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Author: Steve Marquie, W8TOW

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OLD RADIO

The Legacy of the Globe King

When World War II was over, surplus equipment and parts flooded the market and the country was ready to play radio again. Some of the rigs from pre-war times came back to life. Many hams wanted to convert war surplus radios, and others wanted brand new rigs. The surplus parts that enticed the home-brew builders also stocked the manufacturers' shelves. These surplus parts became the basis for many new radios.

World Radio Labs (WRL) of Council Bluffs, Iowa, was a manufacturer in the right place at the right time. Investing heavily in war surplus material, WRL owner Leo Meyerson produced some of the first post-war transmitters. His popular low-power Globe Trotter was one of those transmitters.

With hams asking for more powerful rigs, WRL prototyped a 1/4-kW transmitter. By 1947, it was ready. Designing it around a pair of United V70D triodes operating in class C, the Globe King was born. It produced over 250-W output on AM.

Within a year, the Globe King had already been redesigned. The original version had a modulator with four 6L6s in push-pull parallel. WRL found that by designing a new modulator, the RF power could be increased to 300-W output at 100% modulation. The new Globe King 400 ran the same United V70Ds in the finals and a pair of Hytron 5514s in the modulator stage. A few additional changes in the Globe King 400 series occurred, but they continued to use the same RF and modulator tubes, and plug-in coils.

THE STORY OF ONE WRL GLOBE KING 400B

By Steve Marquie, W8TOW

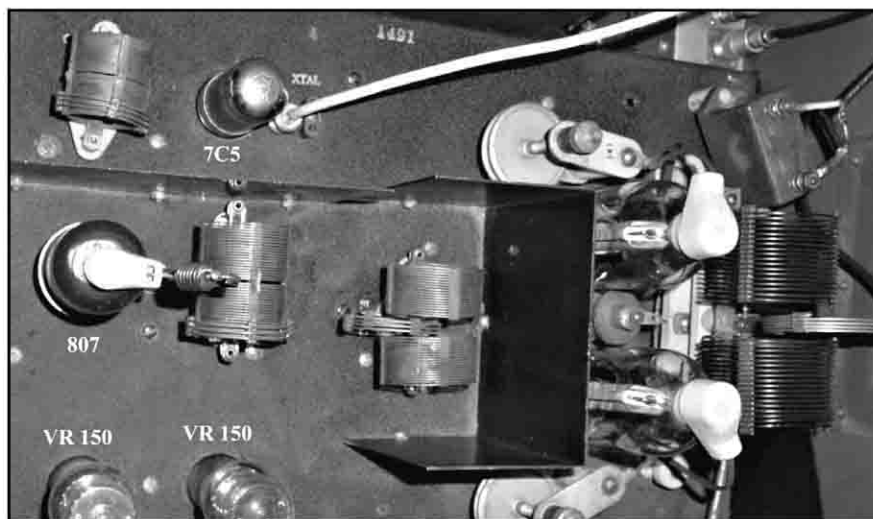
In the fall of 1951, John Eisenman, W8URM, decided he would become a proud owner of a Globe King 400. Now deemed a Globe King 400B, John's new radio included TVI shielding, an improved speech amplifier and some minor RF circuit changes. John was a CW man, though, so he never tried it on phone. Instead, he concentrated on getting his DXCC by running the Globe King 400B only on CW. I am sure he commanded the DX end of the bands!

After almost 30 years in suburban Detroit, John finally sold the rig in 1980. The transmitter was relocated to Mike

Beachy, N8ECR. Mike, an avid AMer, made efforts to restore the rig and get it on AM phone.

The class C power supply and the

modulator were both giving Mike some problems. He realized some success by replacing the high-voltage bleeder resistor. The transmitter was delivering over



The Globe King RF deck: 7C5 oscillator, 807 driver and two V70D finals.



The station of Steve Marquie, W8TOW. His restored Globe King is at the far left.

Old Radio Profile: Steve Marquie, W8TOW

Steve Marquie, W8TOW, became interested in operating AM early on. Originally, he operated CW/SSB like many newcomers to ham radio. Then, in 1977, *CQ Magazine* ran an article titled "No, Harry, AM isn't Dead!" This sparked his curiosity. Within months, he had restored a Viking I transmitter and a 51J2 Collins receiver. He used them in the 40-meter "AM Window." Other AM rigs followed, but eventually the DX bug bit him. Later, he moved to a new home and fell out of radio for a while. In 1997 he rediscovered AM. This time he chose to focus only on AM/CW with vintage radios. This led to an opportunity to restore some of the "big rigs" from yesteryear. Among several home-brew transmitters, his favorite is the 1952 vintage WRL Globe King 400B.

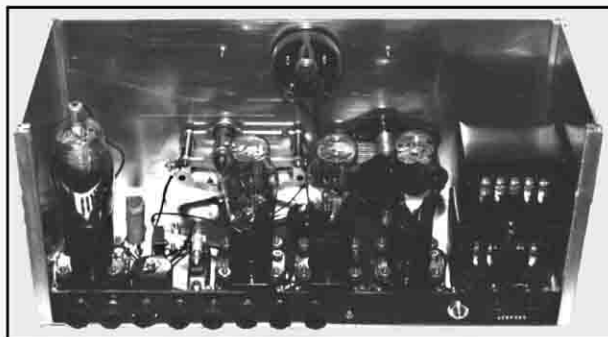
Replicating the Round-the-World Four

In the June 2000 QST I said of the Silver Marshall 'Round-the-World Four,' "This radio would be a good candidate to replicate today with old parts...and the cabinet is assembled with small sheets of aluminum. If anyone has already done this, I would like to hear from you."

Well, reader Tom Provost of New Jersey took the challenge. "My recreated Round-the-World Four, circa 2000, is up and running. I completed it last week and powered it up. The first station I received sounded like Radio Japan. Tuning around, I heard some other international broadcasters. I am pleased with its ease of operation," Tom said.



Tom Provost standing next to two broadcast radios, with the replicated Silver Marshall on top.



An inside view of Tom's version of the Silver Marshall.

He indicated that some differences in his

replicated version were required because he was unable to find all old parts. He wound a set of four coils for it on National 4-pin forms instead of the 5-pin coils used by Silver Marshall. The audio transformers were impossible to find, so he made his own using miniboxes from RadioShack. He placed barrier strips on them to connect the wires and placed new 3:1 transformers inside each one. He also made the RF chokes, placing them inside small plastic pipe caps so they would look the same as the originals.

For tubes, he used slightly newer ones—1930s 4-pin tubes. The lineup is a 32, 30, 30 and a 31 in the audio output.

The cabinet was made from some pieces of scrap aluminum. The four corners were machined from aluminum square stock using a slitting saw on a lathe. The aluminum stock was acquired at McMaster-Carr. Visually comparing his new radio to an original, I found they are very close in appearance.

For dc power, he made a "B" battery from 64 AA cells. He placed them in a plastic box and used connectors for the wires. For filament power, he used 2 D-cell batteries.

Tom isn't a ham yet, but loves to restore old radios; he has some impressive receivers in his collection. Among them are a Pilot Super Wasp, a Hammarlund Comet Pro, a National SW-3, a couple of HROs, several vintage Hallicrafters and a Technical Material Corporation GPR-90. Additionally he has many early home broadcast radios.

300-W output, with 1450 V dc at 300 ma, but the modulator still refused to work. Power supply problems, together with distorted audio in the speech amp, kept the Globe King silenced for many more years.

Being active on AM early in my ham career (1976), I decided to revisit AM again in the '90s. Motivated by the smell and glow of the tube gear, I convinced Mike to sell the Globe King 400B to me in 1996. Mike and I had been AM buddies for many years. He knew that I wouldn't sleep until it worked, so he agreed to part with the old relic. On a cold Sunday in January 1997, I drove through drifting snow to Pigeon, Michigan, to purchase the transmitter. Six hours later, the fun began!

What I Found

After removing some layers of dirt and crud that had accumulated over the years, I tried an on-the-air evaluation. The results weren't promising, so I decided to dig into the radio.

At 375 pounds, the Globe King is not a lightweight. Working on it requires some planning. The RF chassis, modulator, and the high voltage power

supply are on individual decks, all housed in a 3-foot cabinet.

The modulator has its own 1000 V dc power supply, using 866JR mercury vapor rectifiers. This part of the rig was sick. Isolating the modulator's B+ supply by lifting the wire that exited the bleeder resistor, I tried it again. I saw sparks!

Okay, maybe there are other problems. I checked the filter cap. It was good. The choke was good. What next? I had no other 866JRs, so I chose to eliminate the tube rectifiers, replacing them with solid state components. This would also eliminate the filament transformer. I tried again. Now I had 1100 Vdc. Careful inspection identified two problems: (1) the filament transformer was bad, and (2) the tube sockets for the 866JRs were miss-wired from the factory.

On to the speech amp, and more problems. I did put the rig on the air, but the reports were less than favorable. Reports of distorted audio and splatter abounded. Many hours later I had those problems solved. I found that the old carbon resistors had changed value over the years and none of the tubes in the speech amp had the right voltages. I also

discovered that the phase inverter tube (6N7) had been miss-wired at the factory. This meant there had been two wiring problems on the same deck. If the original owner had been a phone operator, I'm sure it would have been fixed years ago. Finally, after 45+ years, the Globe King was on the air.

Over the next few months some other minor problems surfaced. Eventually, I replaced every capacitor and resistor on all three decks. All the plug-in coil sockets were cleaned and the tubes were checked and replaced. This work has led to many trouble-free hours of operation and enjoyment. Restoring the 400B was a lot of fun. I may never get DXCC running the Globe King 400B as W8URM did back in the 1950s, but I am getting close to WAS on AM. The 400 is still the "King" to me.

MORE GLOBE KING INFO

For more information on the WRL Globe King transmitter, visit my Web page at www.eht.com/oldradio/arrl/index.html. Hamfest season is now here. As always, look for my call letters on my hat and say hello.—K2TQN **QST**