THE HOLLOW STATE NEWS-LETTER

SUMMER 1985 NO. 10

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Price: $4 for 1 year/four issues, $8 for two years/8 issues; back issues (all currently available) $1 apiece. Double all prices for subs outside US/Canada/Mexico.

Well, well. . .here we are at the nether world pass between hollow and solid state. Living forever two major technological jumps behind the rest of the pack, where portable means anything less than 35 pounds. Yes, friends, the twilight in the Twilight Zone is the glow of 6L6's, 3TF7's, 35W4's. As we sit warmed by this glow, let us begin.

EDITORIAL CHANGE IMMINENT HSNers may or may not know that I have taken on new responsibilities (including the Army Reserve and a new house). Chris and I went on a search for one new editor, and came up with three. There will be more details in the next issue, but suffice it to say that Skip will continue as a Contributing Editor, and two other HSNers will do the Editorial Honors! All Chris will be doing is getting this thing printed and mailed, and depositing your checks (hi!). In any case, contributions are solicited to kick off the new Editorial Department with a bang -- you should send them to Skip's NEW address above. Skip will collect them and forward them to our new editor, whose computer word-processes so well that HSN is likely to win a design award (hi!).

FLEA MARKET SEASON -- Do you have your list of needed tubes made up? Are you scouring the garage sales for old five-tube radios??? Are you attacking hamfests in search of tube data books??? WHY NOT? Make hay while the sun shines, folks, so that the winters of your days will continue to be warmed by Hollow State. (In the summer you'll need air conditioning, though. It's 90° here in the Bronx today. No time for tube heat! ch)

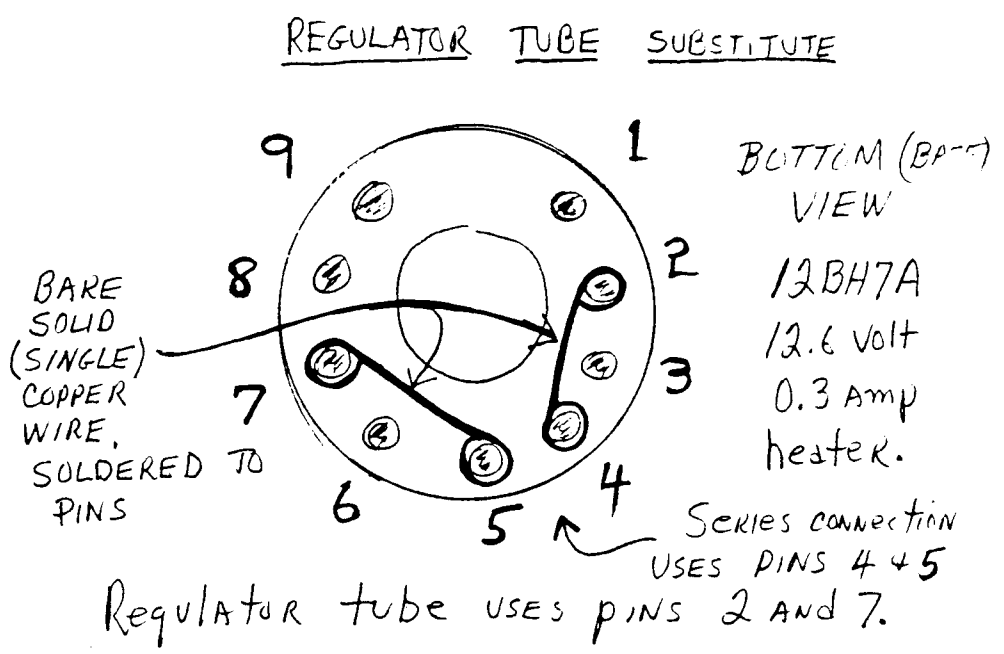
REGULATOR TUBE SUBSTITUTE -- Our first contribution this month comes from Gerald W. Murphy. Dr. Murphy writes: "When the RT-510 tube in my R390A failed, I devised a simple interim substitute while trying to track down a new tube. I used the 12.6 volt heater section of a 12BH7A 9-pin miniature tube connected in series with the heaters of the BFO and PTO tubes. In the series connection this tube's heater draws 0.3 amp, which is just what is needed. The appropriate pins of the tube were connected together as noted in the diagram (next page) so the tube can be plugged right into the regulator socket. The shunting wires were soldered into place after scraping each pin to get good contact. I used a heat sink in the form of a hemostat to protect the tube. This set-up works well and could be used permanently. I could detect no adverse effect on stability after warm-up. There may be a bit of regulating action, in fact, since variations in current would presumably cause some temperature-dependent effects on resistance and current in the three heaters. I think this is a better way to go than to replace the two oscillators with 12.6 volt heater tubes; that route may result in a need to do some realigning of the PTO to get accurate calibration and linearity."

(SEE DIAGRAM PAGE 2)

Also, Dr. Murphy needs a copy of the (TM-11-5820-10) R390A Manual. He will pay costs and copying. Contact him at Box 152, Scottsville, NY 14546.

BALLAST TUBE REPLACEMENT KIT AND SSB ADAPTOR NOT RECOMMENDED BY DALLAS LANKFORD

For your consideration, the following wit and wisdom of our own DALLAS LANKFORD. In this writing Dallas refers to a modification published in our first issue. Dallas writes:

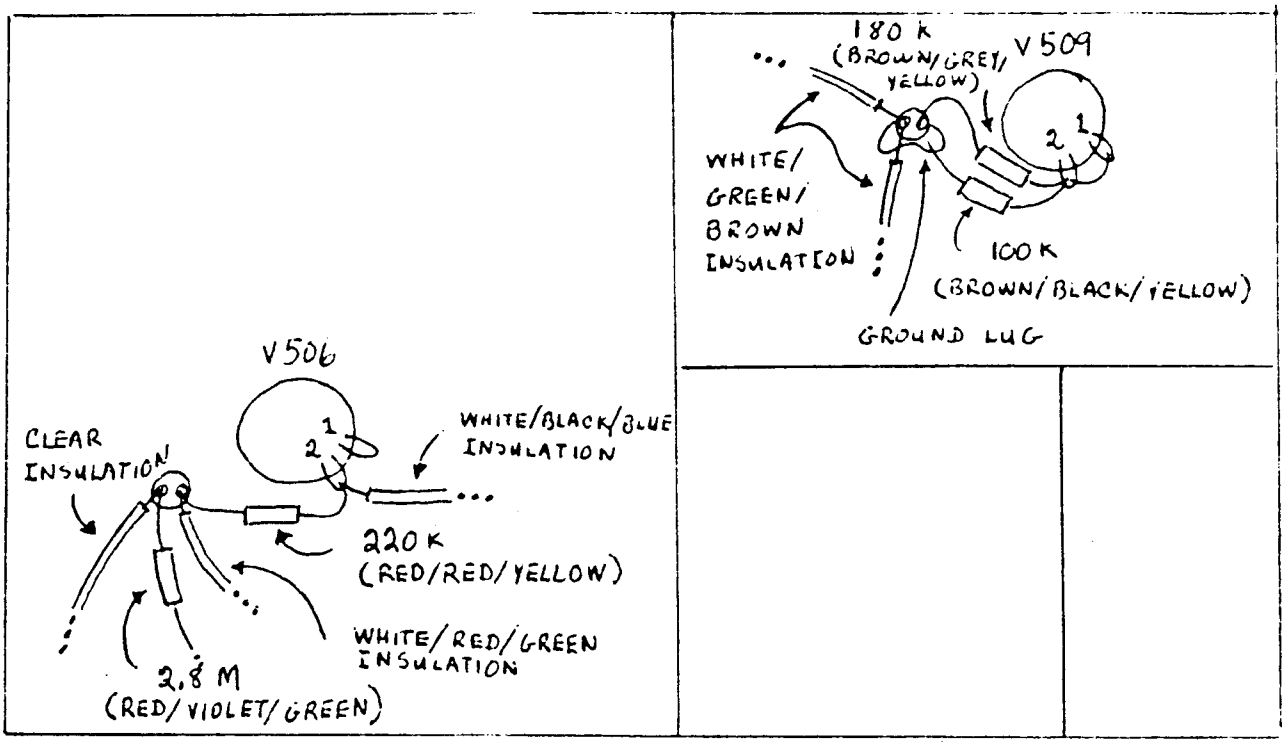


"Because of the increases in 3TF7 prices, I decided to look into the solid-state ballast tube replacement advertised by G.B. Communications in Ham Trader Yellow Sheets and elsewhere. I also purchased their R390A SSB adaptor at the same time. What a waste of money! The ballast tube adaptor is and looked homebrewed. The adaptor base had been carelessly ground away. It was such poor workmanship that I didn't even bother trying it out. Worse yet, I could not have used it anyway, because parts of the adaptor mount on the outer side of the R390A in such a way that there is not enough clearance to re-install my R390A's in their cabinets. The unit comes with one page of installation and operating instructions, and no schematic. The unit is not completely assembled, and several solder connections must be made.

The SSB adaptor also is and looked homebrewed. It is a small (1-3/4" x 1-1/16" x 1-5/16") approximately rectangular piece of black plastic with four wires (two #20 bare solid copper, and two #22 stranded insulated, one red, one black), coming out of the bottom. The black plastic is some kind of homemade encapsulation. I would assume the circuit is encapsulated to prevent you from copying it. But, of course, this also prevents you from repairing the unit if anything goes wrong. The unit comes with one page of installation and operating instructions, and no schematic. The four wires are attached to terminals 3 (AGC), 10 & 13 (line output), and 16 (ground) on the rear of your R390(A). For operation the LINE METER switch is set to +10, and the LINE GAIN is set at 7-8. The unit I received did not operate as described in the operating instructions. Also, with the unit installed, local audio gain was greatly reduced, and audio hiss obscured weak SSB signals. I do not know if you can use the line audio while the SSB adaptor is attached. However, this is perhaps a moot question, since I would strongly recommend against purchase of this SSB adaptor. The SSB mod described in #1 of the "R390A Users Group" (HSN's predecessor) is vastly superior, and requires only two diodes, a resistor, a little solder wick, a little solder, and a little of your time. I am enclosing a diagram of that mod for reader information." (SEE PAGE 3)

LOCAL COLOR FROM SKIP I think the very first time I ever tried my hand at anything electronic was when my five-tube bedside radio stopped "radio-ing" when I was in fourth grade. Like any bright young child I proceeded to take the back off, (Aren't you glad they had cord interlocks even back then?), thereby for the first time ignoring that most ignored little sticker "NO USER SERVICEABLE PARTS INSIDE!" "Ah ha!" I said, "Tubes!!" There are five tubes in here and I bet at least one of them does not work. Well, I pulled the tubes right then (fortunately the tubes and chassis were well-marked because at that point I did not think to check that out). I took my five tubes and got on my bicycle and went to the local TV store to have them tested. The store owner helped me used the tube tester and even helped me determine that the dead soldier was the 35W4. Ninety-eight cents later I was on my way home to perform my first repair. Two weeks later my grandfather gave me a transistor portable. I opened the back. NO TUBES. SIGH! Good thing I didn't have to fix it. And so began a lifelong obsession which leads us into (drum roll please to page 4)

BEFORE :



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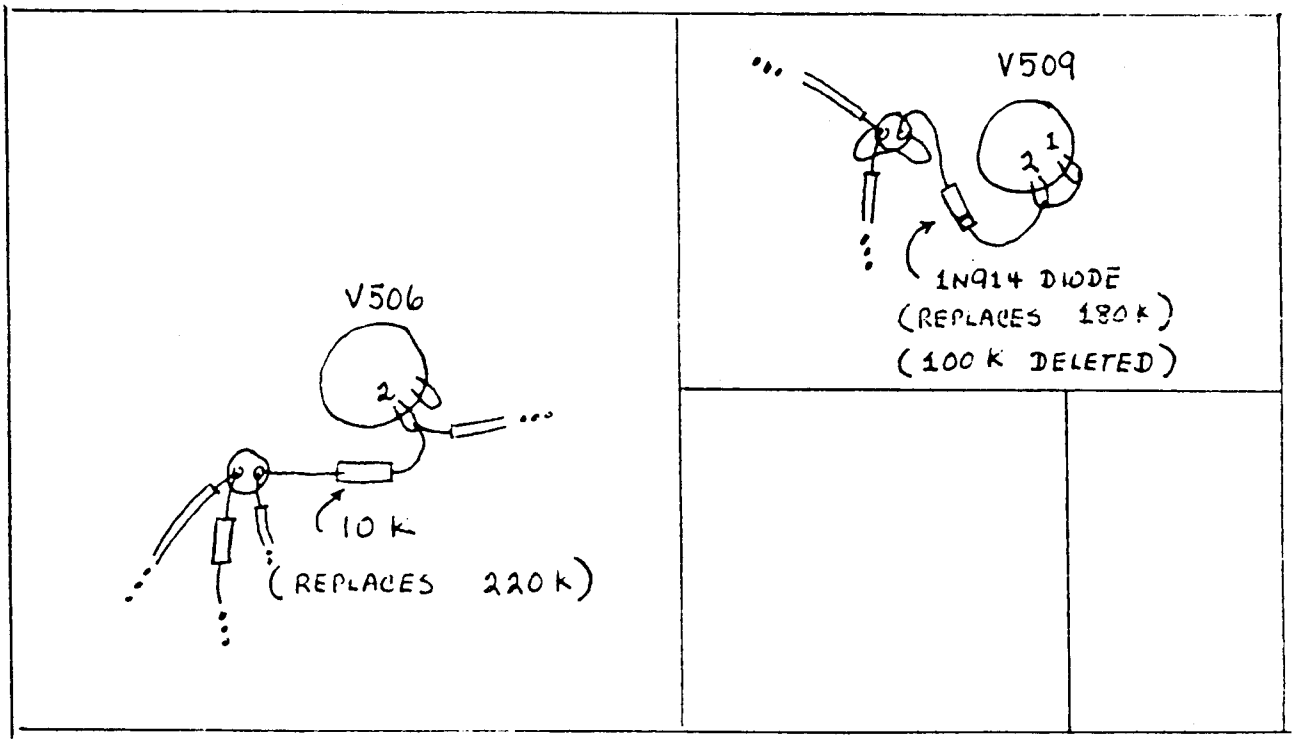
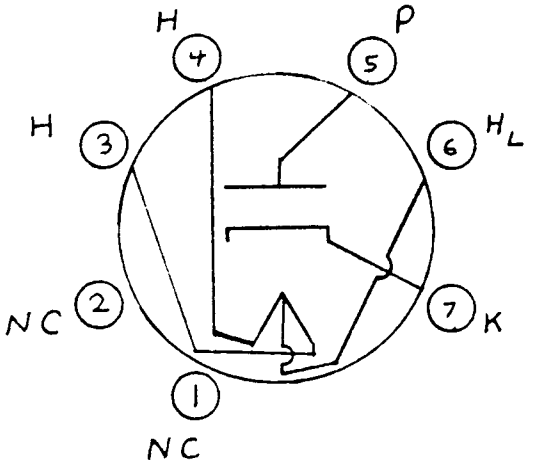


R-390A SSB/CW MOD (BOTTOM VIEW)

MEET THE TUBE Today, kiddies, we look at the venerable 35W4. This tube is a half-wave vacuum rectifier of the miniature type most commonly found in the power supply sections of AC/DC receivers. It is equivalent in performance to the glass octal type 35Z5-GT An interesting feature of this tube, and no doubt the reason it saw so much use in common garden-variety kitchen table radios is that it provides a tap for the operation of a panel lamp or pilot light. See, that's why the numbers glowed!



35W4

	w/o pilot	w/ pilot
Heater Voltage (AC/DC)		
Entire heater (pins 3/4).	35V	32v
Lamp section (pins 4/6)..	7.5V	5.5V
Heater Current		
Between pins 3 & 4.....	0.15A	-
Between pins 3 & 6.....	-	0.15A

This tube requires a miniature seven-pin socket and may be mounted in any direction, making it ideal for portable and mobile use.

Please keep in mind that I am not the only one capable of waxing nostalgic. If you have an anecdote that might lead to a "Meet the Tube" please send it in and we will tell the world about the tube that had such a profound effect on you and this hobby. As contributing editor I will continue to supply our newsletter with "Meet the Tube" as well as the occasional article, so continue to send "Meet the Tube" material to me at: P.O. Box 45, Beverly, NJ 08010.

Whatsamatter, Bunky? Ya say you're looking for a Very Low Frequency converter? VLF listening is really taking off these days (your technical/contributing editor can't figure out why, but live and let live. If you want to try your hand at the basement bands, a VLF converter can be purchased for a reasonable price -- an advertisement appears along with this issue for LF Engineering. Chris has purchased one and finds that it works quite well, considering the area in which he lives. More information on this facet of the radio listening hobby where neat old tube rigs seem to abound can be had by contacting "The Longwave Club of America, 45 Wildflower Road, Levittown, PA 19057." You will find in their journal, "The Lowdown," articles by some of our own esteemed users group members. From the few issues I have seen LOWFERS seem to be as creative at building and scrounging as all hollowstaters are. Tell them HSN sent you.

COMPUTER PROJECT FOR THE ADVENTUROUS I think I have come up with a project for one of our computer mavens. Could someone come up with a program by which one could dump in all of their tube substitution data from all their tube sub books for quick and easy call-up? While such a program would have limited commercial possibilities it might be neat to provide to the public domain through the pages of HSN. A simple but adequate challenge to all you PC people. If you accept the challenge please try to write it in generic (microsoft) BASIC. COMPUTERS IN HSN??? There goes the neighborhood!!

IN THE "NATION'S ATTIC" Speaking of tube-type computing, if you get to the American History Museum section of the Smithsonian during your vacation travels this year you will be treated to a beautiful display of ENIAC/UNIVAC class tube computers. Rack after rack of Hollow State Heaven. Big octal tubes, too, not minis. We are talking leading-edge technology here, folks. Real back to basics stuff.

SUMMERTIME CHORES -- For most of us, summer is not DXing time. Vacations need to be taken, children need to be squired to and from camp, barbecues are waiting to be fired up, and most of all DX is pretty poor overall. However, the hollowstater shouldn't neglect his (or her) receiver during the summer.

First, try to fire the receiver up as often as you can bear the heat, in order to keep the tubes, capacitors, and such from deteriorating from lack of use.

Second, since summer vacations are rolling around, the DXer should open up his receiver, dust it out top and bottom, and (if really ambitious), test the tubes and re-tube if necessary. These new-fangled hand-held vacuums are great for the dust-removal chores of the hollowstater -- they run for 10 to 15 minutes before needing a re-charge, and this is just right for one receiver or two. Need it be said that some dust is FLAMMABLE??

Third, clean contacts with approved cleaners, check for bad connections, make sure any parts which must be greased (gear trains in the R390, for example) are sufficiently lubricated.

Antennas may be checked in the summer also -- we often neglect the antenns with results that could be disappointing during winter storms. Check that connections are not corroded, that all insulators and other hardware are in good condition, and that the connections to the receiver are properly lightning-protected.

I would add that summer is the perfect time to buy more hollow-state equipment, but suspect that our various "War Departments" might not approve.

Other possibilities: if you live in an excessively humid area, you might have to check your equipment for mildew or fungus infestation! Best remedy for this: rejoin the rest of us in temperate climes (hi!) Insect infestation is also not unknown (if you don't fire it up enough to drive the critters out with the heat! A major cause of solid-state radio problems in some areas in NYC is that cockroaches take up residence and the radios don't generate enough heat to drive them away! Those "music boxes" can become "roach motels"!) I believe that a mildewcide is available in spray form -- perhaps someone who has had this problem can give us more details (in the FALL issue, when it's too early for next year and too late for this one, hi!). If anyone has insects in their R390, fire it up for a few hours and most of them will either be fried or will leave.

IT'S A SHORT ISSUE THIS MONTH. I hope that the membership will continue to support HSN by WRITING IN with articles and tidbits pertinent to Hollow State equipment. Send your material to Skip at the address on the front; he will forward it to our new Managing Editor, who will debut in the next issue. Thanks.

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 The Hollow State Newsletter is available at the subscription price of $4 for 1 year, or $8 for 2 years. Back issues 1-9 are available from the publisher at $1 per issue. Samples are available from the publisher at the same price. Double all above prices for subscriptions outside US/Canada/Mexico. An inquiry sheet is available for an SASE. I would appreciate any publicity about HSN to mention prices and such for the greater convenience of the HSNer-to-be.

ERRATUM: In Dallas Lankford's article on page 2, a sentence was mistyped. The sentence which now begins: "The adaptor base. . ." should read: "The adaptor base had been ground down during manufacture (if one can call it that), and some of several pins on the adaptor base had been carelessly ground away." Sorry. ch