

Classic Radio

The WRL Globe Scout

World Radio Laboratories (WRL) was founded by Leo Meyerson, W0GFQ (SK), in Council Bluffs, Iowa, in the late 1940s. In direct competition with the E.F. Johnson Company and a few others, WRL produced amateur radio equipment in both factory-wired and kit form under the Globe and Galaxy brand names.

The Globe Scout

The WRL Globe Scout was the entry point for many hams in the 1950s. While WRL made a few transmitters in the late 1940s with plug-in coils, the most recognizable Globe Scouts took shape around 1953, starting with the 50 W CW and 40 W AM band-switched Model 40A (see Figure 1). They all used the 6146 final tube, which was a bigger, more robust version of the 2E26. The 6146 tube had high plate dissipation (25 W) and high usable frequency. It was compact, and inexpensive for its day, at only \$4.95.

Globe Scout Modulators

All of the Globe Scout models were crystal controlled



Figure 1 — The Globe Scout Model 40A. [Bruce Vaughan, NR5Q (SK), photo]



Figure 2 — The crystals used in the Globe Scout. [www.universal-radio.com]

(see Figure 2). They especially appealed to the Novice-class operators, whose transmitters were restricted by the FCC to 75 W with crystal control. WRL made a companion model 755 variable frequency oscillator (VFO), which would adequately drive the Scout. The Globe VFO also had the advantage of having its own power supply, which didn't change voltage when the transmitter was keyed.

Amplitude modulation (AM) was the most popular type of HF phone operation in the 1950s, as opposed to FM or SSB. The Globe Scout used a technique called *Heising modulation*, which involved using an ordinary iron (power supply-type) choke to decouple the dc power supply from the modulator, thereby feeding the final tube with modulated plate voltage (see Figure 3). This worked, but you could never achieve full modulation, and because Heising modulation was generally used for economic reasons, the rest of the audio chain was generally compromised as well.

Other radios of the time used *screen modulation*, which generated AM by modulating the screen grid of the final amplifier. While screen modulation worked and was certainly cost effective, the Johnson Ranger was by far the best sounding with its push-pull 6L6s as the audio modulator and a real modulation transformer, but it cost three times more than the Globe Scout.

Globe Scouts were also cathode keyed, which was an easy and practical method of keying the radio in CW. However, it could be dangerous, as it put several hundred volts across the key terminals. I learned this the hard way, during my first contact using a used Globe Scout. Other radios, such as the Johnson Ranger, had grid block keying, which eliminated the shock hazard on the key terminals.

Globe Scout Tube Lineup

All of the Globe Scout models had the same tube lineup. A 6V6 served as an oscillator if you used a crystal, or a buffer if you used an external VFO, along with a 6146 final amplifier. A 6SJ7 served as the first speech amplifier, followed by a 6C5 into a single 6L6 modulator. A 5U4G or 5U4GB tube served as the rectifier. There were no solid-state devices used in the rig. In the late '50s, WRL came out with two models of the

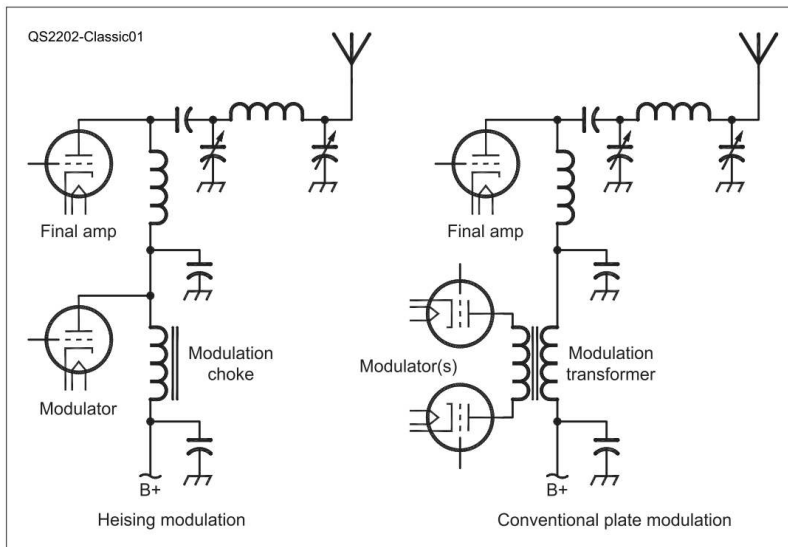


Figure 3 — Heising modulation (left) compared with conventional Class B high-level modulation (right). Note the use of the choke instead of the transformer.



Figure 4 — The front panel of the Globe Scout Model 680. [www.universal-radio.com]

Globe Scout, the Model 66, which covered 160 through 10 meters, and the Model 680 (see Figure 4), which covered 80 through 6 meters in an effort to capture some of the Technician-class market. In these models, the two octal-based audio tubes were replaced by a single 6U8A, which used the same circuit, though housed in a single, nine-pin miniature tube envelope.

Getting the Globe Scout on the air took a bit more effort than with rigs today. There was an antenna changeover relay, with a couple of additional sets of contacts that could also control another relay. The antenna change-over relay switched the antenna from the receiver to the transmitter, while the other contacts muted the receiver during transmit and turned on the VFO. For safety reasons, it was also important to ground everything, because most 1950s-era equipment did not have polarized ac plugs.

Tuning the Globe Scout

Tuning the rig required care and attention. The pi network output circuit had a very wide range, and it would tune almost any load. Most rigs did not have an RF output meter; you tuned the rig by dipping the final plate current and increasing the loading until you achieved the desired plate current while maintaining acceptable grid current. Assuming the final amplifier was properly neutralized, output power was maximized by tuning it in that manner. Operators were well advised to use an antenna that was somewhere near resonance, or else the final amplifier might act as a doubler or even a tripler, resulting in a nice signal at two or three times the desired frequency. Many Novices tried using 40-meter dipoles on 80 meters, resulting in nice interference-free signals in the 7400 kHz range, just above the top end of 40 meters.

To operate the rig properly, a ham had to learn another quirk about the oscillator control knob on the Globe Scout: to use a 40-meter VFO or crystal on 20 meters, it had to be positioned at 10 o'clock, while using the same crystal or VFO on 15 meters required that the knob be set at 2 o'clock.

Other WRL Products

WRL had a fairly complete product line, including the Globe Chief, a CW rig that used two 807 final amplifier tubes instead of only one like the Viking Adventurer or the Knight T-50. Like the Globe Scout, it was crystal controlled but it ran 90 W, and it appealed primarily to the Novice-class operators. WRL did, however, have an accessory modulator, enabling the rig to be used for phone operation. WRL also made the Globe Champion to compete with the Johnson Valiant in the 250 W AM market and the Globe King, a 500 W, 300 pound rack mount radio to compete with the Johnson 500.

In the late '60s and early '70s, the market changed from separate transmitters and receivers to a single box idea, the transceiver, which was less expensive than buying separate units. Collins and Swan were the leading manufacturers with these radios. WRL tried to compete in that market with their Galaxy brand of transceivers, but the big three Japanese companies appeared on the scene with their superior products. By the mid-1970s, WRL/Galaxy, National, Hallicrafters, E.F. Johnson, and others had disappeared from the amateur radio market, paving the way for a whole new generation of products.