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QST Issue: Apr 2004

Title: Hallicrafters HT-4, to War and Home Again

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OLD RADIO

Hallicrafters HT-4, to War and Home Again

Also known as the BC-610 (military), the HT-4 started life as an amateur transmitter in 1938. It was immediately popular with hams who wanted a well-built powerful rig, which was easy to operate. It was designed using the best parts, all heavy duty, and it was well constructed. It was capable of 450 W on CW and 325 W on AM phone, 100% modulated. At a cost of nearly \$700, only hams who had a good income could afford it. Nevertheless, Hallicrafters sold hundreds right away and they started to talk all over the world.

Before Pearl Harbor, during 1940, the US Signal Corps recognized that they would need better communications to control the rapid coordination and movement of troops, and to reach tanks under way or in battle. Additionally, the radios they needed would have to be rugged and powerful, work on a wide spectrum of frequencies, and be able to do so in a fixed location or on the move. A search was launched to find suitable equipment. As the need was immediate, they turned to the Amateur Radio market to see if what was already available might fill their needs. After looking at over 20 different transmitters, the Hallicrafters HT-4 was selected. It would become the BC-610.

The SCR-299

That wasn't all that was needed. The transmitter needed to be part of a complete station, so the SCR-299 was designed. This included two receivers, spare parts, antennas and a powerful ac generator set.



The famous "Duce and a Half" carrying the SCR-299 hut.

In early 1942 the SCR-299s were built into a 1½ ton capacity truck designed by the Signal Corps in Fort Monmouth. A trailer was also designed to haul the Onan PE-95 generator set. This was placed on a trailer so it could be located at some distance from the radios when in a fixed location, or hooked up for operation while driving. The operator could turn it on or off as needed, by remote control.

It was first deployed in northern Africa. It did a great job when the success of the

African campaign was hanging in the balance. General Dwight Eisenhower credited the SCR-299 in his successful reorganization of the American forces and final defeat of the Nazis at the Kasserine Pass. It was also successful in the invasion of Italy.

Thousands of SCR-299s were built during the war. Some versions would be built into small huts, and could be fastened on the famous "Duce and a Half," a 2½ ton truck and trailer combination. The Navy and other branches of the ser-

AL KLAKE, N3FRQ



Station W9WZE, from the movie *Voice of Victory*.



The beautiful construction makes the BC-610 very desirable to Boatanchor collectors.

Profile: Joe Cro, N3IBX

Known best as "Vortex Joe," N3IBX says, "Anything within a 500-mile radius of my house, that has a vacuum tube in it, gets sucked into my basement shack—never to see the light of day again!"

Joe lives near Philadelphia; and enjoys collecting, working on, modifying, restoring, and using vintage Amateur Radio equipment and old broadcast transmitters. He loves to bring something back to life that has remained forgotten or neglected, and use it on the air again. He says he runs a "Boatanchor Hospice."

Joe operates mostly on AM in the following bands: 160 (1885 kHz), 75 (3875-3885) and 40 (7290-7295). He has 15 operating positions in his cellar, each with its own separate transmitter and receiver. Each is linked to a variety of antenna tuners for every band. His antenna lineup is a 260-foot 160-meter flattop at 85 feet, a 61-foot $\frac{1}{4}$ -wave ground plane at 85 feet for 75 meters, a 61.5-foot $\frac{1}{2}$ -wave sloper for 40 meters, a homebrew G5RV, a 20 meter dipole, a 17.5 foot vertical for 10 meters, a 4 element quad for 6 meters and a 7 element quad for 2 meters.

His big antenna is a military inverted V, 110 feet total length, center fed through a 9:1 balun. Each leg is terminated into a 150 Ω resistor driven into the ground. It is resonant from 1500 kHz to 46 MHz.

Joe's motto is: The bigger it is, and the more it weighs, the better it will work!



Joe Cro, N3IBX, after a long night on 75 with his HT-4 model H.

vice also used the BC-610. Sometimes they used SCR-299 and sometimes the equipment was removed and relocated to ships, airplanes and buildings.

After the war, Hallicrafters continued to manufacture the BC-610 for the military, until about 1952. The versions went from -A through -I. They continued to be used by the Army, Navy and Air Force in the Korean Conflict and later in Viet Nam.

In 1946 Hallicrafters once again started to produce the HT-4 for amateur use. The HT-4 models went from -A to -F, with F being the newest.

The MARS Program

The Military Affiliate Radio System continued to use the BC-610 in both fixed (base locations), and in remote locations like the jungle or island outposts. Instead of voice transmissions, they were used primarily for radioteletype (RTTY), for sending written messages. They could literally run all day and all night transmitting RTTY at 400 W; they were that rugged.

During 1968 I was stationed at Langley AFB in Virginia. We had a BC-610-I RTTY circuit. We were the primary circuit for Germany and backup station for AIR in Washington, DC. Our BC-610 had just come from being refurbished and needed to be installed and tested. My ham radio background came in handy here. I found it easy to hook up and put on line with an R-390 receiver and some other surplus gear.

After several months my NCOIC received a telephone call from the MARS director at Andrews AFB, wondering if

we had any local MARS members who wanted a BC-610, as they had one they needed to get rid of. I was one of only two ham MARS members attached there. I volunteered and eventually was told to go pick it up.

This turned out to be a dream come true for me and another source of irritation for my wife, who thought she was rid of ham radio while I was on active duty. The BC-610 was an "I" model, and it was brand new. I had to take all of the spares, and all of the accessories. They were the OS-39 RTTY frequency shift keyer (FSK) and VFO, the BC-614 speech amp, and the BC-729 antenna tuning unit. I also got all of the crystal oscillator plug-ins and all of the coils.

I had to take it all apart and haul it to the second floor attic of our rental home; it weighed 400 pounds. The whole operation of taking it apart to putting it together only took a couple of hours. In one more hour I had it on the air, on CW. It was easy to work on.

In no time at all I had a Model 15 Teletype that I picked up in the local junk yard, chugging away during the evenings. I used to bring home some of the messages from the MARS station, so I could send them out on the evening Southern Net. Then I would monitor the net all night to see if I could pick up some messages to take back to the station in the morning.

One evening I went down stairs to watch some TV, as the net was real slow that night. After a few minutes I heard a thunderous sound coming from above. Startled, I jumped up and declared, "What was that?"

My wife knew. She said, "That's your

teletype machine running. Maybe now you'll realize just how noisy it is down here."

The RTTY was on auto-start and had come to life and was happily typing away. The problem was, I had the TTY machine sitting directly on a metal teletype table, and the metal table sitting directly on the wooden floor. I swear it wasn't that noisy upstairs.

In a few minutes I added some carpeting between the machine and the table, and added two layers of carpet between the table and the floor. Problem solved—and one marriage saved.

Voice of Victory, the Movie

Hallicrafters produced a wonderful movie early in the war, all about the HT-4, the BC-610 and the SCR-299. I have a copy and it has renewed my interest in this beautiful transmitter. The movie shows a prewar ham station, W9WZE, on the air using the HT-4 and SX-28 and a wonderful, early, 2 element beam on an old-style tower. Then in great detail the movie shows exactly how the '610 was built, piece-by-piece. It also shows the production line and exactly how the SCR-299 was assembled, tested, and then shipped by boxcar. It runs about $\frac{1}{2}$ hour.

If you would like to get a digital copy, I'll have the links installed on my Web site where you can download it. I'll try to make arrangements for those who can't download it, to be able to get a copy on CD or on VCD (not DVD). Visit my Web site for the information: www.eht.com/oldradio/arrrl/index.htm.

It's hamfest season again. Look for my hat and say hello.—K2TQN