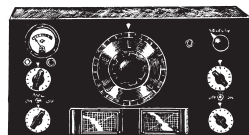


THE COMMUNICATIONS RECEIVER



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The Howard 438

By *Jim Hanlon, W8KGI*

I wonder how many of our readers have actually used one of the Howard Radio Company communication receivers from the 1930s-1940s era, a time that many consider the "Golden Age" of radio. While I have a few of those radios, I must admit that I never had worked on one until this article surfaced and I decided to restore a Howard for an upcoming "Fixing Up" column. Read on, while author Jim Hanlon tells the story of his receiver.—W2DGB

I did not start out to become a collector of communications receivers; it just sort of happened. My father bought a wonderful HRO-50 for my older brother and myself back in 1950, when we were getting interested in ham radio. I didn't acquire another receiver (outside of some WWII surplus Command Sets that don't really count because they only cost about five bucks apiece, and everyone had at least a few) until 1965. By then, I was married, the father of two girls, in graduate school, and teaching at Ohio State. That year Bob Higgy, W8IB, a professor friend of mine, gave me his HRO Senior "to take care of for him" when I helped him move his ham gear out of his ancestral home to an apartment. Bob knew that I understood HROs, and that I would appreciate his radio and put it to good use in my hamshack.

The first time I actually "collected" a receiver occurred at Dayton in 1978. It was my first-ever visit to the Hamvention, and in a cruise around the flea market, a somewhat familiar item from my Boy Scout days caught my eye. Back around 1953 when I was WN4VIV in Kentucky, one of the guys in my troop, realizing my great expertise because I had a Novice ham license, brought me a non-working Howard 435A and asked me to fix it. Even at that age I had the right combination of luck and insight to find the trouble with his set. All of the antenna input coils were burned to nothing but black traces on the coil forms. To this day I wonder what happened to cause that catastrophe. Was there a nearby

lightning strike, or did a previous owner try to tie in the 110 volt line to the antenna terminals?

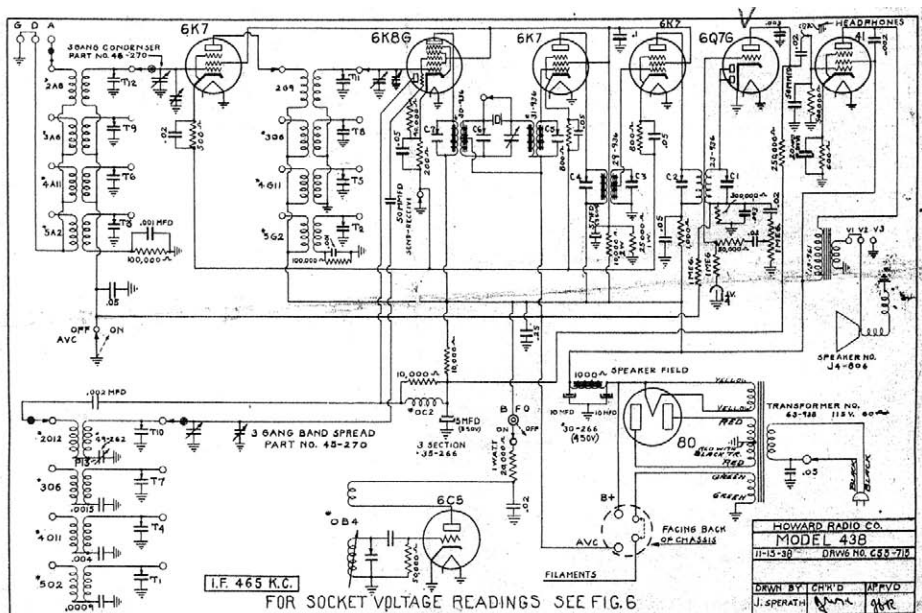
Whatever the cause, rewinding new antenna coils onto the scorched grooves brought the little radio back to life. My scouting buddy played with it for a while and then lost interest, so about a year later I talked him into selling it to another friend who was in my Radio Club at Saint Xavier High School in Cincinnati. John "Mac" MacAulay, then WN8SBW, later K4AWW, and now WQ8U had just gotten his Novice ticket. He paired the Howard with a Heath AT-1 and had a nice little station on the air.

What had caught my eye at Dayton was the familiar black box of a Howard receiver, this time a model 438. An older gentleman, Bob Blum, ex-W8DDI from Bucyrus, Ohio, was offering it for sale. "It covers 160 meters," he assured me in an attempt to make it more attractive, "and it comes with its original manual." A few minutes later we had agreed on a twenty-dollar price and I had crossed the threshold to becoming a collector.

The Howard Radio Company, according to Raymond Moore in his book, "Communications Receivers," was based in Chicago and was a long-time manufacturer of broadcast receivers. From 1938 to 1942 the firm offered a line of communications re-



The W8KGI Howard Model 438 receiver as restored to operating condition.



The circuit diagram of the 438. Note that it has an internal speaker, with the field coil as the filter choke.

ceivers, including my 1939-vintage 438. In general, Howard radios were low-end sets, but they didn't quite compete either in features, price or quality with similar Hallicrafters receivers, so I suspect they didn't sell particularly well.

My 438 is a rather typical eight-tube superhet. It has a 6K7 r.f. amplifier, 6K8G converter, two 6K7 455 kHz i.f.s., a 6Q7G detector and first audio, a 41 audio output, a 6C5 bfo, and an 80 rectifier. It tunes from the bottom of the broadcast band to 43 mc in four ranges, and it has a 0-to-100 calibrated bandspread, functional on all bands.

The receiver sold for \$49.95, and a plug-in crystal for the i.f. filter was an additional \$10. Bob did not take advantage of that option when he bought the receiver new. Fortunately, Fair Radio was able to provide an excellent substitute—intended for the Hammarlund Super Pro. It fit the socket in the Howard and worked well.

Comparable Hallicrafters radios were the \$49.50 S-20R, which boasted a 6H6 noise limiter not included in the Howard, and the \$69.50 SX-24. The latter had a built-in crystal filter, noise limiter, S-meter and calibrated, ham-band bandspread. It is no wonder that you find many more S-20Rs and SX-24s surviving today than Howard 438s.

The Howard has a number of other less-than-endeared features. Its cabinet is a rather cumbersome, single-piece affair covering the top and all four sides of the radio. A bottom plate can be opened for access to the chassis, but getting to the adjustments

on the top of the chassis or even just changing a tube is quite a different matter. All of the knobs have to be removed so that the control shafts can be slid out of their holes as the chassis is jockeyed out of its tight-fitting shell.

The tube sockets are all of the broadcast-receiver wafer variety, not the molded plastic sockets usually found in even the cheapest Hallicrafters radios. The front-panel switches are the inexpensive slide types rather than toggles. The b.f.o. pitch control is just a knob on the shaft of a tuning slug in the b.f.o. coil rather than a variable capacitor.

The 438 originally came without an r.f. gain control. The r.f. and i.f. stages ran at full gain all of the time unless they were cut back by the a.v.c. But c.w. operation is usually done on receivers of this type with the a.v.c. turned off. This prevents the b.f.o. signal from overwhelming the a.v.c. and cutting the r.f. gain way back, causing even moderate signals to block the receiver. I solved that problem by replacing the rotary off-on switch on the far left of the panel with a 20K pot that controlled the r.f. and i.f. gain and included an off-on switch.

On the air the Howard was originally somewhat drifts and its gain bounced. I replaced several paper bypass capacitors and also an old body-end-dot resistor that fed B+ to the local oscillator. As it warmed up, the resistor would drift to less than half of its cold resistance value. With those improvements the Howard became a pretty decent receiver,

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beautiful, well-organized equipment. Sophisticated clerks waited behind the counters to explain the features and operation of the gear.

Adjacent to this store building was the laboratory of Mr. McCandless, who manufactured de Forest's spherical Audions. When the E. I. Company came out with their early spherical Audion control unit, purchasers could just run next door to pick up a tube. However, this was a dying market because the new Radiotron UV-200 detector tube had been introduced. But as we poked around in the E. I. Store, we saw several of the wood-based spherical Audion control units tucked and forgotten in a remote corner. The highlight of my day came when Grandpop purchased a brand new E. I. loose coupler as my Christmas present!

Further up Cortlandt Street, there were no end of famous radio stores—Davega and many others—all displaying beautiful cabinet radios in their windows. Many of them featured the new

UV-200. But I wondered who would want to pay those fabulous prices when the real fun and joy was came from building your own set.

Traveling back across the Hudson River towards home, I happily clutched my E.I. Co. package along with the latest issue of *Radio News*. What fun it was then to build up those early sets from scratch! ☑

NOTE

¹ *The Antique Radio Gazette* was the official publication of the Antique Radio Club of America. ARCA merged with The Antique Wireless Association in the spring of 1994, and the content that appeared in the *Gazette* during its 1972-1994 publishing history is now part of the AWA archives. Though edited to conform to *The OTB's* current standards of style, this article appears essentially as originally published.

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though I usually warm it up for half an hour or more before I use it on the Classic Exchange. (*The Classic Exchange* is a February operating event, open to all, encouraging the use of "golden oldie" ham rigs. For more information, visit <http://qsl.asti.com/CX/>—ed.)

Howard Radio went on in 1940 to offer a rather imaginative "progressive line" of receivers that may have had more appeal to cash-strapped hams of the era. The basic model 435A was a seven-tube superhet, selling for \$36.75, with one r.f. and one i.f. amplifier. It could be returned to the factory and, at a cost of \$12.75, upgraded to a 436A. This added a noise limiter, a "new, eight-inch bandspread micrometer dial," and the exclusive new HOWARD INERTIAL KNOBS."

For another \$17.05, you could send in your 436A to be upgraded to a 437A. The radio would come back to you with a second stage of IF and a crystal filter. Other available accessories were an S-meter, an external preselector with two stages of r.f. amplification and a directional loop antenna, a monitor that "assures exact frequency measurements on all amateur bands," and an external speaker.

The original, non-A versions of these receivers did not include an r.f. stage, at least in the 435 and 436 models. I have a 436A, and the r.f. stage is indeed in there but it looks like it was tacked on afterwards rather than designed in from the outset.

Howard offered a full line of radios through 1941, all the way up to the Model 490 (similar electrically to the Hallicrafters SX-28 or the Hammarlund Super Pro). You can view pictures of quite a few of their offerings and find schematics for them at <http://members.cox.net/n7rk/howard.htm>. Dur-

An advertisement for the Howard Model 438 radio. The central image shows the radio with its control knobs and dials. Above the radio, text reads "CRYSTAL FILTER" and "ELECTRIC BAND SPREAD". To the right, a box says "R.F. ON ALL BANDS CERAMIC COIL FORMS". Below the radio, it says "4 BANDS - 8 TUBES BUILT-IN SPEAKER". A large circular badge on the right contains the text "Model 438 Only \$49.95 less crystal". At the bottom, the slogan "HOWARD DOES IT AGAIN!" is printed in large, bold letters.

Detail from Model 438 announcement ad. From 1938 Radio Amateur Callbook.

ing the war Howard actually built Super Pros; you will find a few around with Howard on the nameplate rather than Hammarlund. I was told by a friend who was a radio op during the war that when they got a Howard Super Pro they assigned it to the Commanding Officer as an entertainment radio instead of using it for serious communications duties. It wasn't the solid radio that Hammarlund built even if it looked the same. Howard Radio disappeared from the communications receiver business after the war.

Old Howards still show up occasionally at flea markets or on the Internet swap sites. In general they are not as well built as their Hallicrafters, National, or Hammarlund contemporaries, but they are still a lot of fun to restore and use, and their non-glamorous status makes them more affordable. They are definitely worth adding to your collection. ☑