

THE HOLLOW NO. 4 STATE NEWS- LETTER

DECEMBER 1983

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WELCOME FRIENDS TO THE newest evolutionary step in our newsletter. We have widened our horizons from the "R390 Newsletter" to the "Hollow State Newsletter". Our humble journal will be encompassing all of the wonderful old tube-type receivers that you can think of, and their eternal operation through our shared efforts at repair and restoration. This change comes about through discussion with many of our newsletter participants. It seems we all have mutual needs for all our receivers as tubes become scarce and such. We are also shifting gears a tad on the publishing end. Chris has taken full charge of publishing tasks -- handling the subscription list, finances, and final mailing. Skip will be doing the editing. Henceforth, all money and queries concerning subscriptions and back issues should be directed to Chris, and all articles and information for the newsletter should be sent to Skip. This new situation should improve the quality of service for the future of the users group as we expand to take on other tube type receivers. Consequently, we shall be seeking more articles and information on such rigs as the Hammarlunds, Hallicrafters, Nationals, HRO's, and whatever else you have warming your shack. As we round out the first year of publishing we would like to thank everyone who has supported this effort thus far and, with your continued support, we will continue to have a newsletter of high quality far into the future. WHO NEEDS TRANSISTORS WHEN YOU HAVE A GOOD WORKING TUBE RIG!!!

Some of you have been asking about how to find me (WB2GHA) on the air. My station consists of a Heath SB-300 and SB-400 (all tubes, of course) and I can usually be found on the 20 meter band, especially in the vicinity of the independent county hunters net: 14,336 kHz. I will also be operating HF mobile in the near future with a Heath HW-32A (Also all tubes).

Perhaps the biggest news to hit the pages of the tomb of tube-type wisdom comes from Radio West via Joe Bunyard. (Drum roll, please!!) AMPERITE, 600 Palisades, Union City, NJ 07087 is once again producing the coveted 3TF7 tube. (Tah Dah!) Don't that make yer day, Bunky?

DOES ANYBODY OUT THERE use the R392??? This is the mobile semi-equivalent of the R390. It requires 24 volts at 6 amps, but is a really nice radio. I have seen a great many of them recently at hamfests for an average price of \$150. They are sold by Fair Radio for between \$135 and \$200. It's a sort of R390 built sideways.

WHAT??? YOU NEVER HEARD OF A Q5er?? Some of the fine old tube equipment can be found wanting in the area of IF selectivity. A cheap and dirty way of solving this is to scour the surplus outlets for a gizmo called a BC-453. This is an aircraft receiver used during WW II. It tunes 190 kHz through 550 kHz -- right across the 450 kHz IF. Now you're getting the idea. You can also use a R-11A receiver. Both of these rigs are available from Fair Radio Sales for about \$15. They are not for the faint of heart, as you will need to construct a power

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supply for its three voltages: 12, 24, and 250 VDC. Once you get this little box cooking you can either inductively couple it to your receiver or use a piece of coax with the shield connected to the case of both the BC-453 and your receiver, and the center conductor of the coax connected between the antenna post of the BC-453 and the other end wrapped a few times around the plate pin of the first IF amplifier tube. Remember, this will only work on rigs with a 455 kHz first IF. You will have to experiment with the degree of coupling between the two. Some folks say the BC-453 works best with the plungers in its IF cans turned all the way out. What this lash-up does is, in effect, give the receiver an additional stage. This should be enough to get the hard-core experimenter warming up his soldering iron. More information on the Q5er can be obtained in almost any old ham radio handbook or circuit book written before 1965 or so. I found my Q5er with power supply all dressed up and ready to go at a hamfest. Because I recognized it for what it was and what it meant to the improved enjoyment of the receiver by the old-timer who was selling it, I got it for \$5. It pays to be friendly at these activities.

ANOTHER HAMFEST, ANOTHER RELIABLE SOURCE for the various connectors for the backs of all surplus receivers. Mr. Joel Knoblock runs an outfit called: The RF Connection, 11707 Judy Place, Potomac, MD 20854; Phone (301) 299-5389. He currently stocks ALL, I repeat ALL of the connectors for the R390, R390A, R392, et al. The guy also has an incredible mind for which connectors go with which rig, so he can even help you out if you're not quite sure what it is you need. His motto: "Mating is our specialty." A great source.

CALLING ALL COLLINS EQUIPMENT USERS (This includes a great many URR receivers, including my own R390A. Collins is celebrating their 50th anniversary, and they are operating a special events station to celebrate. The special-events call sign is ADØC, and I have heard them on weekends in the General and Advanced portions of 20 and 40 meters. I worked them on 14278 kHz and AL, KØHWE, the station op, was glad to hear about the users group and our desire to keep old Collins gear alive. You can send anniversary greetings to ADØC, Collins Telecommunications, Products Division, Box 728, Cedar Rapids, IA 52498

Speaking of Collins being 50 years old, DICK TRUAX says that determining the age of R390A's is as simple as looking at the date stamped on the filter capacitors C-606 and C-603 on the AF subchassis. They are generally stamped with a month and year, eg. 6-67. Also, you might look on C-103, the metal capacitor fastened to the back underside of the chassis behind the main PTØ. You could also look on the crystal oven on-off switch S-106. Dick (and I, I might add) is interested in knowing if anyone has an R390 built later than 1967. He has a spec sheet from Hammarlund dated 1970, so he feels either they were still making them or at least stocking them that late. Dick also lists the following companies as suppliers of R390A's: Collins, Electronics Assistance Corp. (aka Hammarlund), Imperial Electronics, Motorola, Stewart-Warner (seems to be most of the earlier ones), AMELCO (American Electronics Co.).

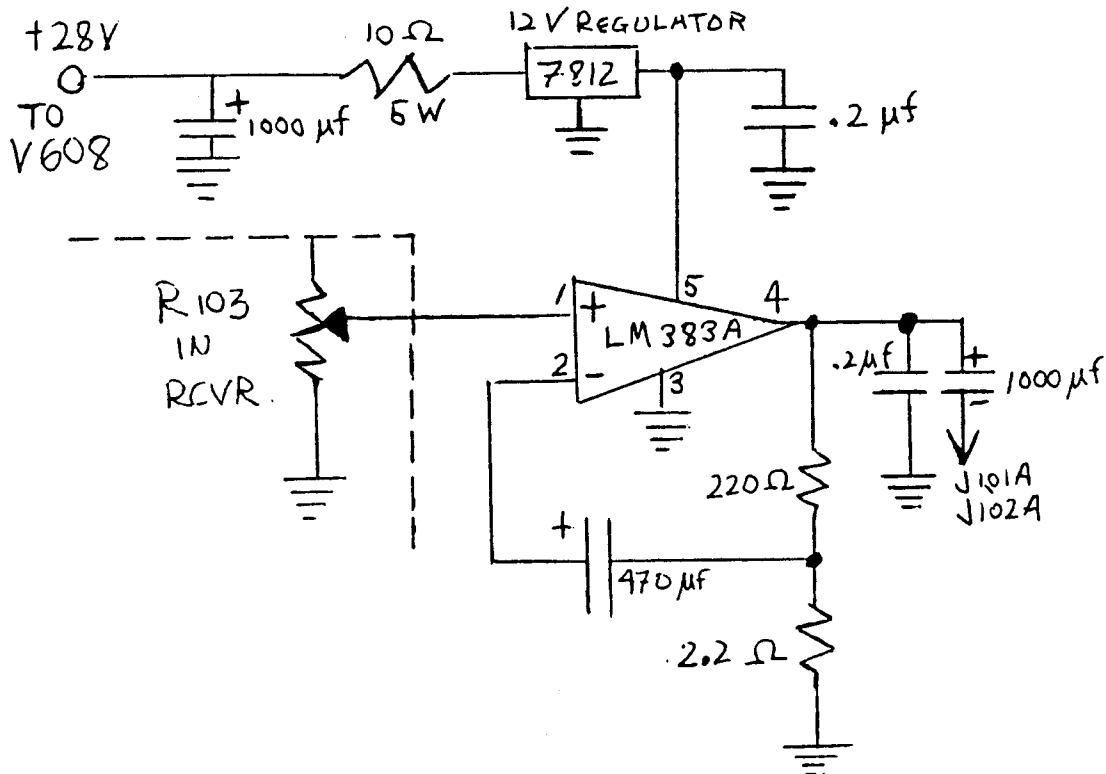
THE GALA TUBE SUPPLIER ISSUE brought two more sources out of the woodwork. From TODD ROBERTS comes: THOR ELECTRONICS CORP., P.O. BOX 707, LINDEN, NJ 07036, Telephone: (800) 526-4052 (in NJ (201) 486-3330 and in NY (212) 239-4510). I think I might do some recon work on this one myself. ed) Todd would also like to remind you ballast-tube-seekers that the 3TF7 can be replaced with the 3TF4 and the 3HTF4. Also, from DICK TRUAX comes yet another source: E.S.R.C., P.O. BOX 1192, DELRAY BEACH, FL 33447. Some price examples: 6C4: \$1; 6DC6: \$2; 6AL5: \$1. No 3TF7's/RT510's.

HELP!!! JORDAN ARNDT, A-306 Marlborough Drive, N.E. Calgary, AB, CANADA T2A 5M1 is looking for someone who might be able to either service or supply a replacement for the VFO of his R-390. I know we have a few members of the group who are adept at VFO info, so please write Jordan and help him warm the Canadian winter with a properly-tuning R390.

In my travels to various shrines of tube type radio seen many a find old rig attacked by mildew, rust, yuck, et al. from prior use in a damp climate. This is especially true of some surplus gear. Anyone with hints on the care and cure of such problems should share it with the group. You can pick up some mighty rank-looking stuff at flea markets, but if we could just learn from one another how to restore this stuff we will resurrect many a rusty rig.

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PSSST HEY BUDDY. Ya wanna eliminate three tubes from your R392? RUDOLF SALOMON supplies us with the following circuit that serves as a solid-state audio section, eliminating the 2 6AJ5's and the 26A7GT (good riddance. huh?)



Rudolf says that the 1000 uf capacitor might be replaced with one of lesser value to prevent "motor-boating" when the volume is turned up. Also, in this modification you will need to replace the heaters of V606 and V607 with 82 ohm 5W resistors. The regulator and amp will dissipate heat. This circuit works with 4 ohm or 600 ohm phones or speakers.

Now that we have expanded our horizons the "To Be Published" file is getting a mite thin. Please send all of your information about all the great old tube receivers to SKIP as soon as possible so we can make the expansion of our newsletter a successful one. All tips, hints, ideas, and dreams are needed at: P.O. Box 421, Mount Holly, NJ 08060.

While it is getting a little cold to wander around the flea-market and hamfest circuit, you might take a little time this winter while warming yourself by the glow of your radio to make up a checklist of the tube compliment inside the aforementioned and all other rigs you might own. Making up such a list to take to your various tube sources will facilitate your replacements in the future. Sure, you might need a 3TF7 right now (like your humble editor), but down the line you might just need that 6DC6, so stock up by knowing all you need. My tube-type hamgear uses the later COMPACTRON-type tubes. You know, the tiny squat ones that take the place of two or three "old-fashioned" tubes. Well, I am finding these late-model tubes even harder to track down than some of the good old boys. I guess it is because they came out so late and so close to solid-state. I understand the really new peanut-type tubes are all but impossible to track down. One good source is early-60's tinv TV sets. I grew up two blocks from TUNG-SOL industries. If I only had known then what I need now!

PUBLISHER'S TUBE NOTE: Tom Farmerie, of 62 Sunrise Av., Grafton, MA 01519 (sometimes known as the Grafton Phantom II) has suggested that perhaps those of us who need tubes should band together to pool our purchasing power. He has suggested that a Tube Buying Consortium should be formed. In line with the good old tradition of: "Don't suggest it

unless you're willing to run it," Skip and I have charged Tom with finding out whether such a consortium is possible and then coordinating it. Our suggestion is that you should make a list of your tube needs and send them to Tom. Tom will then try to find the best prices. When he does, you will be asked to forward your remittances and the tubes will then be ordered and shipped. Remember, this is just a suggestion, so if you're interested please contact Tom at the address above.

Speaking of needing a 3TF7 it is time your humble publisher-turned-editor added his two cents to the ballast tube replacement controversy that came out in previous issues. Okay, so the ballast tube went pffft! I did not have one handy (shame on me), but one of the replacement schemes gets the rig back on the air UNTIL I can re-install the ballast tube as per spec. How's that for standing on the middle of the fence and waving both ways!!!

Some people have been looking for power supplies to use with various surplus gear. As usual, the best source seems to be FAIR RADIO SALES, 1010 East Eureka Street, P.O. Box 1105, Lima, OH 45802. Incidentally, if you're not quite sure what your needs are you can call them at (419) 227-6573. They are glad to help.

In the January 1940 issue of RADIO magazine the New Hallicrafters S20R was selling for \$49.50. This was such a staggering sum that Henry Radio offered it for \$9.90 down and \$3.49 per month. What would you pay for one of these now???

NOTES ON TUNING THE R390A, by H. Cornelius

The comments below are based on the BFO being properly zeroed so that the zero position on the knob corresponds to the exact center of the IF passband. To check this:

1. Set receiver to 2 kHz bandwidth, full gain, with no antenna connected, and with BFO on. There should be a fairly loud rushing noise.
2. Turn the BFO PITCH knob back and forth. At one point, the rushing noise will be at its lowest pitch. If the BFO knob is not at zero, loosen the shaft coupling behind the front panel and reset the knob to zero.

SSB TUNING: Set BANDWIDTH to 2 kHz, BFO to $-1\frac{1}{2}$ (USB) or $+1\frac{1}{2}$ (LSB).

RATT TUNING: Set BANDWIDTH to 2 kHz, BFO to $-2\frac{1}{2}$. Tune KILOCYCLE CHANGE knob for a normal presentation on the RATT demodulator. Special case: when copying narrow-shift RATT on a CV-89/URA-8 or a URA 17, set the BFO PITCH knob to -1. RATT is normally copied with the RF gain fully up and the AGC control on fast. If using limiterless demodulation, try FAST, MED, and SLOW settings for best results.

ALIGNMENT: The technical manual notwithstanding, an R390A can be aligned using only the calibrate signals and the LINE LEVEL meter, with the RF GAIN control retarded to keep the signal strength down. Use the calibrate points nearest the receiver dial readings called for in the alignment procedure. Do not overlook the first crystal oscillator tuning, T-207, which can be peaked for maximum on any frequency below 8 MHz. Do not attempt alignment of the 455 kHz I.F. transformers. Performance of the three mixers varies considerably with various 6C4 tubes. If possible, try several in each socket and retain the tube giving highest gain. Although the technical manual calls for 3 microvolt sensitivity, a well-manicured R390A will get down below 0.5 microvolt.

AN IMPORTANT POINT: The UNBALANCED input jack is at high impedance and works very poorly with coax or with any but a very short antenna. The R390 will work well only through its balanced (two-pin) antenna input, with the antenna (center conductor of coax) connected to one pin and with the other pin connected to ground. This can be jury-rigged if necessary, but the best approach is through use of a connector designed for the purpose. A UG-970 or UG-971 connector will mate with the two-pin socket. The UG-971 adapts to a type C connector such as the UG-709 (for RG-58/U cable) or UG-636 (for a UG-88/U BNC connector). The UG-970 adapts to the PL-259 UHF connector. In any case, check the three connectors on the antenna relay box inside the R390 to be sure that each cable is made up to the correct jack.

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DOES ANYBODY OUT THERE KNOW ABOUT DYNAMOTORS??? I have managed to avoid these things like the plague throughout my radio hobby career and I can't see any reason to learn about them now, but a great many of our readers who might be using or experimenting with equipment that requires dynamotors could use all the info you can supply. Please send all of your information about this subject and all other stuff you have to share with your fellow tube-travelers to SKIP.

I am sure more than a few of our members have faced replacing worn-out filter capacitors. Just what is your particular strategy for your particular radio? The metal "can" types and plug-in types are getting pretty scarce. Since in many cases these parts have limited shelf life, we need to know our possible alternatives. The Most Diligent Subscriber Award goes to new member PETER CURRY who first overheard a couple of hams talking about the newsletter on the air. Pete wrote one of these hams via the callbook address and came to find out that, after his long-distance information gathering, Skip lived only a few miles away from him. Glad to have you aboard, Pete!

Just a note that BARKER AND WILLIAMSON has discontinued its Q-multiplier and notch filter circuits for the Collins 75S1 (model 337-S1), and its circuit for the KWM2/2a (model 340-A) will be discontinued when its current stock is depleted.

Speaking of the KWM2A, your humble editor has been smacking his lips over this rig for a long time. I would very much like to acquire one or a KWM2 (which can be converted into a 2A; more on this in future). If you have one for sale, or know someone who does, write me at Box 421, Mount Holly, NJ 08060.

THERE IS NO TRUTH TO THE RUMOR THAT SKIP decorates his Christmas Tree with old 6L5's (actually, I use 35W4's).

FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE

DICK TRUAX, 3003 Gleeson Lane, Louisville, KY 40299, phone (502) 491-2871 evenings or weekends only, has the following R390A/UJR JUNKYARD!!!

R390A parts, all are complete and operational unless noted otherwise. UPS shipping additional. All subchassis have been checked in full operation -- they are complete except for tubes, which are common types and readily available used or new.

- One Crystal Oscillator Subchassis, complete with all crystals -- \$50
- One Power Supply Subchassis -- \$60
- One RF Subchassis, complete with all gearing, racks, and slugs, digital counter -- \$90
- Two AF subchassis -- \$60 each
- One IF subchassis LESS BFO PTO and 8 and 16 mechanical filters only. All transformers intact -- still has 2 and 4 kHz filters -- \$90
- One antenna relay assembly -- \$15
- Two front panel grab handles -- \$5 each
- One front dial face w/window -- \$5
- One crystal oven HR-202 w/200 kHz and 17000 kHz crystals installed -- \$25
- One PTO subchassis, complete with 6BA6 -- \$60
- One Oldham coupler assembly, all three pieces -- \$20 for the set of three
- One dial lock mechanism -- \$5
- One zero-adjust mechanism -- \$5
- One carrier level meter -- \$20

Miscellaneous parts include BFO switches, rear chassis oven switch, almost all front panel switches and rheostats, the main wiring harness MINUS a few connectors but largely intact, spare 15.5 and 16 MHz crystals, and many other pieces of hardware including clamps, shaft extenders, etc. Hard to find unless you dismantle an R390A as I have done. I have NO knobs or front panels.

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I would prefer to sell the subchassis complete rather than part them out, but would part out the IF subchassis for mechanical filters, transformers, couplers if necessary. Prices are not fixed -- willing to negotiate on part or all if interested in purchasing the entire package. Best offer takes it all -- I need the space it takes in my shack!!!!

LIN ROBERTSON, 936 Loring St. 1B, San Diego, CA 92109 has an R390A series 9719-P-55 for sale. This set has been nicely restored in function, equipment, and appearance. The outer chassis and front panel has been completely repainted in forest green; the front panel has been re-engraved and the engraving filled with white enamel. Comes complete with manuals, covers, spare fuses, and a box full of tested replacement tubes (NOT SUBS!). A lot of work and sweat has gone into this rig, including the Cornelius SSB mod. Am planning to travel and cannot (alas!) take it with me. \$600, we split shipping costs. Telephone (619) 483-1219 anytime (not collect) or write to me at the address above.

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THE NEXT PUBLISHING DATE IS THE WEEK OF MARCH 5, 1984. GET YOUR ARTICLES IN EARLY. YOUR CONTRIBUTIONS OF MATERIAL MAKE THIS NEWSLETTER POSSIBLE.

EDITOR'S NOTE: The mailing list (as well as the typing and information storage) of the Hollow State Newsletter is now computerized. Check your mailing label; if corrections are needed please send the label with corrections indicated to: THE HOLLOW STATE NEWSLETTER; C/O CHRIS HANSEN; P.O. BOX 1226, MADISON SQUARE STATION, NEW YORK, NY 10159. To find out when you are due for renewal, look on your address label; you will see the words: "SUB EXP # " and a number. The number is the issue number of your last issue. All those who have a "4" on their mailing label are due to renew with this issue. Those who see a "5" at that place on their label are due to renew in March. By that time I will have a "LAST ISSUE - PLEASE RENEW" stamp for your envelopes.