's the sense of having an automatically tuned transmitter paired with a manually tuned receiver?

I agree here!

> I'd bet that the GRC-19 radio set was originally intended to have a > 'hardened' R-391 as it's receiver.

Don't forget the AN/FRR-33, which combined the R-391 with the tunable CU-286, and C-973, C-974 and C-975 controllers and PP-629 power supply for handling dual diversity RTTY reception. See <http://www.r-390a.net/faq-systems.htm> for a little more info. Paul

From cbscott@ingr.com Mon Apr 7 15:18:51 2003
Subject: [R-390] Knob request/trade/sale

I need four of the small knobs, two without stripes and two with stripes. I'm in the process of putting together two complete sets of knobs and need these to complete the sets.

I have two of the medium-sized knobs if anyone needs them (or wants them in trade). I can offer them either the way they are (they need refinishing) or if you want to wait, I can have them powder-coated gloss black with the rest of the parts I'm having finished. Thanks, Barry(III) - N4BUQ

From hankarn@pacbell.net Mon Apr 7 19:50:42 2003
Subject: [R-390] RE: "TRUE ENGRAVED PANELS"

What happened to all of the guys that wanted engraved Panels for the R-390-A? Now is the time to place your order for a CNC engraved panel.

This requires your flat panel shipped to my shop, with tags removed any metal work is extra. Each panel will be marked on the rear contact area to make sure you get your panel back. The $150.00 flat charge includes: stripping, cleaning, powder coating, CNC engraving, filling with white, silk screening on the reverse side, packing and return shipping in USA domestic postal service. If paying by PAypal or Bid pay please add 3.5% to the payment. International shipping to be determined by actual cost.

So now is the time to put up or shut up HiHi. If you do not like the cost, then you do the legwork and coordination along with the filling etc. etc. beat the price and make sure it is quality work and I will send you mine to be done.

I need orders by 4-15-03. Plan about 3 weeks turn round time. This is a one time deal as it is very time consuming. "WE NOW FIND OUT HOW MUCH HOT AIR" is out amongst the Reflector waves versus the talkers and the doers!!! Thanks for reading. 73 Hank KN6DI

From roy.morgan@nist.gov Mon Apr 7 21:10:21 2003
Subject: [R-390] Distortion

wrote: >Hello R-390A Fans, Can anyone tell me a probable cause for an R-390A going into distortion when >the RF gain is turned up above 5?

1) Remove all tubes substituted for the originally specified ones in attempt to make the receiver "hotter". Replace with the correct tube(s). Do not delude yourself in thinking that a higher gain tube is going to make the radio work better.

2) Make sure your IF gain adjust pot is not set too high. See chuck Rippel's site for the instructions on how to set it.

<http://www.R390A.com/> specifically: <http://www.R390A.com/html/gain.html> Which I quote here to make it REALLY easy for any one wanting to do this (parentheses are mine):

Procedure to set R390A IF Gain:
Once the receiver has been fully mechanically and electrically aligned, the final procedure to perform before "buttoning it up" is to set the IF gain control. Many otherwise very sensitive R390A's are thought not to be due to weak signals being covered by noise generated by excess IF deck gain. Allow the receiver to warm up for at least 1 hour
then:

1- Terminate the antenna input (put 120 ohms across the balanced terminals, or ground one and put 50 ohms from the other to ground)
2- Set receiver for 15.2 mHz
3- Set the "FUNCTION" control to MGC
4- Select the 4kc filter with the "BANDWIDTH"
5- Set "RF GAIN" control to 10 or maximum
6- Peak the "ANTENNA TRIM" for maximum noise as indicated on the "LINE LEVEL" meter (If you get no peak you have other problems, most likely alignment.)
7- Set "Line Meter" switch to -10db scale

8- Set "Line Gain" control to full CW or "10."
9- Adjust IF gain control, R-519 to cause "Line
Level" meter to indicate between -4 to -7 VU.
10- Re-zero the carrier meter control, R-523
11- Set controls above for normal operation and reconnect antenna
(12- Please report to the list what success you had with this.)

(What this does is set the IF gain so that with the audio and rf gain full up, you get a modest but discernable noise from the front end, the first rf amplifier. The overall gain of the radio is enough so you can hear any, repeat any signal that is just below, at or just above the noise of the radio itself. And, the IF and AVC system can manage the gain of the various stages of the radio to keep distortion to a minimum. Each stage of the radio is pulling it's fair share with out being run at too much gain. No stage overloads more than necessary or at a signal level lower than is optimum.) Roy

From billsmith@ispwest.com Mon Apr 7 22:12:41 2003
Subject: [R-390] Distortion

Is this also a good procedure for the R-390? 73 de Bill, AB6MT billsmith@ispwest.com

From jbrannig@optonline.net Mon Apr 7 22:26:26 2003
Subject: [R-390] Distortion

Generally, it is a good procedure for all receivers. The first stage should set the noise level for the entire receiver. If a signal won't pass the threshold of first stage it won't be heard. from a snowy NY (in April, Grrrrr) Jim

From David_Wise@Phoenix.com Mon Apr 7 22:28:33 2003
Subject: [R-390] Distortion

Roy mentioned tubes and IF gain. I'll add C551, the AGC filter cap. It's frequently leaky. If the problem clears up when you switch AGC to FAST, that's it for sure. If it gets better but doesn't go away, check C548 too. 73, Dave Wise (SWL, Portland OR)

From jamesmiller20@worldnet.att.net Mon Apr 7 22:56:17 2003
Subject: [R-390] Distortion

The geared shaft going into the Antenna Trim can is at a high impedance...it "ses" the front end AGC line. If you mistakenly lubricate the gearing and saturate the phenolic sleeve, it may begin to show enough conductance to drag down the AGC line. Some people mistakenly lubricate these gears and saturate the sleeve...not a good idea. Get a trichlorethane or equivalent moisture displacement spray and clean off the shaft and gears, especially the phenolic sleeve under the gear.

From dsmaples@comcast.net Tue Apr 8 00:48:50 2003
Subject: [R-390] powerline noise - it's dead, I've killed it!

All: I had a Linksys hub that trashed everything across the HF spectrum. I got a 1-amp linear regulator board (kit mfr beginning with V...can't remember the name but I believe it's German. Vellemann???) and put it in a small box with a Radio Snack 6-volt transformer and such, and set the device to produce what the original switch-mode wallwart produced. End result...NO NOISE anywhere. For the Linksys stuff, and similar, that's an easy fix for switch-mode trash... Dave Maples

From tburr@dixie-net.com Tue Apr 8 15:03:10 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

Can anyone suggest/recommend a good basic list of "test" equipment to check the operation of the R-390A. Is the AN/URM-25 absolutely a must - or can anyone recommend a specific substitute type signal generator ? I have 2 R-390A's in storage that were operational years ago, and want to get them out put them to use ("If my back does not give out on me"). I plan to be asking a lot of "stupid" questions in the future, so please do not be too harsh on me. I am not a tech, but I am sincerely interested in learning about the R-390A. Terry.

From Tue Apr 8 15:11:51 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

wrote: > Can anyone suggest/recommend a good basic list of "test" equipment to > check the operation of the R-390A. Is the AN/URM-25 absolutely a must -

ISTR people swearing by (and some swearing at) their HP 8640B. I really think mine is the best non-synthesized RF generator I've used, in almost 40 years of pushing elctrons and making stuff work.

My AN/URM-25D is a fine piece of test gear, but the 8640B is IMHO at least one cut above. -- Mike Andrews

From cbscott@ingr.com Tue Apr 8 15:18:58 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

Terry, Welcome. While the AN/URM-25 is supposed the instrument of choice, it isn't required. A stable signal source with sufficient attenuation that can be matched to the various test points are all that is needed. The test procedures frequently mention the accessories that are part of the AN/URM-25's list of accessories, but they are not absolutely necessary.

I used an AN/TRM-1 to align my first R390A. I've since acquired a nicer GeneralRadio that I prefer and I plan to sell the AN/TRM-1. Some guy had a large inventory of AN/URM-25 generators a while back. Perhaps he still has some.

Ask any question(s) you want. The guys on this list stand ready to help! Barry(III) - N4BUQ

From r.tetrault@attbi.com Tue Apr 8 17:47:56 2003
Subject: [R-390] powerline noise - it's dead, I've killed it!

Good information Dave, My info with respect to the Ethernet spread spectrum architecture was entirely beside the point, I'd never thought of the Linksys power source: if there's a switchmode wall-wart in

your house, replace it with a linear! Bob

From pha@pdq.com Tue Apr 8 19:52:07 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

Terry, I like the URM-25 because, to be blunt, I'm not the brightest bulb when it comes to repair of RF requipment, and I like following the exact instructions with the exact equipment called for. But if you can ask questions and understand the answers like "how do I get 1 UV out of my framitz siggen", then you'll do fine with that approach, too. I think there is enough information in the archives to do basic alignment with no siggen, but an analog meter does help - the VOM I've got is too sensitive sometimes for alignment purposes. I use a TS-505 or a Simpson 260. Paul

From gwmoore@moorefelines.com Tue Apr 8 22:45:33 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

Well, Terry, Call me old-fashioned if you will, but I can't recommend anything better than the AN/URM-25. I own a 1960's vintage RCA WR-50B sig generator, and a General Instrument 1310?? (the nomenclature number is partially obliterated on the front panel) Audio generator. I also happen to be partial to Boatanchor test equipment for Boatanchors, such as using my trusted Simpson 260 meter, instead of a state of the art digital meter for measurement, because, in all probability, that was probably used in determining the resistance and voltage figures to begin with, when the manuals were first written.

There is such a thing as "how much precision is enough", and , since the R-390 was originally manufactured and tested with analog equipment, that is what the measurements were determined with. If one were to use one's modern digital meter, one can fall into tthe trap of "decimal madness" and take the precision way too far. Basically, there is no real need to look at all the decimal places when working on this equipment.

The same goes for a signal generator. The URM-25 is robust, rugged, complete with accessories, has built in modulation sources, and, like all tube equipment, rarely fails. I realize that some of my loyalty comes from having used this (the URM-25) and other such equipment in the Navy "back in the day", and finding it absolutely reliable, but that is the truth. It is reliable, and again, is what the manual, and most likely the manufacturers calibration and test department used when the 390's were shiny and new. < rant>< venting>

I also carry this same theme through my other test equipment. My scope is "hollow state", I have an L/C/R bridge which is also "hollow state" and a frequency counter similarly "hollow state. Although I have a full stable of up to date, state of the art, whoop-de-do computerized equipment, I still enjoy using the older equipment because, frankly, I enjoy using it, and enjoy the sights, sounds, and smells from "hot vacuum" and the deposits of many years of cigarette tar on various items. Although I no longer smoke, it brings back memories of far better times, when one was allowed to indulge ones pleasure without shrilly screaming soccer moms telling me what I should and shouldn't do. I also enjoy remembering the era when we did, actually, have a manufacturing base here in the good old US of A, and electronics people were a sought after commodity. < /rant> < /venting> (Big Evil Grin)

All the above being said, I can't think of a better signal source than the URM-25. Like the "Energizer Bunny (TM), it just keeps on going and going. The frequency range covers EVERYTHING in LF-MF-HF communications which I am liable to run into in the natural course of things. If one carries out proper maintenance, and uses deoxit, etc. etc, one doesn't have any problems. 73 es tnx de Greg Moore

WA3IVX, etc etc, etc.

"All that is necessary for the triumph of evil is that good men do nothing." --Edmund Burke

From dpg@coe.neu.edu Tue Apr 8 23:27:03 2003
Subject: [R-390] Polishing

My R-390 power supply chassis is blackened from a fire under the rectifier tubes. I've removed most of the soot with water and a Q-tip. Today I got the idea that I was going to use NEVR-DULL to remove the rest. Well, that it did, but it also removed the chassis 'yellow'. Now I have a part yellow, part silvery chassis. What is this yellow color? Does it (usually) come off whenever polished? Is there a need to keep it on? David Goncalves

From rbethman@comcast.net" <rbethman@comcast.net Tue Apr 8 23:12:39 2003
Subject: [R-390] Polishing

That "yellow" coloration is the "MFP" or Military Fungus Protection. Unless you plan on operations in a high humidity environment, just polish till your happy! Bob - N0DGN

From jamesmiller20@worldnet.att.net Wed Apr 9 00:25:37 2003
Subject: [R-390] Need 390a function switch wafer

I have a broken switch contact on the POWER-STBY-AGC-MGC-CAL rotary switch, and need to replace the wafer. The power switch is OK. Does anyone have a spare switch or wafer for this that they would be willing to sell? Thanks Jim N4BE

From barry@hausernet.com Wed Apr 9 00:32:44 2003
Subject: [R-390] Polishing

>From the "Yeah-But Department"

YEAH, go ahead and remove the rest of it, BUT, be careful. While virtually harmless when intact, that MFP stuff has some nasty ingredients, so we're told -- like maybe some mercury compounds and other things you should not breathe in or ingest even in trace amounts. Don't use a wire brush or sanding wheel. Keep it wet with cleaner so it doesn't go airborne.

Anybody remember "mercurichrome"? It was the lower-intensity, user-friendly alternative to iodine. Technically speaking, I suppose none of us should be here. Could be many bad things got worse over the last half century -- maybe one of those paradigm shifts. Barry

From R274C@aol.com Wed Apr 9 00:40:39 2003
Subject: [R-390] Polishing

barry@hausernet.com writes: > From the "Yeah-But Department" > > YEAH, go ahead and remove the rest of it, BUT, be careful. While virtually > harmless when intact, that MFP stuff has some nasty ingredients, so we're > told --

Uh-Oh.....I certainly hope that none of you/us sniffed that "poison sulphur" in the synthetic lubricants that we tend to use.....arrrghhhhhhhhhhh.....i can't breath.....ahhhhhhhhhh, ohhhhhhhhhh Les

From rdavis24@carolina.rr.com Wed Apr 9 01:00:51 2003
Subject: [R-390] Rack question?

Hello to all I have a nice condition 5' Motorola rack cabinet that I plan on using to store 3 R-390A's. How close can I mount them and not have to worry about heat problems if all three are running? Should I just mount two in there and leave extra space for air? It has two fans on it and im going to leave off both doors, so only the sides will be covered. Any help will be greatly appreciated. Thanks Ronnie ke4vpn

From r.tetrault@attbi.com Wed Apr 9 02:34:31 2003
Subject: [R-390] Rack question?

I'd try to ensure that the fans can push or pull the air past the radios, which pretty much means sealing it all around except for where the fans can have an intake and an exhaust. Usually the fans are exhaust fans at the top with the intake at the bottom, though some high heat racks were designed with the fans at the bottom pushing intake air through dust filters to exhaust at the top. YMMV. Bob

From chacuff@cableone.net Wed Apr 9 02:41:47 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

Greetings group, I used a URM/25 for a while until I picked up a nice HP-606A.(gave away the 25) Probably the same vintage as the R-390A....larger than the URM/25 but I think easier to use. (personal opinion) I also have a HP-8640B and love it but it don't go down to 500Khz...unless you use the audio out as the generator at that freq.

From hankarn@pacbell.net Wed Apr 9 02:58:38 2003
Subject: [R-390] Rack question?

They were designed to be mounted in racks one on top of the other and were lined up in some rack after rack. They ran for years like that until all of the worry wart hams got to the point of re-engineering them . Just remove the top and bottom covers and put the sides on and if you have one put in a muffin fan at the top to pull some air through them.

Oh yeah the redesign engineers are going to tell you to control the voltage. plug them and let them go. One guy that used to be here had one in a rack of equipment with unregulated power that had been running 24/7 for over 5 years with out a failure.

Look at the specs for voltage, very wide SAFE field of operation.

Let all of the re-design guys cause you to get an ugly "ULCER because you put 119.965 volts into the radio. Fill up the rack and go for it. Hank KN6DI

My double layered nomex suit is on so fire away.

From tburr@dixie-net.com Wed Apr 9 03:44:02 2003
Subject: [R-390] R-390 Polishing

Dave Think I used some of this yellow stuff in the military, which was a yellow color zinc-chromate material. Used by military and commerical on exposed aluminum and ferrous metal surfaces for the purpose of corrosion prevention. Not sure if this is the same stuff as is on the R-390 chassis, as it appears to be some sort of anodizing, and could very well be a zinc based anodizing process. I do know the zinc-chromate coating was very effective, but toxic, and has since been banned by EPA. It was used to reflect / dissipate heat on military commo equipment, as well as corrosion prevention on aircraft, and certain military hardware. It will usually be greenish or yellow in color. I did know a source for this material. You can no longer get it down at the local automotive paint store. I stripped and coated a Ford A Model with it about ten years ago. It is no longer commercially available. Contact me, if interested, and I will see if I can find the source for the zinc-chromate. It doesn't take much to do the job. Terry.

From chacuff@cableone.net Wed Apr 9 04:08:49 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

Hi All, Mike is right...the 8640B does go down below 500Khz. I was confused...I picked up the 606A because of several radio's I have that use 50Khz IF's....not 500Khz as I stated. I have a couple Halli's and HQ series Hammarlunds....

All that said...the HP-606 is a good alternative for the URM/25 if one wants something closer to Lab Grade for someone working on an R-390X series or any of the above mentioned. Cost is about the same... Cecil...

From myoung76@bellsouth.net Wed Apr 9 04:13:38 2003
Subject: [R-390] R-390 Polishing

I am thinking that what we have on many of the R390s is alodine process. Invented in the late 50's and very popular in the 60s (may still be) it is/was a strictly chemical process. The finished product was non-toxic. Another alternative was anodizing (NaOH etch, followed by electoplate process in a sulfuric acid bath, then wash then actual dye dip then sealing the pores. Hey...I did this in my basement shop as a kid. Worked great. To complicated though. The Alodine process (patented) much easier and faster. Mike

From jonandvalerieoldenburg@worldnet.att.net Wed Apr 9 05:25:30 2003
Subject: [R-390] Polishing

Barry- MFP is a alcid varnish product using mercury compounds for the fungal resistance. These varnishes are very solvent resistant, and are evident as a semi clear yellow tinted over coat on all components of a treated radio, most treated radios are stamped "MFD" in a diamond shape on the chassis after treatment. Alodineing is a chemical process similar to anodizning and is more likely to be damaged by accident, MFP is very tough to remove. Jon AB9AH
Central Daylight Time,

From Barry Hauser" <barry@hausernet.com Wed Apr 9 06:13:08 2003
Subject: [R-390] Polishing

The lights are still on in the "Yeah-But Dept.": Yeah part: Yeah, Jon, there's the MFP and there's the alodinine and anodizing. All are fairly tough to remove, though the alodining can be removed by accident. Anodizing is a bit more like plating and a somewhat more durable.

The "but part": While the MFP coating is fairly solvent resistant, it can start to flake off due to a deteriorating bond -- particularly if coated over raw un-alodined/anodized metal. From the original post, it sounded like this had already started. Generally, to remove the rest of it, abrasives are in order, or some kind of scraping action. Either way, when that MFP varnish flakes or is sanded, the particles can become airborne.

As a fix for either the MFP or alodining coming off, it might make more sense to overcoat it with a tinted varnish or polyurethane to even out the color and seal any MFP. I haven't done this yet, but I do have some gear with MFP that's flaking. I think they still sell tinted polyurethane for one-step wood finishing. It should be possible to get a pretty good color match. Not sure how it stands up to heat, though. Any recommendations from someone who's been there, done that? Barry

From jlkolb@cts.com Wed Apr 9 06:20:27 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

Most any signal generator that covers the required frequencies will do for an alignment. To measure the receiver sensitivity requires a well shielded unit with a good attenuator. The Heathkit lab grade signal generator need not apply here.

URM-25's were the standard Navy signal generator during the era of the 390's so are in the offical proceedure, but not required. They were widely available surplus and cheap so became popular with the radio hobbyist.

Best generator here is a Logimetrics I picked up at the swap meet for $20. a few bad spots on the output attenuator, but easy to use an external attenuator instead.

Anyone interested in a HP-606A for $ 50? Pick up only, near San Diego. John

From Aidehua@aol.com Wed Apr 9 14:59:03 2003
Subject: [R-390] Need S Meter for SP600

Looking for one of these, or a repair place for it. Please help... Thanks, Ed NI6S

From dpg@coe.neu.edu Wed Apr 9 13:38:56 2003
Subject: [R-390] Re: Polishing

From what I remember from past projects, the anti-fungal varnish usually appeared as a light brown (if thick enough) coating on the electronic components and underchassis. It appears that that is the case on this radio as well, on the few Motorola modules that I have in the radio. I think what I have is a thin plating (alodine, it seems) on all of the metal surfaces. The overall color of the metal is a very light yellow, but when viewed closely, a rainbow of colors can be seen - just like a metal plated camera lens. I've seen the same rainbow on the metal frames of 80's VCRs and audio equipment.

I'm not too worried about reapplying it; if there is a cheap and safe (no zinc chromate, thanks) way to reapply it, I'm all ears. Until then, I'll be limiting my polishing where needed; still have lots of it to do in this beat-up radio.

I was working on the Crystal Oscillator cover, with the black painted numbering and varnished labeling; both are pretty resilient to NEVR-DULL polishing. I had expected quite the opposite, especially on the varnished label. Now the cover is shiny! Yippeee. David P. Goncalves

From ai2q@adelphia.net Wed Apr 9 15:16:27 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

The URM-25 and other generators like it are really FB, and I have a URM-25 on my bench, but the fact is that you can align an R-390 or '390A very adequately with an old Eico or Heathkit signal generator too. Other companies made these low cost instruments too, and they're all adequate for an acceptable job on R-390 Series receivers. Vy 73, AI2Q, Alex in Kennebunk, Maine .-.-.

From jtone@sssnet.com Wed Apr 9 16:12:45 2003
Subject: [R-390] Need S Meter for SP600

Ed, Am sure there will be other posts re meter repair...but, a few years ago, I called Tripplet ... don't have the phone number or other contact info now...but should be some Google links some place...

They advised they used a shop in New York City that specialized in analog meter repair. I used them to repair an analog RF Watt meter that had an open thermocouple...a bit expensive, but the meter was large, had an unsual face and was part of a lab made, dry dummy load...so I went for it and didn'e eat for a week or two..

Sad part I can't find the addressing info...so suggest u try one of the standard meter companies and see if u can turn up such a shop... Good luck es 73, Gene

From jbrannig@optonline.net Wed Apr 9 16:36:32 2003
Date: Wed, 09 Apr 2003 11:36:32 -0400
I also have a URM-25 and like it. However the older generators also did a good job. The calibrated output and attenuators are useful for trouble shooting. Jim

From jbrannig@optonline.net Wed Apr 9 16:38:13 2003
Subject: [R-390] Re: Polishing

I use Simple Green to clean chassis and panels. It is applied with a broad artists brush, allowed to sit for a while and rinsed with water. Jim

From bill@iaxs.net Wed Apr 9 14:23:56 2003
Subject: [R-390] Polishing

I think Jon is right. Perhaps the yellow that came off was tobacco? Regards, Bill Hawkins

From jtone@sssnet.com Wed Apr 9 16:55:12 2003
Subject: [R-390] Re: Polishing

Gents, There is info out there in cyber world on doing the Alodine...and I recall that Hank or someone in recent past did it/had it done for top and bottom covers for our big pets...

Also...lots of info...maybe the Alodine process for fun and restroation on Varmint Al's web page...I think that's where I may hve seen it....?? So much info out there it's tough to keep track ... btw...if anyone is in to using small lathes...for fabrication of broken parts...check "mini-lathe.com" for great intro and hands on how to for the popular mini lathes for not too much loot available from a variety of houses...great reading and info..plus links to more good stuff... 73, Gene

"Scott, Barry (Clyde B)" wrote:

From k6fsb@juno.com Wed Apr 9 18:37:52 2003
Subject: [R-390] Re R-390 Polishing

A possible replcement for the yellow/gold color is a dyed musical instrument laquer, it is what i'ne been using on the newly machined parts retrofitted to the chassis (r390A C551, r390 C546/7, nonoriginal IF covers), gold dye added to the laquer seems to match quite nicely, holds up well in the heat , and if cleaned properly prior application adhears quite well. being i repair musical instruments and having to do laquer work, it was a logical try, there is also an epoxy available. Ron
From w5or@comcast.net Thu Apr 10 21:06:21 2003
Subject: [R-390] List Administravia

Please note that earthlink.net is mostly refusing email from ANY qth.net mailing lists, and your address has been dumped from this and other lists hosted at qth.net. You have to re-subscribe if you had a earthlink.net address.

From zelickr@biohazard.pdx.edu Fri Apr 11 00:46:01 2003
Subject: [R-390] Suggested Test Equipment for R-390A Alignment ??

Hello all,

Speaking of generators, I have a very nice HP 8640B, the source that several folks have been praising. Indeed, I like mine very much and would agree that it is probably the best generator I have owned.

One advantage of this design (a cavity resonator) is the high spectral purity. It can be a plus when tuning selective filters. You can get high output without a lot of spurs only 30 dB down that can lead to misalignment.

But here is an issue with my unit: It leaks RF!!! Has anyone else had this experience with an 8640?? I can't believe it is supposed to do this, yet I can find no fault with my specimen.

It is lot leaking out the attenuator, which is well calibrated down to 0.1 microvolt. Rather it seems to be leaking out the case. Switching off the RF using the little slide switch next to the output connector does not affect the leakage. Thanks for any suggestions. Cheers, Randy=

From eldim@worldnet.att.net Fri Apr 11 02:11:22 2003
Subject: [R-390] HP 8640B RF Sig Gen Leakage???

Hello Randy, What are you using to discern the RF leakage from the case of your 8640B? Is the leakage coming from a particular section or is is uniform over, across, around, etc. the generator? I'll present this to our resident 8640B expert and see what his experience, and thoughts are. In the interim, I will try to duplicate your case with my HP 8640B as soon as I hear from you, and what you are using to measure this leakage with. 73, Glen Galati, KA7BOJ

From zelickr@biohazard.pdx.edu Fri Apr 11 02:19:08 2003
Subject: [R-390] HP 8640B RF Sig Gen Leakage???

Hi Glen, Here is the routine: I tune up a radio, say a VHF unit, and measure sensitivity. Then I disconnect the generator and hook the radio to a small shop antenna. Presto - an on-channel carrier. Run the 8640 attenuator to zero, or switch off the RF, carrier still there. Change frequency of the 8640, carrier gone... switch off the 8640, carrier gone. Cheers, Randy=

From kherron@voyager.net Fri Apr 11 02:51:36 2003
Subject: [R-390] HP 8640B RF Sig Gen Leakage???

>Hi Guys!! Here is the routine: I tune up a radio, say a VHF unit, and measure sensitivity.

I used to have the same problem with my HP-606B. On the higher freqs is where the problem showed up. Never did find the problem, though I suspected the line bypass caps and the grounding network in the shop. I haven't checked my HP8640B on VHF freqs (above 100 MHz) but I do know that it does not do that at 30 MHz and down. Here's a thought, though. Are you using an external timebase that has a leaking cable connected to it?? I did discover some cables that decided that the shielding wasn't good in and I replaced them. Thanks!! Kim Herron 1-616-677-3706

From jamesmiller20@worldnet.att.net Fri Apr 11 02:35:38 2003
Subject: [R-390] HP 8640B RF Sig Gen Leakage???

Actually I have noted that with mine using a 390a. The 390 isw so sensitive that it picks up even low leakage.

From w5or@comcast.net Fri Apr 11 15:38:14 2003
Subject: [R-390] R-390A Intercept Position

Richard Dillman and other members of the Maritime Radio Historical Society work to preserve the famous AT&T maritime station KMI. They had an excellent listening location on Point Reyes. Scroll down to the third picture at this page: <http://radiomarine.org/KMI/>

for an unusual R-390A accessory. I want one of those spectrum scopes!

If you have the time, take all of Richard's radio tours. Fascinating antennas on display. I have tried to

copy KPH's 500kc signal (on an R-389, of course) during their ceremonial transmissions but no luck so far. The R-390A easily receives those KPH transmissions on HF.

From ham@cq.nu Sat Apr 12 21:07:31 2003
Subject: [R-390] HP 8640B RF Sig Gen Leakage???

Hi, Another way to do the same thing is to use a VHF or UHF pager. They are amazingly sensitive. Back when I was with Motorola they would go over each new generator with a pager before they would trust it for leakage.

There are two basic ways to get a generator to radiate:

One way is to feed signal back down the supply line. This is fairly rare in the case of stuff like the 8640. Most of what comes back out the line cord is fixed frequency stuff rather than the variable output frequency. It can be a problem in generators that are a bit simpler in design.

The second way for the generator to radiate is a defective shield. It may be a piece of coax or a coax connector. It probably is a cover plate or push on cover. After years of maintenance things don't always get put back on quite right every time. Also things like emi gaskets get dirty or bent. Eventually the generator starts to leak.

Here's another thought - Do you have a military version of the 8640? If so it's only rated for leakage if it's still in the big ugly yellow tub. I don't know why that's true, but I"m told it is. Take Care! Bob Camp KB8TQ

From courir26@yahoo.com Sun Apr 13 00:06:02 2003
Subject: [R-390] Iraqi Tactical Radios

NBC had a glimpse of a stash of Iraqi tactical radios on the news tonight, looked like FM gear. Looked more modern than those lame Iret portables they had in the last war, but I wan't able to ID them. Say a HF portable on the news last week. Tonight they also showed boxes of gold plated, inscribed AK-47's at Saddam's son's crib. Wonder what those cost and if they will make it back to the US?

Did't see any 390's in this conflict.

What kind of gear are the Humvees carrying? I see a lot more antennas on vehicles on them than you see at a typical post hurricane deployment. Do they have HF on board now? 73 Tom

From w9wis@charter.net Sun Apr 13 00:29:53 2003
Subject: [R-390] Iraqi Tactical Radios

> What kind of gear are the Humvees carrying? I see a lot more antennas on > vehicles on them than you see at a typical post hurricane deployment. Do they > have HF on board now?

I saw a Bradley with a AS-2259 NVIS HF antenna set up near it so I assume they were using HF as well as other freqs. ... they also use quite a bit of SatCom gear... Mike, W9WIS

From Robert Nickels" <w9ran@oneradio.net Mon Apr 14 02:25:19 2003
Subject: [R-390] R-392 Audio Problem

I just noticed that my R-392 has an audio problem. The receiver seems to work OK otherwise, except the audio level is very low, barely audible on LS-166 speaker at full AF gain. The odd thing is, there's not much distortion until you crank it wide open - just a fraction of the normal amount of audio power. Before I tear into it, I wonder if anyone has run into this problem or has any suggestion of what might cause it. Thanks and 73, Bob W9RAN

From cthulhu@fhtagn.org Mon Apr 14 02:34:54 2003
Subject: [R-390] R-392 Audio Problem

Does it have the "stock" tube audio output or the later solid state module? If it has the tube AF, what is your place voltage going into the RX?

From zelickr@biohazard.pdx.edu Mon Apr 14 06:48:24 2003
Subject: [R-390] update: HP8640B RF Sig Gen Leakage

Hello again, Thanks to all who made suggestions to remedy the generator leakage problem. It looks like the leak is plugged!

Here is the tale.... I made a sniffer out of some double-shielded coax and a miniature antenna at the end. Then I tested the generator at 440 MHz where the problem was the worst, using a very sensitive 2-way radio as the detector.

There was RF floating around the case at different points, but the worst leak by some margin was coming out along the shaft of the freq calibration knob. This is the tiny knob just to the right of the frequency display. If you turn it, the "uncal" light comes on. Next to that is a little hole for frequency calibration.
So I popped the hood to look for problems. This 8640 is quite a nice one, just a year out of cal with the stickers still over case screws. Clean as can be inside. So rough use and/or corrosion was not a likely issue.
I took the cover off the frequency counter section which is also where the calibration control shaft enters. Inside there is a small spring leaf that grounds the shaft, which became immediately suspect. It was already clean, but I cleaned it more and added a little stabilant. Still RF leaking out.

Then I re-surfaced the edges of the casting which forms the cover of the counter section and tightened all the screws down. Still leaking.

Finally, I made my own shaft grouding gizmo from a piece of shim bronze. I captured it with the screw that faces front and holds the two halves of the counter case at their seam just right of the display. The other end I notched so it would rub against the shaft. Unlike the HP grounding shim, mine is mounted on the outside of the counter case. No leak!!

I sniffed all around the 8640 and discovered that in addition the top cover must be very well secured, otherwise more minor RF leaks present in the interior get out. These leaks seem to be coming from several sources, which I did not track down. But with the outer covers in place, I realized satisfactory behavior.
The bottom line? I am a bit perplexed. Here is a generator of the highest quality and certainly appears as

though attention was paid to every detail of construction. Solid castings held with many screws, gold plated circuit boards, best coaxial interconnects, and so forth. My specimen is extremely clean, unmodified, unabused and yet *barely* can keep RF from leaking out. Only with every little detail of grounding perfect does it not radiate. No overdesign there!

I might speculate that the counter is the problem. The 8640 started life with a slide-rule frequency display (the A model) and likely was retrofitted with the digital counter to make the B model. Perhaps it was just too early in the days of RF counter design to seal all the RF leaks. Just for fun I ran the generator with the cast lid completely off the counter module. GOBS of RF pour out. C'mon HP!

As I final note I want to plug the perverse obsession I have of saving little mechanical parts from cannibalized equipment. There is an old military transit case in the corner of my shop where this variety of schmutz accumulates. I'm sure it will be the first thing my kids pitch in the dumpster when I go to the big test bench in the sky, but it took but a few minutes of rooting through the six inches of levers, pawls, shafts, couplings, washers and (very) etc to come up with the magic grounding shim. So there you have it. Cheers, Randy=

From billsmith@ispwest.com Mon Apr 14 06:49:24 2003
Subject: [R-390] R-390A Geartrain CD-Rom

I'd like to thank Scott Seickel (again) for the CD-Rom filled with pictures depicting the rebuild of an R-390A gearchain. They are so clear, it tempts one to perform a rebuild just to go through the procedure.

Is there similar information for the R-390? 73 de Bill, AB6MT billsmith@ispwest.com

From ai2q@adelphia.net Mon Apr 14 14:51:50 2003
Subject: [R-390] update: HP8640B RF Sig Gen Leakage

Good work Randy. Thanks for taking the time to post a detailed explanation of your findings and approach. = Vy 73, AI2Q, Alex in Maine .-.-.

From ceripel@yahoo.it Mon Apr 14 15:40:05 2003
Subject: [R-390] Alinement of First mixer and Second Mixer

Buon Giorno, Sono in possesso di un Collins r-390a, non ascolto quasi nulla nella gamma che va da 05 a 8 Mhz,desiderei sapere quale è la procedura di allineamento del Primo Mixer V202 (Z213) e del Secondo Mixer V203 (Z216), mentre dalla gamma da 9 mc a 32 mc la ricezione è Ottima ed il segnale è robusto. Grazie a tutti, Matteo

From Mon Apr 14 16:44:27 2003
Subject: [R-390] Alinement of First mixer and Second Mixer

wrote: > Buon Giorno, > Sono in possesso di un Collins r-390a, non ascolto > quasi nulla nella gamma che va da 05 a 8 Mhz,desiderei > sapere quale è la procedura di allineamento del Primo > Mixer V202 (Z213) e del Secondo Mixer V203 (Z216), > mentre dalla gamma da 9 mc a 32 mc la ricezione è > Ottima ed il segnale è robusto. > Grazie a tutti, Matteo

Looks like this gent. has an R-390A which is deaf from 5 to 8 MHz, and wants to know the procedure for aligning the first and second mixers, if my high-school Latin is any guide. Mike Andrews

From Miguel Bravo" <mbravoc@wanadoo.es Mon Apr 14 17:23:10 2003
Subject: [R-390] Alinement of First mixer and Second Mixer

Prego Matteo prova questo traduttore per le risposte. Translated with http://babelfish.altavista.com/babelfish/tr and then adapted a bit. (now instead to be in good Italian is in my bad English!).

I am the owner of a Collins R-390A, which is almost deaf in the range that goes from 0,5 to 8 Mhz. I want to know the procedure of alignment of the first mixer V202 (Z213) and second mixer V203 (Z216), while in the range from 9 mc to 32 mc the reception is optimal with very strong signals. Grazie a tutti, Matteo

From billsmith@ispwest.com Mon Apr 14 21:23:17 2003
Subject: [R-390] Manufacturer of R390A

A little late, but.... Motorola ???? 14214 PH-51-93 Serial no. 4700 (it really is a mutt, has MO SIS 101 / MWO 11 / 5820 294 35-2 stamped on front)

From jbrannig@optonline.net Mon Apr 14 22:52:54 2003
Subject: [R-390] Another BA

This weekend I was in Boston looking at colleges with my daughter. I snuck away Sunday to visit "Old Ironsides", a very worthwhile trip. Moored next to the Constitution was a WWII destroyer (I forget the name) Mounted in the bulkhead of the destroyer's ward room was a receiver I did not recognize.

The tag identified it as a RBO-2 by EH Scott. It had a slide-rule dial that was marked with the Ham and short-wave bands. The frequency coverage was BC to 25 megs or so. There were "bass" and "treble" controls, so it appears that this radio was used for news, music, etc. rather than ships communication. Has anyone run across one? Jim

From dpg@coe.neu.edu Mon Apr 14 20:28:04 2003
Subject: [R-390] Counter Cover - E Clips break easily?

Hello All, This evening, after some success getting the grime off of the panel, I began to work on the counter (dial) cover, removing the glass, E clips and copper glass keepers. After finishing up, I put the clip in place, beside the black post. I put my one tip of the needle-nose pliers on the black post, the other on the middle of the clip, and tightened.

CRACK. The damn clip cracked in half! Tried the other one, did the same thing! Now I've lost both. Now the questions:

1. Since my method (worked before on other radios...) cracks the clips, how do I put them on? Get one side into the post groove, then pull and slip the other one in?

2. Is it a standard size that can be purchased out of a catalog?

3. Anybody got spares? David G. Goncalves

From ezeran@concentric.net Tue Apr 15 04:14:13 2003
Subject: [R-390] Another BA

Subject: [R-390] Another BA ...> Mounted in the bulkhead of the destroyer's ward room was a receiver I did not recognize. The tag identified it as a RBO-2 by EH Scott. .. >Has anyone run across one? Jim

Jim, I have one. It was supposed to be a 'morale' receiver for crew entertainment. Scott made hay off their 'low radiation' receivers as there was fear that receiver osc. radiation could be tracked by enemy submarines. You can see some info @: http://www.maritime.org/radio-rbo.htm EdZ

From buzz@softcom.net Tue Apr 15 04:42:00 2003
Subject: [R-390] WTB R-392 tuning slug

Listers, I need a tuning slug with a red dot for Z223 located in the rear right hand corner. Thanks, Buzz

From buzz@softcom.net Tue Apr 15 04:46:51 2003
Subject: [R-390] Counter Cover - E Clips break easily?

I've had that happed to me also. I can get most "E" clips from the little boxes in the nut and bolt isle of my local hardware store. Lowe's also has them but I'm not sure about the Ho Depot. Regards, Buzz

From jbrannig@optonline.net Tue Apr 15 11:20:58 2003
Subject: [R-390] Another BA

Thanks for all the info, I guess it is not as rare as I thought. In the "emergency" radio room was a sign that said "this equipment may be old, but it still works. Don't fool around with it unless you know what you are doing" A good motto for all BA's Jim

From 1.baldi@dottorbaldi.it Mon Apr 14 22:59:03 2003
Subject: [R-390] Manufacturer of R390A

Hi to all, here, in Italy, I have a Collins Radio Company R-390/URR Order 14214-PH-51-93S/N 1205. Federico IZ1FID

From hankarn@pacbell.net Tue Apr 15 14:47:13 2003
Subject: [R-390] RE: ENGRAVED PANELS NOW is THE TIME

Now is the time to send in your panels for engraving. Seems like after all of the hot air running around about wanting an "Engraved Panel" that only 17 people are willing to order them The pricing for this run is $150.00. per panel. This as per previous posted information. If you order later the cost will be $250.00 plus UPS due to charges for single run and setup.

Please send the panels and money to:
Dan Arney
c/o Global Pack & Mail
21315-R Saticoy St.
Canoga Park, CA 91304-5685

Now is the time, Hank KN6DI Thanks to all that are supporting this effort, it is appreciated.

From roy.morgan@nist.gov Tue Apr 15 14:57:50 2003
Subject: [R-390] Counter Cover - E Clips break easily?

wrote: >I've had that happed to me also. I can get most "E" clips from the little >boxes in the nut and bolt isle of my local hardware store.

Try also Small Parts in Florida: http://www.smallparts.com/ Roy

From jtone@sssnet.com Wed Apr 16 00:05:14 2003
Subject: [R-390] Another BA

Jim, There were other modles of the Scotts too...Have two SLRM types...also said to have served on the "Liberty Ships" as moral radios...per the note that alreadys said they shielded local oscilators...detectable at some distance by German U Boats... They are not rare, but nice to find and acquire...I'm looking for a schematic for mine...one has distorted audio...but hate to go fishing without a road map... 73, Gene W8KXR - - -

From tbigelow@pop.state.vt.us Wed Apr 16 20:43:09 2003
Subject: [R-390] BAMA download question

Okay, sorry for the cross post but I'm hoping someone can help me figure this out. I'm trying to download a manual from Ken's BAMA site and having trouble. It's listed with a .djvu (dejavu?) file type, which sounds like something from the distant PC past. I've tried saving in in different formats, but then I get a message saying 'file type not readable.....or possibly corrupted....". Has anyone else run into this before? Thanks - de Todd/'Boomer' KA1KAQ

From chejmw@acsu.buffalo.edu Wed Apr 16 20:49:42 2003
Subject: [R-390] Re: [Milsurplus] BAMA download question

search google for djvu, that takes you to the site with the plugin, for downloading. download it, install it, then go back to BAMA and double click on the file it brings up the plugin reads the file and show the info contained therein. I don't remember the url for djvu sorry. Jim WB2FCN

From tbigelow@pop.state.vt.us Wed Apr 16 21:05:56 2003
Subject: [R-390] Re: [Milsurplus] BAMA download question - Thanks!

Wow, talk about service! Many thanks to everyone who responded. I 've downloaded things from BAMA before with no problem, but it's been a while since I read the homepage. Followed a link right to

the product I wanted, then rapidly became confused. For some reason I thought this was a really old file type - cold swear there was a dejavu product back in te early/mid 90s maybe like java? *shrug* Anyhow, thanks again to all. It certainly pays to read *and* stay informed. de Todd/'Boomer' KA1KAQ "This is like deja vu all over again" - Yogi Bera

From ham@cq.nu Wed Apr 16 23:35:11 2003
Subject: [R-390] update: HP8640B RF Sig Gen Leakage

Hi, Hey, good job!!! This is the same sort of thing they used to have to do back at Motorola on the same gear fresh from HP. The bottom line seems to be that most people don't check really low levels with this kind of gear. Take Care! Bob Camp KB8TQ

From Thu Apr 17 02:00:21 2003
Subject: [R-390] update: HP8640B RF Sig Gen Leakage

wrote: > Hi, Hey, good job!!! This is the same sort of thing they used to have to do back at Motorola on the same gear fresh from HP. The bottom line seems to be that most people don't check really low levels with this kind of gear.

Maybe this (leakage) is why I keep running out of attenuator when I try to do sensitivity measurements on my R-390. -- Mike Andrews

From roy.morgan@nist.gov Thu Apr 17 22:33:42 2003
Subject: [R-390] BAMA download question

you wrote: > BAMA site and having trouble. It's listed with a .djvu (dejavu?) file > type, which sounds like something from the distant PC past.

Todd and Anchorites, The DjVu file format is enabled with a browser plug-in that you can download from the bama site.

At the website access point, http://bama.sbc.edu/ Look for "To Print and View BAMA Manuals You Need A Free Viewer" and click that link.

The viewer's direct link is: http://bama.sbc.edu/viewers.htm

This page has links to the folks who create the thing. You can get a companion utility to create the files also. DjVu files are normally quite a lot smaller than comparable .GIF or. JPG files, as I understand.

NOTE: When viewing DjVu files in your browser and wanting to PRINT them, do NOT use the browser's print button.. but use the special print icon in the plug-in's toolbar. Have fun! Roy

From billsmith@ispwest.com Fri Apr 18 05:02:15 2003
Subject: [R-390] Fw: [K6BW] Some helpful radio hints

Ideas from one of the K6BW members, a California Ham club. They sound good to me.

> Here are a few things I have found over the years. Hope you find something useful here. Maybe some others here can pass on some helpful hints.
>
1. If the display of your HT or mobile has been slightly scratched, try polishing it with Brasso metal polish.
2. Use a small length of surgical tubing or automotive vacuum line as extention for small knobs. Makes them muich easier to grasp and turn. I learned this one from the Sheriff's deputies in Napa.
3. Use the same tubing as shaft couplers to provide insulation on things like variable capacitors. This will also allow for some offset betwees the shafts.
4. To really clean up glass that has a dirty film on it that won't come clean by other means try using a product called "Bar Keeper's Friend". Works really well on the car's windshield to remove road film.
5. To lubricate the gears and other mechanical parts of the older military radio equipment (R-390, R-1051 and such) I use a mixture of Marvel's Mystery Oil and Mobil 1 synthetic gear oil mixed in equal amounts. Really keeps the parts operating smoothly and does not gum up.
6. To clean the mechanical parts of the above mentioned radios, go to an automotive paint store and get some wax and grease remover. This is used before painting to clean the surface. It will not harm most painted surfaces. I have not had any trouble with it bothering the lettering or laquer on the coils and chassis of my R-390. It will really cut through the old hard grease. (PPG number DX-330)
7. To lubricate coil forms to allow the slugs to move freely, like in the rack on a R-390, carefully clean the coilform and them dust it lightly with ground mica. This is available from gun shops with a good selection of reloading supplies.
8. A reat product for all around corrosion prevention and lubrication is called Corrosion-X. It is available ar marine supply houses. I use it on everything from guns to autmotive to electronics. It can be used on jsut about anything. If applied to the end of a piece of coax when the connector is put on, water will not migrate into the cable if it becomes exposed to the elements.

73 de KD6KML Josh Heide

From jbrannig@optonline.net Fri Apr 18 12:49:04 2003
Subject: [R-390] Fw: [K6BW] Some helpful radio hints

To really clean up glass that has a dirty film on it that won't come clean by other means try using a product called "Bar Keeper's Friend". Works really well on the car's windshield to remove road film. Mix with water to form a slurry and rub with a sponge. The windshield will look like it came from the showroom. Jim

From ham@cq.nu Fri Apr 18 20:28:40 2003
Subject: [R-390] update: HP8640B RF Sig Gen Leakage

Hi, Any time you are working on a sensitive radio it's a good idea to check for stray pickup. The R-390 isn't as well shielded as it might be and as this thread has demonstrated there are problems with signal generators as well.

A simple quick check is to pop the coax off of the generator and then touch the shield of the cable to the chassis of the generator. That way you have the same ground loops set up when you do the check as when you do the test. If all is going well you should be able to crank the generator output up fairly high before you hear anything in the radio. You should not be able to hear a difference when you power cycle the generator.

If you fail the test then a quick solution is often an attenuator at the input to the radio. This obviously

will only work if the signal is getting in through the antenna and not if it's coming in through the power cord. If it's still a problem then simple separation of the generator and the radio often helps. Filtering type rfi/surge suppressors also can come in handy.

None of this is specific to any one R-390 (A or not an A) or HP-8640. All are usually good pieces of gear. Any of them can have problems and it's a good thing to check when you are doing work. It can save a *lot* of time .... Take Care! Bob Camp KB8TQ

From jamesmiller20@worldnet.att.net Sat Apr 19 09:48:52 2003
Subject: [R-390] Frequency Shift With AGC Level

I've noticed that with the BFO on a strong carrier, when I lower and raise the RF Gain, there is a slight change in beat note pitch, maybe 100 cycles or so. This doesn't happen on my other 390a. Have swapped IF modules but no change Only does this on the lower bands where I think an extra mixer stage is switched in, so I suspect gain changes in the RF deck are maybe pulling the 10 Mhz oscillator slightly. The receiver has very good sensitivity. Bad tube maybe? Any ideas? Jim N4BE

From root@al.tirevold.name Sun Apr 20 14:52:08 2003
Subject: [R-390] Fresh "Pearls"

Folks, Wei-i Li has provided his latest quarterly "Pearls" of wisdom. Two new categories were added: Resistors and knob-painting. Enjoy! http://www.r-390a.net/Pearls

From Darryl Jones" <sherri-darryl@erols.com Sun Apr 20 16:30:20 2003
Subject: [R-390] New owner with (probably dumb) questions

Hi, I just acquired my first R-390A on Friday for the princely sum of $2 LOL! Well, as you'd expect with a rig you only paid $2 for, there are things that are missing - a screw from the front panel, and most notably the IERC tube sheilds. I was wondering if anyone knows of a source for a complete set (these are all silver) or maybe even has a spare set FS?

My other question is has anyone encountered a bad Dial Lock, and if so, how is it fixed? The only other thing is the Zero Adjuster and Antenna Trim units...both go round 360 degrees. I'm assuming that the Antenna Trim is supposed to stop at -4 and again at +4 as that's where it's marked, as well as the Zero Adjust? Or do I have a problem with these?

I changed the power cord to 3 wire as per mil spec, and fired it up, but some of the tubes that tested as "good" (upper 60's) seemed to balk and I don't have any audio at all, and the Carrier Level meter is around the 60 mark with no antenna plugged in at the back. Thanks for your time, Darryl

From Sun Apr 20 16:51:25 2003
Subject: [R-390] New owner with (probably dumb) questions

wrote: The only other thing is the Zero Adjuster and Antenna Trim units...both go round 360 degrees

If your new rig has an Antenna Trim control, then it's not an R-390A, but the less common and (IMHO, anyway) more desirable R-390 -- unless you have a variant I never heard of. WHat does the

nomenclature plate say, _exactly_?

Antenna Trim on mine does have unlimited travel, but the Dial Lock does _not_: yours should stop after a reasonable number of turns clockwise. It pushes in on a clutch that disengages the frequency indicator from the tuning mechanism, so that one can set the numbers to some multiple of 100 KHz, then turn the Zero Adjuster to disengage the clutch and set the electronics to that frequency without moving the numbers from where they're set.

Dial Lock is just a mechanical clamp that closes on a disc attached to the main (Kilocycles) tuning shaft; it's in two parts, plus a shaft attached to the Dial Lock knob, and it may be that the moving part of the clamp is missing or mispositioned.

> I changed the power cord to 3 wire as per mil spec, and fired it up, but > some > of the tubes that tested as "good" (upper 60's) seemed to balk and I don't > have any audio at all, and the Carrier Level meter is around the 60 mark > with > no antenna plugged in at the back.

It is possible -- even probable -- that the power supply filter caps, and many other caps in the radio, are leaky and/or out of tolerance. The filter caps can be re-formed: bring the rig up _slowly_ on a Variac, starting off at something like 50VAC input.

You know, I hope, that the chassis will be AC-hot (about 55VAC) if the rig _isn't_ grounded, and that if it's pugged into a circuit protected by a Ground Fault Interrupter, then the GFI will operate every time you turn it on. -- Mike Andrews

From ham@cq.nu Sun Apr 20 18:07:14 2003
Subject: [R-390] New owner with (probably dumb) questions

Hi, Sounds like you got a good deal. If you want to double you money I suspect there are several of us on the list that would be glad to take the poor beast off your hands :)

The R-390A does have an antenna trim. It is located directly above the nomenclature plate dead in the top middle of the front panel. Continuous (360 degree) rotation of this control is normal.

Stripped dial locks are not all that unusual on R-390A's. The assembly is available from multiple sources here on the list for a minor amount of money.

The carrier meter sitting at an odd position is simply a sign of the zero adjust pot not being set properly for the way the radio is operating. I suspect you have some other problems that may have the levels messed up in the IF. Simply re-zeroing the meter will take care of the meter but not the other problems. If the carrier meter is working correctly a reading in the 60's would indicate the RF gain is turned way down. This would also cause a "no audio" problem.

Almost all of the R-390's had silver tube shields on them. The IERC's are a rare item. You can get a set of them but it will significantly increase your investment in the radio. I am not convinced that they are worth the money they are selling for these days. Tubes are still pretty cheap ...

A number of sites on the web have copies of the various R-390 manuals. If you can try to download all of them. Each of the various versions has it's strong and weak points. Any of the better ones will guide you through a series of voltage checks to figure out what's wrong and what's right with your radio.

About the only weird piece of test gear you really need is a VTVM (vacuum tube volt meter). The modern equivalents don't seem to work as well for troubleshooting old tube gear. The good news is that VTVM's are a sub $50 item these days and often a sub $10 item. The internal calibrator will give you a good enough signal to get things to the point that you can hear stuff with the radio. If you are going to do a full up alignment of the radio then you will need a signal generator. Older generators work just fine for the task and the big HP R-390 sized units sell for next to nothing. If you have a generator just about any one will do. There is nothing weird (like with the VTVM) about signal generators.

Here's what I would do:
Take your trusty VTVM and run through the DC voltages and resistances. You probably will find a couple that are out of wack. Go through the whole radio quickly to get a picture of what's going on.

With the wacky readings in front of you try to guess what's going on. Do this before you start tearing in to anything. It's not a good idea to rip into the IF module if the power supply isn't running right .... A common issue is the AGC line. It runs through a bunch of modules and is not a good first thing to track down.
Your first objective should be to get a signal through on one band through one of the antenna inputs into a set of head phones. It does not matter which one or how strong. Any signal is better than nothing at all. It is not uncommon to find that the radio is dead on half the bands or nearly deaf. The DC trace should get you at least to this point. Even with major alignment problems you still should be able to hear something somewhere. If you can't then you probably still have a DC problem. Once at least one band has something going on you can then start running through the AC and RF tests.Enjoy! Bob Camp KB8TQ

From Darryl Jones" <sherri-darryl@erols.com Sun Apr 20 18:16:21 2003
Subject: [R-390] New owner with (probably dumb) questions

Hi Mike, > If your new rig has an Antenna Trim control, then it's not an R-390A, but the less common

R-390A/URR Serial #212 Stewart-Warner Electronics, Order # 20139-PC-60 The Ant Trim is directly abobe the plate.

> Antenna Trim on mine does have unlimited travel, but the Dial Lock does _not_: yours should stop after a reasonable number of turns >clockwise.

I turned it 360 degrees three times and it locked in place, so all seems well. Thank you :)

> It pushes in on a clutch that disengages the frequency > indicator from the tuning mechanism,

It seemed loose in the case, so I tightened it, and now it takes only one turn from stop to stop.

> > I changed the power cord to 3 wire as per mil spec, and fired it up, but > > some > > of the tubes that tested as "good" (upper 60's) seemed to balk and I don't > > have any audio at all, and the Carrier Level meter is around the 60 mark > > with > > no antenna plugged in at the back. > > It is possible -- even probable -- that the power supply filter caps, > and many other caps in the radio, are leaky and/or out of tolerance. > The filter caps can be re-formed: bring the rig up _slowly_ on a > Variac, starting off at something like 50VAC input.

Great, thanks for the tip.

> You know, I hope, that the chassis will be AC-hot (about 55VAC) if the > rig _isn't_ grounded,

I always use GFI's with my electronic equipment, it's become an almost anal obsession after grenading a KW1 I had when I was a kid. It didn't trip when I turned the rig on, and all of the tubes lit for a minute or two, but then some stayed bright and others were very dim, even though I turned the lights off in here, there was barely a glow.

Before I turned it on, I took out al the modules and visually inspected them for signs of failed/failing components, and to my surprise, all of the resistors and capacitors appear to have been changed at some point, but unfortunately the disc capacitors weren't replaced with orangedrops, which is something I would certainly like to do. At the moment, however, I have very little testing equipment, so other than a visual inspection and electrical testing, I'm limited in what I can do. Thanks for your advice/help, Darryl

From ba.williams@charter.net Mon Apr 21 03:27:51 2003
Subject: [R-390] New owner with (probably dumb) questions

> Almost all of the R-390's had silver tube shields on them. The IERC's are a rare item. You can get a set of them but it will significantly increase your

I think that if you are going to spend the money on the black IERC shields, then get the best shields. I used to have a detailed report of lab tests that somebody sent the list a few years ago, probably Dr. Jerry. Anyway, without finding the specs of the tests, the shiny shields do damage to tube life by reflecting heat back to the tubes. There are 2 types of IERC tube shields. The type that doesn't do the job as well are the type with only 3 or 4 large finger tabs on the inside to contact the tube glass. The good shields are the ones with a lot of small, mini fingers to grab the glass. Those dissipate the heat more efficiently. That report had temps from the different combinations, etc.

There are only a few tubes that should be shielded. Chuck has those listed on his website, or he used to have it up there the last time I looked. http://www.R390A.com/. I only shield those that he suggests. Barry

From jamesmiller20@worldnet.att.net Mon Apr 21 04:13:35 2003
Subject: [R-390] New owner with (probably dumb) questions

From: http://r-390a.us/R-390A_Modifications.htm "Tube shields: Tube shields are needed on V201, V206, V505, and V701 (HSN issue 5, page 3 or HSN reprints, page 3). Others are often removed if shiny, but should be kept in place if black (inside and outside). IERC shields are the most highly regarded, with WPM coming in second."

From G4GJL@btopenworld.com Mon Apr 21 10:33:38 2003
Subject: [R-390] New owner with (probably dumb) questions

I agree about the ridiculous priced IERC tube shields are going for these days. Witness Ebay from time to time as a (high end) price guide. I have two remedies for this situation which may arouse some thought amongst the group:

Thought 1 There are many items of none-radio-interest electronic equipment which turn up from time to time at boot sales, industry sales, rallies (hamfests west of here) and other suchlike sources. I have found that whilst this sort of kit is of no use to us in a pure radio sense, it will often yield high quality components such as transformers, chokes, switches, fuse holders, knobs, tubes and , yes tube screening

cans. Better quality equipment will often have black high performance tube shields which can be put to good use in our, shall I say, more desirable equipment. Personally I build a lot of my own gear any way, so the source of components I mentioned is a very valuable one to me. I appreciate this is not everyones cup of tea, though.

Thought 2
Higher performance in tube shields is gained mainly by virtue of them being black. So many plain metal shields have the close fitting spring inserts to conduct heat away from the tube and will benefit from the following . These shields can be enhanced simply by painting or spraying them black. Personally I use a USA product for this, which is a high temperature flat black spray aerosol paint, intended for renovation of barbecue equipment. It will easily withstand the tube heat. I dismantle the shields and spray all surfaces, inside and out. bulk spraying will improve your yield per can. Let them dry well, or oven them if the domestic situation permits, before they are put into use.. 73 and peace to you all this Easter Stingy Pete G4GJL

From cbscott@ingr.com Mon Apr 21 14:35:38 2003
Subject: [R-390] Powder-coating the escutcheon

Has anyone powder-coated an R390 dial escutcheon? I plan to have the knobs and meter covers(if possible) powder-coated and want the escutcheon to match. The only problems I see are the lamp holders. These are riveted in place with a fibre-like insulator. As I understand it, powder-coating involves making the object to be coated quite hot. I don't how hot, but I'm wondering if this will significantly degrade these insulators. Has anyone experience with this? Thanks, Barry(III) - N4BUQ

From ba.williams@charter.net Mon Apr 21 16:32:21 2003
Subject: [R-390] New owner with (probably dumb) questions

Found that older reference to tube shields. This was a long thread in 1999 and 2000. Maybe someone has the info on the pros/cons of cutting on the tube shields??? Wasn't that about berylium, or some other nasty metal? I need more coffee before I finish beating horses. Barry

From barry@hausernet.com Mon Apr 21 18:06:06 2003
Subject: [R-390] New owner with (probably dumb) questions

The nasty metal is beryllium copper. Like the meters, it's OK to handle, but not to eat. Seriously though, don't grind/sand it or cause to become airborne dust.

There are two main aspects of the IERC shields -- black surfaces to reduce reflection and heat sinking. The shields themselves are coated with something special or black anodized. Even so, you'll notice that the lower 1/2 inch is shiny/uncoated on the inside, so as to make a good thermal connection to the socket mount. The tube mostly "sees" the heat sink insert which is blackened. It's actually better if the inside of the shield itself is bare to maintain good thermal coupling to the insert. It should not be heavily coated.

I've seed 3 major styles of heat sink inserts -- simple 5-or 6-sided cylinders, the "finger stock" style with lots of springy contacts stamped into the insert, and the pleated type, which is a kind of accordion fold. I'd imagine these vary in terms of effectiveness of heat-sinking vs. ventilation, with a trade-off. The simplest 5-sided ones allow maximum direct cooling -- vertical airflow, but minimize the area contact between the glass and the heat sink. The finger-type improve on the thermal coupling and still allow for

a lot of convection. The accordion pleated type maximizes the glass to heatsink area, but might limit direct convection cooling from the glass. However, the pleats run vertically and there's probably a good deal of convection through the insert as well as heat conducted away through the metal to the shield.

There's a another variation on the design of the shields themselves. Most shiny shields have a substantial flange which retains the spring at the top. This reduce the top opening and probably affecting convection cooling somewhat. The IERC's usually don't have springs and there is typically a minimum kerf on the top so it maintains it's shape and the insert has something to back up against. I've seen some without the kerf, with small stampings to retain the insert.

Lately, I've come across quite a few shiny shields with the pleated type of insert. I would imagine that performance is nearly the same as an IERC type. So, look inside before you cast them aside. I don't know if they were originally equipped that way or upgraded after the fact.

As for painting -- particularly with barbeque or engine paint -- I don't think that's a good idea. Regular coatings serve as a thermal insulator, so the whole shield would tend to retain more heat inside. At minimum, mask off the bottom inside surface. Best to use some other blackening method, like gun bluing. Anyone ever try that? Barry

From keng@moscow.com Mon Apr 21 18:28:52 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

I have had pretty good luck with simply spray painting the inside and outside of a shiny tube shield with flat black paint after masking off the lower part which would make electrical contact with the grounding ring on the socket. My idea was that the shiny interior of the tube shield was reflecting some of the heat back into the tube, and by painting it black, some of that reflected heat was absorbed instead by the shield and transferred to the outside.

Temperatures were noticeably lower for tubes with which I tried this, although I didn't actually measure them. I have not yet tried to cut ventilation slots in them. I suppose I should try some sort of heatsink material around the outside where it might fit. Ken W7EKB

From David_Wise@Phoenix.com Mon Apr 21 18:30:01 2003
Subject: [R-390] Frequency Shift With AGC Level

> I've noticed that with the BFO on a strong carrier, when I lower and raise the RF Gain, there is a slight change in beat note pitch, maybe 100 cycles or so. This doesn't happen on my other 390a. Have swapped
Since the oscillators are unbuffered and not all of the B+ is regulated, there is a certain small unavoidable shift. However, there is also possibility of avoidable shift. Make sure the 0A2 is regulating. One of their wearout modes is a rise in breakdown voltage. Combined with high screen current and low line voltage, it may be dropping out. Note also that the BFO uses unregulated B+ . If you can rig up a stable external BFO, it will help isolate the shift. 73, Dave Wise

From drewmaster813@hotmail.com Mon Apr 21 19:20:13 2003
Subject: [R-390] Capacitors (was New Owner...)

wrote: >It is possible -- even probable -- that the power supply filter caps, and >many other caps in the

radio, are leaky and/or out of tolerance. The >filter caps can be re-formed: bring the rig up _slowly_ on a Variac, >starting off at something like 50VAC input.

Paper and electrolytic capacitors are very common failure items in old electronic equipment. Many recommend wholesale replacement of these capacitors.

Modern plastic dielectric caps (orange drop, et al.) used as replacement for paper work very well and will likely outlast most of us.

A better but more effort consuming method of reforming electrolytic capacitors is connection of cap to be reformed to a DC source of at least rated voltage with current limiting resistance of about 100K. Voltage across cap can be monitored with high impedance meter (VTVM or DVM) as it slowly rises over minutes or hours. A few hundred microamps (voltage across current limiting resistance divided by resistance) or less at cap's rated voltage denotes success.

Beware of R-390A electrolytics made by General Instrument. These will frequently fail even after reforming. Cleaning corrosive guts of exploded electrolytics from inside radios is a royal pain in the scrot.
Ceramic disc capacitors seldom fail even after many years use.

Much information about all of these topics and more can be found in Wei Li's compilation of postings over the years from this list. Goto r-390a.net Click on "References", "Pearls of Wisdom". Drew

From David_Wise@Phoenix.com Mon Apr 21 19:23:28 2003
Subject: [R-390] New owner with (probably dumb) questions

Just to clarify the expected behavior of Dial Lock, Zero, Antenna Trim, and the carrier meter:

1. The Dial Lock mechanism squeezes a clamp against a disc attached to the KC knob. As you turn Dial Lock clockwise, it will become harder and harder to turn. At the same time, the KC knob will also become harder to turn, quickly getting to a point where reasonable force will not turn it at all. As the knob is rotated clockwise, the shaft it's on screws itself into the panel, and at some point the skirt will hang up against the retaining nut. While painstaking adjustment will get it to hang up at exactly the point you should stop turning, I don't think it was Collins' intent that anyone bother. You simply "know" how tight to turn it. If the knob abruptly stops turning with the KC knob still free, the mechanism is either out of adjustment or broken.

2. The Zero mechanism disengages a clutch in the frequency readout. Like Dial Lock, it gets harder and harder to turn as it's tightened down and will eventually hang up. Sometime before it's unreasonably tight, motion of the KC knob should no longer cause the frequency display to change. At this point, the KC knob is still tuning the radio as before, but the readout is disengaged. If you started with the readout on a 100KC boundary, you can line up the radio with the calibrator's 100KC marker. Because each band is controlled by a different crystal*, you may have to do this every time you switch bands.

* With some exceptions; it's too technical for this post.

3. The antenna trim control goes around and around; there's no end stop. At the factory they put a dab of paint on the shaft to help you replace the knob after removing it.

4. The design of the carrier meter circuit is such that it does not display a "fake" high reading when the

RF GAIN control is retarded. This is not due to any magical balance of opposing currents. The tubes that drive the meter are simply not under control of the RF GAIN pot. If there is no signal input, the meter should be 0 regardless of RF GAIN. If there is signal, the meter will go down as RF GAIN is retarded.

Even without signal, you may see a shift in the carrier meter when you switch between MGC and AGC. This is because the AGC line is clamped to ground by a pair of fairly poor diodes, namely, the suppressor grids of two of the IF amps. Working against this is a weak pullup to B+. The result may be anything from ground to a volt or so positive. On the other hand, MGC grounds the line hard. Adding a 1N914 would minimize this effect.

Finally, you may get a carrier reading in MGC mode on very strong signals. This signifies 4th IF overload and is a deliberate characteristic of the meter circuit design. 73, Dave Wise

From Mon Apr 21 22:20:52 2003
Subject: [R-390] New owner with (probably dumb) questions

wrote:> Hi Mike, If your new rig has an Antenna Trim control, then it's not an R-390A, but the less common and (IMHO, anyway) more desirable R-390 -- unless> > you have a variant I never heard of. WHat does the nomenclature plate> > say, _exactly_?
>
> R-390A/URR Serial #212 Stewart-Warner Electronics, Order # 20139-PC-60> The Ant Trim is directly abobe the plate.

D'Oh! Yep. And that's where it is on my "A" rigs, too. -- Mike Andrews

From Darryl Jones" <sherri-darryl@erols.com Tue Apr 22 00:18:58 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

Well, I'm gonna give it a try and find out. Whats the worst that can happen? I lose a couple of tubes, of which with one or two exceptions, I have bucketloads :) Does anyone have a suggestion of how I can measure tube temps accurately?

From R274C@aol.com Tue Apr 22 00:40:10 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

writes: > Well, I'm gonna give it a try and find out. Whats the worst that > can happen? I lose a couple of tubes, of which with one or two exceptions, I have bucketloads :) > > Does anyone have a suggestion of how I can measure tube temps > accurately? >
> Darryl

Get a laser thermometer. Used by most commercial hvac technicians. Very accurate. If you don't have IERC shields, remove the tube shields, they will live longer than with shiny or painted shields. And, contrary to popular belief, your radio will continue to work properly. Les

From wa5jci@flash.net Tue Apr 22 00:45:16 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

I've been using regular tube shields painted flat black since the 60s, works great. es 73 de Pete WA5JCI EM21jv

From ba.williams@charter.net Tue Apr 22 01:17:55 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

I was thinking you would prefer the other type of thermometer, but now you come up with a laser one instead. Go figure. (g)

I went a long time without any shields, so I agree. I only put those that Chuck recommends because I had them sitting around. The only shields that I leave on the SP-600 are the ones that attach to the chassis for support.

I'm too lazy to send you an off list message, so I'll add other comments here. Got Sam Timberlake to meet me at the estate sale site after being promised that people would be there. This was my second drive out there and nobody was there. I talked to the auctioneer a few minutes ago, and the story has changed again. Now, he has sealed bids on the stuff so making offers on the spot is out of the question now. What a bunch of two faced crooks. The auction website shows one R-390A, with the local gain knob missing and a mysterious hole next to the headphones jack. I couldn't tell if it were an owner mod or the Navy diode mod. There were 2 radios that are either J2s or R-388s. I can't tell. Also, a KW1. And, a lot of teletype gear. I didn't see any pics of test equipment, but I'm not going to waste any more time with lying auctioneers. Barry

From R274C@aol.com Tue Apr 22 01:38:43 2003
Date: Mon, 21 Apr 2003 20:38:43 EDT

writes: > I went a long time without any shields, so I agree. I only put those that Chuck recommends because I had them sitting around. The only shields that I leave on the SP-600 are the ones that attach to the chassis for support.

I agree Barry, the only reason I have a full set of shields on the R-274C is because they are all IERC with the "fingers." Many auctioneers are getting like most of America,.....GREEDY. Les

From jtone@sssnet.com Tue Apr 22 01:58:42 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

Gents, Re fingers.. and black shields and such...have been slowly but steadily collecting the little guys for a couple of years.. and have been able to shield up a couple of my pet ST. Juliens Blue Stripers....

Am finding them in ones and two and such in the boxes under the tables at the fests...most don't know or care what they are and have had some given to me....also had to buy a bag of tube shields of various types at local Ham auction...(local club) to get a few out of the sack...cost ... 2 bucks...threw the rest in the dumpster...

So, gotta get on ur hands and knees guys ... down where the spiders and and old tv rabit ears reside under the tables...lot's of gold, errr. . . "black gold" down there, even if u have to buy the whole box; and then let the vendor keep the junk minus those little shields...btw...also a good way to find those little meters we lust after too... Good hunting...!! Gene W8KXR

From Jim Shorney" <jshorney@inebraska.com Tue Apr 22 03:15:47 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

wrote: >Does anyone have a suggestion of how I can measure tube temps >accurately?

Brew up a wheatstone bridge circuit with a forward-biased silicon diode in one leg as the sensing element. Connect it to your DVM and feed it a regulated DC supply voltage, calibrate it to 100C in a pan of boiling water and 0C in a cup of ice water. Quick, dirty, cheap, and surprisingly accurate.

From mmasin@atc-us.com Tue Apr 22 03:16:08 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

If anyone is interested we still have the tube shield inserts, (BeO2), accordian type on our website. There are 2 different sizes offered. Just for your info.

Mark Masin American Trans-Coil

From hankarn@pacbell.net Tue Apr 22 04:06:45 2003
Subject: [R-390] RE: ENGRAVED R-390A panels

Gentlemen it is time to cough up the panels and money as promised. I have asked for the panels twice and have 2 in my shop and 3 on the way. If you are going to back out let me know as I took your email as full intention to do it. I had 17 people say they were going to order and have money for 5. Looks like the programming cost is now on my back as it has been paid up front on the basis of emails. Time to put up and pay up. Thanks, Hank KN6DI

From mparkinson1@socal.rr.com Tue Apr 22 04:45:01 2003
Subject: [R-390] RE: ENGRAVED R-390A panels

OK guys I have my R-390a silk screen panels in for Hank to do his things with the engraving. Don't hang Hank out there this is a great deal and one that doesn't happen very often if at all. Hank has a lot of money of his own invested in this deal please don't screw it up if you told him you want your panels done get them to him with the money. I stating this because I don't the panels to cost me more if you don't put up. All you guys that were thinking about having them done now is the time to send in you silk screen panels. Matt

From tbigelow@pop.state.vt.us Tue Apr 22 18:39:29 2003
Subject: [R-390] Re: [R-390]IERC shields (was New owner with...)

wrote: >Found that older reference to tube shields. This was a long thread in 1999 >and 2000. >Barry

Barry and group - To the best of my knowledge, the nasty part is the insert itself, not the shield. Don't hold me to that though, because I didn't build 'em! The thinking on shiney shields is that they weren't really intended as shields so much as holders to keep the tube in place for gear used in harsh environments (like on a battleship with 16 in guns firing). Makes sense when you look at the bayonet base and spring in the top to keep downward pressure on the tube. Whatever the case, it sure doesn't

look like removing heat was a consideration.

Here's my view of cutting them (IERC): Don't. They are designed a certain way to perform a certain way. Altering the shape could potentially mess this mechanism up and defeat the purpose. Now, having said that, here are some other thoughts:

-Use the correct size shield for the correct tube size. Or, don't use a shield designed for a short 9-pin on a 6U8A (slightly taller, medium-height 9-pin). I've seen this recently on an SP-600 listed via ePay. If you look at the tubes, you'll see that the shorter shield is snug to the top of the tube. This defeats the chimney or convection of heat being sinked away from the tube and passing up and out of the shield. You get the false security of having an IERC shield 'protecting' your tube, yet in reality it's just keeping heat in. Looks fancy, but doesn't work. One exception would be the later IERC types with the open sides. I've never seen these in the shorter 9-pin configuration, though. Still, the inner fingers have to align properly with the tube. If you tried using a tall 7-pin on a stubby 6AL5 for example, it wouldn't work worth a damn. Best thing to do is to take the different sizes and inspect them side-by-each. You'll quickly see the difference.
-WPM sockets work well also, just not as well as the IERC types. WPM are more along the lines of the ELCO/EBY/CINCH bayonet-base shiney shield, except they are black with inserts. I have a bunch of these in older equipment, I'm thinking of enlarging the top opening just a bit with a reamer to allow better airflow up through the inserts. There's a reason the IERCs have a wider mouth at the top.

-Some of the shiney shields actually have great inserts in them. I've always wondered how a shield with a shiney exterior and black interior with an insert would fair. Shiney exterior reflects external heat floating around inside the radio instead of absorbing it. I have to guess that the engineers who came up with the IERC designs knew what they were doing, so I've never pursued it.

- Heatsinks/inserts for bases are important also. Somewhere between the shiney shields and the IERC types, these were used to pull heat away from the pin bases were too much heat can cause the seals to fail accompanied by loss of vacuum and the associated darkness within the tube. I've seen only a few IERC bases made to work with the IERC shields, and therefore conclude that the more standard IERCs were perhaps made to replace older types (or work with existing designs) and offer an improvement in cooling.
- Prices are only as bad as you're willing to pay. Sure, they appear on ePay for big $$ and if you want the convenience of not having to look around and can afford the price, it's a deal made for you. If your budget won't permit or you're a packrat at heart though, there are always the usual sources: old avionics, defunct test equipment, etc often yeild these nice, black tube shields. It involves being patient as well as looking around at surplus outlets, under tables at hamfests, or even dumpster diving. Where do you think the dealers who sell them online are getting them? Just remember when cannabilizing an old piece of gear to also retreive the little 'band of fingers' from the tube socket bases, if they're in the unit. Always check!
Now, a couple years back a few of us put together a deal on here which yeilded a lot of these shields. I'm fairly well set myself for now, although I could use a few of the taller 9-pin types. IIRC, there where 3 of us - Bill Cotter, myself, and one other person whose identity escapes me. We mainly traded with other list members, with trading being the preferred method, selling being the second choice (Bill sold a bunch, though). If there's enough interest and enough people have at least some amount of surplus they'd like to trade for sizes they need, we could try it again. Sizes are(from memory, don't yell if I'm wrong):

5015 - short 7-pin (6AL5/5654 etc)
5020 - medium 7-pin (6BA6)
5025 - tall 7-pin (6AQ5 etc)

6015 - short 9-pin (6AK6?)
6020 - medium 9-pin (6U8A, 12AX7 etc)
6025 - tall 9-pin (12BA7, 3TF7, etc)

So....any interest? de Todd/'Boomer' KA1KAQ

From Dave_Faria@hotmail.com Wed Apr 23 00:00:09 2003
Subject: [R-390] R-390 Archives

GE List. I"m working on a 390a and it has a problem that I've seen discussed on the list. Where are the 390 archives??? Thanks Dave Faria

From: (mikea) Tue Apr 22 22:02:06 2003
Subject: [R-390] R-390 Archives

wrote: GE List. I"m working on a 390a and it has a problem that I've seen discussed on the list. Where are the 390 archives??? Thanks Dave Faria

Right there, above the "^", on the home page. -- Mike Andrews

From jtone@sssnet.com Wed Apr 23 02:50:41 2003
Subject: [R-390] Re: [R-390]IERC shields (was New owner with...)

Gents, In spite of Fest scrounging....if a list effort to make some shields available....count me in on the effort...still looking for them... 73, Gene W8KXR

From ham@cq.nu Wed Apr 23 02:11:26 2003
Subject: [R-390] Re: [R-390]IERC shields (was New owner with...)

Hi, More weird stuff:

Black - reflects heat poorly, radiates heat well (carbon black does a good job)

Shiny - reflects heat well, radiates heat poorly. (pure gold is really good ...)

Why ? Well one way to look at it - if a black object radiated heat poorly and absorbed it well it's temperature would go up and up if you put a chunk of it inside a vacuum jar and shined a light on it. It would be a cool effect, but tube plates would not be black ....

This is simply what people who make iron stoves have observed long before IR ever got discovered. Black stoves make the room warmer ..... Take Care! Bob Camp KB8TQ

From ham@cq.nu Wed Apr 23 02:01:33 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

Hi, Enormous chunk of wasted bandwidth follows .. 1200 baud modem users proceed at your own risk :)

This gets a little complex. On the thermometer question it depends on what you want to measure. An IR thermometer will measure the temperature of the inside of the tube IF the glass used is transparent at IR AND you know the emisitivity of the thing you are pointing at. Since the thermometer responds to light you have to know how much gets through the glass and "what color" the thing you are looking at is. You can check both things out, you just have to break a couple of tubes to do it. If you want to measure the pin to glass seal temperature then you need a nice little thermocouple.

Now for the complex part. Tubes wear out for a bunch of reasons:

1) Filaments go open circuit
2) Gas
3) Filaments loose emission
4) A grid goes open or short.

In receiving tubes (rather than rectifiers or power amp tubes) filament emission is not usually a big deal. The tube will work pretty well even with a well worn filament.

Gas can come from the stuff inside the tube, but in modern (post WWII) tubes usually if it's gassy it's because it leaked.

Grid open and shorts usually are from shock and vibration.

Filament open's are a function of how often the tube is turned on, and exactly how power is applied. A fast power on *may* actually be better for some tubes than a slow power on.

Still with us .....

High temperature affects outgassing from stuff in the tube, and leaks in the glass to metal seal. Unless it is combined with shock and vibration it should not affect grid problems. This assumes the grid is not glowing orange
....

Filament opens and cathode emission don't seem to correlate well with a modest change in the tube temperature. The filament is running in a fashion that it self regulates it's temperature. Once it is at temperature it will run there for a good long time. Again provided that there is little or no shock and vibration.

All the yack above about filaments assumes that you run them to the same voltage each time *AND* that it is roughly what it should be. The filament has a bit of a memory affect so varying the filament voltage all over the place does some weird things.

Finally the tube shields (at last ...)

Tube shields will affect the temperature of the upper glass bulb and of the plate. Indirectly the grids may be cooled a little. The temperature at the glass to metal seals may not change much at all with black versus shiny shields. A full contact shield might reduce the temperature a bit, but it could also raise it a little. Air flow would have an affect on the outcome here.

But what about the data you ask ....

Yup the data is out there and it's correct. The tube shields do have an affect on the life of the tubes in an R-390. Good Navy data and no reason to doubt it. A couple of questions:

1) Does you radio see as much shock and vibration as the shipboard radios the Navy ran the tests on?

2) Did they toss the tubes when they failed on a tube tester or failed in the radio?

3) Do the tubes you use fail at the rate that the Navy tubes did?

4) Did the radios have tube or solid state rectifiers?

The last question is the most interesting. Even in 24/7 type service I don't see anything close to the Navy failure numbers. I also do not run tube rectifiers so maybe all their failures were rectifier tubes.

What's more to the point, back in the 1980's your government and mine went out and bought tubes for "essential equipment" to keep it running for something like another 20 years. The good old R-390(both A and not A) *must* have been on the list. The mountains of tubes we see on eBay are a result of them surplussing these tubes. You can find all the tubes except two - the ballast tube and the rectifiers. I can understand the ballast tube, it's a different category and probably didn't get covered in the order to buy the vacuum tubes. The rectifier may have been left off since the solid state conversion was an approved modification. If that's the case then they didn't go through anything close to the number of tubes they thought they would. I suspect that most of us on the list have more than ten sets of spares. Heck I'm probably not that odd in having a couple hundred of some of them. Hall of fame land may be in the multiple hundred sets range. We're all out grabbing these tubes and they are still dirt cheap. There have to be an ocean of them out there. We don't run as many radios as the Navy did, but then they didn't plan on a 500 year supply of tubes either.

Bottom line - fancy tube shields are neat and they do look slick. For a truly presentation grade radio they are the only way to go. If you put a couple hundred bucks into the front panel then they are cheap by comparison. For a use it every day and I don't care what it looks like radio, save your money .... Take Care Bob Camp KB8TQ

From Dave_Faria@hotmail.com Wed Apr 23 04:23:53 2003
Subject: [R-390] Question for Historians

GE List. I'm working on a very nice Capehart 1961 contract. All modules are Capehart except the P.S.(Stewart-Warner) and the PTO(Progestron). Did Capehart ever make its own P.S. or PTO?

A techincal question - the PTO seems to be very sensitive to vibration. I know this PTO is built like the Collins but, don't recall a Collins PTO being this sensitive. I swapped out the 6BA6 and it helped some but, the sensitivity to vibration is still there. Its like the grids in the tube are vibrating or a bad ground (I hope not). Thanks List Dave Faria

From R274C@aol.com Wed Apr 23 02:38:35 2003
Subject: [R-390] Question for Historians

writes: GE List. I'm working on a very nice Capehart 1961 contract. All modules are Capehart except the P.S.(Stewart-Warner) and the PTO (Progestron). Did Capehart ever make its own P.S. or PTO?

No, they did not make their own pto's.

The only pto manufacturers were....Collins, Motorola, Progressitron, Dubrow Electronics and Cosmos. The vibration probably is likely a bad solder joint on one of the minicaps (forget the capacitance) I have had three progressitron pto's and all three had the same problem. A slight jarring would make it change frequency. Took it apart and lo and behold, a solder joint was making intermittent contact. A quick reflow and it was working like new. ymmv. Les Locklear

From ham@cq.nu Wed Apr 23 03:20:23 2003
Subject: [R-390] Re: IERC tube shields and tube temps...a field expedient...

Hi, Even with an indirectly heated cathode the contact between the filament and the cathode is very good. The insulation (vacuum) around it is also really good. The result is that the cathode gets to the filament temperature and isn't affected very much by what's around it. The self regulation of the filament still keeps things going at a constant temperature. Given that then tube shields aren't going to have much of an affect.
The getter (hopefully ....) stays nice and cold through the process. By that I mean that you don't want it to melt or worse yet vaporize. Generally you pick getter material so that this is not going to happen in any reasonable combination of conditions. As long as you stay below melting temperature it's hard to say exactly what the getter will do as a function of temperature. It's affinity for crud goes up as temperature increases, but so does the tendency of the crud to turn back into a gas. Is it better hotter or colder ? - depends on the material and what you are trying to "get". You hope the guy who made the tube knew his stuff. If he did have a choice then I'd guess he optimized for a bare tube with no shield.
Take Care! Bob Camp

From redmenaced@yahoo.com Wed Apr 23 03:52:20 2003
Subject: [R-390] Question for Historians

wrote: Did > Capehart ever make its own P.S. or PTO?
+++++++++
That'd be very likely, check the ground strap on the PTO shaft. Joe

From drewmaster813@hotmail.com Wed Apr 23 20:25:53 2003
Subject: [R-390] IERC Tube Shields et. al.

wrote: >Now for the complex part. Tubes wear out for a bunch of reasons: > >1) Filaments go open circuit >2) Gas >3) Filaments loose emission >4) A grid goes open or short. <snipped>

Don't forget other common failure modes: heater to cathode short, grid emission.

Grid emission results from electron-emitting coating migrating from cathode to grid. In applications with appreciable grid circuit resistance this emission will cause grid to go positive and upset bias point. In our beloved R-390 series one IF tube having grid emission can pull AGC line, decreasing or defeating gain control action and causing all controlled tubes to draw excess plate current. Drew

From ba.williams@charter.net Thu Apr 24 14:54:35 2003
Subject: [R-390] New owner with (probably dumb) questions

Barry, Yup, that's the nasty stuff. I use the accordian/pleated ones. More surface contact vs cooling spaces. I just happened to have enough of those types. I also have a few cardboard tube shields with aluminum foil that I've taken out of cheap plastic radios. Barry

From ba.williams@charter.net Thu Apr 24 14:56:44 2003
Subject: [R-390] New owner with (probably dumb) questions

> From: http://r-390a.us/R-390A_Modifications.htm "Tube shields: Tube shields are needed on V201, V206, V505, and V701 (HSN issue 5, page 3 or HSN reprints, page 3). Others are often removed if shiny, but should be kept in place if black (inside and outside). IERC shields are the most highly regarded, with WPM coming in second."

Jim, Somewhere along the line I wrote down that it was suggested that V-204 be shielded too. Barry

From ghayward@uoguelph.ca Thu Apr 24 15:56:50 2003
Subject: [R-390] Tube Failures

The heater to cathode short is a good one to know about. I had a humongous amount of hum when I turned the limiter on, but not when it was off. I eventually found the problem to be the tube. It tested OK (previous posting about testers with forked toungues is true!) but when I replaced it the problem vanished. With the high impedance circuit, even miniscule AC leakage into the cathodes was enough. 73 de Gord, VE3EOS.

From tbigelow@pop.state.vt.us Thu Apr 24 16:18:05 2003
Subject: [R-390] Tube Failures

wrote: The heater to cathode short is a good one to know about.

Surprised it didn't show a short on your tester, Gord. But this is an excellent example of why a tube tester is a great tool for getting you into the ballpark, but also how/why swapping tubes is still the only way to be certain. Even a good tube tester can't give you the critical results that the hands-on approach gives.
Someone on the Collins list was just mentioning how a complete re-tubing of their KWM-2 was not the great idea they thought it was. Apparently two new Phillips 6AZ8s were too hot for the rig and caused oscillations. His revised view is to replace one tube at a time, remember where each tube came from, and have some known-good replacements to use as substitutes. Replacing the Phillips with RCAs cured the problem. Good stuff.... de Todd/'Boomer' KA1KAQ

From cbscott@ingr.com Mon Apr 21 19:27:55 2003
Subject: [R-390] New owner with (probably dumb) questions

Aside from the shield itself, I've found the little strips of finger-like stock that are wrapped inside the tube socket is beneficial in conducting the heat from the tube base to the tube shield base and then to the chassis. I think they're made of beryllium copper as well. Barry(III) - N4BUQ

From jmerritt2@capecod.net Thu Apr 24 22:03:42 2003

Subject: [R-390] Tube Failures

Heater to cathode leakage is an insidious problem which the vast majority of tubetesters out there are not capable of detecting. Even the venerable TV-7 and TV-10 series cannot detect this problem. **This is one very good reason why serious tube people will own (and be prepared to pay for) the Hickok 539 series.** Chuck N1LNH

From James Smith" <n1xas@attbi.com Fri Apr 25 00:18:02 2003
Subject: [R-390] Antenna Jack

I just purchased an R-390A and I have a question. Is the balanced antenna jack the same as an IBM AS400 twinax connector? Thank you Jim Smith N1XAS@attbi.com

From Jim Shorney" <jshorney@inebraska.com Fri Apr 25 00:30:41 2003
Subject: [R-390] Antenna Jack

wrote: >I just purchased an R-390A and I have a question. Is the balanced antenna jack the same as an IBM AS400 twinax connector?

Yep. Jim Shorney

From Dave_Faria@hotmail.com Fri Apr 25 03:25:22 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug

GE List. I scanned the archives looking for a solution to a stuck slug on a 390a IF Deck. Only one thread in he archives is where a fellow broke a stuck slug. Of course its the last slug to be peaked on my deck. Any suggestions? Heat it up in the oven? Or maybe try the freezer? I'm open for ideas. Lubricants?? Thanks Dave Faria

From jetemp@insightbb.com Fri Apr 25 02:42:19 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug

I had the same problem a few months ago. I tried to use a metal allen wrench and, of course, broke the slug. I ended up ordering another from Fair. I have seen suggestions to heat the coil, and other suggestions to put a couple of drops of wd40. Next time I think I will use heat as the first resort. Hair dryer? Jim Temple

From cbscott@ingr.com Fri Apr 25 13:48:13 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug

I think I would refrain from anything like WD40 as it can degrade the coil form. Barry(III) - N4BUQ

From jbrannig@optonline.net Fri Apr 25 14:10:13 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug

If there is wax on the slug, then a hair dryer or soldering iron, applied carefully, should loosen it. Don't use a heat gun, they get way too hot. From painful experience, do NOT force the issue. The best bet is to try and find a replacement coil. The coil form is cardboard and will not take much abuse. Jim

From G4GJL@btopenworld.com Fri Apr 25 17:21:38 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug

Heated sealing wax in the end of a small blunt stick.

Qtip
1/8 inch metal stock
long screw
Whittled dowel

worked fine for me on a Blue streak project a while back. 73 Pete G4GJL

From kherron@voyager.net Fri Apr 25 18:24:21 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug

Hi Gang, >The best bet is to try and find a replacement coil. The coil form is cardboard and will not take much abuse.

I, too, would keep the lubes out of the coil. I've had success drilling out the core with small drill bits and a pin vise. This, of course, assumes that you have another core. The actual ferrite core will break up rather easily and the pieces can be blown out of the coil and a replacement core installed. Thanks!! Kim Herron 1-616-677-3706

From keng@moscow.com Fri Apr 25 18:15:58 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug

> >The best bet is to try and find a replacement coil. The coil form is cardboard and will not take much abuse. > > I, too, would keep the lubes out of the coil. I've had success drilling > out the core with small drill bits and a pin vise. This, of course, assumes > that you have another core. The actual ferrite core will break up rather easily > and the pieces can be blown out of the coil and a replacement core installed. > > > Thanks!! > > Kim Herron

I have had excellent luck with saving the scraps of smashed slug, grinding them up with a mortar and pestle, mixing the resultant powder with epoxy glue, and putting the mix into a straw of the correct diameter. YMMV. Ken W7EKB

From r.tetrault@attbi.com Fri Apr 25 18:36:46 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug

Ken, That is a heroic story to someone who imagines that these things are as near to magic as they will ever get, but the iron powder is only that, and the straw and the epoxy is a logical step. The proof is the tune-up and I'm sure that the coil peaks as it should. The YMMV part hinges on anyone's ability to use the minimum epoxy... Bob Portland, OR

From keng@moscow.com Fri Apr 25 19:56:03 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug - a possible solution...

> Ken, > > That is a heroic story to someone who imagines that these things are > as near to magic as they will ever get,

Yes. Making slugs with threads on the outside and hex shaped holes in the center are a lot more difficult, but can be done. The first time I did this was for an R-1004 with a smashed slug. In that receiver, the IF cans were tuned by a small, slotted, piece of threaded brass rod with a flat on the slug end. I just stuck the rod down into the epoxy/iron mix and let it harden. Then peeled off the straw. Worked beautifully. And as Bob says, you must use a minimum amount of epoxy. Ken W7EKB

From theprof@texoma.net Sat Apr 26 01:55:15 2003
Subject: [R-390] Antenna Jack

Yes and I found there is enough room inside for a 300/75 ohm TV balun for matching. 73 de Richard W5SRB

From k6fsb@juno.com Sun Apr 27 06:09:02 2003
Subject: [R-390] Looking For Suggestions - Stuck Slug

I had good luck using super glue gel and a small stick, glue the stick to the centre of the slug, wait till hard, then slowly remove the core, i had founf replacement cores in other scrap equipment-- Old tv's and junk radios, of course size and weight are of importance. if it isn't cracked just stuck- try heat the outside and cold freeze the core -sometimes it works. re-lubricants-preferably not, be sure the core is not cracked, however i have used a real light oil (Kano), then cleaned with alchol, relube lightly with bees wax Ron

From LairdThomasN@JohnDeere.com Fri Apr 25 21:38:31 2003
Subject: [R-390] Calibrator drift

Just put together a R-390A basically from parts modules. It works (somewhat), my first problem is when I turn on the calibrator it drifts downward "rapidly" in frequency. I literally have to turn the tuning dial to keep up with it? Seems to just keep going. I stopped turning after it went down 50kc. Tom Laird WC9M Moline, IL.

From ToddRoberts2001@aol.com Sun Apr 27 19:53:10 2003
Subject: [R-390] Marvel Mystery Oil Does Turn To Gum

I think some people in the past have recommended using Marvel Mystery Oil or mixing it with another lubricant as a good way to lubricate an R-390A RF Deck? I thought I would relate an experience I had with Marvel Mystery Oil. I had a can of the stuff sitting in a cupboard for about 15 years. Some of the oil leaked around the top of the can and after being exposed to the air for 15 years it did indeed turn into some kind of sticky red gummy substance. It would seem this is not a good indicator of the oil for use as a lubricant exposed to air over a long time 15 years or more? It looks like Synthetic oil or grease would be the best bet for a long-term lubricant exposed to air? 73 Todd Roberts WD4NGG.

From R274C@aol.com Sun Apr 27 22:55:43 2003
Subject: [R-390] Marvel Mystery Oil Does Turn To Gum

writes: I think some people in the past have recommended using Marvel Mystery Oil

I think the "clue" is...to lubricate more often than "15" years. I use Mobil 1 synthetic gear kube, but clean and lube every 2-3 years. YMMV..... Les Locklear

From meyer_rm@yahoo.com Mon Apr 28 05:31:16 2003
Subject: [R-390] Marvel Mystery Oil Does Turn To Gum

I had something similar happen. I have model aircraft that have glow-fuel engines on them. Someone recommended that I use Marvel Mystery oil to lube the engines prior to storage. I had one engine that sat for about three years. When I went to turn it, it was so gummed up that it took significant force to get it to move. Poured some solvent into it and it freed up. I only use synth oil, now.Cheers! '73 de N2DXN Bob

From djmerz@3-cities.com Mon Apr 28 07:22:31 2003
Subject: [R-390] Marvel Mystery Oil Does Turn To Gum

Hi, I used Marvel Mystery oil to degunk my 390a gears when I first got it - worked great and loosened things up very well - I then oiled it with synthetic oil and I've been happy with the result - about 2 years into it now and still works ok. I may repeat the process in a year or two. I like the MM oil for cleaning - I used to like kerosene to clean away grime on gears, parts, bicycle chains etc, but I think it stinks a bit more. I would guess you could gum up something pretty good by putting on an inadequate amount of MM oil and letting it set - not enough to flush out the old residues that might be there - but I'm just guessing on that. Does anyone know what MM oil is? maybe a mixture of kersone and oil ? Dan.

From cbscott@ingr.com Mon Apr 28 13:12:47 2003
Subject: [R-390] Refinishing meters

Has anyone experience with meters like the one shown at http://members.aol.com/n4buq/r390a

I want to have it powder coated, but I'm not sure putting it in a 400-deg. oven is a good idea. Does it come apart? It appears to have a hard-rubber (neoprene?) gasket imbedded in the back. Does this come out easily? If so, does it expose the method of disassembly?

I noticed that when I removed the electrical connections on the back, the meter movement became loose inside the housing. Apparently this isn't a sealed meter and it should come apart but I havent seen any way to get it apart. ...and, no, I don't plan on licking the insides of the meter... Thanks, Barry(III) - N4BUQ

From drewmaster813@hotmail.com Mon Apr 28 18:46:59 2003
Subject: [R-390] Marvel Mystery Oil Does Turn To Gum

wrote on Marvel Mystery Oil: >Some of the oil leaked around the top of the can and after being exposed

to >the air for >15 years it did indeed turn into some kind of sticky red gummy substance. <snipped>

Marvel Mystery Oil is described as a solvent/penetrant and all penetrating oils with which I have had experience have gummed up, some after only 1 week. Penetrants are good for freeing up stuck mechanisms but ultimately should be cleaned out and replaced with a non-gumming lubricant such as Mobil 1 or other synthetics.

I have not used the Nolan Lee-recommended mixture of 50:50 MMO and Mobil 1 for R-390 series RF geartrains but have wondered if the Mobil 1 inhibits gumming tendencies of the MMO.

My approach has been to completely tear down gummed up geartrains and soak in lacquer thinner (any brand except that in the red white and blue can from A** Hardware). On assembly I apply Mobil 1 and re-apply semi yearly or yearly as needed.

I have heard that Mobil 1 was recently reformulated and may possibly not be as good as previously. Maybe time to switch to Amsoil? Kerosene or fuel oil will gum up after a year or two. Drew

From terryo@wort-fm.terracom.net Mon Apr 28 21:01:44 2003
Subject: [R-390] Gear train lubricants

The best lubricant I have found for a freshly stripped and cleaned R-390 gear train in Phil Wood's bicycle grease. The viscosity is perfect, it does not creep and it maintains the same viscosity for years. It makes the gear train feel almost silky, which is no mean feat.

I did my first R-390A with it seven years ago and the tuning still feels almost silky. I use lacquer thinner to strip the old lubricants, but I also clean and re-lube the slug rack. I clean all the slug rack rollers, guides and cams with swabs and lacquer thinner. I use a swab to put a thin coat of Phil Woods on the appropriate edges of all the rack parts.

I've done three complete cleanings this way. They still feel great (two have been sold). It's a one time job with no need to pull the radio for periodic lubrication. Oil does not evaporate. Every re-application is just replacing oil that migrated somewhere else inside your radio. I wouldn't do that to my R-390s.

Phil Woods is commonly available at better bicycle shops and it works great on bicycles as well. 73 Terry O' WB9GVB

From ks4ns@arrl.net Tue Apr 29 03:29:10 2003
Subject: [R-390] Restored R-390A For Sale

This is an all Motorola #285 including CY-979A/URR case #69. It is not a depot dog. It has been completely restored with all new caps and all the recommended mods for active use (including a neat SSB mod). Case and front panel have been painted and lettering refilled. It has both meters, ALL tubes, and everything works. It has been meticulously cleaned, aligned, and is dead on frequency. It comes with original manual, some spare tubes, and other misc. R-390A items. I am offering it at a firm price of $800 and it is worth every cent. If you are seriously interested, email me for photos. The ONLY reason I am selling it is because my wife and I are going cruising. Dale Hardin 4289 Mariner Way #309 Ft. Myers, FL 33919 Home (239) 454-8523 Cell (239) 340-8215

From djmerz@3-cities.com Mon Apr 28 23:19:26 2003
Subject: [R-390] Gear train lubricants

Hi, another data point.... in a sea of 390 experience. I have some Phil Wood's around somewhere that I bought when I was into bicycle lub tasks. I thought about using it when I starting cleaning my 390a but instead followed the "conventional wisdom" posted somewhere about Marvel M O and Mobil 1. I'm glad to hear that Phil Wood's grease works so well. Maybe I'll dig it out and see if mine has congealed yet, hi. As I recall it was still pretty "juicy" and flowed out from the light green plastic toothpaste type tube it came in - I may have tossed it because it was about 30 years old 2 years ago. Another data point may have been lost, but maybe today's Phil Wood's grease is different than the stuff I had. Dan.

From r.tetrault@attbi.com Tue Apr 29 04:25:35 2003
Subject: [R-390] Gear train lubricants

Synthetic is synthetic. They don't evaporate. That's why they are the only lubricants for gas turbines and such. Thicker is better for the gear train as it is less likely to wander. You can get synthetic wheel bearing grease if you talk to your local race car parts store. I use RedLine 75-90 gear oil and their CV/wheel bearing grease for everything needing lubricant. Well, almost. My Audi quattro has 286K miles on RedLine, still gets 5K/quart, original clutch, though that's my fault, I take it outta gear at the stopsign even. But the running gear is original and still breaking in as far as it feels. Bob Portland, OR

From ezeran@concentric.net Tue Apr 29 04:32:03 2003
Subject: [R-390] Gear train lubricants

> > The best lubricant I have found for a freshly stripped and cleaned R-390 gear train in Phil Wood's bicycle grease.

Too Funny! I remember Phil Wood hubs when they were new (73 or so?). Sealed bearings who woulda thunk it? I was riding a Raleigh International criterium bike(all 531 tubing with Campy Strada road set), Nishiki touring, and a Motobecane road bike. R390s were $15-$20 at swapmeets, I was much thinner and had hair color...and more hair. Remember the Brooks seats with copper rivets...the "S Line" of bike saddles! OK ..enough...my ..regression into BoatAnchor Bike riding....when a 2A3 was less than a quarter. Super 8mm Home movies.....?? Will be at the West Coast Military Radio Colector's Group annual meet Thursday - Sunday...gotta get into the retro mind set . EdZ San Diego

From cbscott@ingr.com Tue Apr 29 13:34:45 2003
Subject: [R-390] Refinishing meters

Sweeeet! I thought the thru-holes looked like they had inserts, but I didn't figure they were threaded. Thanks. Barry(III) - N4BUQ

From dpg@coe.neu.edu Tue Apr 29 13:38:45 2003
Subject: [R-390] Re: Refinishing meters

Question: Does the joint between the circular case and square face have a recessed metal ring with 4

notches in it? A couple of meters I recieved yeterday have that, might need a special wrench to unscrew it, if it does indeed screw in. It could also be a friction/compression ring; if so I guess drilling into the notches would help. Just a guess.

Also: I was reading in the 'Pearls' about the solution of the meter face reproduction problem (using a laser printer). I'd like to make a couple of Fair Radio replacement meters into useable R390 meters, but to do so, I need either a scan or high quality photograph of the two dial faces. Does anybody have these? David P. Goncalves

From cbscott@ingr.com Tue Apr 29 14:02:13 2003
Subject: [R-390] Re: Refinishing meters

This one has four shoulder screws that hold the round back to the square face. I didn't see this until I removed the thick gasket. I'll get a picture on the website tonight (unless I forget...) Barry(III) - N4BUQ

From gwmoore@moorefelines.com Tue Apr 29 14:30:44 2003
Subject: [R-390] Re: Refinishing meters

To ALL, I could generate some artwork for the meter faces, but what I would need is a photo of an actual glowing R390 meter face with a machinist's scale in the photo... I want to do the artwork large, then have it reduced in a process camera. I need the machinist's scale in the pix to establish actual size...I would appreciate being able to see the mounting screw holes for the meter face, etc.....I have an R392 from Fair with a replacement meter, so I can use that as the benchmark for the "new" meter, in case screw holes have changes, etc, etc.

If you can do this, I will do a layout of the artwork, and get it shot in the process camera to reduce it.. Hey, I KNOW that this is kinda behind the times, but we didn't use CAD/CAM or computer rendering when I was designing dials for aircraft instrumentation..we did the original anywhere from 4:1 to 10:1 using pc artwork layout tape for the indicia, cut to exact size with my trusty X-Acto, and a photo typesetter of the old strip type, so one cut the lettering out and pasted it up...

The bigger the better, as scale errors were reduced in the reduction process.

Now, on printing the meter face, I recommend using either Randolph epoxy Fed-Std 595 color 37038 (flat black) yes krylon flat black would work, or flat black baking laquer from Brownells, and to screen the indicia, a 600x600 mesh stainless screen using Ulano Wet Direct Emulsion.... the printing, I can find no better than Wornow Cat-L-Ink flat white (17875) unless you want a different color.. color. I am not really set up here for this type of precision screen printing, since I am now retired from aerospace engineering, but I could do the artwork, if asked nicely enough --hi--

I will suppose that someone on this list has the ability to do the whole layout by computer graphics, so if they do, you have my greatful thanks, but if you want it done "the old way" I will do the artwork, get it reduced with the emulsion on the right side to expose the screen printing plate, and then ya are on your own...these are just suggestions.... 73 es tnx de Greg

From amcdonald@toyodatrw.com Tue Apr 29 15:17:52 2003
Subject: [R-390] comment on 390 for sale

In response to the 390 for sale, can you give more info on the "neat SSB addition"?

From ba.williams@charter.net Tue Apr 29 15:22:31 2003
Subject: [R-390] Re: Refinishing meters

Greg, I used to do the same thing you are suggesting by hand back in the '70s. However, it seems that a good grade of real silk would be better since you will probably be doing only a few prints and not hundreds. Silk will hold up for this. Maybe steel mesh is better for other reasons, I dunno. Never used it, but high grade silk was amazing. Also, why not just shoot the screens on Rubylith? I bet a good arc light system and a high grade emulsion will get the details of the dial faces pretty good. This saves cutting the Rubylith like you suggested. I can cut screen material and friskets just as well as anyone else, but not that kind of thing with dial arcs and numbers. Just a suggestion from a former commercial artist from the dark ages. (g) By the way, keep in mind that you will probably have to tile the same image on the mesh/silk so that one pull would produce maybe 10 or more dial faces. That is a lot of precision cutting unless you shoot the screen.

Another approach would be easier, more accurate, and certainly cheaper. Look at Hobbytown or any other R/C hobby supply source and see about decal paper. I read about it several years ago. It is a paper and you can 'print' your own decals on this special paper and run it thru the printer. It produces the same decals like we used on plastic model kits. If this stuff is still available, I bet a clear full sized decal with black print would look nice on a white painted metal dial plate. The white arcs and numbers would show thru and probably look very good. Just another suggestion. Barry

From pwokoun@hotmail.com Tue Apr 29 16:56:44 2003
Subject: [R-390] Re: Refinishing meters

Dave and others: If your meter has the ring in the back with the 4 notches you can remove this with a good pair of long nose pliers. This ring is threaded on. Just put the pliers in a couple of the notches and twist CCW.

The other type of meter has the threaded inserts from the rear through the mounting holes. These just unscrew with a wide, thin standard screwdriver. With both types the rubber is probably sticking pretty good from all those years of compression. I don't think a rubber adhesive was used.

I have done both scanned and CAD drawings from both meters onto hp glossy photo paper using a laser printer and they come out looking real good. I remove the dial scales from the meters and carefully glue this new scale onto the back side of the existing scale. Trim all with a sharp razor and you have a perfect match using the existing holes. If you ever want 'original' again, just flip the scale over.

BTW, I just don't do one scale on each sheet of paper. With the computer you can copy 16-20 of the same on each which gives you many years of meter scales. If anyone wants to see the artwork I use I could send you an email of it. My originals are in Visio but I could convert it to jpg or pdf.

Another thing, these meters are so small, really, that a minor imperfection on the artwork really becomes minor when reduced to full size. Some original meters I've seen have had really horrible silk screening, printing, or whatever method they used. good luck to all, pete KH6GRT

From jlkolb@cts.com Tue Apr 29 18:50:08 2003

Subject: [R-390] Re: Refinishing meters

blw wrote: > Another approach would be easier, more accurate, and certainly cheaper. Look > at Hobbytown or any other R/C hobby supply source and see about decal paper.

Back in the dark ages (about 1958), I got a shoebox of commercially made decals from one of the local hams. As well as the sets of words for receivers - Bandswitch - Bandwidth - RF Gain - etc, there were several sets of decals of meter faces. various sizes, black on white, white on black, 0 to 3, 0 to 5, 0 to 10 markings, etc. I guess there used to be lots of meter reuse. John

From ba.williams@charter.net Wed Apr 30 02:02:13 2003
Subject: [R-390] Re: Refinishing meters

Back in the later dark ages I got a large pack of Letraset press type transfers that were mostly electrical terms. I have it somewhere, but I'll probably use some of those "on" and "volume", etc words one day. I'll cover them with a small square of clear laquer. I should start digging around to find that pack. It is neat. Barry

From jamesmiller20@worldnet.att.net Wed Apr 30 03:25:34 2003
Subject: [R-390] 16khz filter failure when hot

My 16 khz filter appears to "quit" when operating temperatures rise after an hour or so of operation. Carrier meter drops to near zero, although signals can still be heard weakly in the 16 khz position (other positions are fine). Use some component cooler to cool the 16k filter down, and it springs back to life after a brief noise. Is this a usual failure mode for this filter? Anyone ever open one up to attempt repair? Jim N4BE

From buzz@softcom.net Wed Apr 30 05:23:02 2003
Subject: [R-390] Meter faces on the web

Listers, Since there has been a lot of interest in R-390 meter faces I decided to put my library of meter faces in the public domain at: http://webs.lanset.com/buzz/meters/faces.html There are meter faces there for R-390, R-392 and the GRC-106 amp.

Also, there was interest on the Mil-Veh mailing list re: using 12 volt lamps on 24 volts so I made up a page to help with those projects at: http://www.softcom.net/users/buzz/12to24/1224v.html I hope that you enjoy, Buzz

From cbscott@ingr.com Wed Apr 30 14:13:22 2003
Subject: [R-390] Meters

List, I updated the website with pictures of the back of the Line Level and Carrier Level Meters. Anyone have meters like these? I would like to get a matching set and wonder if anyone wants to do some trading. http://members.aol.com/n4buq/r390a Thanks, Barry(III) - N4BUQ

From pwokoun@hotmail.com Wed Apr 30 16:31:45 2003

Subject: [R-390] Meter faces on the web

Good beginning Buzz. However, your picture is for the Vu Line Level meter rather than the carrier level stated. If others have trouble opening the picture, try changing the .tiff suffix to .tif. pete

From pwokoun@hotmail.com Wed Apr 30 16:34:43 2003
Subject: [R-390] Re: Refinishing meters

Those rub on decals were made by MarKit and Chartpak which I also still have. Packages were made for words and dial markings, both black and white. Age seems to be drying them out and less able to stick to panels.

From djmerz@3-cities.com Wed Apr 30 17:09:16 2003
Subject: [R-390] Gear train lubricants

Hi , I think one of my reactions to the Phil Wood grease was that it was too thin, but then the Mobil synthetic gear lubricant seems thin also but I used it. I picked up a "review" of the PW grease

Strengths: Good lubrication. Pretty green color. Smells like a machine shop. Beautiful Phil logo.

Weaknesses: There's no such thing as waterproof grease. Expensive. Similar Products Tried: Lubriplate. Gold Medal. Chassis lube.

Bottom Line: A good grease with lots of sulfur in it so it has that good machine-smell (and scuff resistance too). The green color is cool, but RED chassis lube is cooler. Don't know where the waterproof claim comes from. This grease will eventually wash out like any other if exposed to water. You can get comparable performance from regular auto bearing lube or chassis lube for MUCH less money. The squeeze tube is convenient though.

In searching I came across "Militec-1" touted as a gun lubricant. It is pretty expensive except for the free sample that you can get. ($28 for 16 oz - like the quart of Mobil 1 I bought, that's a lot of lubricant). Does anyone have experience with Militec-1 relevant to 390 gears? Evidently it is hard to get off your hands and a little goes a long way, and it's a synthetic oil? Dan.

From rbethman@comcast.net Wed Apr 30 17:18:53 2003
Subject: [R-390] Gear train lubricants

I don't know if anyone has tried it, but powdered graphite mixed with either water or light machine oil would seem a likely candidate. The method of mixing with water results in a dried graphite coated surface. Since the gears aren't in an electrical circuit, this would seem to be another possibility to pursue. Bob - N0DGN

From r.tetrault@attbi.com Wed Apr 30 17:25:01 2003
Subject: [R-390] Gear train lubricants

Hoppe's makes a volatile with moly suspension for this purpose for firearms. You can get it at any sporting goods store, though I don't know their particular trade name. Bob

From barry@hausernet.com Wed Apr 30 17:32:45 2003
Subject: [R-390] Gear train lubricants

Not a such a good idea if the graphite can fly around, settle in places where the sun don' t shine -- inside coil forms, fouling insulators, and possibly creating high resistance connections where infinite ohms should be, etc.

Alternatively, you can treat the gear teeth surfaces with moly paste -- coat them, run in the gear train and than remove the excess. But not sure it's worth it vs. just Mobil One. It does work well on the slug rack rubbing surfaces and a few other places.

The molybdenum particles suspended in the paste work their way into the tiny pits in the metal surfaces. You apply as if Simonizing. The paste itself is just a vehicle and not a lubricant. The moly particles stay put and can't fly around like graphite powder or graphite coating flaking off and flying around. Barry

From k6fsb@juno.com Wed Apr 30 03:01:30 2003
Subject: [R-390] Re: Refinishing meters

David- make yourself a wrench from conduit or copper pipe, i used a piece of copper pipe (i think 1.5") and filed the end to make the tabs (used only three tabs) to fit the back of the metre, put pipe in vise and then unthreaded the collar, movement can be removed after removing the nuts on the back holding solder lugs. Ron

From roy.morgan@nist.gov Wed Apr 30 19:12:47 2003
Subject: [R-390] Re: Refinishing meters

wrote: >David- >make yourself a wrench ... movement can be removed after removing the nuts >on the back holding solder lugs.

Would-be Meter Disassembles, I have the urge to repeat Morgan's Law of Radioactive Meters and Regulator Tubes: tu wit: DON'T BREAK THEM OPEN AND EAT THE INSIDES.

To elaborate slightly: 1) SOME meters from R-390's and other radios have glow-in-the-dark meters containing alpha-emitting radioactive sources. (EVen though it does not glow anymore, the stuff is still in there.)

2) Many military OA2 and similar regulator tubes have small amounts of radioactive material in them to ensure reliable ignition especially in the dark and cold.

In both cases (pun intended!) the stuff is pretty harmless unless you get the case open and get the material on you or inside you (by breathing or ingestion or through a cut or abrasion). Make sure this does not happen!

What does "pretty harmless" mean? I remember one analysis that concluded something like: You would have to place an R-390A meter on your chest or cheek for about 34 years before you'd be exposed to radiation equivalent to the minimum yearly radiation exposure. However, ingestion or inhaling the dust

from a meter's markings or tube innards places the material in direct contact with your tissues and could lead eventually to cancer or the like. A sealed meter or unbroken regulator tube envelope effectively contains all alpha emissions. The bottom line: If you are going to take R-390 meters apart: Make VERY sure you know what kind of meter you have and what you are doing. Roy

From cbscott@ingr.com Wed Apr 30 19:15:34 2003
Subject: [R-390] Re: Refinishing meters

Roy, Good [repeat] advice. One of the meters (Carrier Level) is marked "Sealed - Do Not Open" while the other (Line Level) is not marked as such. I wonder if the Line Level meter would be considered "safe"? I haven't opened either of them, partly because of the radiation thing. I have noticed that the Line Level meter doesn't appear to be all that well sealed (see pictures) so I'm thinking it may not be a threat. What think ye? 73, Barry(III) - N4BUQ

From terryo@wort-fm.terracom.net Wed Apr 30 19:17:54 2003
Subject: [R-390] Gear train lubricants

Your Phil Woods must be compromised or an ancient formula. The grease in the tube I have is quite thick. As far as price, one tube has lubed dozens of bicycle bearings and three R-390s and is still half full. I use it pretty sparingly in an R-390 because the excess collects dust and spoils the appearance.

I offered my advice because I have tried Lubriplate and Mobil 1 and found them wanting, especially Lubriplate which is atrocious stuff. I tried Phil Woods because it worked so well on my old Eddy Merckyx bike that it seemed a possible solution. I lubed the first R-390 RF deck and gear train a long time ago and it's worked out better than I ever expected. I'd be interested in hearing from people who have actually tried some of these other lubricants and have some time tested results. Best, Terry O'

From rbethman@comcast.net Wed Apr 30 19:34:30 2003
Subject: [R-390] Re: Refinishing meters

Simple folks. IF the meter is an ORIGINAL, it's markings are RADIUM. Radium may NOT still glow, BUT, it has a half-life in the OVER a thousand year range. One of Radium's by products is Radon gas.

BOTH are Alpha emitters. An alpha particle is the easiest to stop, BUT - is also the one that does the MOST damage. Why else do you think that all the R-390As sold by Fair Radio only can be bought either with replacement meters or without meters at all? The government was REQUIRED to dispose of them as Radioactive Waste.

A very good friend of mine, KA4SFV, is now a silent key. He was exposed to Alpha particles thanks to nuclear testing. The effects take a LONG TIME to get you, unless you get a very healthy dose. I am NOT opening any original meters.

If someone has a GM counter - like an Eberline 500, if you get the chance, AND want to take a chance, remove the cover from the front of a meter - open the window on the bottom of the GM counter and PLEASE send us the resulting readout. Bob - N0DGN

From roy.morgan@nist.gov Wed Apr 30 19:37:15 2003
Subject: [R-390] Re: Refinishing meters

wrote: >Roy, > >Good [repeat] advice. One of the meters (Carrier Level) is marked "Sealed - >Do Not Open" while the other (Line Level) is not marked as such. I wonder >if the Line Level meter would be considered "safe"?

Barry, Many harmless meters are in fact "sealed" and are not intended to be opened for repair. I would not depend on the marking "Sealed do not open" as an indication one way or the other that the thing contains any radioactive material.

Instead, I suggest you do two things:

1) Become familiar with the visual appearance of the radioactive markings. (Yellow-ish, thick, indistinct edges, may appear to have been dobbed on the surface over existing paint markings.)

2) Look at the meter in the dark, complete darkness, after you have also been in the dark for at least 15 minutes to allow your eyes to adjust.. Also, try this after exposing the meter close range to the sun, or to a flourescent lamp (preferably a cool white one). This may "re-charge" the glowing material a bit.

>the Line Level meter doesn't appear to be all that well sealed (see >pictures) so >I'm thinking it may not be a threat.

I don't know if the meters that have radioactive markings were sealed or not. Will folks who know the nature of their meters comment on this please? Roy

From cbscott@ingr.com Wed Apr 30 19:38:30 2003
Subject: [R-390] Re: Refinishing meters

Yes, I've opened meters marked "Sealed" and realize this was designed to keep contaminants out, not to keep bad stuff in.

I think both the meters on my Motorola are original as they have the markings you describe. The "newer" Carrier Level meter (pictured on my website) doesn't appear to have as thick a film on it as the other meters. The Line Level pictured does appear to have it.

I have not been able to detect any glow-in-the-dark effects from any of these meters, but I may not have given my eyes enough time to adjust. I'll give it another try -- particularly after "charging" one of them in sunlight. Thanks. Barry(III) - N4BUQ

From cbscott@ingr.com Wed Apr 30 19:55:52 2003
Subject: [R-390] Meters...

One more thing on the meter issue. One thing I noticed when I pulled the Line Level meter was that it is made such that removing the screws that connect the wire lugs to the meter effectively "open" the meter. Removing both screws caused the innards to flop around and I noticed holes in the back where the screws used to be.

If this is a "hot" meter, this certainly exposed its contents. Just an observation. Barry(III) - N4BUQ

From rbethman@comcast.net Wed Apr 30 20:09:53 2003
Subject: [R-390] Meters - more

Roy and I aren't scare mongers. We just both have a concern for fellow boatanchor enthusiasts. Here is a quote from doing a lookup on Radium half-life:

Radioactive Decay & Half-life: Half-life is the period of time required for radioactive decay to reduce the inventory of a given isotope to half of its initial value. Decay is spontaneous, without any outside stimulus. The decay rate does not vary, so some isotopes with long half-lives will be around for millions of years. Half-life is a key parameter in strategies and engineered structures for treatment and safe storage of radioactive wastes. Compared with the 1600-year half-life of radium-226, caesium-137, cobalt-60 and iridium-192 have half-lives of 30 years, 5.3 years and 74 days respectively. Bob - N0DGN

From barry@hausernet.com Wed Apr 30 20:25:22 2003
Subject: [R-390] Meters...

More meter madness ...

I did that also -- there's a tendency to want to remove those funny screws (really some kind of cap-nut) so as to solder onto the terminals without heating up the meter terminals. However, those cap-nuts are part of the meter mounting and seal -- at least to keep dust out, as well as to keep the "genie" in the bottle.
However, I don't think you need to take the radiation cure. As I recall, alpha travels in straight lines, doesn't take corners well. It would have to get around the meter face, the mechanism and make its way out through the holes.

Always amazes me that radiation is both a cause and a cure. When I was an infant, they hung a radium amulet around my neck (told this story before) to treat an enlarged thyroid gland -- a condition they later found cures itself. Nowadays, there's a relatively new treatment for enlarged prostate -- radioactive "seed" implantation. They put in a seed or two -- radioactive pellet -- for a while, then take it out. Pretty good success rate with little or no collateral damage or side effects, so they say on the radio.

So, when my time comes, I'm not gonna pluck down a fortune for a dumb seed implant. I'll just put a meter scale my jockey shorts. Of course, when I finally get a full checkup, the doc will say "Barry, your prostate seems fine, but the x-ray turned up this arc shaped mark with a some numbers around it -- all backwards!"
Like wimmen -- radiation -- can't live with it, can't live without it. Barry (the idiot one)

From cbscott@ingr.com Wed Apr 30 20:31:02 2003
Subject: [R-390] Meters...

Barry (TIO), I was more concerned about any dust that might have fallen out of the holes. I wonder if that's why the military simply cut the wires instead of unscrewing the lug nuts. I figure it was a time-saving measure but I wonder...

"Well, the prostate exam looks good, but I'm only able to get an S-3 out of you. I wonder what the

proper matching network is from rectal-to-50-ohms should be?" Barry(II1/2) - N4BUQ

From Miguel Bravo" <mbravoc@wanadoo.es Wed Apr 30 20:49:45 2003
Subject: [R-390] Meters...

Well, after two years with mine under the hat, I can say that hair doesn't grow but I feel myself more inteligent so will keep it another two years more. Still remember that some of you laught a lot when I said it but now I am the clever, not you.

And Barry, you are going to have a big success with such big parcel under your shorts. Miguel

From r390a@rcn.com Wed Apr 30 21:10:50 2003
Subject: [R-390] Meters...

Anyone else have meters that came with stickers like this? http://users.rcn.com/r390a/hobby/line-level-rad.jpg

From roy.morgan@nist.gov Wed Apr 30 21:35:20 2003
Subject: [R-390] Meters...

wrote: >Anyone else have meters that came with stickers like this?
http://users.rcn.com/r390a/hobby/line-level-rad.jpg

Not here, but that picture gives some idea of the thick, rough-surfaced, yellow appearance of the needle and graduations that I referred to in my earlier message. Roy

From Richard.McClung@Dielectric.spx.com Wed Apr 30 22:02:02 2003
Subject: [R-390] Meters...

Yes, I took mine apart and rinsed them off in the sink, I think I used bleach and ammonia to help clean them up. It worked real good, too. I don't need a night light in the kitchen anymore because the sink drain glows in the dark..... I put the labels on the neighbors door bell buttons..... RICH @B> }

From _bobs@pacbell.net Wed Apr 30 22:07:53 2003
Subject: [R-390] Gear train lubricants

Does anyone know what the ingredients were in the "Grease, Aircraft and Instrument (GL)" specified in the Organizational Maintenance Manual - TM 11-5820-358-20 for gear teeth, cam edges and guide slots? If my feeble memory serves me correctly, it was a white grease. Was there a problem with this lubricant? Bob Vacaville, CA

From cbscott@ingr.com Wed Apr 30 22:10:08 2003
Message-ID: <697750C28DC0474ABF279ECB3979E37303C1CDFB@hq4>

I think this has been covered before, but I don't recall.

Given the Carrier Level meter is a 1ma full scale meter, can any old 1ma full scale meter be used? Same goes for the Line Level meter (not sure of the full scale is for that one). Other than the scales and the physical size, is there something characterstic about these meters that make replacing them all that difficult? Thanks, Barry(II1/2) - N4BUQ

From redmenaced@yahoo.com Wed Apr 30 22:15:16 2003
Subject: [R-390] Re: Refinishing meters

The meters on my '67 EAC simply are NOT radioactive. Now, the speedometer on my '52 GMC Deuce-and-a-half is one hot sumbitch! Joe

From barry@hausernet.com Wed Apr 30 22:19:18 2003
Subject: [R-390] Meters...

Yup, just like that one, on each meter. Barry

From _bobs@pacbell.net Wed Apr 30 22:33:46 2003
Subject: [R-390] Meters...

Found Radiation Hazard Warning regarding radioactive material in an addendum to TM 5820-238-20

Audio Level Meter	6625-00-669-0769	RA 226	0.69uCi
Audio Level Meter	6625-00-669-0770	Ra 226	0.40uCi

Electron Tube 0A2WA 5960-00-503-4880:

EEVC	U 328	0.1uCi
CBS Hytron	Ni 68	0.5uCi
Raytheon	Co 60	0.2uCi

Seems there is a need for caution when working with any of these. Bob Vacaville, CA

From jparker@onemain.com Wed Apr 30 22:57:09 2003
Message-ID: <5742262.1051739829617.JavaMail.nobody@waldorf.psp.pas.earthlink.net>

From an old submariner:

Alpha isn't too bad.
Beta a little worse.
Gamma even worse.
Neutron, call the relatives and say goodbye

Characteristics of Alpha Radiation

1. Alpha radiation is not able to penetrate skin.

2. Alpha-emitting materials can be harmful to humans if the materials are inhaled, swallowed, or absorbed through open wounds.

3. A variety of instruments have been designed to measure alpha radiation. Special training in use of these instruments is essential for making accurate measurements.

4. A civil defense instrument (CD V-700) cannot detect the presence of radioactive materials that produce alpha radiation unless the radioactive materials also produce beta and/or gamma radiation.

5. Instruments cannot detect alpha radiation through even a thin layer of water, blood, dust, paper, or other material, because alpha radiation is not penetrating.

6. Alpha radiation travels a very short distance through air.

7. Alpha radiation is not able to penetrate turnout gear, clothing, or a cover on a probe. Turnout gear and dry clothing can keep alpha emitters off of the skin.

Characteristics of Beta Radiation

1. Beta radiation may travel meters in air and is moderately penetrating.

2. Beta radiation can penetrate human skin to the "germinal layer," where new skin cells are produced. If beta-emitting contaminants are allowed to remain on the skin for a prolonged period of time, they may cause skin injury.

3. Beta-emitting contaminants may be harmful if deposited internally.

4. Most beta emitters can be detected with a survey instrument (such as a CD V-700, provided the metal probe cover is open). Some beta emitters, however, produce very low energy, poorly penetrating radiation that may be difficult or impossible to detect. Examples of these are carbon-14, tritium, and sulfur-35.
5. Beta radiation cannot be detected with an ionization chamber such as a CD V-715.

6. Clothing and turnout gear provide some protection against most beta radiation. Turnout gear and dry clothing can keep beta emitters off of the skin.

Characteristics of Gamma Radiation and X-Rays

1. Gamma radiation and X-rays are electromagnetic radiation like visible light, radio waves, and ultraviolet light. These electromagnetic radiations differ only in the amount of energy they have. Gamma rays and X-rays are the most energetic of these.

2. Gamma radiation is able to travel many meters in air and many centimeters in human tissue. It readily penetrates most materials and is sometimes called "penetrating radiation."

3. X-rays are like gamma rays. They, too, are penetrating radiation.

4. Radioactive materials that emit gamma radiation and X-rays constitute both an external and internal hazard to humans.

5. Dense materials are needed for shielding from gamma radiation. Clothing and turnout gear provide

little shielding from penetrating radiation but will prevent contamination of the skin by radioactive materials.

6. Gamma radiation is detected with survey instruments, including civil defense instruments. Low levels can be measured with a standard Geiger counter, such as the CD V-700. High levels can be measured with an ionization chamber, such as a CD V-715.

7. Gamma radiation or X-rays frequently accompany the emission of alpha and beta radiation.

8. Instruments designed solely for alpha detection (such as an alpha scintillation counter) will not detect gamma radiation.

9. Pocket chamber (pencil) dosimeters, film badges, thermoluminescent, and other types of dosimeters can be used to measure accumulated exposure to gamma radiation.

From barry@hausernet.com Wed Apr 30 22:56:58 2003
Subject: [R-390] Re: Refinishing meters

Now Joe -- DO NOT peg THAT meter! Well, not in traffic, anyway. Barry

From barry@hausernet.com Wed Apr 30 23:06:25 2003
Subject: [R-390] Meters

Yes -- it has been covered, but nothing is ever resolved forever. Also, it's more humane to beat dead horses than live ones.

Anyway, as I recall, the DC resistance or is very low for the correct R-390 carrier meters -- something like 14 ohms or maybe 11? Resistance varies for other 1 ma meters, but is typically much higher.

To make a different meter work with reasonable deflection calls for changing out 2 or more resistors in the IF deck (part of a bridge circuit.) My understanding is that Fair Radio has been doing that to get some replacement meters working.

Also, as I recall from the thread, Dr. J. and perhaps others had cautioned against putting an ohmmeter directly across the meter terminals. There was a procedure for measuring DC resistance without burning out the armature coil. Probably can find it in the Pearls of Wisdom on Al's R-390A FAQ site. Barry

From jamesmiller20@worldnet.att.net Wed Apr 30 23:13:13 2003
Subject: [R-390] WTB 16 kHz Filter

Anybody have a working 16 kHz filter to part with? Jim N4BE

From rbethman@comcast.net Wed Apr 30 23:24:19 2003
Subject: [R-390] Re: Refinishing meters

The alpha is why there is an issue IF the meter is opened. So long as it is enclosed there is NO danger. When one begins taking meters apart to change, clean, or alter the face/dial, THEN there is an issue.

Army nukes never did trust bubbleheads! Bob - N0DGN