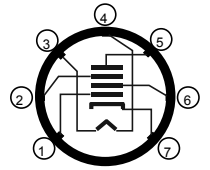


HOLLOW STATE NEWSLETTER

“For lovers of vacuum tube radios”



Issue # 50
Summer 2000

HSN is produced and published by and for the community of those who appreciate the fine accomplishments of the manufacturers of ‘top of the line’ vacuum tube communication radios and auxiliary equipment. Originally created by a group of R-390 users, HSN has expanded to include industrial, military, and consumer grade receivers by Collins, Hammarlund, National, Hallicrafters and others. HSN includes tips, modifications, alignment and restoration advice, product reviews, parts, tubes and service sources, and subscriber buy/sell information - all provided by subscribers and friends of HSN. See page 8 for submissions, disclaimers, reprinting, copyrights, subscriptions, reprints, and the Editor’s and Publisher’s Corner.

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EDITORSHIP CHANGE

Reid Wheeler, Editor

This will be my last issue as Editor of HSN. After seven years and 19 issues, it’s time to turn over the reins to someone else who can inject some fresh ideas into this venerable publication. After retiring from some 30 years of State service in 1997 and opening my own independent consulting business, I thought I would have more time to devote to radio ‘stuff’ – not the case. That, and several other reasons such as grandchildren, traveling, etc., means I have to be more selective in how I spend my time. I do appreciate the support you have given me over the years and hope you do the same for the new editor.

I do want to welcome the new editor, Mr. Barry Hauser, and I hope you will do the same – especially by contributing to future issues of HSN. Barry’s involvement in electronics, boatanchors and hollow-state-ness goes back to the late 50’s, when he began an avocation in extreme tinkering, building circuits, fixing old radios and audio gear. Later, other things interfered, like college, marriage, earning a living and raising a family. However, he managed to return to the noble pursuit again and again – in the 60’s with home-brew projects from the mags like RE and SWLing with a Lafayette receiver, and into mil and vintage tube gear in the ‘70’s. In the 80’s and most of the 90’s, building and technical energy went into his businesses and the computers they run on. He worked part time with his electronics distributor friend when interest in tube equipment seemed to wane back in the 70’s and 80’s and had assumed that it was all gone. One night about 2 years ago, while surfing the Web he stumbled on a lot of hits with the word “boatanchor” in them, clicked on a few, and in amazement, hollered “They’re ALIVE!” In the last two years or so, Barry has returned to the noble pursuit with a vengeance – making up for lost time. Now he has a raft of R-39Xx’s, SP-600’s, BC-312’s, BC-348’s, Hallicrafters, R-1051x’s, GRC-106’s and other beasts in various states of use, restoration and contemplation.

Now the funny thing is, aside from his busman's holiday distributor work, Barry Hauser is not a ham nor an engineer nor even a formally qualified technician. His vocation began in NYC at McCall's, in market research, then on to a long stint with Publisher's Clearing House. In the early 80's he started his own consulting business working with companies like Time Inc., Reader's Digest, Book-of-the-Month Club, and many others. In the late 80's/early 90's, along with his son, David, he started two companies that provide special research and support services for catalog and direct marketing outfits. All operate under the umbrella of "The Hauser Group", based in Hicksville, NY, home of Popular Communications, birthplace of Billy Joel, and a serial killer or two, he says. He recognizes that practically all of you have more experience and knowledge than he does with hollow state affairs. Barry brings to the table the orientation of the "marketing type" who is interested in delivering what the customer wants and his business base, plus his writing and desktop publishing skills should serve HSN well in the future.

Barry will begin his stint as Editor with Issue #51 sometime later this fall. He can be contacted as follows: 370 Marie Court, East Meadows, NY 11554-4304; phone (516) 935-8603 ext. 203, fax (516) 735-1797 and e-mail barry@housernet.com.

At this time, the publisher of HSN, Ralph Sanserino, will continue his work as he has done since 1991.

Thanks again to all of you.

R-390A/URR ORDER NUMBER LIST NO. 5

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This article originally appeared in Electric Radio (December, 1997) and is reprinted with the permission of the author and ER.

Ever since the last article in ER #89, we now know who built the R-390A's and when they were manufactured. This article will attempt to clear up some of the conflicting information of past articles by myself and others from various publications, and pass along some R-390A "tidbits" and anecdotes from my R-390A "archives".

All of the 1968 Dittmore-Freimuth Corp. R-390A's were 1967 EAC receivers with the Dittmore-Freimuth mechanical filters.

The Raytheon pto's mentioned in the last article turned out to be a government rebuild contract. The large decals used covered the original decals entirely. Wally Chambers, K5OP, collects pto's and noticed that one of the Raytheon pto's looked very much like a Cosmos Industries pto. He carefully peeled the decal back and it was indeed a Cosmos pto. When the pto's were rebuilt, the original pto serial number was incorporated in the Raytheon decal. Now, the list of pto manufacturers is:

1. Collins Radio Co.
2. Motorola
3. DuBrow Electronics Industries
4. Progressitron Corp.
5. Cosmos Industries

When the Fowler Industries R-390A serial number 2 surfaced on the West Coast in 1994, it was revealed that Fowler Industries built five R-390A's on a 1984 contract. Well, now serial number 1 has popped up on the East Coast. All modules on it are serial number 1! I believe the odds that two of five receivers built showing up in the surplus market are very slim indeed. It was mentioned that it seemed strange that none of the Helena-Rubenstein R-390A's have been reported. First of all they were shipped to the U.S. Naval Security Group in Bremerhaven, Germany, so they were probably surplused out in Germany. It was common practice to remove nomenclature tags from equipment taken out of service. The R-390A's would have Collins Radio Co. markings on the modules since Collins actually built them. These R-390A's may have gone the route of many signal intelligence receivers back then as reported in ER No. 89. Other reports have come in stating that was a very common practice at Wheelus A.F.B. in Tripoli, Libya. That is, "dumping" electronic equipment in the Mediterranean Sea from low flying aircraft.

All of the Fowler Industries R-390A's that were originally installed in the LSD's at Avondale Shipyards were replaced with R-1051 receivers.

For those of you who don't believe that R-390A receivers are still in use, next time you are at Elmendorf A.F.B. in Anchorage, Alaska, check with the U.S. Naval Security Group. They are using a rack of R-390A's in a diversity antenna system.

Most of us know that during Desert Storm, several thousand KWM-2A transceivers were flown in to replace the microprocessor-controlled rigs that were failing at an alarming rate. It seems that the sandstorm-generated static electricity was eating up the front-end diodes. It sure didn't seem to bother the tube gear. What does this have to do with R-390A's? Well, the electrical repair depot at McClellan A.F.B. in Sacramento, CA received an order to get 300 R-390A/URR receivers ready for Desert Storm. Due to the abrupt end of Desert Storm, they were never shipped. Look for these to be offered on the surplus market soon.

It was mentioned in the last article that a large number of surplus R-390A's were in a military warehouse in the southwestern United States. Well, I may need a geography lesson, but they were actually stored outdoors at St. Juliens Creek Annex in Portsmouth, VA. The following excerpts are courtesy of Jim Thompson, W4THU, of the Radio Works in Portsmouth.

The story begins, from my point of view, with a gigantic pile of more than 1,000 R-390A receivers (by my estimate). There they were, stacked under the bright Virginia sun on a cold winter day. The pile was perhaps a fifty foot square and more than six feet high. It was an incredible sight. To many of us, here stood, row upon row, perhaps the finest receiver ever engineered. Of course, that was before the ravages of a year or more sitting in the rain, snow, sleet and hail took their inevitable toll. The sale took place April 11, 1997. This will probably be the last large sale of R-390A's ever. Most of them were signal intelligence receivers with the mechanical-digital bfo knobs. Almost all were 1967 EAC R-390's. The Fowler Industries serial number 1 was in this pile.

Swapping nomenclature tags was very common in the military to avoid problems with property officers when receivers were sent in for maintenance. Chuck Teeters, W4MEW, sent me a letter detailing how this problem was solved. A large number (about 6,500) tags were made up at Ft. Monmouth. Approximately 1,500 were printed with the 14214-PH-51 order number for the Collins R-390 (not A) receivers. 5,000 more were made for R-390A's. The 1955 Collins Radio Co. order, 08719-PH-55, had 3,500 tags made; the

remaining 1,500 were printed for the 1958 Motorola order, 14385-PH-58. These tags are quite easy to identify, as the photo resist didn't take very well where the black is. Small random pinholes are in the black area of the tags. "How many of these tags were used is anybody's guess. I know for a fact we got letters and calls from all over asking for tags, and thanking us for bailing them out. I remember one call from a civilian engineer, saying that they had changed all the tags at the Clark Field receiver site. He said they left them all blank to give the property people fits! If someone has a receiver with a blank serial number, it probably came from there".

We will probably never again see a receiver built to the level of the R-390A/URR. Regarding the "pile" of R-390A's at St. Juliens Creek Annex, most of the units that had sat out in the harsh elements required little, if any, parts to work! Try that with your microprocessor controlled receivers!

My gratitude is extended to all who wrote or called. I just assemble the information, check it out and put it on paper. Without you it wouldn't have been possible. Special thanks to my "partners in crime", Tom Marcotte N5OFF and Wally Chambers K5OP. Also the following contributors who have been very gracious with their time and information: Mac McCullough, John Miller, George Rancourt K1ANX, Chuck Rippel WA4HHG, Jim Thompson W4THU, Chuck Teeters W4MEW and all the Fort Monmouth people who worked on the improved H. F. Receiver project and provided the guidance to get the R-390 series through development.

The order number list for the R-390A/URR is listed below.

YEAR	MANUFACTURER	ORDER NUMBER
1954	Collins Radio Co.	14214-PH-51
1954	Motorola	363-PH-54
1954	Collins Radio Co.	375-PH-54
1955	Collins Radio Co.	08719-PH-55
1956	Motorola	14-PH-56
1958	Motorola	14385-PH-58
1959	Stewart-Warner Corp.	42428-PC-59
1959?	Hewlena-Rubenstein (Collins)	" Unknown "
1960	Stewart-Warner Corp.	20139-PC-A1-51
1960	EAC	23137-PC-60
1961	Caphart Corp.	21582-PC-61
1962	Amelco, Inc.	35064-PC-62
1962	Teledyne Systems (Teledyne bought Amelco)	35064-PC-62
1963	Caphart Corp. (Mfg for Adler Electronics)	20878-PC-63
1963	Teledyne/Imperial	37856-PC-63
1967	EAC	FR-36-039-N-6-00189 (E)
1968	Dittmore-Freimuth Corp.	DAAB05-68-C-0040
1984	Fowler Industries	N 00024-84-C-2027

MORE REPAIRING RACAL RA17 RECEIVERS

By Bob Filby G0HJR

In HSN #49, Mr. Filby provided us with some of his insight into these fine receivers found on both sides of the Atlantic. Here is some more of his experience in servicing this fine receiver. His e-mail address has changed to robfilby@totalise.co.uk

For Racal enthusiasts, here are a few more “case history” fault identification and repair items:

FAULT ONE.

Recently somebody brought around to me a 17L to have a look at. The owner had spent FOUR months on and off trying to fix the fault!! The fault gave the impression that the 37.5 BPF was down, and looking on the CT-501 it confirmed this impression. However, there are other faults that can give this impression, I started from the harmonic genie stage and soon found the fault. The screen feed resistor on V2 (100K) was open circuit, changed this and straight away the wobulator showed a favorable response. As the set had been messed around with, I had to start from scratch and re-align the set.

FAULT TWO.

Fault finding on a 17L and got the sets sensitivity done to 12uV, however all was not fine as the RF meter was moving up and down. After spending a bit of time going through the usual faults and exotic ones I was no nearer finding the fault. The only way out was to perform a drop test from about a couple of inches!! Sure enough the fault cleared up. Now came the hard part in trying to re-create the fault. Went through each module and section in a systematic sequence and ended up at V6, it turned out that the grid pin on the valve base was corroded. Took the pin out and replaced it with another one. This time the set was working okay with no further problems.

FAULT THREE.

The final fault was on an RA117E this time the set was dead from V14 backwards. After a bit of signal injection and tracing I arrived at the LC filter. Took the filter to bits and found one of the fine wires linking one wafer section to another section was disconnected. Soldered it back up and the set started to make some noises. However, due to the previous owner “clutching at straws” everything was out of alignment.

All these faults have one thing in common - the set in the natural course of operating will maintain the factory alignment for many years, in short LEAVE THE ALIGNMENT ALONE!! Always look at what causes the fault before even considering re-alignment.

FAULT FOUR.

Had another fault on a 17L at the weekend, details are as follows:

The sets sensitivity was failing and on checking the 37.5mc/s BPF on the CT-501. Found that the filter was centered on 38.5mc/s NOT 37.5mc/s. Changed all the silver mica caps and checked them on the cap meter. Found one of them was about 15pf out of tolerance and another was varying all the time whilst on test.

Connected the set back up to the CT-501 and the BPF was centered dead on 37.5mc/s whilst the skirts were centered on 37 and 38 respectively. Left the set on for a few hours and the response was still the same. Just to be sure that all the problems were solved in the 37.5mc/s chain, I injected an accurate 37.5 mc/s signal of constant amplitude into the grid of v6 and traced it through the various stages until I reached v10. I compared the results with samples from previous sets and found the results were about the same. Disconnected everything and replaced the parts removed before testing and then switched the set back on. I was greeted by silence!! Eventually found the fault, the earth wire on the RF/IF gain pot was dry jointed, yet it appeared to be okay. Resoldered the connection and measured the sets sensitivity as about .8Uv centered on 14.5mc/s.

Here are some case history's on several of the Racal accessory pieces.

RA98 SSB unit. The set would not resolve ssb, found that the screen resistor, 1meg, on v8 or v9 had gone o/c. Replaced that and the set would resolve ssb, however there was very little output. Further investigation showed that another four resistors had also gone open circuit. It was decided at this time to replace all HT dropping resistors and de-coupling caps. This time the set worked properly.

RA197B preselector. This pre-selector had an intermittent fault on it and it eventually decided to give up working one day. One of the valves had failed, replaced it and checked for any other likely fault around the valve base, of which there was none. However, the unit failed to work on one of the ranges. I located the offending coil and noticed one of the connecting wires going to the coil was not soldered and the other wire was dry jointed. I had to take the coil out of the unit because there was something rattling around inside it. The something was a broken piece of trimmer core, someone in the past had been a bit heavy handed with a realigning tool and broke the top of the core off. Replaced it and resoldered the connections and the unit worked as it should do.

RA37 LF adapter On switching on the LF units HT voltage I was greeted with a loud popping noise which repeated itself five times a second. I knew that the associated receiver was working properly as I had been using another LF unit a few days before hand. Obviously the fault was HT related, so I swapped over the HT regulator valve, 0A2W, and all was okay. As the unit was all disconnected I also checked the mains plug and sometime in the past there was a short between earth and the live pin as was evident by the blobs of brass fused onto the strands of the earth braid around the three core cable!! Out came the cutters and cut off the wire and 3 pin plug and resoldered up a new length of 3 core cable.

SHORT SUBJECTS

European Manual and Tubes Sources [Jim Carrington] In the latest issue of “Radio Bygones” which I just subscribed to, I came across a few adds from manual and tube vendors. I thought I'd post them for those of you with radios of European ancestry like Racal etc. I have not contacted any of them and do not know of their overseas shipping policies, etc.

Manuals

Savoy Hill Publications-Vintage service data & manuals
50 Meddon St., Bideford, The Little White Town, Devon EX39 2EQ England
phone 01237-424280

website: <http://freespace.virgin.net/tudor.gwilliam-rees>
email : savoy.hill@virgin.net
“The Worlds Largest Source of Vintage Service Manual”

Mauritron Technical Services
8 Cherry Tree Road, Chinnor, Oxon OX9 4QY England
phone 01844-351694 fax 01844-352554
web site: <http://www.mauritron.co.uk/mauritron/>
email enquiries@mauritron.co.uk
“Service Manuals and Technical Guides for the Electronics Repair Trade, The Largest Independent Supplier of Service Manuals in the United Kingdom. From the Earliest Valve Wireless Sets to the Latest TV, Video or Monitor”

Tubes (Valves)

Wilson Valves (prop Jim Fish G4MH)
28 Banks Avenue, Golcar, Huddersfield, West Yorks HD7 4LZ England
phone 01484 654650 fax 01484 655699
email wilsonvalves@surflink.co.uk
“over 50000 valves stocked vintage, military, audio etc. send SAE for
>list”

Chevel Supplies Limited
Dept. RB, 157 Dickson Road, Blackpool FY1 2EU England
phone 01253 751858 fax 01253 302979
email chevet@globalnet.co.uk
“most valves available at low prices”
They also sell some manuals and books.

Hope this helps locate some items otherwise unobtainable in the US.

QUESTIONS AND ANSWERS FROM OUR READERS

This section will present questions from subscribers for which responses are solicited. If you can help in providing answers, suggestions or just plain good advice - please send them to the editor for inclusion in the next issue of HSN.

Nothing this issue

PUBLICATIONS OF INTEREST

Nothing this issue

WANTED TO BUY / SELL / TRADE / WHATEVER

Nothing this issue

EDITOR'S AND PUBLISHER'S CORNER

See first article this issue for the latest info.

SUBSCRIPTIONS: \$5 for 4 issues (3 issues published per year).

BACK ISSUES: \$1 each - only issues from #31 to current available – no minimum order.

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INDEX: Issues 1 through 45 (10 pages - topics by Issue/page number) - \$2

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