R-390 Reflector February ’06 Edited

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 31 Jan 2006 17:45:44 -0600
Subject: [R-390] IF Trimmer notes

Hi Folks,

Discovered something in the last few days that might be of interest. I've not seen it talked about here in the past. While doing the alignment on my R-390A project (mostly done R-390's) I have gone through the adjustment of the trimmers across the mechanical filters. The gain seemed a bit low on the 4 kc position so I figured it was the dreaded worn out filter scenario. While adjusting the trimmers for max gain I noticed a couple only had one peak. I would expect on the trimmers that will rotate 360 degrees to have two peaks. Some had two peaks and that was on the more sensitive positions.

The ones with only one peak would lead one to believe he had found the correct position for the trimmer which isn't so. What is in fact the case...the fixed cap is not the correct value to properly resonate that end of the filter. I substituted various values in place of the factory cap and found one that would allow adjustment through two peaks and the gain came way up. After getting all the top end tuned I pulled the deck loose and stood it up in the radio to adjust the lower trimmers as my side panel does not have the holes to allow adjustment while the IF deck is in place. I found three of the four bottom trimmers to have only one peak. I will have to pick up some more caps to continue the tuning of the lower end of the mechanical filters but I expect the final outcome to be a much better performing radio. It should allow me to reduce the overall IF gain and improve overall sensitivity beyond what I already had achieved by improving the efficiency of the coupling of the signal through the mechanical filters.

Bottom line is if you only get one peak on the trimmers, improvements in performance can be achieved by getting the correct value cap in the circuit to allow proper resonance setting. Can't go by the values in the book as each filter will probably be different. Two of mine had been changed from the Collins to the later Whitewater filters....that probably accounts for two positions being out of resonance. The caps I pulled were 82 pf and tested OK.

I also had an intermittent gain problem in the 4 Kc position which turned out to be the lead on the original fixed cap had rotated in the body of the cap causing a change in capacitance anytime the cap was pushed on....or when the temp. in the radio changed.

This radio is getting close to .1uv a little at a time with most bands running .13 to .15 @ 8Kc. Not bad for one that came out of the SJC pile! Cecil....

From: "Barry" <N4BUQ@aol.com> Date: Tue, 31 Jan 2006 20:10:58 -0600
Subject: Re: [R-390] IF Trimmer notes

Cecil,

Good analysis. I'd assume that with any of the ceramic trimmer types, if you don't get two peaks (or nulls as the case may be), the cap isn't of sufficient value due to whatever due to the mechanical nature of their construction. Barry - N4BUQ

Date: Tue, 31 Jan 2006 21:50:29 -0600 From: "tfrobase" <tfrobase@kitparts.com>
Subject: [R-390] AC Plug?

Ton, N3LLL

From: Tom Norris <r390a@bellsouth.net> Date: Tue, 31 Jan 2006 22:20:00 -0600
Subject: Re: [R-390] AC Plug?

Make **SURE** you put COLLINS in large letters in the title and subtitle of the listing. heehee.

What does Fair Radio sell these plugs for, if they still have them? Tom NU4G

From: Roy Morgan <roy.morgan@nist.gov> Date: Wed, 01 Feb 2006 09:56:02 -0500
Subject: Re: [R-390] IF Trimmer notes

wrote: Good analysis. I'd assume that with any of the ceramic trimmer types >Cecil,

Barry and all,

It goes like this: As the trimmer is rotated toward it's minimum value, the circuit begins to resonate but needs less capacitance than the minimum. Thus you get only one dip, but the dip is not at resonance.

OR:

As the trimmer is rotated toward it's MAXimum value, the circuit begins to resonate but needs more capacitance than the MAXimum. Thus you get only one dip, but the dip is not at resonance.

If the real resonance point is within the range of the trimmer, you'll get two dips, one on either side of maximum capacitance.

The same applies to air variables. With slug tuned circuits, or with compression trimmers, you get more of a hint of what's going on because of the position of the shaft or screw. Roy

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Wed, 01 Feb 2006 10:06:48 -0500
Subject: [R-390] Source for good ceramic alignment/tuning tools

I've got a set of thiry-year old alignment tools made out of nylon that I probably bought at Radio Shack. (In any event they come in a now decaying plastic pouch that say "Color TV alignment set"). They're getting pretty worn and ratty now, and since I'm getting deep into aligning RF decks and eventually IF transformers I want something better.

Radio Shack doesn't seem to have any tools like this anymore. AES has some nylon tools but I'd like something better than what I have. (Well, at least the nylon ones are a little bendy and don't break).

At one point you could buy from the electronics parts places some really nice ceramic and/or carbon graphite alignment tools. If I poke around Digikey etc. I see a couple of nice insulating screwdrivers but nothing with the hex tips (including the narrow-shaft one for doing the bottom of two

slugs in a trasformer).

If anyone knows of a good source for buying these ceramic hex thingys, I think that I'd now like to invest a little bit of money (maybe $20-$40) for a set that'll be useful in my R-390A and other radios. If anyone knows the exact designation for the hex core sizes that'd be handy someday too. Tim.

From: "Barry" <n4buq@aol.com> Date: Wed, 1 Feb 2006 09:25:20 -0600
Subject: Re: [R-390] IF Trimmer notes

Well, with *some* air variables. The type that have a mechanical stop at maximum capacitance will only have one "true" peak or null (depending on the circuit). Barry - N4BUQ

From: Roy Morgan <roy.morgan@nist.gov> Date: Wed, 01 Feb 2006 11:12:59 -0500
Subject: Re: [R-390] Source for good ceramic alignment/tuning tools

wrote: >I've got a set of thiry-year old alignment tools

Tim,

I have been collecting alignment tools for a *long* time. The wide array of forms and shapes tells me I have only a few of the ones that likely were made.

Among my favorites are phenolic ones that have metal ends. Some are flat blades, some are internal hex like nut drivers. I just got a 51J-4 that has it's phenolic alignment tools in place, and one has a small round pin through the end of the tool..

None of the old tools are the hex shaped ones needed for more modern slugs.

>They're getting pretty worn and ratty now, and since I'm getting deep into >aligning RF decks and eventually IF transformers I want something better.

The flat-ended ones will shape up on a grinding wheel or with a file. But the small hex ones are likely at the end of their life.

>Radio Shack doesn't seem to have any tools like this anymore.

Look here: http://www.action-electronics.com/toolidx.htm#Align
The PDF file describing lots of tools is: http://www.action-electronics.com/pdf/gcalign.pdf

>At one point you could buy from the electronics parts places some really >nice ceramic and/or carbon graphite alignment tools.

I never saw them. If you find them, please tell us all. Roy

From: "SAM LETZRING" <sletz@msn.com> Date: Wed, 1 Feb 2006 09:35:14 -0700
Subject: Re: [R-390] Source for good ceramic alignment/tuning tools

I have a lot of ceramic screwdriver tip alignment tools (both straight and phillips) that I have used for

adjusting surface mount inductors/var. caps.- but I have never seen ceramic hex tips- don't know why they wouldn't b out there though. aquick google search didn't turn anything up-however. Sam

From: "Barry" <n4buq@aol.com> Date: Wed, 1 Feb 2006 12:07:55 -0600
Subject: Re: [R-390] Source for good ceramic alignment/tuning tools

Tim,

Look at:
http://www.radioshack.com/product/index.jsp?productId=2062757&cp=&kw=alignment&parentPage=search

Barry - N4BUQ

From: Tom Norris <r390a@bellsouth.net> Date: Wed, 1 Feb 2006 17:54:57 -0600
Subject: [R-390] Thermistor info for soft start?

What is the spec of the thermistor needed for the 390 and 390A to give it soft start? I had ordered a couple of the Keystone things from Digi-Key several years ago, but am going to place a Mouser order the next day or so and would like to get a couple from them for the "new" stuff that just came in.

Can anyone assist? Thanks Tom NU4G

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Wed, 01 Feb 2006 19:42:57 -0500
Subject: Re: [R-390] Thermistor info for soft start?

wrote: > What is the spec of the thermistor needed for the 390 and 390A to give it soft start? I had ordered a couple of the Keystone things from Digi-Key several years ago, but am going to place a Mouser order the next day or so and would like to get a couple from them for the "new" stuff that just came in.
The one I use is a CL-80. Rated at a max current of 3 Amps (and a R-390A with ovens off is about 1.5 Amps, with ovens on is a little over 2 Amps) and cold resistance of 47 ohms.
++
I don't know the official spec for max current of a R-390 but I'm guessing it's similar or maybe just a little more.

Other ones with a similar max current rating will work too. As you go up in max current rating, the cold resistance will drop and the current limiting effect will go down. If you go too low in max current rating you risk burning up something.

The CL-80 gets rather warm in operation - which means it is doing its job. In my radio it gets to the point where it would be uncomfortable for me to touch it more than just momentarily. And of course it is wired in the hot AC lead so you gotta be careful not to touch the leads! Teflon is a good thing for covering the leads.

Wow, if you need a couple does that mean you just acquired a couple more 390/390A's? I'm jealous :-).

Mouser part # 527-CL80. Digikey part # KC008L-ND. Can't believe I just spent 4 or 5 whole

paragraphs characterizing a single part! Tim.

From: "Barry" <N4BUQ@aol.com> Date: Wed, 1 Feb 2006 21:39:43 -0600
Subject: Re: [R-390] Thermistor info for soft start?

I've used a CL-80 as well. Barry - N4BUQ

From: "Leanne" <leanne@islc.net> Date: Wed, 1 Feb 2006 15:40:34 -0500
Subject: Re: [R-390] Source for good ceramic alignment/tuning tools

Take a look here at their alignment tools

http://www.gcwaldom.com/catalog.html Leanne - W1WXS

I've got a set of thiry-year old alignment tools made out of nylon that I probably bought at Radio Shack. (In any event they come in a now decaying plastic pouch that say "Color TV alignment set"). They're getting pretty worn and ratty now, and since I'm getting deep into aligning RF decks and eventually IF transformers I want something better.

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Thu, 02 Feb 2006 14:00:08 -0500
Subject: [R-390] The infamous squelch non-option

I've been able to figure out that the empty filler plate on a R-390A's audio deck is for some sort of squelch option. As I get more receivers accumulating around the shack, I'm starting to appreciate how squelch could make sense in a lot of environments.

The blank plate covers the mounting holes for a tube socket and a relay, right? What other componentry had to be added? I see the non-terminated wiring harness near that spot, anyone have a schematic diagram of what might go there?

I probably will try to rig up some sort of squelch system, and probably outside the various receivers. In particular what I want to do is be able to monitor a couple of HF utility frequencies and have them break in over SWL broadcasts when there's something happening, this is more of a prioritizing rather than a simple squelch scheme. Still, I'd like to see how they thought it would be done in the R-390A. Tim.

Date: Thu, 02 Feb 2006 12:20:50 -0700 (MST) From: Richard Loken <richardlo@admin.athabascau.ca>
Subject: Re: [R-390] The infamous squelch non-option

The squelch is an artifact from the R-390 so if you look at an R-390 manuals then you should be able to figure most of it out. Me and my manual are separated at this moment or I would provide more tangible data. Richard Loken

From: DJED1@aol.com Date: Thu, 2 Feb 2006 14:23:46 EST
Subject: Re: [R-390] The infamous squelch non-option

writes: probably will try to rig up some sort of squelch system, and probably outside the various

receivers. In particular what I want to do is be able to monitor a couple of HF utility frequencies and have them break in over SWL broadcasts when there's something happening, this is more of a prioritizing rather than a simple squelch scheme. Still, I'd like to see how they thought it would be done in the R-390A.

I haven't tried to do a squelch, but it shouldn't be too hard. You've got the AVC line and the diode load jumper available on the rear terminal strips, so you could use the AVC voltage level to switch the audio on or off. Let us know how you fare Ed

From: Roy Morgan <roy.morgan@nist.gov> Date: Thu, 02 Feb 2006 14:54:36 -0500
Subject: Re: [R-390] The infamous squelch non-option

wrote: >The blank plate covers the mounting holes for a tube socket and a relay, >right?

Right.

>What other componentry had to be added?

Not a lot. The relay is a plate load relay of some 10 Kohms DC resistance, I think, and operates in the plate circuit of a 12AU7 or the like.

The Mode switch is likely capable of that function. You will find that it's stop is set one from the end. You move the stop and add a panel label or plate and that's it on that end. The harness contains all the wires needed.

>I see the non-terminated wiring harness near that spot, anyone have a schematic diagram of what might go there?

See the R-390/URR manual. That has it as standard equipment.

>I probably will try to rig up some sort of squelch system, and probably outside the various receivers.

The AGC or Diode Load terminals on the R-390 would be useful. Roy

From: Tom Norris <r390a@bellsouth.net> Date: Thu, 2 Feb 2006 18:57:43 -0600
Subject: Re: [R-390] The infamous squelch non-option - I got a drawing

wrote: The squelch is an artifact from the R-390 so if you look at an R-390 manuals then you should be able to figure most of it out. Me and my manual are separated at this moment or I would provide more tangible data.

I've got the schematic of that "option" It's in an older R-390A schematic I have from someplace.

Let me make a "snip" of it and put it online. Tom

From: "Steve Hobensack" <stevehobensack@hotmail.com> Date: Thu, 02 Feb 2006 20:13:12 -0500
Subject: [R-390] Radio Shack tools

Be carefull with those radioshack alignment tools as pictured in the link. The metal goes straight through the plastic to the other end. I found out the nasty way when the palm of my hand took a hit of B plus! ....Steve...N8YE

From: "Barry" <n4buq@aol.com> Date: Wed, 1 Feb 2006 12:07:55 -0600
Subject: Re: [R-390] Source for good ceramic alignment/tuning tools

Tim,

Look at:
http://www.radioshack.com/product/index.jsp?productId=2062757&cp=&kw=alignment&parentPage=search

From: Tom Norris <r390a@bellsouth.net>
Subject: [R-390] 390A Squelchables

I did a quick grab of the 390A squelch and wrote a tiny bit about it. Included some of the original schematic so you can see it in context. It picks up its signal from the diode load at pin 11 of J620.

The circuit is enabled via the function switch at one click past cal. This voltage appears at J619-8. It simply grounds the audio line via J620 pin 2. The wiring harness for the circuit should be installed in the deck -- even my 1967 EAC has it tied off and unused. Here's the circuit --

http://www.fernblatt.net/A/390asql.zip

Not to be a blasphemer, but it would be mo' easier using fets. The "squelch B+" might need to be messed with in that case. The switches do appear to have wiring in that last position, and there is wiring in the audio decks, whether the twa' ary meet, I canna say. Tom NU4G

From: "Patrick" <brookbank@triad.rr.com> Date: Thu, 2 Feb 2006 20:49:25 -0500
Subject: Re: [R-390] Radio Shack tools

So did I.....Pat

From: Tom Norris <r390a@bellsouth.net> Date: Fri, 3 Feb 2006 17:10:49 -0600
Subject: [R-390] 390A Squelch info online part II

Slight edit of content, changed file name. See below. The audio module partial schematic is slightly more readable and there is a photo of the front corner of the audio module for those who may not know where the "optional squelch" was supposed to go. 73

I did a quick grab of the 390A squelch and wrote a tiny bit about it. Included some of the original schematic so you can see it in context. It picks up its signal from the diode load at pin 11 of J620. The circuit is enabled via the function switch at one click past cal. This voltage appears at J619-8. It simply grounds the audio line via J620 pin 2. The wiring harness for the circuit should be installed in the deck -- even my 1967 EAC has it tied off and unused. Here's the circuit --

http://www.fernblatt.net/A/390A_squelch.zip

Not to be a blasphemer, but it would be mo' easier using fets. The"squelch B+" might need to be messed with in that case. The switches do appear to have wiring in that last position, and there is wiring in the audio decks, whether the twa' ary meet, I canna say. Tom NU4G

From: DW Holtman <future212@comcast.net> Date: Sat, 04 Feb 2006 18:53:30 -0700
Subject: [R-390] Rack Mounted R-390A

Hello,

This week I aquired a 19 inch rack on ebay. It is a very heavy duty (will hold up to 3000 lbs) unit, it will have no problem holding a few hundred pounds of radios.

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&ssPageName=ADME:B:EOIBSAA:US:31&Item=5860753194

My question is about mounting R-390A's in a rack. I have heavy duty sliders, but there is no built in holes for standard sliders in R-390A's. I'm thinking about making a side plate to secure the radio to the sliders. I know that I can secure an R-390 using the front rails, but would really like to be able to slide them out to work on or remove them. What is the best way to mount them?

Thank you in advance for any information. 73's DW Holtman WB7SSN

From: ToddRoberts2001@aol.com Date: Sat, 4 Feb 2006 22:04:50 EST
Subject: Re: [R-390] Rack Mounted R-390A

writes: My question is about mounting R-390A's in a rack. I have heavy duty sliders, but there is no built in holes for standard sliders in R-390A's. I'm thinking about making a side plate to secure the radio to the sliders. I know that I can secure an R-390 using the front rails, but would really like to be able to slide them out to work on or remove them. What is the best way to mount them? Thank you in advance for any information. 73's DW Holtman WB7SSN

Always use extreme care when mounting a heavy radio like an R-390A in a rack using sliders. I have heard stories where the radio slid out too fast and shifted the center of gravity so far that the whole rack toppled over onto the person causing severe injury. A heavy radio mounted high in a rack can do this more easily than you think. Just use common sense and caution and there should be no problems. 73 Todd WD4NGG

From: "dr7zyq" <dr7zyq@imbris.net> Date: Sat, 4 Feb 2006 19:13:26 -0800
Subject: Re: [R-390] Rack Mounted R-390A

Also, your message seems to suggest that you can bolt a '390/A into a rack cabinet using the front mounting holes and let it hang in the rack. They are well built, but not intended for that. I once sold a radio to a fellow ham who passed away a year later. I bought the radio back from his estate and then found that he had hung it in the rack by the front -- it no longer tuned smoothly, but would hang up and it took some work to get it back to tuning correctly. A piece of aluminum angle mounted in the back of the rack to support the rear of the receiver is cheap and very easy to do.

If I misunderstood your comment, then never mind. David, WA7ZYQ

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Sun, 05 Feb 2006 11:13:51 -0500
Subject: Re: [R-390] Rack Mounted R-390A

wrote: writes: My question is about mounting R-390A's in a rack. I have heavy duty sliders, but there is no built in holes for standard sliders in R-390A's. I'm thinking about making a side plate to secure the radio to the sliders. I know that I can secure an R-390 using the front rails, but would really like to be able to slide them out to work on or remove them. What is the best way to mount them?

FWIW: My yellow striper from Fair Radio had "extra" holes in the sides which had obviously been used for mounting rails in its previous life. They were simply drilled and tapped into the aluminum sides, and not done awfully professionally either.

That said, what I do: Put angle-iron on the inside of the racks. Align so that bottom sides of the R-390A sit on the angle-iron and you can secure it in with the front panel screws. Note that the front panel screws do not really support the unit, that's reserved for the angles that the radio sits on. The screws are just there to stop it from sliding out. Allow a lot of space on the top and bottom to remove modules etc. I would say at least ten inches on top and bottom at the very minimum. If you can make it twenty inches.

It is very difficult for me (and I'm not a small guy) to lift a R-390A overhead myself. I would never recommend that anyone try it. Realistically you probably don't want to mount it much over waist-height. Put speakers and lightweight stuff up top.

Putting it in over waist height is possible if you lay the rack down, bolt the radio in, and then tip it up. This can be done by one guy with a six-foot medium-weight rack. For your heavy duty racks it may not be feasible. This is also much more reasonable if you take the modules out (especially the power supply!) and then put them back in after the mainframe is secure and at the desired height.

Replace angle-iron with aluminum angle if you wish etc.

For ultimate deluxe arrangement, put delrin strips on top of the angle pieces to make it easier to slide in and out. But in case you didn't get the hints, always make sure you can get in to align and swap around modules without having to take it out of the rack. With a little luck you'll be able to put the mainframe into the rack and not remove it for years.

And I fully agree with the others: do not slide anything heavy out of a rack on rails! Many racks originally had anti-tip features such as lead weights on the bottom or legs that came out the front and helped against tipover. This is not a hypothetical risk! Tim.

From: Bruce Hagen <bhagen44141@yahoo.com> Date: Sun, 5 Feb 2006 08:53:58 -0800 (PST)
Subject: [R-390] Alignment tools

Tim:

The current Stanley, was Jensen, catalog (www.StanleySupplyServices.com) has complete sets or individual tools. See pages 132 and 279. Bruce Hagen

From: mikea <mikea@mikea.ath.cx> Date: Sun, 5 Feb 2006 12:05:22 -0600
Subject: Re: [R-390] Rack Mounted R-390A

wrote: And I fully agree with the others: do not slide anything heavy out of a rack on rails! Many racks originally had anti-tip features such as lead weights on the bottom or legs that came out the front and helped against tipover. This is not a hypothetical risk!

What He Said, in spades.

Best bet is to lag-bolt the base of the rack to the floor if possible, and to tie the back of the rack to a stud in the wall behind the rack. This is especially important for open racks with only one set of vertical supports, and only a bit less so for racks with two sets.

We had to do this where I was stationed in Japan, because the racked gear, when extended, wanted to pull the racks over, breaking the conduits leading power and signal in/out, and because the frequent small quakes and less-frequent (but pretty hairy) bigger quakes really came close to knocking over the racks even when all the gear was stowed. Mike Andrews

From: Tom Norris <r390a@bellsouth.net> Date: Sun, 5 Feb 2006 12:23:59 -0600
Subject: [R-390] Rack mounted R-390*, my solution

To and the list --

My solution to the weight problem when mounting heavy things in a rack is to use angle stock bolted to the sides of the rack cabinet. Here's a pic - http://www.fernblatt.net/A/rack_anglestock.jpg

That rail "shelf" bears the weight and the front screws simply hold the radio in place. The aluminum rails give quite a bit of friction, so the front bolts aren't *really* needed, but I feel better with them there.

Another thing that helps in my case is assorted heavy "crap" in the bottom and an extra deep rack.

Outriggers on the front are A VERY GOOD IDEA if you use slides though, regardless. Tom NU4G

From: DW Holtman <future212@comcast.net> Date: Sun, 05 Feb 2006 11:53:17 -0700
Subject: [R-390] Rack mounted R-390

Hello,

Thanks for all of the great suggestions. The idea of using aluminum angle iron is the overwhelming choice among the experts on this forum. It is what I will go with, tomorrow I will go to my local home center and get some heavy 1/8 inch angle.. I am planning to anchors it against some studs in the wall as well as put some anchors in the concrete floor to secure the cabinet when I decide exactly where I will go. I have to be careful because once it is mounted it will be a chore to move it around. Thanks to Tom Norris for sending the link to the picture. Looking forward to filling up this 7 1/2 foot tall rack with quality Heavy Metal Gear. 73's DW Holtman WB7SSN

From: Dan Arney <hankarn@pacbell.net> Date: Sun, 05 Feb 2006 04:15:04 -0800

Subject: Re: [R-390] Rack Mounted R-390A

1000's of them have been mounted by the front panel only with no problems. Hank KN6DI

From: Robert Nickels <w9ran@oneradio.net> Date: Sun, 05 Feb 2006 10:57:00 -0600
Subject: Re: [R-390] Rack Mounted R-390A

wrote: Also, your message seems to suggest that you can bolt a '390/A into a rack cabinet using the front mounting holes and let it hang in the rack. They are well built, but not intended for that.

Actually they are, as long as you aren't contemplating mobile operation. From page 6 of TM-11-856A 'Radio Receiver R-390A/URR' -

"Two cases and two rack-type cabinets (not supplied) are available for use with the receiver. In addition, the receiver may be mounted in any standard 19-inch rack, if adequate ventilation is furnished. In mobile installations, the weight of the receiver must be supported at the rear of the main frame rather than by the front panel alone".

The two cabinets are the light weight tabletop cabinet CY-917/URR and the more rugged CY-979/URR. The manual later states that the "recommended cabinets have dowel pins that engage holes in at both rear lower corners of the receiver and provide the required support".

If hams were to install their R-390As per the procedures described in the TM, for Fixed Installations we would allow at least 1 3/4" (1 U) open rack space between receivers, and remove both top and bottom dust covers all tube shields except those on V201 through V206, V505 and V701. The manual states that removal of these tube shields will lower bulb temperature of the tubes and prolong tube life, and that dust covers should only be left in place when extremely dirty or sandy conditions exist. I suppose some hamshacks might qualify! 73, Bob W9RAN

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Sun, 5 Feb 2006 10:56:05 -0800 (PST)
Subject: Re: [R-390] Source for good ceramic alignment/tuning tools

Radio Daze, Digikey and E-bay all have GC alignment tools. Regards, Perrier

From: Buzz <muttman@charter.net> Date: Sun, 05 Feb 2006 12:10:26 -0800
Subject: Re: [R-390] Rack mounted R-390

A great source for angle iron is from discarded bed frames. I've found them
behind furniture stores and at flea markets or garage sales for a few dollars. Buzz

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Sun, 05 Feb 2006 16:28:56 -0500
Subject: Re: [R-390] Source for good ceramic alignment/tuning tools

wrote: > Radio Daze, Digikey and E-bay all have GC alignment tools.

Thanks, guys. What I ended up buying was a 9-piece Aven set from Digi-Key, 243-1016-ND. They are "just" plastic, not the ceramic ones I was desiring, but they were pretty cheap and they seem to be more

durable than my old chewed up Radio Shack set. My next Digi-Key order I might get a ceramic screwdriver or two (but they aren't very cheap!) Tim.

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Sun, 5 Feb 2006 13:48:08 -0800 (PST)
Subject: [R-390] Good technical reference books.

GM List,

Here are 3 sources of chee… I mean "thrifty" tech books for us BA enthusiasts. They have both basics and up to the esoteric math explanations.

1. Bill Orr Handbooks. Found on Ebay. Search by his name. Usually $10-$20.

2. ARRL Handbooks. Mid 70's. Also found on Ebay. Search by name. Usually $10-$20. In this age range they still have tube theory and info on using dual gate MOSFETS so we can SS our R-390 and other BA receivers. In this era you didn't have to be a MIT EE graduate to understand the explanations.

3. Communications Receivers by Ulrich L. Rohde, Jerry C. Whitaker, and T. T. N. Bucher (Hardcover - Jan 15, 1997). Found on Amazon.com. Search using Ulrich L. Rohde. Usually can be purchased used for $25-$30. Rhode is a ham and THE AUTHORITY on receivers. Practical as well as all the math you could ever handle. He wrote for years for Ham Radio magazine. WARNING: Extensive use of SAND STATE! Ludites should avoid this one. Regards, Perrier

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Sun, 5 Feb 2006 14:51:13 -0800 (PST)
Subject: [R-390] SSB HR scaned article

Hi Gang,

A couple of years ago vk2abn offered a pdf file of the HR SSB article for the R-390A. His email address bounced on me.

I'd appreciate it if someone could email it to me. Regards, Perrier

From: Tom Norris <r390a@bellsouth.net> Date: Sun, 5 Feb 2006 17:02:20 -0600
Subject: Re: [R-390] Rack Mounted R-390A

Hank is correct, but it makes a whole heck of a lot easier to get in and out of the rack if you put in those angle bits. HP supplied those sort of angle "shelves" in some of their larger equipment system racks for just that reason. (I think it was HP...) Tom

From: Tom Norris <r390a@bellsouth.net> Date: Mon, 6 Feb 2006 11:54:49 -0600
Subject: Re: [R-390] Rack Mounted R-390A

The reference is on page 5 of TM 11-5820-357-20 manual in the installation section, it says --

"Caution: When the receiver is installed in any cabinet other than described above, adequate ventilation

must be provided. For mobile applications of the receiver in cabinets other than Cabinets, Electrical Equipment CY-979/URR and CY-1216/U, support must be provided at the rear of the receiver, so that the front panel does not carry the entire weight of the receiver."

Similar info for the 390A is found in paragraph 6 section 6 of AFTO 31R1-2URR-422/TM 11-5820-358-20 (page 10 of feb '61 printing)

But since folks argue with the manuals about things like solid state rectifiers being wrong, I guess they won't agree with this either. If the shafts bind, it may be as simple as adjusting the front panel bushings.

I'd rather use the angles that try to wrestle with an 85 pound radio at shoulder height with one hand while removing screws with another and keeping it from destroying what's below it in the rack with a third hand. I've not sprouted that third hand though, no matter how many vitamins I take, so I use the anglestock. Slide it in, secure the front. No trying to support it while fastening it to the rack. Tom

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Mon, 06 Feb 2006 18:25:07 -0500
Subject: Re: [R-390] Good technical reference books.

wrote: > 2. ARRL Handbooks. Mid 70?s. Also found on Ebay. Search by name. Usually $10-$20. In this age range they still have tube theory and info on using dual gate MOSFETS so we can SS our R-390 and other BA receivers. In this era you didn’t have to be a MIT EE graduate to understand the explanations.
The monthly QST's were good too. The Handbook construction projects tend to be very pedestrian and while the details vary from year to year there is overall not a lot of variety (but a lot of really good reference material). The QST articles tend to be more exotic and detailed.

My personal taste in Handbooks is 50's and 60's. By the 70's all the ads are gone. But on the sand-state side they start getting heavy into robust simple receivers and QRP equipment.

The Handbook was a bit cookbook-like, and that was probably a good thing. (There was also this bizarre fascination with 7360 beam-deflection mixers for everything including the kitchen sink!)

A good tube textbook I remember was one by Seely, "Electron Tube Circuits".

I also subscribe to the HBR mailing list on qth.net. Highly recommended. When I was a kid I got to read all this stuff but didn't have the money to play with it. Now I can afford it but don't have enough time!

> 3. Communications Receivers by Ulrich L. Rohde, Jerry C. Whitaker, and T. T. N. Bucher (Hardcover > - Jan 15, 1997). Found on Amazon.com. Search using Ulrich L. Rohde. Usually can be purchased > used for $25-$30. Rhode is a ham and THE AUTHORITY on receivers. Practical as well as all the > math you could ever handle. He wrote for years for Ham Radio magazine. WARNING: Extensive use of > SAND STATE! Ludites should avoid this one.

I really really like Clark and Hess, "Communications Circuits: Analysis and Design". Maybe too much math for a lot of hams: they spend a lot of time making approximations to waveforms so they can integrate to get semi-analytic results, but today a lot of the analysis would be done with computers (even a spreadsheet would be leagues beyond what they do in the book, but with less rule-of-thumb-derived in approach). Does both transmitters and receivers, tube and transistor and just a little IC. (Admittedly more transistor at least for the receiver side.) Tim.

From: "Paul H. Anderson" <paul@pdq.com> Date: Mon, 6 Feb 2006 21:28:16 -0500 (EST)
Subject: Re: [R-390] Rack Mounted R-390A

wrote: > The reference is on page 5 of TM 11-5820-357-20 manual in the installation > section, it says

The FRR-33 dual diversity RTTY system installation manual shows angle iron rails to rest the receivers on (2 R-391's and other components). This is for fixed, not mobile operation. The R-391's might be a little heavier than the R-390A, though.

I'd still vote for using the supports.

> I've not sprouted that third hand though, no matter how many vitamins I take, so I use the anglestock.

You need to be eating the insides of meters, not taking vitamins! Paul

From: John Lawson <jpl15@panix.com> Date: Sun, 5 Feb 2006 14:46:25 -0500 (EST)
Subject: Re: [R-390] Rack mounted R-390

wrote: Hello, will go with, tomorrow I will go to my local home center and get some heavy > 1/8 inch angle.. I am planning to anchors it against some studs in the wall

Been using alum. angle for years in racks to support Large Heavy Things, so that the panel screws just hold the unit in place.

For something on the order of weight (and value!) or a 390 - I would probably go for more like 1/2 or even 3/4 angle. For devices over 100 pounds, I use 1" and make sure that the rack has rear-mounting facilities. A lot of racks have a pair of drilled uprights on each side for this purpose.

But, even though it's been done by many, including Moi, I think in my newest installation I'll support my -390s, etc., like this, and give the old panels a rest. Just my 200 millidollar.... Cheers John KB6SCO

From: Barry Hauser <barry@hausernet.com> Date: Mon, 06 Feb 2006 21:03:51 -0500
Subject: Re: [R-390] Rack Mounted R-390A

Hmmmmm.... a difference of opinion.... Some alternative solutions....

1. Mount rails to the ceiling with movable hoist. Recommend cutting through the sheet rock or whatever to secure with 3/4" U-bolts around the rafters. Attach chains with padded hooks to front handles, move receiver out of rack halfway and attach rear chains, etc. Use suitable manual or electric winch.
2. A skyhook.

3. Difficulty wrestling with R-390's? Keep two extras -- unrestored blue stripers -- for use in workouts. When you build yourself up to the point where you can hold two of 'em out straigh-arm for 10 minutes, you're ready to rumble. (Whatever you do, do not read the fine print warnings on your blood pressure meds. Heck, those final words on the commercials give me palpatations.)

4. Remove all equipment from rack cabinet. Place horizontal bar approx 9 inches down from top

crossways. Use it to hang your coat. Put '390's on benches, desks, etc.

5. Rackless rackmount -- Cut 6.5 foot X 18.5 inch hole in interior wall. Will be necessary to either (a) move 1 stud out 2.5 inches if 16" spacing or (b) install additional stud if 24" spacing. Stack up radios thru-wall. May be flush mounted to save floor space. Make power & antenna connections in adjoining room. (Ignore complaints.)

6. Report to kitchen. Remove and dispose of microwave as per manual instructions regarding prevention of enemy use (or put it in the living room so you can save steps when warming up your pizza -- put it on top of a small fridge for handy brewskies.) Not efficient where it is anyway. Place R-390(A) in place of microwave. Or, leave the microwave where it is and put the R-390 on top of the fridge. If anyone asks, the decor is "eclectic". Depending on your kitchen "motif", you may have to refinish the front panel in natural brushed aluminum (to match the latest greatest stainless steel look), gleaming white, or whatever. Probably not much concern about matching to avocado these days.

I could go on ... or y'know what, just get the angle iron or angle brackets, but I'll tell you this .. nobody has smashed a radio or gotten smashed (well except for the brewskies), with my methods. heh heh. Barry

From: Ed Zeranski <ezeran@ezeran.cnc.net> Date: Mon, 06 Feb 2006 21:17:58 -0800 (PST)
Subject: Re: [R-390] Rack Mounted R-390A

> > I've not sprouted that third hand though, no matter how many vitamins I take, so I use the anglestock.
At work we use 2"X2" angle drilled for the EIA 10-32 rack rails. Several rack manufacturers make them and they turn up at surplus /junk places. EdZ

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 7 Feb 2006 10:15:11 -0600
Subject: Re: [R-390] Rack Mounted R-390A

I've considered designing a small roll around self contained hydraulic lift to assist in getting them from the floor to the bench....or maybe pneumatic...

Would be a great help as one gets older and these radio's get heavier.... Cecil...

From: John Lawson <jpl15@panix.com> Date: Tue, 7 Feb 2006 11:31:50 -0500 (EST)
Subject: Re: [R-390] Rack Mounted R-390A

wrote: > I've considered designing a small roll around self contained hydraulic lift to assist in getting them from the floor to the bench....or maybe pneumatic... Would be a great help as one gets older and these radio's get heavier....

Actually these are 'items of commerce' and available from most all big industrial supply houses. When I was heavily (yes it's a pun!) into collecting vintage minicomputers, I had a mechanical version - used a winch and cable. The smaller, simpler ones look like a 'refrigerator dolly' with a small platform or short forks that are used to lift the Item Of Interest.

They're kinda pricey - though they come up for auction from time to time. Just the thing for putting 100+ pound Things in racks, though.

And yes, I've installed an R-390 at shoulder-height in a rack, myself, un-aided. Of course that was damn near 30 years ago - youth is certainly wasted on the Young.... and the occasionally stupid.... ;} Cheers John KB6SCO

From: "Barry" <n4buq@aol.com> Date: Tue, 7 Feb 2006 10:38:41 -0600
Subject: Re: [R-390] Rack Mounted R-390A

A set of scissor jacks from the Acme Company (you know, the place where Wile E. Coyote always buys his stuff) on rollers would work nicely... :)

I like the nylon rails I made for my first R390A. I machined them such that they raise the side panels just enough to be even with the bottom edge of the front panel. Using the flat-head screws into the threaded holes where the bottom cover mounts, it allows the radio to sit on a flat surface and the nylon makes for a slick enough surface that I can slide it around pretty easily. My cabinet has a floor even with the 10.5" opening, so the radio slides right into place (no skyhooks necessary).

Barry - N4BUQ (the other, other Barry)

From: "Barry" <n4buq@aol.com> Date: Tue, 7 Feb 2006 10:58:02 -0600
Subject: Re: [R-390] Rack Mounted R-390A

Let's see...

$v^2 = u^2 + 2as$

Given s = approximately 1.5 (meters) at shoulder height, v is approximately 5.44 m/s when the radio hits the floor.

kinetic energy = $(m * v^2) / 2$

An R390A's mass is approximately 36 kg

$k = (36 * 5.44^2) / 2 = 532.6848$ Joules

How big is the hole in the concrete? Barry - N4BUQ

From: "Barry" <n4buq@aol.com> Date: Tue, 7 Feb 2006 11:09:24 -0600
Subject: Re: [R-390] Rack Mounted R-390A

And if you don't like word problems, just ask the folks at UPS. Sadly, they probably know the answer. Barry - N4BUQ

From: Richard Loken <richardlo@admin.athabascau.ca> Date: Tue, 07 Feb 2006 10:34:23 -0700 (MST)
Subject: Re: [R-390] Rack Mounted R-390A

wrote: > k = (36 * 5.44^2) / 2 = 532.6848 Joules > > How big is the hole in the concrete?

Surprisingly, I never think about Joules when I have just watched a $600.00 device with a weight of 36Kg destroy itself on a concrete floor. That only comes after weeks os sulking (possibly including hospital time). Richard Loken

From: <w9ya@arrl.net>
Subject: Re: [R-390] Rack Mounted R-390A

Hey Tom and the gang;

I agree....

It is common practice to add support for heavy items placed in racks. I see this in the racks at work for equipment weighting in at less than the r390 series. We have over 100 racks worth of equipment there. I have seen this additional support used at other places I have worked at or been associated with. You can buy these rear and side angles from the rack manufacturers directly or several other places if you would rather not make these yourself.

I also regularly see bent equipment that does not have additional support. I repair the electronics that sit in these racks as my primary function at work. I have been doing this repair work for over 35 years. I do not see bent equipment that has had additional support added.

Sometimes we add support that the manufacturers did not otherwise recommend. It does not hurt to do so. The equipment seems to be easier to move around and stays square when we use additional support for heavy equipment we mount into these racks.. This is NOT rocket science, (although we do some similar things at work,) but rather a matter of common sense.

SO.....IMnsHO, if we would like our older equipment to last a bit longer and be easier to move into and out of the racks; perhaps we should consider doing some things hinted at in the manuals and from our direct experience that will keep them cool and square Vy 73; Bob w9ya

From: "Barry" <n4buq@aol.com> Date: Tue, 7 Feb 2006 11:44:35 -0600
Subject: Re: [R-390] Rack Mounted R-390A

Barry wrote: k = (36 * 5.44^2) / 2 = 532.6848 Joules
How big is the hole in the concrete? Surprisingly, I never think about Joules when I have just watched a $600.00

Well, if my calculations are correct, that works out to about $1 / Joule. I wonder if that's a good buck to bang ratio? Barry - N4BUQ

From: Richard Loken <richardlo@admin.athabascau.ca> Date: Tue, 07 Feb 2006 11:12:28 -0700 (MST)
Subject: Re: [R-390] Rack Mounted R-390A

Barry wrote: > Well, if my calculations are correct, that works out to about $1 / Joule. I wonder if that's a good buck to bang ratio?

Now that is something we all understand!

k = (36 * 5.44^2) / 2 = 532.6848 Joules

Lessee now. A Palm Treo 650 retails for about $600.00 and it weighs maybe200g so that gives us...

k = (0.2 * 5.44^2) / 2 = 3 Joules

At about $200.00 a Joule and it might (might, mind you) survive the fall. But a Palm Treo is boring and it will be worth $.00 in three years when the battery is dead.

If you throw the Treo at a concrete retaining wall at a major league volocity of 100Kph then how many Joules is that? Richard Loken

From: ~ Quig ~ <greybeard5150@sbcglobal.net> Date: Tue, 7 Feb 2006 11:10:17 -0800 (PST)
Subject: [R-390] "Special" wall plugs for R-390x recvrs

Anything good for the over-the-top audiophools is good for the "certifiable" radio fanatics too, eh?

This particular item takes the entire audiophile insanity to a whole new level. This concept is so preposterous that I'm thinking that there may be a possibility that PE has done this as a joke, just to see how far this phenomenon can be taken, and how many fish will actually jump, and take the bait. http://tinyurl.com/s4pr I'm still shaking my head in disbelief.... http://tinyurl.com/s4pr

From: "Patrick" <brookbank@triad.rr.com> Date: Tue, 7 Feb 2006 16:53:55 -0500
Subject: Re: [R-390] Rack Mounted R-390A

My idea is levitation using a superconductor and a small magnet.....Pat

From: "Barry" <n4buq@aol.com> Date: Tue, 7 Feb 2006 16:18:10 -0600
Subject: Re: [R-390] "Special" wall plugs for R-390x recvrs

We should insist on gold-plated connectors and oxygen-free copper wire all the way back to the power plant. Barry - N4BUQ

Anything good for the over-the-top audiophools is good for the "certifiable" radio fanatics too, eh?

This particular item takes the entire audiophile insanity to a whole new level. This concept is so preposterous that I'm thinking that there may be a possibility that PE has done this as a joke, just to see how far this phenomenon can be taken, and how many fish will actually jump, and take the bait.

http://tinyurl.com/s4pr

I'm still shaking my head in disbelief....

http://tinyurl.com/s4pr

From: Barry Hauser <barry@hausernet.com> Date: Tue, 07 Feb 2006 18:35:04 -0500

Subject: Re: [R-390] "Special" wall plugs for R-390x recvrs

Sheesh! The outlets look like the special orange ones required for isolated lines, only white, with a bit of gold plating.

I'm afraid it's no joke....

To go with it, they also have a $79 "Edison" plug and a $79 IEC plug (for the other end assuming the gear has an IEC socket). Barry

From: Joe Foley <redmenaced@yahoo.com> Date: Tue, 7 Feb 2006 16:54:53 -0800 (PST)
Subject: Re: [R-390] Rack Mounted R-390A

Genie makes one, cable operated with a hand crank. It has wheels in the back and casters in front.

Just the thing, all aluminum, too.

No idea what the price is but I did see some at the Rochester, NY hamfest last year. Joe

From: Tony Angerame <tangerame@earthlink.net> Date: Wed, 8 Feb 2006 07:23:33 -0800
Subject: [R-390] Re: "Special" wall plugs for R-390x recvrs

Alongside of Radio Row on Vesey St., NYC I remember "Vendors" with push carts selling "Interference Filters" for $1. It was simply a M/F 110vac plug with an internal .001 cap across the line. They would plug one into the other making an interesting design that stood vertically on the cart. I passed them up saving for that $5 ARC-5. (Smart kid)

File this one away with monster cable and antennas with resistors in them. Tony WA6LZH R-390x?

From: Barry Hauser <barry@hausernet.com> Date: Wed, 08 Feb 2006 20:55:40 -0500
Subject: Re: [R-390] Re: "Special" wall plugs for R-390x recvrs

Not to mention a variant on that handy item - - those "magic" devices that turned your whole house wiring into a giant TV antenna -- not to mention the entire power grid. Didn't work so great. But then again, maybe it was "before its time" -- and you needed those $150 wall outlets to make 'em work, or oxygen free 300 ohm twinlead. Barry

From: mikea <mikea@mikea.ath.cx> Date: Thu, 9 Feb 2006 08:12:30 -0600
Subject: Re: [R-390] "Special" wall plugs for R-390x recvrs

But that ad also shows a vanilla piece of Tripp-Lite gear.

Well, I guess that when your external power is down, you are willing to accept power from something that doesn't have hand-sanitized e-, gold-plated <foo>, o liquid Helium-conditioned <bar>.

Audiophools! Sheesh! Mike Andrews, W5EGO

From: Bruce Hagen <b_hagen@sbcglobal.net> Date: Thu, 9 Feb 2006 07:06:40 -0800 (PST)
Subject: Re: [R-390] "Special" wall plugs for R-390x recvrs

Hey guys it's called "marketing" and don't let the whole truth get in the way. You have to give the audio guys some credit though. Who else has reversed electron flow. Who else took ordinary zip cord to 20 times (or more!)it's normal price by packaging and market claims? I'll bet you didn't know that the finish on the outside surfaces of 3/4" plywood speaker boxes has a drastic effect on sonics. etc,etc. I was a mfr. rep in the Hi Fi field for many years but with manufacturers that sold around this type of hype. Bruce

From: "John Page" <k4kwm@hotmail.com> Date: Fri, 10 Feb 2006 00:19:34 +0000
Subject: Re: [R-390] Re: "Special" wall plugs for R-390x recvrs

I dont know, BPL is supposed to radiate RF from the power lines. So who knows.

John Page K4KWM Hollow State since 1953 (ex W8PKU,N8BLB,NA8O)

From: "Les Locklear" <leslocklear@cableone.net> Date: Thu, 9 Feb 2006 09:41:00 -0600
Subject: Re: [R-390] "Special" wall plugs for R-390x recvrs

I guess we are all getting more mellow with age. A couple of years ago, you would have been called a witch and taken to task for working for Lucifer himself.....:-)

I prefer all my high end speaker wire to be oxygenated and bombarded with taconite pellets 1/2 hour before hooking up. Les Locklear Gulfport, MS.

'Twas a woman who drove me to drink, and I never had the courtesy to thank her for it. W.C. Fields (1880-1946)

From: Bruce Hagen <b_hagen@sbcglobal.net> Date: Fri, 10 Feb 2006 06:38:25 -0800 (PST)
Subject: Re: [R-390] Re: "Special" wall plugs for R-390x recvrs

Ah, 300 ohm twin lead. Remember the clear stuff? Suppose to be lower loss which I guess it was for a while at least. Guess they forgot about the sun. Sure made the picture flash when it was windy as the two conductors met where the insulation had fallen off. Bruce

From: Tom Norris <r390a@bellsouth.net> Date: Fri, 10 Feb 2006 13:05:42 -0600
Subject: [R-390] Here - A "Special" wall plug *just for* R-390* R-388 etc

I was bored, and I didn't put a lot of creativity into this. Here is a special wall plug just for R-389, 390x, 391, 838 and other Collins-designed/built boatanchor receivers. http://www.fernblatt.net/A/urr_plug.jpg

From: "Ken Kaplan" <krkaplan@cox.net> Date: Fri, 10 Feb 2006 10:38:27 -0700
Subject: [R-390] Re: "Special" wall plugs for R-390x recvrs

I remember seeing something like this back in 1999 or 2000 at the CES (Consumer Electronics Show) in

Las Vegas. At the Alexis Hotel, they present high-end audio products and I'm talking very high-end. Audiophooles are all over the place oogling the class A tube gear and solid silver power cables. There was a vendor selling Leviton duplex power outlets for $250! I learned that he had disassembled them and gold plated all of the metal parts. I tried to learn from him what advantage this was (other than corrosion protection) but got a lot of slippery sales talk. He assumed he was talking to an audiophoole instead of an engineer. It has been my experience that most audiophooles have a limited understanding of physics and are willing to suspend skepticism in search of perfect sound - what ever that is. I'm kind of sorry to see this kind of crap at Parts Express as they are a good source of stuff for those who like to build their own good audio systems, me included. 73 Ken kb7rgg

From: Masters Andy <nu5o@yahoo.com> Date: Fri, 10 Feb 2006 15:35:33 -0800 (PST)
Subject: [R-390] 0A2 Replacement

Good evening. Has anyone used the 0A2 Solid State replacement at this website:
http://www.webervst.com/ccap.html

If so, were you pleased with the results? Regards, Dutch Masters NU5O

From: "Ken Kaplan" <krkaplan@cox.net> Date: Sat, 11 Feb 2006 00:39:08 -0700
Subject: [R-390] Re: Here - A "Special" wall plug *just for* R-390* R-388 etc

> I was bored, and I didn't put a lot of creativity into this. > Here is a special wall plug just for R-389, 390x, 391, 388 > and other Collins-designed/built boatanchor receivers.

Me too. http://members.cox.net/krkaplan/urr_plug2.jpg and
http://members.cox.net/krkaplan/urr_plug3.jpg Ken

From: Fred Olsen <fwolsen@wi.rr.com> Date: Fri, 10 Feb 2006 22:46:43 -0600
Subject: Re: [R-390] Re: "Special" wall plugs for R-390x recvrs

Ken Kaplan wrote: > ... at the CES There was a vendor selling Leviton duplex power outlets ... that he had disassembled them and gold plated all of the metal parts.

And no doubt neither he nor any prospective sucker - uh, make that "purchaser" - knew or cared that he had voided the receptacle's U.L. listing by doing so. (Sheesh; at least he could have used Hubbells! Oh, wait, they don't come apart that easily.) "show me the science" Fred

From: "Bruce Hagen" <b_hagen@sbcglobal.net> Date: Sat, 11 Feb 2006 12:23:24 -0500
Subject: RE: [R-390] Re: "Special" wall plugs for R-390x recvrs

Now Ken, you're letting truth hinder marketing. Shame on you. Yes, the Alexis was always interesting. Bruce Hagen

From: "Chuck Curran" <ccurran@wi.rr.com> Date: Sat, 11 Feb 2006 19:05:13 -0600
Subject: [R-390] BFO Problem/Question for a newly restored R-390A

Hello All:

In April of 2005 I received a R-390A from an Uncle who had decided to hang up his radio activities at the age of 85. I had given him a 75A-3 about 18 years ago, which he traded for this particular R-390A. Upon deciding to clean out his basement, I became first on the list to get the Capehart 1961 vintage R-390A. My lucky day!

This particular radio came complete , all covers present and in very, very good physical condition. I started by gathering all information, printing out full sized schematics and then diving in. It had never been touched since it's departure from the military, as near as I could tell. Seven tubes were so bad, my Hickok almost threw them back at me. I re-capped the unit, carefully cleaned all gears with a 100% disassembly. Yea, I messed up, even pulled out the Geneva, and that took a bit to get re-synced. After picking up a HP606A signal generator, I was able to properly re-align the electrical end of the radio, and all seemed pretty good, except that darn BFO! That Heath IG-102 just couldn't handle the task.

The main problem now is that the BFO would kick in, and then weaken and drop out within 10-20 seconds. Sometimes it did not work at all, and I had to flip the switch repeatedly to get it to kick in. O.K., today I decided to determine what had happened with the BFO circuit.

I first checked the resistances on V505 comparing all to the manual values, most were "close" to nominal values, but off enough to cause a strong interest, especially on pin 5. I then removed the IF deck and started to dig in a bit deeper. Upon checking individual resistances I quickly found that R530, the 22K plate resistor for this Hartley oscillator, had changed from a correct value of 22K to 33K. That did not seem to be good, so I installed a new 22K resistor. OK, many of you know how crowded things are in that part of the 390A. I needed to remove the flexible shaft coupling to access this area around the V505 tube socket. I successfully replaced this resistor, using many chunks of solder wick, and then re-installed the IF deck for a test.

I fired up the receiver, and then tried to zero out the calibration signal at 3.000 MHz- no audio tone at all was heard, but a strong Calibration signal was still present, at least displayed on the meter. I putzed around, a bit puzzled, since I had not even heard the normal 10 second long "weak" BFO signal. Where was it? I spun the dial with the BFO still on and got hammered at 2.987 MHz with a very strong signal. I turned off the BFO and it disappeared. Tried the Off/On routine and was able to convince myself I was actually controlling an off frequency BFO signal.

Prior to removing the flexible coupling, I had marked the BFO sealed unit shaft with a black magic marker dot. I "assumed" I could run that puppy back to the same spot and all would be well. Wrong, I believe now that I failed.. During the flexible coupler removal, I realized there were actually four Bristol set screws, two on either end spaced about 110 degrees apart - gee, why not 90, was this a manufacturing error for this coupling? Ah, minor detail. I ended up twisting and cussing, and removed the coupler, without being sure how much the shaft had rotated. I cleverly told myself that it was surely like a variable cap, with a 360 degree rotation pattern that would just repeat itself. Maybe not?

Here is my question, sorry for the long diatribe. Should I start turning the BFO shaft until I achieve a tone at the expected points? Is this shaft on a threaded adjustment, with 3, 4, or 5 turns possible so I can achieve this?

As an alternative, I thought I could try to sample this BFO oscillator output with my frequency counter, and see where it is. I think I can do this using a tube test socket and just sample the signal off the available exposed V505 plate contact point. If I am actually off by 13 KHz, I would want to "try" to turn the shaft to come back to the correct 455 KHz frequency for the center point of the BFO oscillator.

If this shaft just has a 360 degree adjustment, then I guess I might have a problem, possibly with the inductor and three caps controlling the oscillator base frequency. Not likely, since it was on frequency prior to my messing with it.

Being totally and 100% ignorant of the internals of that sealed BFO can, I hope someone may have learned the construction features and can offer some advice. Is it a multi-turn adjustment, or just a 360 degree affair?

In advance, thanks for any comments on this situation, Chuck WA9POU Cedarburg, WI

From: "Barry" <n4buq@knology.net> Date: Sat, 11 Feb 2006 20:12:03 -0600
Subject: Re: [R-390] BFO Problem/Question for a newly restored R-390A

> Hello All: > In April of 2005 I received a R-390A from an Uncle who had decided to hang up his radio activities at the age of 85.

Chuck,

I think there are ways to do this without a counter, but I've used a counter for mine. You can pick up a signal with a loop around the oscillator tube or tie to the plate circuit through a cap. If you think you might be off by as much as 13kc, this would get you a *lot* nearer to where you should be with it.

I think Roger has a "radio-only" procedure to set this, but I don't know it offhand. Good luck, Barry - N4BUQ

From: "Craig C. Heaton" <wd8kdg@worldnet.att.net> Date: Sat, 11 Feb 2006 20:46:54 -0800
Subject: RE: [R-390] BFO Problem/Question for a newly restored R-390A

Chuck,

I think the BFO is a multi-turn device. Hope you have a sig-gen or access to one, it will be needed, check out Chuck Rippel's web site, link is provided to his IF Deck Alignment page. At the bottom of the page is the correct way to set the BFO. His method works, I've used it.

http://www.r390a.com/html/if_deck.html later.....craig 73's wd8kdg

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Sun, 12 Feb 2006 12:42:43 -0500
Subject: Re: [R-390] BFO Problem/Question for a newly restored R-390A

wrote: > The main problem now is that the BFO would kick in, and then weaken and drop > out within 10-20 seconds. Sometimes it did not work at all, and I had to flip the switch repeatedly to get it to kick in.
My guess would be a leaky capacitor that gets worse when voltage is applied (of course you wouldn't notice it until you turned on the BFO!). IIRC there are at least a couple of black beauties in that area. One is "just" some sort of bypass on the current-regulated filament string through the BFO and PTO and is hardly critical.

> I first checked the resistances on V505 comparing all to the manual values, > most were "close" to

nominal values, but off enough to cause a strong > interest, especially on pin 5. I then removed the IF deck and started to > dig in a bit deeper. Upon checking individual resistances I quickly found > that R530, the 22K plate resistor for this Hartley oscillator, had changed > from a correct value of 22K to 33K.

Pretty common occurence! Almost all 2.2K plate resistors in my 390A's were up by several hundred percent.

> That did not seem to be good, so I > installed a new 22K resistor. OK, many of you know how crowded things are > in that part of the 390A.

Well, in my yellow striper the BFO oscillator tube socket was crumbling into tiny pieces of dust. I managed to replace that, although it was an extended project.

> without being sure how much the shaft had rotated. I cleverly told myself > that it was surely like a variable cap, with a 360 degree rotation pattern > that would just repeat itself. Maybe not?

Not. In fact you will notice that the shaft is left-hand threaded, such that when you turn it clockwise it backs out of the BFO. This moves a slug in and out of an inductor core. It's also the reason that the flexible coupling is also compressible.

> Here is my question, sorry for the long diatribe. Should I start turning > the BFO shaft until I achieve a tone at the expected points? Is this shaft > on a threaded adjustment, with 3, 4, or 5 turns possible so I can achieve > this?

Yes. Just don't turn it past its limits, if you're doing all this with a counter then you will know when you're turning in the wrong direction and not go very far that way.

When you're done, you might want to check the flexible/compressible coupling to make sure that it's not stretched to its limit either.

> As an alternative, I thought I could try to sample this BFO oscillator > output with my frequency counter, and see where it is. I think I can do > this using a tube test socket and just sample the signal off the available > exposed V505 plate contact point.

I do fine with just sticking a scope probe near the tube (may want to remove the tube shield first). That's enough of a signal to register on my frequency counter or my scope. Also works great for the crystal oscillators (the band switched one, the 200kHz one, and the 17MHz one.) You can also see the spiky divided-down 100kHz calibrator at the next dual triode in the calibrator too.

I know the "classic" R-390A tuneup procedure only needs signal generators and voltmeters, but if you've got a scope or a counter then a lot of this stuff becomes trivially simple. Tim.

From: "Chuck Curran" <ccurran@wi.rr.com> Date: Sun, 12 Feb 2006 19:11:40 -0600
Subject: RE: [R-390] BFO Problem/Question for a newly restored R-390A ---Problem Resolved

I just wanted to let you know that the BFO is now running at 100%. Thanks to all who provided suggestions and comments. I received quite a number of direct e-mails. Lots of good discussion and some interesting stories about similar problems too.

The first item I had was about the number of available turns, I did find out that the BFO shaft does have about 3 turns. I needed about 1 ½ to bring it right back on the money. I used the second method of BFO calibration to get it right on the money, as shown on page 159 of the TM-11-856A manual.

I am not knowledgeable enough to appreciate why the Plate resistor R530 going from 22K to 33K also changed the resonant frequency, causing the last 45 years worth of service people to keep twisting it further and further to get a zero beat. The inductance and 3 mica caps in the can really establish the point for resonance, I would have expected that a lowering of the plate voltage would have decreased the output signal amplitude, but left the frequency alone. What am I missing in this Hartley oscillator operational theory?

It's nice to now have the calibrator functional for more than 8-10 seconds and a decent BFO for the rest of the time. I am running out of problems – time to get a different radio? Chuck

From: "Jim M." <jmiller1706@cfl.rr.com> Date: Sun, 12 Feb 2006 20:25:24 -0500
Subject: [R-390] CY-979A/URR

What's the going price for one of these cabinets for the 390? I have one purchased from a list member several years ago that I am going to sell. I think it is a repro. It has the shock mounts and is in near perfect consition except for some wear on the internal brackets that the receiver rests on. Jim N4BE

From: ~ Quig ~ <greybeard5150@sbcglobal.net> Date: Sun, 12 Feb 2006 17:36:10 -0800 (PST)
Subject: [R-390] Re: CY-979A/URR

"What's the going price for one of these cabinets for the 390? I have one purchased from a list member several years ago that I am going to sell. I think it is a repro."

I can't speak to repro's, but I bought a new in the box original one recently from a list member that was also purchased some years ago. Price was $450 to list members.....same as he paid for it then. It was NOS military and drop dead beautiful, and perfect.

If you take it to eBay the price goes through the roof. It depends on what you want to do; make your money back and "keep it in the family" or make money. ~ Quig ~

From: John Lawson <jpl15@panix.com> Date: Sun, 12 Feb 2006 21:22:50 -0500 (EST)
Subject: [R-390] Want a 390 non-A repaired

I'm near to getting the panel back on my R-388. Next I need to dig into my R-390A and fix up a few dead bands (40M: Arrgh!) etc.

In the meantime, I've had a couple more contracts signed recently, so I've just gotten [quantum-busy-jump] busier.

That leaves my R-390 sitting on the "round tuit" shelf once again. So I thought I'd solicit the Group's feelings / opinions as to the best Venue to get the 390 re-tubed and aligned to the point where it's doing well on all bands. Currently it powers up, and a few strong local AM broadcast stations can be (barely) received, but she's mostly deaf. I'm not concerned with the cosmetics or with having it 'at-or-better' spec-wise, I'd just like it to function on all bands, then I can put the 390A on the bench for a (long) while.

So if you can refer me someone who does this work currently (OR if you are available yourself to repair a 390 non-A) - please reply back to me PRIVATELY off-list. I dont want to get bidding or finger-pointing started - I'm just interested in ballpark prices and average turnaround time for an R-390 in "OK" condition. Thanks to everyone in advance... Cheers John KB6SCO

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Tue, 14 Feb 2006 09:08:08 -0500
Subject: [R-390] Heretical comparison: R-390A vs WJ-8716

Yeah, I know. I'm bad. I got a WJ-8716 from that E-place last month.

This is Watkins-Johnson's HF receiver from the early/mid-80's. Mine has the preseelctor (PRE), ISB, and GPIB options. The last means that (gasp!) it has a microprocessor in it.

So how does it stack up against the R-390A? First opinions, after a few weeks of use:

1. The WJ-8716's shielding is way better than the R-390A's. If I unplug the antenna from the WJ-8716, I get nothing. At all. Anywhere. Not even the blowtorch AM transmitter in my backyard shows up. Compare this to the R-390A, where even with the covers on several of the local AM broadcasters show up pretty well and even the powerhouse SW broadcasters can come in on the 6MHz band.

I've been told that the WJ-8716 is supposed to be Tempest Compliant, and if so they sure did it good. There are about 8 trillion screws holding the top and bottom covers on. (OK, really like sixty some) and everything on the back comes out on BNC's. Internal modules are on little PCB cards that go pretty securely into a backplane. Built-in extenders etc.

2. Sensitivity-wise, both have plenty through at least the low HF. With the low sunspot count there's not much to listen to above 20MHz right now.

3. Selectivity-wise, WOW. The WJ-8716's filters (a crystal filter at 10.7MHz, plus mechanical filters at 455 kHz) are incredibly flat in the middle and steep on the sides. It has 300Hz, 3.2kHz, 6kHz, and 16kHz bandwidths. This is where this receiver really shines. If the signal is not in the passband, it's gone.
4. For AM reception without any awful heterodynes, they both do about as well as each other. For SSB (keep in mind I have no SSB mods nor an outboard SSB unit for my R-390A) the WJ is a clear winner. It blows away all my modernish (well, 70's and 80's vintage) ham receivers too. It also has ISB, which is a unique experience to get different sidebands in different ears via headphones. Not sure how much good it is other than "hey wow" (although it does tell you from which side of the carrier that stupid hetrodyne is coming from without having to lift a finger! And it's trivial to select the sideband with the least QRM.)
The WJ-8716 only has two AGC time settings: "Slow" (fast attack, slow decay) and "Fast" (fast on both). The asymmetrical timing on "slow" is obviously good if you're setting on one frequency but it's a pain when scanning through the bands because the hang is so long. I'm still not really used to it.

5. Control-wise, my only complaint is the stupid thumbwheels for BFO frequency on the WJ. The WJ seems to have a TCXO master oscillator and it is spot-on from the instant it's turned on. 4 buttons select 4 different tuning rates. The BFO setting is only effective in the CW mode. Those used to modern digital radios will think that the WJ's user interface is hopelessly simplistic (no memories, no automatic scanning, etc.) but it's fine by me (although all the buttons are identical, I would prefer good old knobs!)

6. Images: I have the previously-mentioned blowtorch AM transmitter in my backyard. On consumer-type radios, images of this show up everywhere up and down every band. On both my R-390A and WJ-8716, these Images are not a problem. I haven't gone persnickity looking for birdies or anything.

All that said, I am back to doing listening and tinkering with my R-390A as well, so I'm not hopelessly modern yet! Tim.

From: "Pat McGrath" <ka6tya@arrl.net> Date: Tue, 14 Feb 2006 15:01:17 -0800
Subject: [R-390] $390A Price

What is a fair price for a $390A that is in working condition but need the two large knobs and a complete overhaul? Cleaning, alignment, testing components etc.

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 14 Feb 2006 17:53:21 -0600
Subject: Re: [R-390] $390A Price

Depends....Knew someone would say that....

Depends on cosmetic condition....front panel engraved or silk-screened? Mods....extra holes? Meters?

St. Julians Creek survivor. (Blue or yellow stripe on front panel...corrosion or rust on top side of chassis)
I would guess average $275-$325 if just average surplus. Less with other problems as listed above but probably not less than $200-$225 Just my 2 Cents worth... Cecil...

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Tue, 14 Feb 2006 16:14:30 -0800 (PST)
Subject: [R-390] FLR 9 Vs, Rhombic

Todd Roberts asked: FLR 9 Vs other antennas

I was stationed at Karamursel Air Station in mid 1965 during the construction and change over to the FLR 9. This was a radio intercept base run by USAFSS about 60 miles SE of Istanbul. We had two functions; intercept primarily of Russian HF traffic and the maintenance of a 24X7 IDSB radio link that started out at IIRC, base at Izmir Turkey near the Turkey - Russian border. I believe this is where Gary Powers took off.

One sideband signal carried 16 channels of multiplexed teletype. The other was a reserved phone line. After starting at Izmir, we received the signal, relayed it to Croughten, England who relayed it to Ft. George Meade and re-transmitted it to Ent AFB in the middle of Colorado Springs (Now the US Olympic Training center) which was the USAFSS headquarters. If the phone was picked up anywhere along the line it was immediately answered at Ent. We ran two high power and one low power frequencies at one time which we switched depending on the time of day. About 15 miles away was the base transmitter site where they used 30KW linear amps for our high power transmit.

Assigned to the base receiver site I had the opportunity to use the R390A's (I never knew at that time there Non A's existed) on both the rhombics and the FLR 9. We had around 16 A's in our shop. About a dozen sat on single frequencies all the time. We had a RTTY setup with a printer which we used to "read the mail" of AP, UPI & others. On 2nd shift we really chewed through the

paper. IDR the converter we used.

Our AFRTS local station was a 1400KC or so peanut whistle. We tech supported them and provided a AFRTS relay for sports events, usually baseball.

We'd ask the FLR 9 controllers to provide their best match for the frequency and general location. The FLR 9 was better, but nothing to write home about. Even our receive from England wasn't on a 3 bay Hughs(sp) receiver didn't seem any more reliable.

But this was the cold war and Viet Nam was going full bore. Since the Russians were supporting the VC any improvement of signal strength was worth the money. If you look on a globe you will see that Istanbul is roughly south of Moscow. The base location was dictated by politics of the Turkish government. [Read: employment of locals in a poor area]

Since all political decisions originated in Moscow it was a great target. We also had smaller intercept stations along the Black Sea.

This is a very long post. I'll post more later about if people are interested. Regards Perrier

From: odyslim@comcast.net Date: Wed, 15 Feb 2006 00:23:32 +0000
Subject: Re: [R-390] $390A Price

I would give no more than $200. The filters are probably sick. It sounds like somebody has started to use it for a parts radio. So, if the meters are on it and if the IF is complete, no more than $200.00 Scott

From: Barry Hauser <barry@hausernet.com> Date: Tue, 14 Feb 2006 20:09:32 -0500
Subject: Re: [R-390] $390A Price

Cecil & gang ...

Pat asked the price of a "$390A". Like coinage with famous defects, a $390A is very @RARE@ and therefore goes for an appropriately high price. Unlike the cost-reduced R-390A, the "$" signifies a cost-increased version. Back in the 50's, someone misread the engineering reports and went the wrong way, incorporating both L/C AND mechanical filtes, and crystal lattice filters, roller bearings, etc., but was stopped after a few units were made. Someone noticed the gold plated front panel screws on the gray mother-of-pearl front panel and called the OMB.

All seriousness aside, Cecil I think your pricing may be a bit out of date, unless it reflects only non-auction, non-internet, last-day-of-hamfest-and-it-ain't sold yet radios. Barry

From: "Pat McGrath" <ka6tya@arrl.net> Date: Tue, 14 Feb 2006 17:35:39 -0800
Subject: Re: [R-390] $390A Price

Thanks for the reply Cecil. The R390A is in good condition. No rust, original meters, no blue or yellow stripe on front panel.

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Tue, 14 Feb 2006 20:36:55 -0500

Subject: [R-390] Squirrely PTO

OK, you guys may remember my dissected PTO. It's mostly back together, but now I notice something else:

If I tune continuously in one direction, then the frequency is nice and smooth.

If I reverse and tune continuously in the other direction, then the frequency is nice and smooth after a small fraction of a turn.

But... for a small fraction of a turn (say a few hundred Hz which would be like a degree or so) if I wiggle it back and forth it sounds "squirrely". Seeing how this only happens when I reverse direction, I'm guessing this is some form of backlash.

"Squirrely" means that if I'm tuning through a carrier it does not smoothly go up and down, but jumps around by like 100 Hz or so from smooth. In the "reversing zone" I can turn the knob a bit with no noticable frequency change, and then it jumps a lot (maybe 100 Hz). After the reversing zone it seems to be nice and smooth.

Pulling the covers off and looking inside I see no obvious anti- backlash spring. There is a ring holding tight the PTO slug to the threaded shaft, and maybe that's supposed be under tension to make the assembly be anti-backlash?

What is the "official" anti-backlash mechanism for this PTO? It's a Raytheon-refurbed Cosmos by my best reckoning.

If I go to my other 390A (also a Cosmos PTO) the behavior is not nearly so squirrely. There may be a very small amount but it's possibly my wrist :-).

Or is it not anti-backlash, but something that the right grease cures? I've rebuilt Ten-Tec PTO's and the usual cure for everything there is a few new plastic parts and magic grease. I didn't really understand what I was doing but I was just following Ten-Tec's directions. My feeling is that plastic pieces and grease is not the answer for my 390A's PTO, but I will appreciate corrections!

Oh, as to overall PTO alignment, after I "jumped a turn" the range was correct and with a little tweaking of the endpoint and a couple of the setscrews it's nice and linear, to within a few hundred Hz end-to-end. I do seem to be at the very very end of the endpoint adjustment range: if I need more range, is the endpoint inductor the inductor that folks remove a turn from? I remember hearing about the procedure but didn't really relate to it, having never torn into the PTO when I was reading! Tim.

From: "Pat McGrath" <ka6tya@arrl.net> Date: Tue, 14 Feb 2006 17:52:39 -0800
Subject: Re: [R-390] $390A Price

> I would give no more than $200. The filters are probably sick. It sounds like somebody has started to use it for a parts radio. So, if the meters are on it and if the IF is complete, no more than

Hi Scott

Everything thing is on it except one large knob missing and the other one appear defective. The receiver is working but need a complete overhaul.

From: DJED1@aol.com Date: Tue, 14 Feb 2006 21:31:55 EST
Subject: Re: [R-390] $390A Price

I would have to agree with Barry- the prices seem to have taken a jump since Fair stopped selling complete radios. Even before, a repairable Fair unit without meters was going for $4-500. Flea market units I've seen went for 500-700, and really nice units on the e-place are now exceeding $1000. So I would judge the radio as described would be worth $4-500 (having meters makes up for the lack of knobs) Ed

From: Gary Pewitt <n9zsv@cei.net> Date: Tue, 14 Feb 2006 20:57:54 -0600
Subject: Re: [R-390] FLR 9 Vs, Rhombic

Perry, along with Phil Atchly I was one of the people who relayed your data to the states from RAF Croughton. Actually we microwaved it to Barford St.John where it went out on tropo scatter. We didn't get to play with any R-390A's though, curse the luck. Just about everything we handled was teletype and it came in on British landlines which used different voltages so we had thousands of relays to convert it to our voltages and current loops. Spent a -lot- of time with vector scopes adjusting those relays. Sure was glad when they started replacing them with solid state modules. I wonder if there is anyone on the list that spent time at Wheeler in Libya or Laghes in the Azores? Please do post more. I am interested even if no one else is. 73 Gary

From: Gary Pewitt <n9zsv@cei.net> Date: Tue, 14 Feb 2006 21:01:24 -0600
Subject: Re: [R-390] $390A Price

Check out the price Fair Radio is asking for as is sets with no meters. 73 Gary

From: "Jim M." <jmiller1706@cfl.rr.com> Date: Tue, 14 Feb 2006 22:25:10 -0500
Subject: Re: [R-390] Squirrely PTO

The Oldham coupler between the PTO shaft and the front gears should have a spring between the two posts. This is on the outside front of the PTO where it's shaft meets the front panel mechanisms. If you don't have a spring there, you will get backlash. The warble can be caused by either a loose, corroded or missing bracket on the front of the PTO that presses against the PTO shaft to ground it. It's a little right angle bracket and it needs tension to effectively ground the shaft. Jim M.

From: Joe Foley <redmenaced@yahoo.com> Date: Tue, 14 Feb 2006 19:30:51 -0800 (PST)
Subject: Re: [R-390] $390A Price

> >>>What is a fair price for a $390A that is in working condition but need the two large knobs and a complete overhaul? Cleaning, alignment, testing components etc.
++++++++
Nein, nein, nein,

Vat ve haf here ees a classic Freudian schlip en das"$390A".

Zees patient vants to know vat ees a gut price to pay for such a ting, BUT he ees really telling us vat he tinks ees a gut price to pay.

Note zee proximity of zee "$" to zee capital R, a seemingly innocent mistake, but, NO, zere is zomting else, deeper vorking here. Not neccessarily zinister, but zubconscious, none der less.

Yah, zees one is in der very early stages,..... Josef

From: "Les Locklear" <leslocklear@cableone.net Date: Tue, 14 Feb 2006 21:43:29 -0600
Subject: Re: [R-390] $390A Price

Sign ze papers old man!!!! Karl

From: "Barry" <n4buq@knology.net> Date: Tue, 14 Feb 2006 21:55:47 -0600
Subject: Re: [R-390] $390A Price

"Ah lahk thu way he tawks." Karl (Childers)

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Tue, 14 Feb 2006 20:12:12 -0800 (PST)
Subject: [R-390] Electrical safety leakage

Roy Morgan wrote: There is a specified leakage limit for medical equipment

Having done those tests for 25 years I think I remember the values.

There are 3 tests performed. First is a ground resistance check from the instrument to the power plugs ground pin. The limit is 500 miliohms. Normally you could easily get between 85 to 100 miliohms. Anything close to the limit indicated a loose ground connection. Equipment with the IEC removable plugs was the biggest problem the constant removal of the line cord caused you to have to twist the ground pins slightly to meet specs. This shouldn't be a problem with BA's as they are almost always plugged in.

The second test was in two parts. You measured ungrounded leakage with the power turned on. Once with normal polarity and then with reverse polarity. The leakage current limit was 500 microamps. Except for very large pieces of equipment the normal range of leakage was 80 to 150 microamps.

This is the rational for the 500 microamp limit. The least amount of AC current that was able to put the human heart into ventricular fibrillation by direct application was 200 microamps. Since the body is a big salt water sponge, the decision was made to codify the limit as 500.

Beginning of safety rant!
IMHO one is foolish to leave the original line filters on the R39XX, SP 600's and any other BA equipment. The price for new or used "medical grade", I.E. low leakage, is less that half the price of a 26Z5. I've been "bit" badly by a 2 wire line cord SP 600 when I touch something grounded. NOT FUN. The difference between nasty words and DEATH is the moisture on the surface of you skin. A 4,000 to 5,000 microamp leakage can kill you with no problem.

Another reason to use the newer Pi balanced filters is that THEY HAVE BETTER SUPPRESSION CHARACTERISTICS THAN 50 YEAR OLD CAPS. Hide a new filter in the old case if you want. If

you vehemently disagree, have your will, life insurance, final arrangements up to date and make a value list of you BA stuff so you heirs don't get ripped to badly on epay. You are never lucky forever.

In addition, one should make a shorting stick for your RECEIVERS using a 10 Kohm 5 or 10 watt wirewound resistor. One, your bleeder resistor may not really be working well (if it's even there!) and newer caps, both electrolytic and film capacitors have MEMORY. They can come back to bite.

When I was in "sets" (hands on: live power) at Keesler AFB I was one of the students who some of the most "sparks". But I never got hurt because I kept one hand in my pocket and didn't wear a ring even though I probably had the sweatiest hands. Heck, my hands are getting sweaty just writing this remembering the past.

Be safe, live long. Enjoy our temporary custodianship. End of Rant Regards, Perrier

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Tue, 14 Feb 2006 22:09:45 -0800 (PST)
Subject: [R-390] Edited reflector files

GM List,

I have downloaded and edited the reflector files from the QTH zipped archives. They are from 2001 thru 2005.

They are MS word 95 docs. I removed all the extra stuff and they are similar to W Li's "Pearls" format. Total file size about 12 mbtes. Al may post this on his site at some time in the future. I will try to email them via my dial up to those who want them. It may take me a while to answer you. Reply off list. Regards, Perrier

PS I highlighted lots of tech tips that so many have graciously donated. Many will be added to the new Y2K manual.

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Tue, 14 Feb 2006 22:14:26 -0800 (PST)
Subject: [R-390] Edite relector files

GM List,

I have downloaded and edited the reflector files from the QTH zipped archives. They are from 2001 thru 2005.

They are MS word 95 docs. I removed all the extra stuff and they are similar to W Li's "Pearls" format. Total file size about 12 mbtes. Al may post this on his site at some time in the future. I will try to email them via my dial up to those who want them. It may take me a while to answer you. Reply off list. Regards, Perrier

PS I highlighted lots of tech tips that so many have graciously donated. Many will be added to the new Y2K manual.

PPS Sorry if this is double posted. I hit the wrong button a minute ago

From: "Cecil Acuff" <chacuff@cableone.net> Date: Wed, 15 Feb 2006 17:18:46 -0600
Subject: Re: [R-390] $390A Price

This is a tough group.....

You list a fully restored 390A for $1200 and get beat up.....you value a surplus radio with two missing knobs, known full overhaul needed, questionable origin (at that point), unknown cosmetics at around $300 and ya get beat up....:-)

I would have valued it a bit higher if I knew more about it I guess.....I don't think $500 though.

Thing about the Fair Radio 390A's in the last few years...they all were SJC survivors. Not that I have anything against them they just require a good bit more work and some were pretty ugly...some were not...just didn't know which you were going to get.

I personally don't mind that the price is going up....I think they have been undervalued for a long while considering the performance potential they have and the desirability relative to other boatanchor surplus receivers. They are going to be the coveted of the litter even 20 years from now I believe.....may be paying 5K for a nice one then...who knows! Cecil....

From: Barry Hauser <barry@hausernet.com> Date: Wed, 15 Feb 2006 19:07:27 -0500
Subject: Re: [R-390] $390A Price

See my 1/2 of convo below:

> This is a tough group.....

We have to be -- "tough love" -- it's for your own good -- like firing live ammo over you so when your in combat, you have been cured of the reflex to pop your head up (instead of duck down).

> You list a fully restored 390A for $1200 and get beat up.....you value a > surplus radio with two missing knobs, known full overhaul needed, > questionable origin (at that point), unknown cosmetics at around $300 and > ya get beat up....:-)

You almost have it right on. The sequence is thus: Ya get beat up, then a reason is (generally) provided. It's a given.

I think the cosmetics were known in this case -- at lease generally. Unless seriously distressed (corrosion holes), bent, mice, rats, etc. , -- reasonably presentable, they go for more these days. Also, a lot of nice looking radios are nonetheless, needy on the inside. A missing knob isn't significant.

> I would have valued it a bit higher if I knew more about it I guess.....I > don't think $500 though.

That's about par for the course these days, maybe more -- and that doesn't buy an R-390A that's already cleaned, recapped and tweaked. A lot of the pretty ones are overdue for an overhaul -- which is where the real fun is.

> Thing about the Fair Radio 390A's in the last few years...they all were > SJC survivors. Not that I have anything against them they just require a > good bit more work and some were pretty ugly...some were not...just > didn't know which you were going to get.

The slimmer the pickin's from the St. J. C. pile, the more labor has to go into them just to make saleable units, whether repairable or checked. There were no more that were needing a module swap or two and a tube here and there. They have to piece them together and, in some cases make repairs to the modules to get them out the door when they can.

> I personally don't mind that the price is going up....I think they have been undervalued for a long while considering the performance potential they have and the desirability relative to other boatanchor surplus receivers. They are going to be the coveted of the litter even 20 years from now I believe.....may be paying 5K for a nice one then...who knows!

I don't know if that will happen, mainly due to the demographics -- namely average age of those interested. Not much sign of younger guys getting into this, so supply and demand may do a flip, and a mint, restored radio will be down to $200-300 in a few years. Of course, it depends.... Barry

From: "KC8OPP Roger S." <kc8opp@yahoo.com> Date: Wed, 15 Feb 2006 03:14:43 -0800 (PST)
Subject: Re: [R-390] Squirrely PTO

Tim,

Just last week I had the same problem with a Cosmo PTO that I had disassembled for maintenance and cleaning. When I check a PTO I use an Excel spreadsheet to plot measured freq at each 100KHz point against desired freq, and problems like this really show up on the graph. I started with about 300Hz difference, after some fixing managed to get it to over 800Hz. After taking the PTO apart more times than I can count I think I have found the answer.

The lead screw is threaded into the tuning slug, at the end opposite the oldham coupler are two arms that reach out to the frame to keep the slug from turning. The bracket that holds the arms also has a washer with four tabs. The four tabs are for backlash tension. Riding on that washer and threaded on the lead screw is a castled nut that you can rotate to increase/decrease tension.

You may have to remove the tuning slug to clean and free up the castled nut. I thought about removing the screws that hold this assembly to the slug, but now would recommend against doing that. I was able to clean things up and re-lube in place. With all covers off, I would move the PTO both ways to a pre-set point and measure the off-set. Each time I would rotate the castled nut a little to increase tension (decrease backlash). I stopped when the backlash was in the 50/100 Hz range. I did not want to put too much strain on the threads inside the tuning slug.

You do need to look at the oldham coupler also. I changed to a stiffer spring which helped remove some of the backlash there.

Hope this helps. I did take a few pictures but don't have anyplace on the web to put them. 73's Roger KC8OPP

From: "B Riches" <bill.riches@verizon.net> Date: Wed, 15 Feb 2006 08:42:20 -0500
Subject: Re: [R-390] FLR 9 Vs, Rhombic

Was in Athens Greece 1962-1964 - worked in ground radio repairing Collins S line and R390a's! S line at ground radio provided coms for Med area - Wheelus - England - Turkey - Ethiopia - Germany. R-

390's for rtty crypto - 4 channel mux! Was in Libya at receiver site a mile off base playing with R-390 and SP600 receivers. At that time I never thought that I would still be rebuilding them or even be able to own them! Quite an experience. 73, Bill Riches, WA2DVU Cape May, NJ

I wonder if there is anyone on the list that spent time at Wheeler in Libya

From: flood@Krohne.com Date: Wed, 15 Feb 2006 13:29:14 -0500
Subject: [R-390] $R390A prices and a repair story

Scott /Cecil,

Reputable

I'll take some of your working radios that are missing knobs and meters for around $200 each! (greed mode activated, now I need a description for ebay as to why the units with missing meters are worth more...) But then again.... I'll bet Barry has beat me to them :)

BTW I was to embarrassed to admit it before to anyone except Todd "Boomer", but I fixed my '52 Motorola 390. After hauling it out of the rack, and digging up the heavy old test gear, I found my problem.... a bad dc fuse. Just thought someone might benefit from my experience. At work I'm always telling people to look at the simple things first. To bad I don't follow my own advice, I could have rolled out the rack and changed the fuse in place... If I only had checked it first! John Flood

From: Michael Crestohl <W1RC@Verizon.net> Date: Wed, 15 Feb 2006 21:46:52 -0500
Subject: [R-390] FS: Vintage Radio Books

Hi Gang:

I am thinning out my library of duplicates and other non-essential books.

ARRL Radio Amateur Handbook 1947 VG $20.00

ARRL Course in Radio Fundamentals 1960 VG $7.00

ARRL VHF Manual 1972 VG $5.00

ARRL License Manual 64th Ed 1970 Near Mint $6.00

ARRL License Manual 59th Ed 1968 VG $5.00

ARRL License Manual ? Ed year unknown probably late 40s early 50s. 1st page cut, cover taped, otherwise VG $5.00

ARRL Learning the Radiotelegraph Code 12th Ed. 1970 VG+ $6.00

ARRL Learning the Radiotelegraph Code 10th Ed. 1968 VG $5.00

ARRL Hints & Kinks, Vol VIII 1968 Near Mint $7.00

ARRL Hints & Kinks, Vol IV 1949 cover loose $7.00

CQ Mobile Handbook, 2nd Ed. 1956 VG $6.00

ELECTRIC RADIO Hiram Percy Maxim 1998 $10.00

I also have three copies of the British equivalent to ELECTRIC RADIO - Radio Bygones. Three issues,

Issue 92, Christmas (DEC/JAN) 2004,
Issue 93 Feb/March 2005 and
Issue 94 April/May 2005,

This is a very interesting and well-illustrated magazine. There is a fascinating two-part article called German 'Amateurs" in WW-II.

I am asking $8.00 plus postage for the three. They normally cost about $6.00 per issue or $38.00 for an annual subscription consisting of six printed issues. .

If interested please reply by e-mail. 73, Michael, W1RC w1rc*at*verizon*dot*net

From: Tony Angerame <tangerame@earthlink.net> Date: Wed, 15 Feb 2006 07:29:31 -0800
Subject: [R-390] Re: FLR 9 Vs, Rhombic

Perry,

I was also at Karamursel from 65-67. I sat back in the Printer Room if you recall in the very corner of the buiding I was a 29252. Were you in maint or comm? Ever buff the hallway? Would you be up for a Bull run?

I always thought the FLR-9 was a bit noisier than the terminated rhombics. Guess it was one heck of a DF antenna though compared to the adcock.

The roach coach was cok fina abi. Tony WA6LZH

From: Ed Zeranski <ezeran@ezeran.cnc.net> Date: Thu, 16 Feb 2006 01:34:25 -0800 (PST)
Subject: Re: [R-390] Re: FLR 9 Vs, Rhombic

> I always thought the FLR-9 was a bit noisier than the terminated rhombics. Guess it was one heck of a DF antenna though compared to the adcock. > WA6LZH

I guess the stearable gain made the FLR prefered, especially when coordinated with other sites.
EdZ...who spent time in Augsberg

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Thu, 16 Feb 2006 10:02:56 -0800 (PST)
Subject: [R-390] Edited reflector files update

Hi gang,

I had two excellent questions off list asked about the files I edited.

One was why not pdf? I have found pdf's harder to edit that word. Although I have acrobet 5 I didn't use it.

The other was why I used MS word instead of rtf or text files. The company I started working for 20 years ago used MS. They had a compaq computers and corporate MS license and loaded the software on employee's computers for free to avoid virisi from work done at home. So I've just stuck with it.

If any one wants rtf or text files let me now off line and I will do a conversion. I plan to go to the public library in the next couple of days as they have free high speed internet connections.

So far about 8 people have asked for the files and one has volunteered to place it on his web site.

I will break up the files to several messages so those like me who have dial-up will have and easier time downloading. Several people sent me some pdf file attachments to my yahoo mail the last few days and they will not open. Don't know why. &*%&$ windoz!! Regards, Perrier

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Thu, 16 Feb 2006 10:38:41 -0800 (PST)
Subject: [R-390] "Fake" 12AX7 tubes on e*pay

GM List,

I frequently check epay for tubes. I've observed that there are many individuals listing tube as 12AX7/5651/XXXXX/XXXXX. I don't know if they are just stupid or greedy a**holes or both.

The point being that the numbers list are not for the same tube. I don't know where they got their "substituition" from but I wouldn't buy because you and probably they haven't a clue what they have.

Reputable dealers like Triode Electronics in Chicago sell russian and east european new tubes that are excellent. I think some negative comments made by some to the contrary are old wives tales. Regards, Perrier

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Thu, 16 Feb 2006 14:51:33 -0500
Subject: Re: [R-390] "Fake" 12AX7 tubes on e*pay

> Reputable dealers like Triode Electronics in Chicago sell russian and east > european new tubes that are excellent. I think some negative comments > made by some to the contrary are old wives tales.

I have many "Tesla"/"JJ" (E European) 12AU7A's (actually labeled ECC82, I always thought ECC82 equals 12AU7A's but seeing the subject line maybe you don't think so) and several have already failed with cathode-to-heater shorts in the past couple years. Maybe 30% failure rate. That is not "excellent" in my book, to me it indicates less-than-stellar manufacturing.

It's pretty obvious (from the massive amounts of hum) when the short happens.

Maybe I just got a bad batch. And my batch was only 20 tubes. So discount my experience if you wish.

I have bought batches of surplus JAN tubes (typically 60's/70's/early 80's) as well and have not experienced this problem with them. Tim.

From: Tom Norris <r390a@bellsouth.net> Date: Thu, 16 Feb 2006 18:14:15 -0600
Subject: Re: [R-390] Edited reflector files update

wrote: > The other was why I used MS word instead of rtf or text files. The company I started working for 20 years ago used MS. [snip] Several people sent me some pdf file attachments to my yahoo mail the last few days and they will not open. Don't know why. &*%&$ windoz!!

I usually say that when someone sends me an MS Word file *instead of* a pdf file, since I *don't* run windows. But I do run OpenOffice, and it's 99.9% MSOffice compatible. The grumbling comes from that 0.1% of files it doesn't deal with well. heehee Tom NU4G"my OS does pdf files natively"

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Thu, 16 Feb 2006 18:26:15 -0800 (PST)
Subject: [R-390] Fake 12AX7 tubes- Revised

GM List,

My train brain got ahead of my thingers on the last post.

Here is a listing I saw recently on epay: Tube 12AX7/5751/7025. So here is the problem. They are similar BUT not the same. Here is information I got from the N7JP site, Triode Electronics, and Vacuum Tubes, Inc pages

12AX7 = High-Mu Twin Triode. Amplification Factor 100

5751= High-Mu Dual Triode. Amplification Factor 70
Special-Quality (SQ) Premium Tube. Improved-reliability, trustworthy long-life type.

7025= This type is identical to type 12AX7A except that it has a controlled equivalent noise and hum characteristic.

So what tube are you getting? Will the one(s) you get work for your specific application/intent? Since these are at best improperly labeled I stand by my definition of the product. Regards, Perrier

From: "" <pulsarxp@earthlink.net> Date: Thu, 16 Feb 2006 19:25:48 -0600
Subject: Re: [R-390] "Fake" 12AX7 tubes on e*pay

> > Reputable dealers like Triode Electronics in Chicago sell russian and east european new tubes that are excellent.

What Eastern block country makes a good 6L6 tube these days? Are there any? I need one for my Globe Scout. Seems like US 6L6 tubes have gone through the roof due to the audiofile guys. Lee

From: "ELDIM" <eldim@att.net> Date: Fri, 17 Feb 2006 01:36:33 -0800
Subject: Re: [R-390] "Fake" 12AX7 tubes on e*pay

It almost makes me sick to my stomach to think that U.S. Made Radios would have to revert to using SOVIET-SINO tubes in these American Classics. Mind you now nothing personal against our friends in those countries. I'd rather they be buried by my side than ever have to LIMP ALONG with 2ND RATE quality that would jeopardize the radios other precious inards and possibly subject them to massive cardiac arrest. GIVE ME YOUR POOR, GIVE ME YOUR HUNGRY - -JUST DON'T SEND ME THOSE FORSAKEN TUBES-FREE OR NOT! 73, Glen Galati, KA7BOJ Tacoma, WA eldim@att.net

p.s. Is Tim trying to give a plug for Triode Electronics? There is no such thing as old wives tales when it comes to quality tubes for your BOATANCHORS. END OF SUBJECT.....

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Fri, 17 Feb 2006 06:06:43 -0500
Subject: Re: [R-390] "Fake" 12AX7 tubes on e*pay

wrote:> What Eastern block country makes a good 6L6 tube these days? Are there any? I need one for my Globe Scout. Seems like US 6L6 tubes have gone through the roof due to the audiofile guys.

My personal experience applies only to "small" tubes with close element spacing (e.g. 12AU7's). I've got a few Chinese 6L6 tubes in other equipment and have not yet had a problem. Tim.

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Fri, 17 Feb 2006 08:59:17 -0500
Subject: Re: [R-390] "Fake" 12AX7 tubes on e*pay

wrote: > It almost makes me sick to my stomach to think that U.S. Made Radios would have to revert to using SOVIET-SINO tubes in these American Classics.

I got started in electronics in the 70's and there were a lot of really crappy marginal tubes being sold as "new" at the time through retail drugstores and even TV repair shops too. Rumor at the time was that they came from Japan or South America but many of the brands relabeled everything they sold that it was completely impossible to find out who made them. It's not obvious to me that the Sino-Soviet brands of today are any worse (they're probably better overall).

Well, looking through my R-390A's that probably never had anything but mil-spec JAN tubes in them their whole lives I see plenty of heat-damaged plate resistors in them that indicate past possible tube problems. Worst case "cardiac arrest" is probably a short that causes so much current in a transformer or choke and kills it. Resistors and most tubes still seem plentiful enough, and there doesn't seem a lot of dire shortage of most of a 390A's chokes or transformers although I'm certain that there are some that are harder to find than others.

Most (but not all) 390A's have fusing that will prevent the worst many "cardiac arrest - choke fire" cases. (Strangely enough many of the nicer looking ones on E-pay do not have the fusing installed... MARS units that didn't see military use/depot service?)

> p.s. Is Tim trying to give a plug for Triode Electronics? There is no such > thing as old wives tales when it comes to quality tubes for your

While I've bought stuff from Triode Electroncis with great success in the past, I am certainly not trying to push them as a source for tubes... I've had pretty good luck getting US/Euro JAN tubes much cheaper at hamfests or even the (I swore I would never talk about it) E-place. Tim.

From: Roy Morgan <roy.morgan@nist.gov> Date: Fri, 17 Feb 2006 09:18:55 -0500
Subject: Re: [R-390] "Fake" 12AX7 tubes on e*pay

wrote: >What Eastern block country makes a good 6L6 tube these days?

I don't have experience with 6L6 types but I can tell a story about EL34's, or E34L's actually:

A friend of mine has a Dynaco Stereo 70 and we retubed it with Tesla E34L's. He had the bottom cover loose and that shorted the bias to one set of tubes. While listening to the thing, he noticed the plates glowing rather strongly red. We don't know how long they's run that way. Immediate shutdown was followed by re-testing of tubes and bias and so on. The tubes tested exactly as they had upon installation and have been running just fine ever since.

My suggestion: if you can get any Tesla 6L6GC type tube for affordable prices, do it. Beat the devil out of them and report your experience. Roy

From: "SAM LETZRING" <sletz@msn.com> Date: Fri, 17 Feb 2006 07:42:59 -0700
Subject: Re: [R-390] "Fake" 12AX7 tubes on e*pay

> >What Eastern block country makes a good 6L6 tube these days?

I needed a couple of 7027's for a couple of old Globe Scout's I'm rebuilding- found some Chinese 6L6GC's cheap and will try them- have some SOvtek also so will do some comparison. Sam

From: Roy Morgan <roy.morgan@nist.gov> Date: Fri, 17 Feb 2006 10:14:46 -0500
Subject: Re: [R-390] "Fake" 12AX7 tubes on e*pay

wrote: >I needed a couple of 7027's for a couple of old Globe Scout's I'm >rebuilding- found some Chinese 6L6GC's cheap and will try them- have some >SOvtek also so will do some comparison.

Sam,

If the plate voltage is high (550 or so) in the Scout, you can expect the Chinese tubes to self destruct. Better get some advice from the guitar guys before you endanger your transmitter. In many guitar amplifier repair shops there is a bucket for burned out transformers and chokes that died from the use of chinese 6L6's and other such tubes. The Chinese 2A3's in audiophile amps that ran near max conditions for genuine UhMurrican tubes were particularly prone to failure.

I would trust the Sovtek's more. At least try them first, so that when you fry your power transformer with the Chinese ones you'll at least have had a chance to see how the Sovtek's worked.

Your best bet is to use Tessla E34L's (and rewwire the socket if needed) if you think the filament supply is up to the increased current draw. Sorry to be pessimistic. Roy

From: Radiograveyard@aol.com Date: Fri, 17 Feb 2006 10:46:28 EST
Subject: Re: [R-390] "Fake" 12AX7 tubes on e*pay

Hey guys I have a good supply of 6L6's just have to dig them out if there is a need. Pete

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Fri, 17 Feb 2006 21:14:50 -0800 (PST)
Subject: [R-390] Edited files requested-help

To those who requested the edited relfector files.

I've sent the files in RTF so everyone can use them. If you need MS doc or pdf, I've done that also.

Here in lies the problem. I have dial-up. I've added all of you to one email and then attached a years worth of files. Al's mail box is full and w9ya has a time out problem. So 48 files came back. I need everyone who wants the files to have about 14 meg available in their in box. I don't have the time to do you all individually if I'm going to get any sleep or you want the files any time soon.

Please fix your in boxes so I can get the info to you. If you want a CD of all the 3 formats I'll hace you sent me $3. Reply off list what you'd like. Regards, Perrier

From: Perry Sandeen <sandeenpa@yahoo.com> Date: Sat, 18 Feb 2006 11:22:17 -0800 (PST)
Subject: [R-390] Tube plate voltages

wrote:>I needed a couple of 7027's for a couple of old Globe Scout's I'm rebuilding
wrote:>If the plate voltage is high (550 or so) in the Scout, you can expect the Chinese tubes to self destruct.

The design maximum plate voltage for 6l6's is 375 volts. The design max plate volts for the 12AX7's is 350 volts.

If users are at or far above these limits, all bets are off as to country of origin comments. Yeah JAN tubes would take the overload better. I'd like to use JAN 12AX7's if I can find them at a reasonable price. My original post was to point out that on epay auctions, specifically 12AX7's are highly suspect. From reputable dealers it is a whole different story. Good scrounging to all! Perrier

From: "W. Li" <wli98122@yahoo.com> Date: Sat, 18 Feb 2006 13:18:41 -0800 (PST)
Subject: [R-390] re: front panel protectors

Here is a cheap way to protect our newly finished front panels:

Take two of those clear plastic CD spacers that come with the bulk packs. It's flexible, and can be cut with tin snips or filed to clear nearby structures. Remove both KC and MC knobs, and place these under the large washer/nuts and retighten carefully.

Now our fingers will not rub off the paint as we tune. When all scratched up after years of use, they are easily replaced. W. Li

From: Tom Norris <r390a@bellsouth.net> Date: Sun, 19 Feb 2006 21:34:17 -0600
Subject: [R-390] OT - Any SAQ reception success??

Subject line says it all. I should have built a loop, but didn't. Any R-389 owners out there have any luck hearing the broadcast? 73 Tom NU4G

From: ToddRoberts2001@aol.com Date: Sun, 19 Feb 2006 23:05:20 EST
Subject: [R-390] OT - Any SAQ reception success??

Hi Tom, reception of SAQ 17.2 was successful here in South Carolina. I was not able to use an R-389 as I had to pull the main breakers to the house and run the radio on batteries to get away from line noise. Quite a few people copied them at their 0900 and 1300 UTC transmissions 02/19/06. For a good rundown on what people were hearing go to the Longwave Message Board at - http://www.lwca.org/mb/index.htm
Several people have posted wav files of their reception there. The consensus is that their signal was much weaker this time compared to other transmissions and conditions were not the best with static and poor propagation. My RST on them was 229 using a 160 meter dipole resonated with an adjustable inductor on 17.2 KHz. 73 Todd WD4NGG

From: "Dave Maples" <dsmaples@comcast.net> Date: Mon, 20 Feb 2006 16:08:03 -0500
Subject: RE: [R-390] OT - Any SAQ reception success??

All: I didn't hear squat, and I could hear the big narrow-shift boys just up the band. Receiver here was a Harris... Dave WB4FUR

From: Gord Hayward <ghayward@uoguelph.ca> Date: Mon, 20 Feb 2006 16:12:51 -0500
Subject: Re: [R-390] OT - Any SAQ reception success??

Nothing here either. I used an FRR-21 with about 60 meters of wire around our back yard but all I got was lots of noise. I taped it all, so I may go back and listen again but I don't think I'll find anything. 73 de Gord, VE3EOS

From: "Clarence Lozano" <jeeper@netins.net> Date: Mon, 20 Feb 2006 16:59:15 -0600
Subject: [R-390] Collins 75a-3

Hello,I have for sale a nice 75a-3 new tubes,alighned,with original manual$500best offer,or trade for general coverage receiver

From: "Dan Cotsirilos K9DTC" <dcsfree@comcast.net> Date: Mon, 20 Feb 2006 17:15:37 -0600
Subject: Re: [R-390] Collins 75a-3

Since there is no moderator here I must do it this way. This guy Clarence Lozano has robbed me and other hams thru ads. Dan K9DTC

From: "Mark Richards" <mark.richards@massmicro.com> Date: Mon, 20 Feb 2006 18:26:17 -0500
Subject: RE: [R-390] Collins 75a-3

>This guy Clarence Lozano has robbed me and other hams thru ads.

>> Hello,I have for sale a nice 75a-3 new tubes,alighned,with >> original manual$500best offer,or trade for general >> coverage receiver

A spell checker and instruction in use of the key marked "Enter" is in order.

These are high on my list of Rules to Live By on the Internet. Perhaps this is a tip-off to a troubled road ahead? /m

From: "Steve Hobensack" <stevehobensack@hotmail.com> Date: Mon, 20 Feb 2006 18:46:41 -0500
Subject: [R-390] RE: R-390 Digest, Vol 22, Issue 22

I heard it here in Marietta Ohio. It was plenty weak, neck and neck with the noise. First time for me after many tries. ..73..Steve..N8YE

From: "Mark Richards" <mark.richards@massmicro.com> Date: Mon, 20 Feb 2006 18:58:36 -0500
Subject: RE: [R-390] Collins 75a-3

Mark I am not sure what that means? Dan K9DTC

It means I'm irritated. Grrrrr. :) Do it like this:

"Hello.

I have for sale a nice Collins 75a-3 with new tubes. It was recently aligned. I will include the original manual.

The price is $500 or best offer. I will also consider a trade for a general-coverage receiver."

Taking care to avoid spelling errors and poor grammar, and in a form to be read by the intended audience, is my point.

Off topic, but I am increasingly irritated (and discouraged) by what comes through the wires.

If a non-English speaker is authoring, then this should be revealed up front. The message might produce a helpful response, perhaps with a suggestion as to how the message can be correctly written. If primarily a native English speaker, our poor system of education stands out and most likely there's no hope.
>>> Hello,I ->no space? >>> tubes,alighned,with ->no space? "alighned"? >>> original manual$500best ->no space? No "or"? >>> offer,or -> no space? >>> or trade for general -> what happened to the pronoun?

Finally, no signature. Selling something? Indicate name and at least city/country. Red flags. /mark richards

From: "AI2Q" <ai2q@adelphia.net> Date: Mon, 20 Feb 2006 19:05:30 -0500
Subject: Re: [R-390] Collins 75a-3

Amen! Thanks Mark. Vy 73, AI2Q, Alex in Maine

From: "Drew Papanek" <drewmaster813@hotmail.com> Date: Mon, 20 Feb 2006 19:47:42 -0500
Subject: [R-390] "Fake" 12AX7 tubes on e*pay

wrote:>I have many "Tesla"/"JJ" (E European) 12AU7A's (actually labeled ECC82, I always thought ECC82 equals 12AU7A's but seeing the subject line maybe you don't think so) and several have already failed with cathode-to-heater shorts in the past couple years. Maybe 30% failure rate. That is not "excellent" in my book, to me it indicates less-than-stellar manufacturing. <snipped>

In Tesla/JJ's defense, the factory was destroyed by bombing missions during the US campaign there (Serbia). I think it would be difficult to maintain quality control with bombs detonating all around you, the ceilings and walls collapsing and your co-workers dying.

Perhaps the tubes to which Tim refers are from a lot made around that time.

On Sovtek tubes, I have a Hallicrafters HT-9 transmitter which uses six 6L6's in various roles. The crystal oscillator stage uses a 6L6 and runs about 430 volts on the plate. I tried a Sovtek 6L6GC, American 6L6GB, 6L6GAY, metal original 6L6 and all gave identical ample grid drive to the next stage.
That oscillator stage pushes crystals quite hard-makes FT-243 types drift like crazy from heating, fractures HC-6/U types in seconds.

Yeah, I prefer the old American tubes, but will take what I can get to keep the radios running. Besides, any organization that still makes tubes in this day and age can't be all bad, can they? Drew

From: mlmccauley <mlmccauley@comcast.net> Date: Mon, 20 Feb 2006 21:49:40 -0600
Subject: [R-390] OT - help with a Russian spec sheet

I have a spec sheet for a Soviet era VFD tube that I'm trying to apply in a project. I've tapped every resource that I can think of, all to no avail. I'd try to translate the individual words/phrases myself using something like Babble Fish, but many of the characters are Cyrillic, and I only have a PDF.

It's really not a lot of text, 95% of the data fits on one page. I have made inquiries regarding getting translation services to do it, but that's *way* too rich for my blood for a hobby project. Can anyone give me a hand? Thanks in advance! Mike

From: odyslim@comcast.net Date: Tue, 21 Feb 2006 04:23:19 +0000
Subject: [R-390] Attention Hank Arney

Hank, Please contact me. I need to buy a few items. Regards, Scott W3CV

From: "Don Reaves" <don@reatek.com> Date: Tue, 21 Feb 2006 00:56:16 -0600
Subject: RE: [R-390] OT - Any SAQ reception success??

> Any R-389 owners out there have any luck hearing the broadcast?

Not heard in Central Arkansas. An ice storm prevented me from a field trip to my remote listening site, so I had to put up with the usual noise from this urban area. I used a modified Singer LFA-1 loop antenna and could null out most of the noise, but still no SAQ heard. I'm working on a bigger magnetic loop for the next attempt.

Discussion of R-389 listening targets is not OT! Don

From: "Dave Merrill" <r390a.urr@gmail.com> Date: Tue, 21 Feb 2006 07:10:34 -0600
Subject: [R-390] Spoofing Martyn

Item 587 013 1179

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 21 Feb 2006 08:08:31 -0600
Subject: Re: [R-390] Spoofing Martyn

What a Hoot!

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 21 Feb 2006 08:24:15 -0600
Subject: Re: Spam Alert: Re: [R-390] Collins 75a-3

Well the list does have a moderator but is not currently moderated, in the sense that each and every message is screened at this point. That is an option though...as we just came out of a period in the group penalty box.

A good heads up though....

Nobody wants to be burned...and use of this list to do so would be a tar and featherable offense.....I think we still have that sub-committee....don't we....with home addresses of all posters?

Do have to turn in the frequent flyer miles to the list secretary though...(at least the airline tickets are free)
Of course Clarence may be straight up....I have no experience with him....but others have passed this way. Cecil...

From: Gord Hayward <ghayward@uoguelph.ca> Date: Tue, 21 Feb 2006 10:08:45 -0500
Subject: Re: Spam Alert: Re: [R-390] Collins 75a-3

> a tar and featherable offense

no.. more like black ukumpukky and feathers we now have a use for the stuff :-) 73 de Gord

From: "Joe Grossbauer" <wa9msd@ggnet.net> Date: Tue, 21 Feb 2006 09:25:54 -0600
Subject: RE: [R-390] Spoofing Martyn

Very funny!

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 21 Feb 2006 09:35:07 -0600
Subject: Re: [R-390] Squirrely PTO & SJC update

Funny how some of us seem to experience the same type things at about the same time.....at times. (confused yet?)

I have been fighting with my Cosmos PTO for the last week of available evenings. Same problems...got the jitters with reversing direction or even when fine tuning at times. Tap on the PTO cover with a small screwdriver handle and the het tone would bounce all over the place. (most noticeable with the bfo on and using a heterodyne tone for discernment) I've had the thing apart so many times it's crazy. I finally completely removed the heater and associated wiring with no intents in putting any of it back. We don't use them anyway and I see no need for them to remain.

I even put the thing back in the radio with all covers removed so I could move things around with a tuning tool with the radio tuned to a carrier and bfo on. All seemed to center around the rear connection of the tuning slug to the lead screw and anti rotation hardware.

I had remembered reading Rogers post but didn't remember the details. (went back and looked this morning)

Here is what I did.

I considered fully removing the tuning slug but had concerns about getting the slug back in sync with the compensating ring and it's already pretty close adjustments.

I pulled the rear end plate with the slug fully in that direction and removed the tiny screws (had to drop one on the carpeted floor), the top brass ring, the lead screw to slug tensioning nut and finally the inner brass ring.

It appears that the slug is not actually threaded but probably has some type of threaded fixture on the opposite end as well.

I cleaned and scuffed the brass rings and the lead screw tensioner fingers (for lack of a better description). I washed them with spray contact cleaner and scrubbed them with a scotch brite pad to remove any oxidation and re-washed. All was re-installed on the end of the tuning slug. There is a metal ring with a couple of arms that go to a piece of square stock that is used to keep the frictional forces from rotating the tuning slug. (it is attached to the slug) It has twice or three times the number of threaded holes needed to attach the brass rings. Pick a set that don't interfere with the tabs on the tensioner once set as tightly as desired. I torqued mine down a bit more than it was when I disassembled it to improve electrical contact with the lead screw. (with fingers, not tools) I have no fear of it damaging the core as it is springy and should prevent any damage. The top ring and screws lock everything in place and ground everything by virtue of the shaft ground on the front of the PTO...which was also removed and treated to the cleaning and scotch brite pad treatment....shaft included, re-tensioned and re-installed.

I feel no added friction in tuning but the thing is dead on now...no more jitters period! I washed all lubricant off the lead screw (I had placed there)....it looked like stainless steel and the frictional components appear to be brass or copper so I consider it to be self lubricating....and obviously the RF ground at that point is very important.

I was watching the slug movement before disassembly and there was no perceivable backlash even under high magnification so I don't think that was too much of a contributing factor in mine. I could push slightly on the parts mounted on the end of the tuning slug and it would jump around in frequency like crazy but I couldn't see anything actually move so I attribute it to poor electrical contact....

It's all reassembled and back in the radio....minus the heater stuff! It is a joy to tune! Very smooth sounding.... Now to fine tune all those little screws at the 100cps points...while in the radio! Still planning that one!

Right now this SJC survivor tunes and hears as well as any radio in the shack and that includes an Icom 756 Pro II and a hot rod Leary SP-600...all sharing the same antenna through a military active multicoupler. The Pro II needs preamp 1 on to keep up...the Leary is still the winner with best recovered audio and top notch sensitivity. (nice front panel IF gain control)

Improved audio is next.....more power, less distortion...then on to adapting look alike meters with 100 ohm inputs.

Remember this is the "lets see what is possible within the scope of the technology" radio....never intended to be a museum piece!

So far no extra holes...no modifications that would prevent module swaps beyond 12V tubes to eliminate the ballast tube and solid state stuff limited to rectifiers in the power supply and replacement of the selenium which had failed. All molded paper caps replaced. New filter caps and a few resistors replaced. Will need to go back and check more resistors now that some of them have been flagged by others. Am running a 6BZ6 in 1st RF amp. Can't measure any additional sensitivity but it sounds much cleaner, a bit quieter and is every bit as sensitive as original. Half turn removed from end point coil in PTO for end point adjustment. Stay tuned...more to come for those interested..... Cecil...

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 21 Feb 2006 09:39:31 -0600
Subject: Re: Spam Alert: Re: [R-390] Collins 75a-3

Forgot about that...who is the designated collection point.....is it still Barry Hauser? I have a 55 gallon drum about half full I need to ship! Cecil...

From: "Alan" <alminer@alminer.com> Date: Tue, 21 Feb 2006 11:10:17 -0500
Subject: Re: [R-390] Spoofing Martyn

Very funny and also painfully true. Al

From: "Don Reaves" <don@reatek.com> Date: Tue, 21 Feb 2006 11:01:08 -0600
Subject: [R-390] RE: moderation comments

That moderator is darn near useless.

When he does turn on the moderation switch there is sometimes a TWO DAY delay before our posts get released, and he ticks off some folks who attempt to post messages that he arbitrarily deems irrelevant or

frivolous to the list.

When he turns off the moderation switch (hmm, I guess he has a job/life/whatever), you never know what exceptions to expect on the list here - off topic posts, ebay trivia, flame bait, some bordering on slander, and a tendency to pile on.

I don't think he is doing a good job - he can't seem to anticipate what we need to keep the list open and clean, vibrant and informative. Don

From: "Dave Merrill" <r390a.urr@gmail.com> Date: Tue, 21 Feb 2006 11:53:03 -0600
Subject: [R-390] Re: Spoofing Martyn

Be sure to read all the "Questions from other members" - pretty funny stuff!

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Tue, 21 Feb 2006 13:23:36 -0500
Subject: Re: [R-390] Squirrely PTO & SJC update

> Funny how some of us seem to experience the same type things at about the> same time.....at times. (confused yet?)
>
> I have been fighting with my Cosmos PTO for the last week of available> evenings. Same problems...got the jitters with reversing direction or even> when fine tuning at times. Tap on the PTO cover with a small screwdriver> handle and the het tone would bounce all over the place. (most noticeable> with the bfo on and using a heterodyne tone for discernment)

I've been doing most of my testing with a receiver on the bench in CW mode to pick up the hetrodyne. It's a lot easier to hear the squirreliness than it is to see it on a frequency counter.

That said, my squirrely PTO seems to have cured itself without me ever doing any of the dissection that Roger or Cecil suggested. I did do a little cleaning on the square rod that the spider arm rides on, and that may have been enough. It had some visible deposits (maybe grease turned into shellac?) that might have been hampering smooth action at some points on the dial.

Looking inside the PTO I see some greasy/shellacy gunk elsewhere but not on the mechanics. After reading Cecil's success I am tempted to tear down and scrub-bright and wash the whole innards.

Could the grease been intended to make the airtight/nitrogen-tight seal of the cans against the O-rings?

Is there any purpose at all at this point to pump the PTO full of dry nitrogen again? Tim.

From: "Bill Hawkins" <bill@iaxs.net> Date: Tue, 21 Feb 2006 13:02:39 -0600
Subject: RE: [R-390] Squirrely PTO & SJC update

"Is there any purpose at all at this point to pump the PTO full of dry nitrogen again?"

Well, you can get most of the way there by sending the PTO to me in Minneapolis, where the dewpoint is around -20 at night.

I'll open it up, let it fill with almost 80% nitrogen, then lightly grease the seal and send it back to you. Bill Hawkins

From: ~ Quig ~ <greybeard5150@sbcglobal.net> Date: Tue, 21 Feb 2006 11:18:56 -0800 (PST)
Subject: [R-390] Re: Spoofing Martyn

wrote: Item 5870131179

Rats! It looks like I got there too late. It didn't even come up as being an item that had been pulled. Whatever it was, it's now like it never existed. Did anyone save it so I could take a peek? I'd appreciate it if someone could share. ~ Quig ~

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 21 Feb 2006 16:16:06 -0600
Subject: Re: [R-390] Squirrely PTO & SJC update

My 2 cents worth is no! I even cut the silica gel bags out of there because they couldn't have been contributing to reducing the moisture after all these years and I have read horror stories about them rupturing and spreading grit all over the inside of the PTO. These radio's are not operated in the environment they saw during the wars....cold or hot. (wars that is) Mine is in an air conditioned shop/shack and being in the south I heat it by vacuum tube when necessary...not unusual to be running the A/C in December....

Be careful not to spray cleaners or lubricants on the main coil form....bad things could happen. I washed all my parts after removal and what cleaning I did with contact cleaner was done with Q-tips. I did flow some over the lead screw while running the core in and out.

Just be careful...it wouldn't take much to reduce a perfectly good PTO to junk quickly! Cecil.....

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 21 Feb 2006 16:41:45 -0600
Subject: Re: [R-390] Re: Spoofing Martyn

Typical Ebay....they need to learn to take lemons and make lemon juice!

There's no means for justice for the honest man....at least maybe not in this life! It'll all work out in the end though! Have faith! Was funny while it lasted though! Cecil....

From: "Cecil Acuff" <chacuff@cableone.net> Date: Tue, 21 Feb 2006 17:09:12 -0600
Subject: Re: [R-390] RE: moderation commentsTo: <r-390@mailman.qth.net>

Doesn't read the same out of context does it.....Did I write that? Sorry about that...didn't come out quite right I guess. My heart was in the right place though! Tough job....kinda like the Dirty Jobs guy on TV!

Seriously....I think you do a fine job with the list Don....and I've been on some bad ones, I know what one looks like. (maybe it was my fault)

You're rational and don't make us endure frog stories.... I don't go to any of those hangouts any more. (they won't let me!) I've been told frog legs taste a lot like chicken.....h'mm sounds a bit like the days of

Nolan Lee! Better hush I guess before I end up moderated.... Keep up the good work! Cecil....

From: ToddRoberts2001@aol.com Date: Tue, 21 Feb 2006 20:25:06 EST
Subject: [R-390] KPH To Be On The Air Sunday Feb 26

Here is another reason to turn on your R-389 or R-390/R390A this coming Sunday. According to the LWCA home page Coastal station KPH will be on the air this Sunday Feb 26 with a special event operation from the Marconi Conference Center in Marshall, Ca. They will set up a 1942 vintage CW operation with 1942 period receivers at the Conference Center and remotely key the KPH transmitters at point Reyes Peninsula. Operations are set to begin at 1800 UTC or 10 AM Pacific time with transmitters on 426KHz and 6477.5 KHz and receivers on 500KHzand 6276KHz. They will attempt to work 2 ships on MF that day. For more information you can go to : http://marconiconference.org/openhouse.htm
73 Todd WD4NGG

From: Tom Norris <r390a@bellsouth.net> Date: Wed, 22 Feb 2006 12:57:33 -0600
Subject: Re: Spam Alert: Re: [R-390] Collins 75a-3

Feathers cost too much.

How about ukkumpukky and BBODs? And the extra stale Kielbasa left over from making ballasts.
Tom

From: TVComlGuy@aol.com Date: Fri, 24 Feb 2006 13:45:48 EST
Subject: [R-390] Hank Arney

Hi to the group,

Has anyone heard from Hank Arney lately? I've been trying to reach him and haven't been able to.
Ron, KB0WAR

From: ~ Quig ~ <greybeard5150@sbcglobal.net> Date: Fri, 24 Feb 2006 11:02:02 -0800 (PST)
Subject: [R-390] Re: Hank Arney

Hank took a fall a while back and he's been laid up. He busted his shoulder, and I'm guessing that he's in a sling that would make typing difficult if not impossible. I'd be surprised if he's not 'reading the mail' on us though, and he just might appreciate a get well card or two if they were dropped in his mailbox. Get well soon Hank, you old son-of-a-gun! ~ Quig ~

From: Flowertime01@wmconnect.com Date: Fri, 24 Feb 2006 14:20:57 EST
Subject: Re: [R-390] To ,Hank Arney

Hank, Shur hope you are getting well. Miss your input to the reflector. Roger L. Ruszkowski

From: "Cecil Acuff" <chacuff@cableone.net> Date: Fri, 24 Feb 2006 13:28:54 -0600
Subject: Re: [R-390] Re: Hank Arney

He has also moved from California to Texas so his world is probably upside down about now. Cecil....

From: Dan Arney <hankarn@pacbell.net> Date: Fri, 24 Feb 2006 17:00:31 -0800
Subject: Re: [R-390] Re: Hank Arney

I am shutting down my packing and crating shop after 25 years, selling my house and bought a house in Lowry Crossing TX MCKinney. Lived in this house since Aug 67 and 25 years of radios and electronics and junk has used up 6 2 1/2 ton stake bed plus 5 20 yd dumpsters plus about 20 pickup loads of high class "JUNQUE". HiHi

So I have been busy. Sending 2 28' freight trailers of furniture and radios back to TX on Feb. 27th. and then have to unload and sort. Hank KN6DI

My new address is
1050 Overland Dr.
Lowry Crossing TX but I understand the mailing addy is McKinney

My Phone # as of 3-03-06 is to be 469-742-8941 and I have been told that my email addy will remain the same.

From: Michael Crestohl <W1RC@Verizon.net> Date: Fri, 24 Feb 2006 21:54:31 -0500
Subject: [R-390] FS: Stewart Warner U S Navy R-390A

Hi Gang:

Here is a nice R-390A restoration project with a documented history. It is a 1960 contract (Order Number 20139-PC-60) Stewart Warner serial number 22XX, with both original meters in reasonably decent mechanical and cosmetic condition. This radio served with the US Navy (has the Diode Load jack on the front panel) and I even have documentation as to where it spent its' tour of duty at sea. However no other manuals are included.

It has been in storage for several years and will need a good cleaning.

The major issue with the cosmetics is that along the way someone drilled a hole in the front panel to install a toggle switch used to turn the power on and off. It can of course be reversed and the hole filled with J B Weld but it is possible that the normal power switch is broken.

I cannot give any indication on its' electrical performance because I have not powered it up. However I have some notes dated 12/24/2003 that were made by someone who did apply power to it and recorded his observations: "Receiver functions but audio is distorted and BFO signal is a bit weak for copying SSB."
Other things I observed are: Modules seem to be original (at least the ones I can see). The ballast tube was replaced by a resistor and the power supply was modified for diode rectification. I am told that all Navy R-390As were so modified but I don't know if this is fact or fiction. The AC line filter on the back panel is missing and the line cord installation is jury-rigged but looks okay.

I would prefer local pickup (of course) and I am about two hours northwest of Boston and three hours north of Hartford CT. I can deliver to Hosstraders in May (but would expect payment earlier). I will ship it if necessary. I would ship in two cartons but this adds a bit to the cost. Buyer is responsible for

packing costs and the actual freight charges. The total cost is dependent on distance of course. Estimate two 50 pound boxes from 05047.

I figure that $650.00 plus shipping is a reasonable price for this radio. It can be made very nice with a minimum of effort and completely restored with more effort. Photos are available. If interested please reply by e-mail. 73, Michael W1RC*AT*VERIZON*DOT*NET

From: "Kenneth G. Gordon" <kgordon@moscow.com> Date: Sat, 25 Feb 2006 09:01:07 -0800
Subject: Re: [R-390] To Hank Arney

Get well soon, Hank, and good luck on the move. Ken Gordon W7EKB

From: mlmccauley <mlmccauley@comcast.net> Date: Sat, 25 Feb 2006 16:06:53 -0600
Subject: [R-390] THANKS! - Russian spec sheet

Many thanks go out to all those who gave me a hand with my spec sheet problem. I received several responses, which enabled me to cross check the results, which, as it turned out, really wasn't necessary in that everyone did such a good job. Again, thanks very much for everyone's assistance! 73, Mike WB5MYY

From: Larry WA9VRH <wa9vrh@mtco.com> Date: Sat, 25 Feb 2006 16:12:25 -0600
Subject: [R-390] CCA First Wednesday AM Night March 1st!

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

Wednesday March 1st on 3880 kcs at 7:00 PM local East Coast time marks the start of the latest chapter of First Wednesday AM Night, drawing hundreds of vintage stations from across the country.

The event is anchored by a "tall ship" AM station in each time zone. The East Coast and Central sections will now run for 90 minutes in response to the tremendous participation in those time zones. The remaining time zones will be an hour. We encourage stations to check-in on AM using Collins and other AM transmitters, new and old. It's an opportunity to revel in this nostalgic mode, enjoy giving vintage equipment a "run," and sharing some storytelling about classic vacuum tube homebrew and commercial designs. Typically more than a hundred stations take part in the evening's coast-to-coast AM event; by the time it concludes at 10:00 PM Local PST.

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

7:00 PM-8:30 PM Local East Coast Time Anchor: Bob W0YVA

7:30 PM-9:00 PM Local Central Time Anchor: Jim W0NKL

8:00 PM-9:00 PM Local Mountain Time Anchor: Jim WA0LSB

8:00 PM-9:00 PM Local West Coast Time Anchor: Bill N6PY comments please to wa9vrh@mtco.com

From: Masters Andy <nu5o@yahoo.com> Date: Sat, 25 Feb 2006 20:15:36 -0800 (PST)
Subject: [R-390] LM117K Mod and other issues

Good evening. I am working through a R-390A that I recently acquired on EBAY. It is an EAC '67 series.
It came with the Kleronomos audio mod and provides excellent audio, especially on AM. It also has a pair of diodes across TB103 Term 10/13 and a wire going over to TB102/4. The power supply has been changed over to a pair of diodes with a 200 ohm dropping resistor. I have recapped the IF and AF sections and changed out the "out of tolerance" 2.2K resistors in the IF section.

Tonight I added the Current regulator mod from ER number 70, page 24 using a LM117K regulator. I ended up changing R2 from 4.3 ohms to 4 ohms to raise the actual voltage measured at pin 2 of the 3TF7 socket. Initially, with 4.3 ohms, I measured about 10.2 volts. With 4 ohms, I am measuring 12.1 volts. How close to 12.6 vdc do I need to be on the BFO/VFO tubes? Everything seems quite happy at 12.1 vdc and I am inclined to leave it there unless there is a good reason not to do so. The voltage stays solid as a rock with the AC input being varied from 105 to 128 VAC.

I plan to add the Lankford full wave bridge AM detector next and I am also interested in adding the two 1n4148's to pin 2 V506A and Pin 1 V509. Does any one out there know of a reason NOT to do both of these mods? Thanks, Dutch Masters NU5O

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Sun, 26 Feb 2006 13:12:40 -0500
Subject: [R-390] Cosmos PTO, spring-loaded core?

OK, my wife is sick, the kitchen is a mess, my three kids are running around the house screaming, and of course I've decided to pull apart my PTO.

I've gotten roughly to where the pictures at http://www.r-390.com/cosmos.htm

but of course I've got some questions:

I see the ring and ridge that ride the linearity adjustment screws. (Interestingly enough *all* the screws are present on mine. Looks like they take a 0.028" hex key but can't find mine at the moment.) I see the core that is supposed to ride the linearity adjustmet core, and I find that it sits on the end of a threaded rod and presumably a black nub on mine (it's red in the pictures at the URL above) is supposed to ride the ring and move in and out with a spring pushing it.

BUT... I don't feel any pressure when I press on the nub.

Is it time for me to tear off the two screws holding the linearity adjusting coil and look for the springs under there?

Or do I have to "press harder"? Tim.

From: "Jim M." <jmiller1706@cfl.rr.com> Date: Sun, 26 Feb 2006 15:56:03 -0500
Subject: Re: [R-390] Cosmos PTO, spring-loaded core?

You are in deep waters now.

My suggestion: Fix the wife some chicken soup, clean up the kitchen and get the kids under control first. Jim M. N4BE

From: Robert Watson <kn4hhptc@yahoo.com> Date: Sun, 26 Feb 2006 15:26:38 -0800 (PST)
Subject: [R-390] Looking for a PTO

My project R-390A (Amelco S/N 20) is minus a PTO. I would like to find a Cosmos PTO. However, I will entertain any flavor that comes available.

If you have one you can part with, I would like to hear from you. Many thanks and 73, Bob KN4HH near Atlanta

From: "Jim Shorney" <jshorney@inebraska.com> Date: Sun, 26 Feb 2006 17:42:02 -0600 (CST)
Subject: [R-390] OT: Simpson 460 Series 4 manual

OK, you guys seem to know just about everything about everything. I need a manual for a Simpson 460 Series 4 DMM. Don't shoot me, it ain't got tubes. Anyone have one that I could beg a copy of? It looks simyular to the 464 meters, but has an analog meter on the front panel as well. TIA-Jim

From: Gary Pewitt <n9zsv@cei.net> Date: Sun, 26 Feb 2006 17:43:33 -0600
Subject: [R-390] Need crate

Does anyone have one of Hank Arney's 390 shipping crates in good shape they'd sell me.? Hank has quite making them. If so please let me know much you want for it and shipping empty to zip 72927. Thanks Gary

From: "WA9VRH" <wa9vrh@mtco.com> Date: 27 Feb 2006 00:15:36 -0000
Subject: Re: [R-390] OT: Simpson 460 Series 4 manual

Hi Jim,

Do a Google search on Simpson electronics and checkout their website. They have a number of manuals that you can download. 73 Larry WA9VRH

From: "Jim Shorney" <jshorney@inebraska.com> Date: Sun, 26 Feb 2006 18:29:33 -0600 (CST)
Subject: Re: [R-390] OT: Simpson 460 Series 4 manual

wrote: >Do a Google search on Simpson electronics and checkout their website. They have a number of manuals that you can download.

Thanks, Larry. Been there, done that. It's not current, so it's not available for DL, but they would be happy to sell me a copy for $25. I'd rather use that as a last resort, since I swapped another meter that was in excess of my needs for this one. I also wasted more than a fair amount of time on Google searching, to no avail. 73-Jim

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Sun, 26 Feb 2006 19:52:49 -0500
Subject: Re: [R-390] Cosmos PTO, spring-loaded linearizing core?

Jim recommended: > Fix the wife some chicken soup, clean up the kitchen and get the kids under control first.

OK, made that much progress :-).

But now I have more time to write my real question:

How the heck is the linearization screws/plate/core/inductor supposed to work in real life?

"In principle" it's a spring loaded thing such that the core follows the 40-some linearizing screws through the rotation.

But this is what I find in my Cosmos:

The linearizing inductor has a core in it.
The core is on a leadscrew.
The leadscrew goes through a threaded hole in the metal base of the inductor.
On the other side of the leadscrew is a plastic nub that, I presume, is supposed to follow the 40-some screws.

What I don't see: Any way for the nub to move the core in and out of the little linearizing inductor.

There's no spring. Nothing slides.

Maybe, just maybe, the nub compresses/flexes the metal base such that the tiny corrections are made. But it doesn't seem likely.

Maybe, just maybe, the pressurized nitrogen in the PTO provides the restoring force and the sliding is just the screw wiggling in its threads. But that doesn't seem likely either.

Obviously my knowledge of how the linearizing is supposed to work has a huge gap in it, because I don't see how the screws move the nub or how the nub moves the little core.

Can anyone PLEASE correct my mistaken reasoning here? Tim.

From: <fwbray@mminternet.com> Date: Mon, 27 Feb 2006 01:32:31 -0000
Subject: Re: [R-390] Cosmos PTO, spring-loaded linearizing core?

Tim,

Hopefully, the following links will be of some value.

http://web.webhost4life.com/barryhauser/index.asp?action=page&name=3 Take a look at issues 45 and 46 of Hollow State News.

Also look at: http://www.r390a.com/html/body_n5off_pto.html I have a Cosmos PTO, but have not yet tried to align it. Good luck, Fred Bray W6WAW

From: "Dan Merz" <mdmerz@verizon.net> Date: Sun, 26 Feb 2006 18:41:14 -0800
Subject: RE: [R-390] Cosmos PTO, spring-loaded linearizing core?

Tim, you might want to look at www.davemed.com/cosmos.html if you haven't. You can also find this by goggle search "cosmos pto miller 390a". Miller's pictures of the innards may be helpful. Dan.

From: "W. Li" <wli98122@yahoo.com> Date: Sun, 26 Feb 2006 19:04:20 -0800 (PST)
Subject: Subject: [R-390] LM117K Mod and other issues

Dutch:

Nice work! Leave it at 12.1 volts to the BFO/VFO heaters. The Radiotron reference allows 10% variance on the heaters. They'll last longer at the slightly reduced levels. W. Li

From: <fwbray@mminternet.com> Date: Mon, 27 Feb 2006 05:02:13 -0000
Subject: [R-390] Another "Close to Perfect" R-390a

Just saw another R-390A -- item 5872325416 -- from you know who.

This is an interesting radio, as it is described as an "improved Motorola version " but bears a Capehart plate.

Now my question. Is there anything unique about the PTO in this radio which is described as "the exceptional Collins PTO which is very rare to find as they were only usually put in to special one off receivers built to a higher spec receiver for a special purpose" ?? It looks like the regular R-390A PTO, but maybe I am missing something as I only have one radio? I think I know the answer, but I am always willing to learn something new. 73, Fred Bray W6WAW

From: "Jim M." <jmiller1706@cfl.rr.com> Date: Mon, 27 Feb 2006 00:25:21 -0500
Subject: Re: [R-390] Cosmos PTO, spring-loaded linearizing core?

If I recall correctly, and it has been a while, the core of the linearizing coil is spring loaded inside in some fashion so that it moves in and out as the adjustment screw heads push against the slide (I don't have better names for these parts). I dont recall if there was a lot of tension or not but when you push on the little "nub" the coil core should go in slightly, and then spring back when you release the pressure. The pressurization inside the can (if there ever was any) has nothing to do with it. What is going on that you think this coild may be the problem?

The only adjustable coil I know of with screw threads is the end point adjustment coil right next to the linearizing coil. There shouldn't be any wiggling threads. I have only opened one Cosmos PTO (the one on the URL) so I don't know what you may have there. If it doesn;t look like what's pictured on the URL inside, then maybe it is something different or it has been modified sometime in its life. Jim M.

From: "Bob Young" <youngbob53@msn.com> Date: Mon, 27 Feb 2006 01:12:22 -0500
Subject: [R-390] correct size and quantity of IERC tube shields for R390-A

I have an R390-A coming back from Chuck Rippel and would like to know how many IERC tube shields I'll need, what sizes and if possible what numbers I would need, such as TR6-6051 etc. also do these things really work or is it hype? Bob Young

From: "paolo gramigna" <paolo.gramigna@controllo.it> Date: Mon, 27 Feb 2006 07:55:29 +0100
Subject: [R-390] Another "Close to Perfect" R-390a (item 5872325416)

well, the meters are a replacement, several tube shields are missing, the wiring looks modified, the mainframe is badly bent...

but i'm saving those descriptions. I can make use of some hints from them, when i'll have to sell my used car... cheers, Poalo from Italy

From: "Craig Anderson Ext 1365" <Craig.Anderson@saintpaul.edu> Date: Mon, 27 Feb 2006 07:17:01
Subject: [R-390] RE: R-390 Digest, Vol 22, Issue 30

The correct configuration for the IERC tubes shields for the R-390A can be found at the following link.

http://site298.webhost4life.com/barryhauser/archives/hsn-issue45.pdf Craig W9CLA

From: "paolo gramigna" <paolo.gramigna@controllo.it> Date: Mon, 27 Feb 2006 07:55:29 +0100
Subject: [R-390] Another "Close to Perfect" R-390a (item 5872325416)

well, the meters are a replacement, several tube shields are missing, the wiring looks modified, the mainframe is badly bent...

but i'm saving those descriptions. I can make use of some hints from them, when i'll have to sell my used car... cheers, Poalo from Italy

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Mon, 27 Feb 2006 08:30:38 -0500
Subject: Re: [R-390] Another "Close to Perfect" R-390a

> Just saw another R-390A -- item 5872325416 -- from you know who.

Did Martyn just get a can of copper-colored spray paint or something? Or maybe he can do copper plating now? The sides of a R-390A are not copper colored, unfortunately!

Several of his recent "finds" (usually you can see gottahaveit1995 buying them in the past few months on the E-place too) show obvious "fix-ups" that are either copper-colored lighting, copper-colored spray paint, or maybe (but I doubt it) replated chassis. Tim.

From: "Tim Shoppa" <tshoppa@wmata.com Date: Mon, 27 Feb 2006 08:42:29 -0500
Subject: Re: <<<SPAM>: Re: [R-390] Cosmos PTO, spring-loaded linearizing core?

wrote: If I recall correctly, and it has been a while, the core of the linearizing> coil is spring loaded

inside in some fashion so that it moves in and out as> the adjustment screw heads push against the slide (I dont have better names> for these parts).

That was my understanding too. What I do NOT understand is why there's no spring action and no spring and no slide inside this VFO's linearizing coil.

> I dont recall if there was a lot of tension or not but > when you push on the little "nub" the coil core should go in slightly, and > then spring back when you release the pressure. The pressurization inside > the can (if there ever was any) has nothing to do with it. What is going on > that you think this coild may be the problem?

Again, no spring action. Disassembly of the linearizing coil shows no spring. In fact the core sits on a screw that is threaded through the base.

It is VAGUELY possible that the base is actually two pieces, and the threaded part is supposed to be sliding in and out. But pushing and tugging firmly on it shows no sliding. And it looks like it's just one solid piece. (And externally looks just like all the pictures).

If someone told me that this cylinder was supposed to slide, I might start putting it in a vise hammering on it or something. But short of that it's not gonna move.

> The only adjustable coil I know of with screw threads is the end point

> adjustment coil right next to the linearizing coil.

Yeah, I've got the end point adjustment coil and it is threaded. (Actualy the threads are not on the coil but on a brass insert in the bulkhead that the coil attaches too.)

BUT... my linearizing coil has a threaded base, and a core on the end of a threaded screw. No sign of any spring or slider at all. Thus my complete mystification as to how it ever worked.

My pictures look just like those on the other websites of a Cosmos's innards, except that none of them ever got so far as unscrewing the linearlizing core to look for how it was supposed to work. Oh, one difference: on mine the nub behind the ring isn't red, it's black. Don't know what that means. It looks original, it's a very snug fit into the bottom of the linearizing coil's base, but so snug that it never could've slid in and out.
I'm tempted to tear down my other Cosmos PTO just to see what the heck is inside it.

> If it doesn;t look like what's > pictured on the URL inside, then maybe it is something different or it has > been modified sometime in its life.

Mine *had* been rebuilt by Raytheon (according to the maintenance sticker) sometime in the early 70's. But the coil base looks identical to the other Cosmos pictures I've seen around (of course they only show the outside of the base and not the threads or the slug on a threaded screw on the inside). The only obvious difference is that the nub that is supposed to ride the back of the ring is black plastic on mine.

The reduction drive for turning the screw plate in mine was pretty grungy. Not as much shellac and grit as the RF deck geartrain, but pretty bad for a sealed unit! Tim.

From: "Les Locklear" <leslocklear@cableone.net> Date: Mon, 27 Feb 2006 07:45:59 -0600

Subject: Re: [R-390] Another "Close to Perfect" R-390a

Martyn tends to wax poetic about anything that he sells on the E place.

Being a Capehart receiver, it originally came with a Dubrow electronics pto which is a conventional (corrector stack) pto like the Collins, Motorola, Dubrow and Progressitron. The only other pto manufactured was the Cosmos which was of a different design.

Martyn is one seller to steer clear from imho. Les Locklear

From: "Cecil Acuff" <chacuff@cableone.net>
Subject: Re: [R-390] Cosmos PTO, spring-loaded linearizing core?

Tim and Group,

I can't tell you exactly how it works because I haven't torn mine down that far but I can tell you it does move the core. First lets be sure you are looking at the right inductor...which you probably are. With the covers off you should see the main inductor and two smaller ones on ceramic coil forms. The one furthest from the main inductor is the end point inductor. There should be one a bit closer to the main inductor. The spring is probably hidden up inside the housing part that threads through the aluminum main framework of the pto. You should be able to push the core easily I would think because the metal ring that rides the end of the core shaft is pretty thin I would think to be formed by the screws only in their little area and not the next on either side. I haven't actually seen that part but I can't imagine the screws riding directly on the end of the shaft.

Anyway to cut to the chase what I did to verify function was to drop a plastic alignment tool through the hole in the rear end plate into the coil form for the that coil. I marked a ring around the point where it intersected the end plate and I ran the pto from end to end and watched the movement of the alignment tool through that process. It moves...mine didn't move more than probably 1/8 of an inch total...maybe not that much but it moved. As long as yours is doing that I wouldn't sweat it.... Cecil....

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Mon, 27 Feb 2006 09:45:39 -0500
Subject: Re: [R-390] Cosmos PTO, spring-loaded linearizing core?

wrote: I can't tell you exactly how it works because I haven't torn mine down that far but I can tell you it does move the core. First lets be sure you are looking at the right inductor...which you probably are.

Oh, definitely.

> the aluminum main framework of the pto. You should be able to push the core > easily I would think because the metal ring that rides the end of the core > shaft is pretty thin I would think to be formed by the screws only in their > little area and not the next on either side. I haven't actually seen that > part but I can't imagine the screws riding directly on the end of the shaft.

In my unit, the metal ring has a triangular "screw rider" that obviously is shaped so that it is riding at least one and usually two screws at any point in its travel. Then I guess the back of the ring pushes up against the "slug rider" that is supposed to slide the slug in and out (I guess, in my case it's not sliding!)

As to the triangular screw rider: see how the screws zig-zag in and out? The backs of the screws look to be enlarged such that the triangular rider is always on at least one and usually on two of the screw backs.

> Anyway to cut to the chase what I did to verify function was to drop a plastic alignment tool through the hole in the rear end plate into the coil form for the that coil. I marked a ring around the point where it intersected the end plate and I ran the pto from end to end and watched the > movement of the alignment tool through that process. It moves...mine didn't move more than probably 1/8 of an inch total...maybe not that much but it moved. As long as yours is doing that I wouldn't sweat it....

Thanks Cecil, to verify that there is really supposed to be movement :-).

Looking at how adjustable the screws are I would be surprised if there could be an eigth inch of travel, but that's a good upper limit. If you turned one in an eight of an inch it would probably fall off inside :-(.

But I'm getting no sliding. Maybe I should soak the metal inductor base in some kind of solvent to free up that so-far-hypothetical slider. I can sort of conceptually see that there's a cylinder in there, with internal threads that the core sits in, and that the cylinder and thus the slug are supposed to be sliding in and out.
There's a lot of mechanisms with a lot of screw holes and I really don't understand how they kept all those holes closed to pressurize this thing with nitrogen. Tim.

From: Roy Morgan <roy.morgan@nist.gov> Date: Mon, 27 Feb 2006 09:51:08 -0500
Subject: Re: [R-390] Another "Close to Perfect" R-390a

wrote: >Just saw another R-390A -- item 5872325416 -- from you know who. > >This is an interesting radio, as it is described as an "improved Motorola >version " but bears a Capehart plate.

Likely pure baloney.

>Now my question. Is there anything unique about the PTO in this radio It looks to me like a normal 70H-12.

>... I think I know the answer, but I am always willing to learn something new.

I think I know the answer, too: Pure BS. If I bought that radio from him, I would not be surprised to get the name plate shown on a very different radio altogether. Roy

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Mon, 27 Feb 2006 10:03:02 -0500
Subject: Re: [R-390] Cosmos PTO, spring-loaded linearizing core?

One further thought: My PTO is evidently a Cosmos PTO that had been rebuilt by Raytheon in the 70's.

I compare the innards of mine (covered with grease, goop, and shellac) to Jim's pictures at http://www.r-390.com/cosmos.htm and I'm stunned at how shiny his is. In mine the reducing gear was slopped in tan/grey grease, much of which was running all over the feed-through wires. Much of this grease was also on the screws/ screwplate etc. too. Some was leaking through into the back of the can and seeping out of where the inductors screw down to the baseplate. I've been able to clean up much of it.
I think Raytheon royally screwed my PTO up 30 years ago. But, if I can get the slug to slide again I'll be

home-free! Tim.

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Mon, 27 Feb 2006 10:09:20 -0500
Subject: Re: [R-390] Another "Close to Perfect" R-390a

>>Just saw another R-390A -- item 5872325416 -- from you know who. This is an interesting radio, as it is described as an "improved Motorola version " but bears a Capehart plate.

> Likely pure baloney. I think I know the answer, too: Pure BS.

Radio-Mart tries to ride the gap between being an expert at how beautiful his radios-for-sale are, and at the same time has to feign enough ignorance so that he can claim he didn't know that the scratches had been spray painted over and the radio doesn't really work right. So my belief is that he introduces "obvious" factual errors to make those much more apparent than the facts that he is actually trying to hide.
In other words: There is a thin line between ignorance and arrogance. Radio-Mart has erased that line.
Tim.

From: Roy Morgan <roy.morgan@nist.gov> Date: Mon, 27 Feb 2006 10:19:57 -0500
Subject: Re: [R-390] correct size and quantity of IERC tube shields for R390-A

wrote: >I have an R390-A coming back from Chuck Rippel and would like to know how many IERC tube shields I'll need, ...

Bob,

Which tube shields you will "need" depends on your opinion, I offer two different opinion candidates for your consideration:
1) All tubes should have IERC tube shields in place.
2) Only the tubes which are mentioned in the military manuals should have tube shields left in place, they should be IERC shields, and all others should be removed.

>what sizes and if possible what numbers I would need, such as TR6-6051 etc. also do these things really work or is it hype?

I include below for the record my notes file on tube shields. It contains posts from this list, and lots of detail on the sizes, numbers and heat reducing capability of the black tube shields. It is NOT hype.
Roy

Tubeshields.txt From K1LKY

To: r-390@mailman.qth.net From: "pete wokoun, sr." <pwokoun@hotmail.com>
Subject: [R-390] IERC type tube shields

I can provide this info in a .pdf file if anyone wants it that way. I'll soon stick it in my website for future reference: www.qsl.net/kh6grt

More than you ever wanted to know about heat-dissipating tube shield mil specs...but just the item for

those *HOT* 6BF5s in Collins equipment. (You may need to change your font type to a constant-spacing one like Courier for the tables to line up properly.)

MIL SPEC HEAT-DISSIPATING TUBE SHIELDS by Pete Wokoun Sr., KH6GRT (6/2004)

We all have heard the benefits of using International Electronic Research Corp (IERC) type heat-dissipating shields in the R390A and other equipments to reduce tube operating temperatures. However, I haven't seen any information on just how how much they actually reduce the temperatures. Collins did some temperature studies but I haven't been able to find a copy of their study, possibly called service bulletin 303. I don't know if that study included heat dissipating shields. Searching thru the mil specs that these shields were made to I finally found some definitive temperature reduction figures. The specs are all in degrees C; they have been converted to degrees F in this presentation.

The mil spec heat-dissipating shields designated for retrofitting to existing equipment come from three mil specs: MIL-S-9372(USAF), MIL-S-19786(NAVY), and MIL-S-24251. These shields are designed to replace the shiny, nickel plated JAN types. Mil-S-9372 was an Air Force spec and MS24233, its mil standard for retrofit shields, was implemented January, 1958. MIL-S-19786 was a Navy spec and its amendment for retrofit shields was implemented May, 1964. Both these specs were cancelled in 1968 and replaced by mil spec MIL-S-24251 which covered all branches of the service and was implemented March, 1967. Shields made to any of these specs will have the mil spec part number on them. Here are those mil spec part numbers cross referenced to the well-known IERC numbers:

SIZE	IERC #	MIL-S-9372	MIL-S-19786	MIL-S-24251
Short 7 pin	5015B	MS24233-1	S0761*V00	M24251/6-1
Med 7 pin	5020B	MS24233-2	S0762*V00	M24251/6-2
Tall 7 pin	5025B	MS24233-3	S0765*V00	M24251/6-3
Short 9 pin	6015B	MS24233-4	S0966*V00	M24251/6-4
Med 9 pin	6020B	MS24233-5	S0967*V00	M24251/6-5
Tall 9 pin	6025B	MS24233-6	S0968*V00	M24251/6-6
Ex-Tall 9 pin	6027B	MS24233-7 *(X or C)	---	M24251/6-7

All the above sizes except the short and ex-tall 9 pin ones are used in the R390A. You can get information on how many of which ones on many web sites. The IERC numbers are normally used when searching for these shields. If someone other than IERC made them, they may only have the mil spec number and some other model number. I have some made by Waterbury Pressed Metal Company (WPM in the table below) that are this way. One I have made by Cinch Connector Company does carry the IERC number. I found documentation that the Atlee Corp also may have produced some of these shields. Their different model numbers are noted in the table below and cross referenced to the IERC numbers:

SIZE	IERC #	WPM #	ATLEE #
Short 7 pin	5015B	RS-215-1	A10041-1
Med 7 pin	5020B	RS-215-2	A10041-2
Tall 7 pin	5025B	RS-215-3	A10041-3
Short 9 pin	6015B	RS-216-1	A10042-1
Med 9 pin	6020B	RS-216-2	A10042-2
Tall 9 pin	6025B	RS-216-3	A10042-3
Ex-Tall 9 pin	6027B	--	---

BTW, I noticed the last two digits in the IERC number correspond to their height in decimal inches. For example, the 5015 is 1.5 inches high, 5025 is 2.5 inches high, etc. Anyone know if the 50 and 60 designate anything?

Physically, from ones I have seen, the shield inserts (the part that contacts the tube) are of two types: a multi-sided cylinder (5-sided for 7 pin tubes and 6-sided for 9 pin tubes) or a round insert with a multitude of 1/16 inch fingers. I found both types on shields from both the -9372 and -24251 mil specs. The multi-sided inserts have an open top between the insert and outer shell whereas the mini-fingered insert has a top closed. I personally have not seen or heard about any shields that have the MIL-S-19786 markings.

Shields made to MIL-S-9372(USAF) (MS24233) were qualified to reduce the surface temperature of a test 'slug' by 36 degrees F, minimum (a 10-11% reduction). The test 'slug' was an alumimum piece shaped like a tube with an internal heater and 3 imbedded thermocouples. This 'slug' was heated up to 338 to 356 degrees F when the shield was applied. The average reading for all thermocouples had to be at least 36 degrees F less than the starting temperature. How well this test 'slug' with its greater thermal mass related to actual tubes I don't know.

Shields made to MIL-S-19786(NAVY) were qualified using an instrumented glass tube called a Thermion. Apparently these were tube-sized things containing a heater and thermocouples. It was heated to its test temperature when the shield was applied. The shields designated for retrofit service were only required to reduce the temperature of the thermion between 10 and 25% (symbol 'X' in the tables). However, the shields worked so well they were qualified to the next higher reduction of 25-38% (symbol 'C' in the tables). Specific temperatures for this spec are as follows:

	Bare Bulb	Shield Temp Reduction (Minimum)	
MIL-S-19786 #	Test Temp	(X) 10-25%	(C) 25-38%
S0761 (short 7)	293 degrees F	27- 65 deg F	65- 99 deg F
S0762 (med 7)	437 degrees F	41-101 deg F	101-154 deg F
S0765 (tall 7)	455 degrees F	43-106 deg F	106-161 deg F
S0966 (short 9)	266 degrees F	23- 59 deg F	59- 89 deg F
S0967 (med 9)	446 degrees F	41-104 deg F	104-157 deg F
S0968 (tall 9)	347 degrees F	32- 79 deg F	79-120 deg F

Note: The V00 in the -19786 mil part number refers to a vertically mounted shield with no separate base provided.

Shields made to Mil-S-24251 were qualified using actual electron tubes. The temperatures were measured from a thermocouple imbedded into the test tube's glass at its hottest spot. The hot spot location was determined by temperature sensitive paints. Like in the previous specs, the test tube was heated to its test temperature when the shield was applied. The shield had to reduce the bulb temperature by at least the amount indicated in the following table:

	Bare Tube	Shield Temperature
MIL-S-24251 #	Test Temperature	Reduction (minimum)
M24251/6-1 (short 7)	239 degrees F	45 degrees F (19%)
M24251/6-2 (med 7)	419 degrees F	72 degrees F (17%)
M24251/6-3 (tall 7)	464 degrees F	81 degrees F (17%)
M24251/6-4 (short 9)	266 degrees F	45 degrees F (17%)

M24251/6-5 (med 9) 437 degrees F 99 degrees F (23%)
M24251/6-6 (tall 9) 446 degrees F 81 degrees F (18%)
M24251/6-7 (ex-tall 9) 455 degrees F 81 degrees F (18%)

Typical tube operating temperatures I expect are somewhat less than these test temperatures which maximized tube dissipation. This would lead to somewhat less than the above temperature reductions in actual situations. However, I think these tests were closer to actual conditions than the 'slugs' and Thermions used in previous testing.

The mil spec Mil-S-24251 remains in effect today. However, there are no products on its qualified products list. What that means is no one currently makes any of these shields because the military doesn't have a need for any. Personally, I think shields made to any of these mil spec are going to perform similiarly because they're not all that different from each other.

There are other types of mil spec heat-dissipating shields even of improved design but they are not designated for general back fitting into existing equipments. These shields and their sockets were designed from the start as an integral part of their equipment. As such, significant quantities to use in other equipments are probably not available.

So, what does all this mean? Here are my thoughts: These temperature reductions listed that the shields had to meet are all minimums so actual reductions cannot be determined. Physically these shields seem to remain pretty much unchanged throughout the years; it was the mil specs that were changing. And mil specs are sometimes written just to document what is normally used and available! From the mil spec 19786 qualified products list the manufacturers had test data that supported their products qualification of 25-38% reductions in bulb temperatures. This range also allowed them to meet the newer mil spec 24251 minimum reductions. So I would venture to say a typical bulb temperature reduction of 20-25% is realizable with the heat-dissipating shields. Having a temperature reduction figure only leads to a further question: By decreasing the operating temperature of a tube by some amount, how much improvement in tube life does this lead to? This becomes harder to answer than determining how much cooler the tube operates. But one can generalize by saying any increase in tube life by lowering bulb temperature is beneficial.

The most informative article I was able to find on-line which related tube bulb temperatures to tube life was pearl_tube_coolers.pdf on the www.pearl-hifi.com website.

Although much of the website borders on the more esoteric nuances of high-end audio, this paper presents some of the earlier works done by GE and IERC on tube temperatures and life spans that are difficult to find these days. An example from an IERC study in that article: a 6AQ5(6005) tube operating near maximum plate dissipation has a bare bulb temperature almost 460 degrees F. Enclosed in a bright JAN shield its bulb temperature rises to 600 degrees F. With an IERC type B cooler installed the bulb temperature drops to 365 degrees F. This is a 20% drop from its bare bulb temperature and an 39% drop from its JAN shield temperature. This related to a tube survival rate after 500 operating hours of 35% using no shield, to less than 5% using the JAN shield, to over 95% still working using the IERC type B cooler. In another example from a GE study: From a batch of 200 6AQ5(6005) tubes running at 502 degrees F, 15% were still operational after 2500 hours. A second batch running at 428 degrees F, 74 degrees cooler or about a 15% reduction in bulb temperature, still had 90% operational after 5000 hours. It seems "small decreases in bulb temperatures often result in seemingly disproportionately large increases in tube life". The article is also interesting in that it touches on other factors like filament voltage, forced air cooling, and temperature gradients that also have an influence on tube life.

From: Barry Hauser <barry@hausernet.com> Date: Sat, 03 Jul 2004 07:23:44 -0400
Subject: Re: [R-390] IERC type tube shields

Hi Pete & list

While compiling this body of knowledge, you might want to add yet another type of insert -- the pleated type of beryllium copper ones. I've seen these in IERC shields and also in black or shiny conventional shields. Some might be retrofits - depot, manufacturer or hobbiest.

There is some variation in the style of the shields themselves, even within IERC ones. Some have a substantial rim at the top, others much thinner and some have none at all -- made of a flat piece of metal rolled up and crimped -- maybe spot welded, rather than cut and formed from tubular stock.. They may have different model numbers, dunno. The wider the top rim, the more convection is impeded.

I'd guess there are at least three main attributes that determine the heat reduction effectiveness of the various inserts themselves -- percent of surface contact area to the glass envelope and inner surface of the shield, composition and mass of the insert and vertical airflow. It would seem -- using "eyeball geometry" -- that the five or six sided cylinder type would be the worst, and the many-fingered and pleated type the best. The latter makes for more contact area and mass, but the finger type may allow for better airflow.
Another factor is how well the shield is heat-sunk to the chassis. Some of the heat convects/rises up out of the tube shield, some gets conducted away through the shield to the mounting base into the chassis. The best of the IERC's are all black except for the inside bottom which is bare metal, apparently machined or wirebrushed. Some black shields have the coating in place where they mount up, so might reduce heat transfer.

All this works "as advertised" on the top half of an R-390, but not exactly on the upside-down bottom half, I suppose.

One tip: If you have the conventional wide-rimmed shields with either the five/six-sided cylinder or pleated insert, (or you're rolling your own) make sure the insert is pushed a bit down from the top of the shield to let the heat escape. This type of shield is usually missing the crimps in the sides which keep the inserts in place vertically, so tend to ride up when the shield is installed -- and fall out when removed. Barry\

From: <robert.boyd@servicecanada.gc.ca> Date: Mon, 27 Feb 2006 10:26:50 -0500
Subject: RE: [R-390] Another "Close to Perfect" R-390a

The description is just laughable and certainly the "best of the worst"! After labouring for hours aligning it to "better than Collins specs" he leaves the frame bent. What does this do to critical mechanical tolerances? Robert W. Boyd, VE3BE

From: "Bill Hawkins" <bill@iaxs.net> Date: Mon, 27 Feb 2006 10:36:35 -0600
Subject: RE: [R-390] Cosmos PTO, spring-loaded linearizing core?

The innards pictures show enough details for some educated guesses. Most of my PTO work was on R389 PTOs with 50 ring corrector stacks.

The solid ring that holds the slider that contacts the ends of the adjusting screws must be attached to the

frame at some point, probably opposite the linearizing coil. It can't turn. That means it could be the spring that you are looking for. If it isn't springy, that could be the problem. Does the PTO look like it had been overheated?

You can't put a spring in the end of the coil opposite the slider, or it would be detuned. Seems like you have to attach the screw from the slug to the ring with the slider, to get spring action. That means the relaxed spring must be well away from the frame (at the coil) when the frame is separated from the ring with the screws. You'd have to disassemble the PTO as shown in Jim's pictures. Once you've done that, you ought to be able to press gently on the slider, in the direction of the coil, closing the gap between the slider and the frame holding the coil. Can you do that? Do you feel spring action, so that the gap widens when you remove pressure on the slider?

If the slider ring is acting like a spring, then the rod from the coil slug must be attached to the ring. Can you see if that's true? The detailed pictures don't show that detail. If it isn't attached, can you see how it might have been before it broke away?

The adjuster screws don't hold nitrogen pressure. The case is sealed with the big O-ring, the 2 feedthrus and the two screw caps for linearity and endpoint adjustment.

Old silica gel packs have to be heated to dry them out before they may become useful again. Bill Hawkins

From: JMILLER1706@cfl.rr.com Date: Mon, 27 Feb 2006 12:30:27 -0500
Subject: Re: [R-390] Cosmos PTO, spring-loaded linearizing core?

I think there's your problem. With all that goop in there it could be that some found its way into the linearizing coil and has dried hard, keeping the coil from moving. Try a squirt of denatured alcohol to the insides of that little coil to see if it will start moving in and out better. BTW my PTO looked like that on first being opened. There is not supposed to be large amounts of grease in there. Just a dab on the main lead screw (that the large core runs on). I have also found dried grease in the main tuning shaft bearings and grease seals where the shaft exits the front. This caused stiff tuning and backlash. As long as you have that apart, you can clean the bearings and produce a much smoother tuning action.

From: "Bill Hawkins" <bill@iaxs.net> Date: Mon, 27 Feb 2006 12:10:35 -0600
Subject: RE: [R-390] Cosmos PTO, spring-loaded linearizing core?

OK, the ring is not the main spring. I do see the red part with the white dot in Jim's pictures. What I can't see is how to remove the coil assembly, with that long steel base that surely could contain a spring. The picture with "The two halves of the PTO being separated ..." shows what appears to be a wrench flat at the end of the "steel" (or some gray metal) base that is close to the frame. Have you disassembled it that far?
If you do have the coil assembly free of the PTO, can you see a way to look in the steel barrel? The spring has to push the rod all the way out, so the fixed end of the spring is near the coil. The other end pushes on the rod, probably using a circlip snapped onto the rod.

OTOH, Cosmos didn't machine anything that didn't have to be machined. Perhaps the red rod is hollow. The inside end pushes against the spring. The outside end pushes against something like a rivet head on the end of the inner rod that attaches to the coil slug. If that's the way it's built, I wouldn't expect the spring to be gunked up. More likely the rivet head broke off - but you can see something extending from the outer rod. You ought to be able to push the rod a little further into the coil, or go around and push on

the core to get the rod to move out. The core is probably fragile. Bill Hawkins

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Mon, 27 Feb 2006 13:25:56 -0500
Subject: RE: [R-390] Cosmos PTO, spring-loaded linearizing core?

Bill writes: OK, the ring is not the main spring. I do see the red part with the white dot in Jim's pictures. What I can't see is how to remove the coil assembly, with that long steel base that surely > could contain a spring. The picture with "The two halves of the PTO being separated ..." shows what appears to be a wrench flat at the end of the "steel" (or some gray metal) base that is close to the frame. Have you disassembled it that far?

It's easier than you see. There are two cheese-head screws (which you do not see in Jim's photos) that hold the linearizing core base onto the main plate. It's tight but not too hard to get to those screws. The material seems to be aluminum for most of the PTO innards that are not phenolic/ plastic.

> If you do have the coil assembly free of the PTO, can you see a > way to look in the steel barrel?

Yeah, I don't see a spring. I see a threaded hole in the base. The thread on the screw attached to the core threads through that hole. Current theory is that the threaded hole isn't part of the base but is part of a sliding cylinder that goes up and down in the base, and that the cylinder has somehow seized up in mine.

> OTOH, Cosmos didn't machine anything that didn't have to be machined. > Perhaps the red rod is hollow. The inside end pushes against the > spring. The outside end pushes against something like a rivet head > on the end of the inner rod that attaches to the coil slug.

That's a good theory, and it may indeed be what's in other Cosmos PTO's but that's not what I see in mine.
I am tempted to tear down my other Cosmos PTO (it is actually in much bigger need of linearization) just to see if I can slide the core in that one!

I looked at the Cosmos patent #3,098,989 and while the externals of the linearing inductor match mine, the innards of base #28 and core #31 do not look like mine.

That's a really well-written patent BTW. Occasionally for work I have to look at more modern patents and they are written like crap in comparison. Tim.

From: "Barry" <n4buq@knology.net> Date: Mon, 27 Feb 2006 12:43:22 -0600
Subject: Re: [R-390] Another "Close to Perfect" R-390a

Not exactly defending the seller, but that may be original. Some of the frames were Alodined with a gold tint. The last couple of R390As I worked on, I had the frame parts Alodined (or whatever other chromate conversion they happened to have as Alodine is a brand name) and I asked for them to be done with a slight gold tint. I think it looks kind of nice as it matched the original coating better than just clear. Barry - N4BUQ

From: DJED1@aol.com Date: Mon, 27 Feb 2006 13:39:32 EST
Subject: Re: [R-390] Another "Close to Perfect" R-390a

No thin line from my experience. After one bad experience with Martyn that I attributed to his ignorance of things R-390, I tried to be sure of what I was getting by asking several specific questions prior to bidding on another Martyn item. When I received the item, it was clear that Martyn has no concept of what is truth is- he boldly lied in answering my questions. The only reason I didn't post a negative was that he threatened to retaliate. Deal with him at your own risk. Ed

From: JMILLER1706@cfl.rr.com Date: Mon, 27 Feb 2006 14:04:11 -0500
Subject: Re: RE: [R-390] Cosmos PTO, spring-loaded linearizing core?

Just to clarify my PTO was clean and shiny on first opening as in the photos, although the grease on the main inductor lead screw had blackened a bit. Sounds like somebody at Raytheon got a little heavy handed with the grease gun. Another thing: I wonder if some coil parts have absorbed grease and expanded? This happens to the material of the coil forms - they absorb lubricants, expand and then the slugs don't move in them too well any more. I don't recal what the coil form was made of for the linearizing coil, but if it is paper based or easily absorbs moisture, it could have expanded around the plunger and frozen it in place.

From: "Bill Hawkins" <bill@iaxs.net> Date: Mon, 27 Feb 2006 14:46:25 -0600
Subject: RE: [R-390] Cosmos PTO, spring-loaded linearizing core?

OK, no more guesses.

When you say there is a threaded hole in the base, does that mean that the red/black rod is threaded on the outside? It looks smooth in the pictures. If it's smooth, it ought to slide. Bill Hawkins

From: "Tim Shoppa" <tshoppa@wmata.com> Date: Mon, 27 Feb 2006 15:53:53 -0500
Subject: RE: [R-390] Cosmos PTO, spring-loaded linearizing core?

> OK, no more guesses.

Your guesses have been pretty good and quite helpful in fact :-).

> When you say there is a threaded hole in the base, does that > mean that the red/black rod is threaded on the outside? It > looks smooth in the pictures. If it's smooth, it ought to slide.

That red/black rod in the picture isn't really present in mine.

Mine has a black plastic nub sticking (friction fit but pretty tight!) into the bottom of the inductor base.

The threaded rod goes into the threaded hole into the base, and has the slug on the other end at about the right height to stick into the winding area. If I screw it in far enough from the top, it eventually bumps into the black nub. Because I'm turning the slug at the top I stop turning at that point (rather not break that slug!)

My belief (unconfirmed by fact yet) is that the threaded hole is part of a cylindrical "piston" that should slide up and down the base body. The bottom of the metallic piston has the black nub for riding the ring. And that the piston is seized in the body. Tim.

From: shoppa_r390a@trailing-edge.com (Tim Shoppa) Date: Mon, 27 Feb 2006 17:14:12 -0500
Subject: [R-390] Stuck linearity coil piston: SOLVED!

OK, I got home, gave the kids their snacks so I could have 5 minutes in the basement, stuck a nail into the top of the linearity coil and gave it a couple of whacks. Piston frees up and comes out the far end. It was coated by a layer of grease/shellac, some acetone and brake cleaner helped clean it up and now it works great.

I do not NORMALLY use a hammer to solve my R-390A problems :-). Tim.

From: "Michael J Talkington" <kc8fwd@verizon.net> Date: Mon, 27 Feb 2006 17:49:52 -0500
Subject: [R-390] Tube Shields for a R-390/URR

Hello,

What tube shields are needed for the R-390/URR,how many, and what are the part numbers. I want the Black IERC tube shield part numbers that would be a lot of help thanks Mike KC8FWD

From: "John Page" <k4kwm@hotmail.com> Date: Tue, 28 Feb 2006 00:39:42 +0000
Subject: Re: [R-390] Another "Close to Perfect" R-390a

After reading his ad, I get a sense of his doublespeak. All tubes were pulled and replaced with nos, Mil spec, where available. If he didn't have any available they weren't replaced and he "didn't lie".

As many tube shields as he had were available were installed. If he didn't have any available then none were installed and again, He didn't lie. But he sure makes you think he put all that stuff in.

Chassis and components were cleaned and "coated". Coated with what????? WD-40, Choclate milk,? Who knows.

Always drops Rick Mish's name in the ad. John Page K4KWM Hollow State since 1953

From: "Cecil Acuff" <chacuff@cableone.net> Date: Mon, 27 Feb 2006 18:56:40 -0600
Subject: Re: [R-390] Another "Close to Perfect" R-390a

A lot of the description is a cut and past from one of my earlier sales of an R-390A on Ebay. I complained to Ebay and they stated that they saw nothing common between the two descriptions. The said if I disagreed to send them more specific details. I did and never heard anything from them. They won't do anything because he makes them plenty of money.... Disappointing! Cecil....

From: "Patrick" <brookbank@triad.rr.com> Date: Mon, 27 Feb 2006 20:20:35 -0500
Subject: Re: [R-390] Another "Close to Perfect" R-390a

A couple of years ago I bought a R380A PTO that had been checked to perfection on his R-390A, what I got was a R390 PTO, which I tested and did work so it is a spare for my 2 R-390's. Anyhow he totally misstated the item as he consistently does. Have not bought anything from him since not will I in the

future. Pat

From: DJED1@aol.com Date: Mon, 27 Feb 2006 20:32:36 EST
Subject: Re: [R-390] Another "Close to Perfect" R-390a

Funny, a couple of years ago I bought two PTOs from him, both "R-390A checked, excellent", etc. One turned out to be a R390 which I couldn't use, and the other was a R390A with the endpoint out by 40 KHz. He did take them back and refund my money- guess he did't even bother to revise the ad when he resold them. Ed

From: "Barry" <n4buq@knology.net> Date: Mon, 27 Feb 2006 20:38:15 -0600
Subject: Re: [R-390] Another "Close to Perfect" R-390a

I'm curious. What is that big purple wire run from near the PS to near the phone jack? I can't tell from the pictures what is connected to what, but the high-quality electrician's tape sure looks pretty sad. Maybe that's what makes this radio a "one of a kind"? Barry - NBUQ