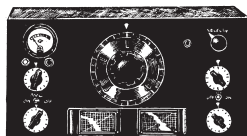


THE COMMUNICATIONS RECEIVER

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The Scott SLR-M: A Wartime Entertainment and Communications Receiver

This receiver was designed for general coverage reception (entertainment and news) on smaller merchant ships during World War II. It is an interesting hybrid in that, because of its BFO circuit, it could also function as a communications receiver.

I was fortunate enough to acquire this radio a few years ago, and was impressed with some of its unusual features. First, while most Scott marine receivers were truly boat anchors, this set used aluminum for the chassis, panel and cabinet, making it considerably lighter than expected. Next, because of its AC-DC circuit, the only "iron" in the set was the massive multiple-

winding output transformer and the filter choke.

Besides the fact that this particular set had been well cared for and was in almost mint condition, its general appearance was imposing. The predominant light gray color contrasted nicely with the red ID plate and the black controls. Finally, the SLR-M is a good example of patented radio technology: the low-radiation receiver.

An excellent article on the various E.H. Scott low-radiation marine receivers of WW II, written by Dr. John T. Meredith, was published in the November, 1992 *OTB*, in the Communication Receiver column. It is recommended reading for anyone interested in Scott radios, and was used as



The SLR-M removed from the cabinet. Note the monitor speaker, the tuning eye tube, and the massive main dial.

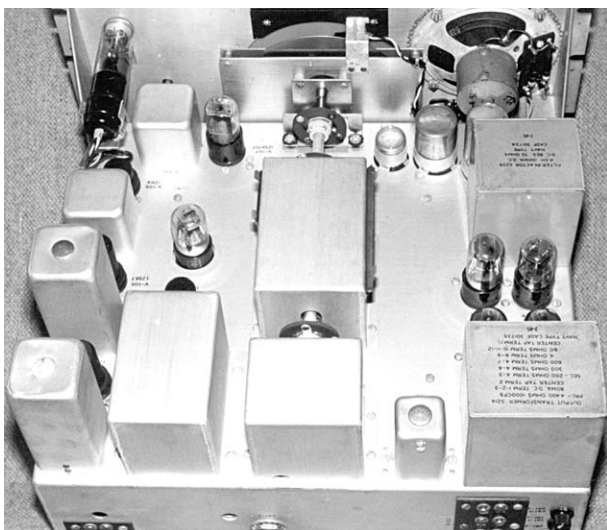
a source for some of the material that follows.

Another good and very comprehensive information source for all the Scott radios, including the military sets of World War II, is the lead article in *The AWA Review*, Volume 11. It was written by Kent King, the Secretary of the E.H. Scott Historical Society.

Meredith makes the point that this is probably the finest AC-DC radio ever made, and an inspection of the circuit and construction appears to confirm that. The quality of components is superb. After all, it was built to government specifications, probably on a cost-plus contract.

This is another example of a radio that flatly contradicts the concept that AC-DC radios are "cheap." We have here a twelve-tube receiver, with communications capability and state-of-the-art circuitry, which was designed with a power supply that would work with the DC mains still found on many of the ships in the 1940s.

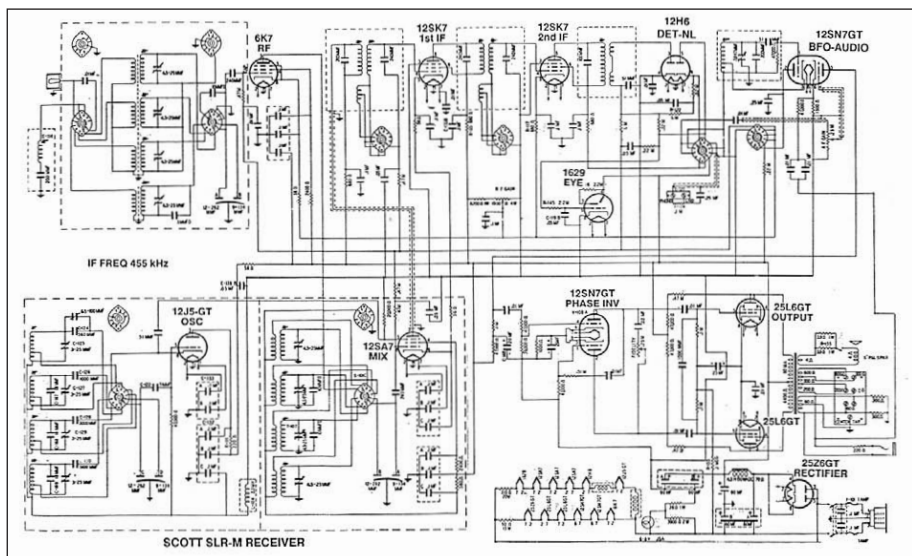
The two photos show the receiver removed from the cabinet. Looking at the front panel, the gain and fidelity controls are to the left of the



Here's a look at the top of the chassis. The three boxes in the center house the RF, mixer, and oscillator circuits. The audio output transformer is at the right rear.

main tuning knob, and the band selector, noise limiter/phone selector, and selectivity switches are on the right. The BFO and tuning eye on the upper right are balanced by the power and speaker switches and the monitor speaker on the upper left. A headphone jack is included.

The receiver covers 0.54 to 1.6 MHz 1.36 to
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The circuit diagram of the SLR-M. Note the complex audio and power circuits.

in the buying power of the year 2000. There were also ex German Army single earphones on the market for ATS 4.00 (US \$1.40).

That was all one that was needed for building the radio. One connected the germanium diode in parallel to the earphone coils and construction work was finished. Antenna and earth were connected to the earphone terminals. Holding the earth wire in one hand and throwing out a few yards of antenna wire resulted in perfect reception of a nearby station.

This simple device was the first truly portable radio available to all, from schoolboys to old age pensioners. Soon after publication in the January

19, 1955 issue of "Funk und Film," 10,000 of those single ear phones had been sold. In addition, there was a serious shortage of germanium diodes, which lasted for several months. With transistor radios still beyond the reach of ordinary enthusiasts, the "Darling" became the great grandfather of the Walkman.

"The more there were, the less there are." This old collector's rule applies to the "Darling" also. Genuine examples are rarities hardly ever found in Vienna's flea markets. The author wishes to thank the Austrian State Archive, especially Mr. Herbert Vopava, for the valuable help in compiling historical material on this subject. ☐

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18.6 MHz in four bands. A distinctive feature of the Scott SLR (Super Low Radiation) series of marine receivers, including the SLR-M, is the combination of mechanical and circuit design improvements that attenuated radiation of the oscillator signal. Marvin Hobbs, Scott's design engineer, received a U.S. Patent on these improvements in 1943.

The antenna coils at the rear of the chassis are totally shielded, with even the coil switch shaft broken by an insulated coupling. The mixer and oscillator tubes and circuits are also enclosed. The metal 6K7 RF tube bridges between the two compartments, and shielded RF filters in the filament and HV lines complete the isolation. The result was that there was no detectable radiation beyond 25 feet, fulfilling the design requirements.

As received, the radio did not work, and my goal here was to restore this set to working condition while leaving the original components in place and doing as little modification as possible. A check of several of the electrolytic capacitors revealed that they were non-functional, and all would have to be replaced. The filter circuits are somewhat complex, and I studied the diagram carefully before proceeding.

Good exact replacements were not available, so I used the usual restorer's trick of wiring in small modern cartridge filters under the chassis—leaving the disconnected originals in place above the chassis. The new capacitors were mounted on small fiber stand offs soldered to the original terminals. The tubes checked out, and with the replacement of a couple of the original by-pass capacitors, the radio came alive. No alignment was found necessary, the components

having stood the test of time.

The five-inch PM monitor speaker sounded distorted, and will probably have to be reworked by one of the several speaker folks who do that sort of thing. While modern replacement speakers are plentiful, I elected to leave this one in, as it is of the highest quality and the construction is very distinctive. It is very rugged, and it a prominent part of the radio. A large Hallicrafters speaker sitting on top serves nicely for the time being.

The tuning was somewhat loose and, without bandspread, was critical for SSB and CW reception. Sensitivity was a bit low, but without careful antenna matching, and considering the mid-1930s technology and components, this was not surprising. The push-pull 25L6 audio-output, even with the low voltage of the AC-DC circuit, provided a respectable 1.5 Watts, enough to operate several external speakers.

Thousands of these radios were ordered during the war, and with the end of hostilities in 1945, many came on the surplus market. Included were many that were unused, and since Scott was left holding an inventory of new sets when the contract was canceled, it is likely that these also ended up in war surplus. Some years back the Scott WWII SLR radios were commonly seen at hamfests, but now they are a rare sight indeed. If one does show up, the price can be high. The Navy version of this receiver is known as the REE.

If you are a collector of military radios, one of the Scott SLR sets is a must. The sets represent a significant design accomplishment that met a perceived need during the very critical Battle of the Atlantic—a battle, incidentally, that was almost won by the Axis. ☐