TRIO 9R-59D HF RECEIVER

I bought this receiver from a local Ham who was selling it as part of an estate sale.

I did not try it before buying it but it looked in good shape and I did not paid much for it. I had a good idea as to the expected performance assuming that it worked.

It is a general coverage four band single conversion receiver with a 455 KHz IF. Coverage included the AM broadcast band to 30 MHz. The window on the right is a band spread for the HAM bands. It is a sixties vintage all tube receiver with a total of eight tubes, nine if an OA2 VR tube is added. An operating manual for the 9r-59DS is available on the BAMA site in the Kenwood folder. I was unable to find a free copy of the service manual.

As received, it did work although the highest band (10.5 -30 MHz) seemed somewhat deaf. The dial calibration is not very good and the frequency stability is not great especially when first turned on. It is also susceptible to line voltage variations. It also has some image issues as to be expected with a single conversion receiver with a 455 KHz IF. On the higher bands, the RF Gain control, top right knob, pulls the local oscillator frequency. The Ant. Trim control, bottom right knob, does the same thing. I wasn't quite expecting this to happen.

This receiver had a voltage regulator tube (OA2) installed. Apparently when shipped from the factory the tube socket is there and wired but no tube is included.

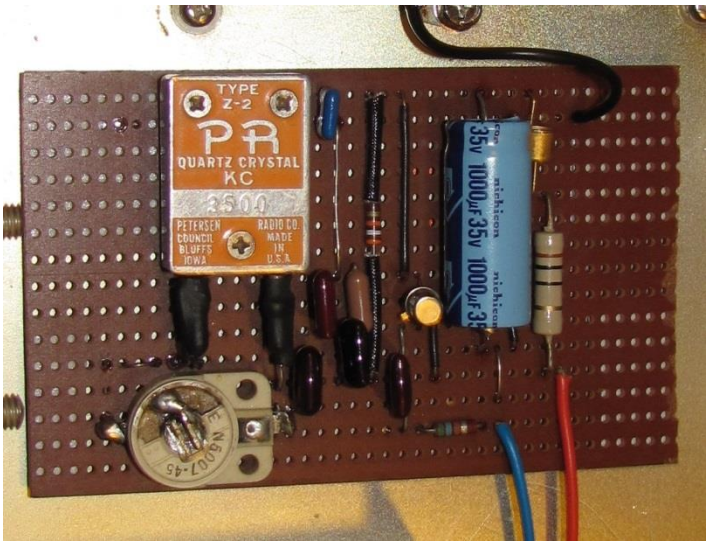
The receiver needs an external speaker. There is plenty of space within the cabinet to install a speaker. I tried this but when you turned the volume up it would tend to modulate the local oscillator especially on the higher bands and this would cause feedback. It may have been the reason they didn't include an internal speaker.

I did some formal sensitivity checks on the receiver. At first I was a bit puzzled with the specs. as it specified sensitivity like less than 10 dB (for 10 dB signal to noise ratio). I think what it means is 10 dB above a 1 µv reference for a 10 dB signal to noise ratio.

On the highest band I was getting poor and inconsistent reading. It turned out that the band switch contacts were dirty. After spraying them with contact cleaner the reading were consistent and much improved.

Sensitivity on the 3 lower bands was generally very good. The worst case was on 20 meters where the sensitivity was 1.8 µv for 10 dB S/N. Most other frequencies were well below 1 µv. On the highest band, 28 MHz was 1.1 µv for 10 dB S/N, 29 MHz was 1.5 µv for 10 dB S/N and 21 MHz was 1.1 µv for 10 dB S/N.

As mentioned the dial accuracy is very poor. I built a band edge marker (crystal calibrator) using



a 2N2222 transistor and is based on a Colpitts oscillator design. The circuit uses a 3.500 MHz crystal. It was built on a piece of copper clad Veroboard using the parts I had on hand. There was plenty of space on top of the chassis to mount the board. A variable capacitor was included to adjust the crystal frequency. It is power from the 6.3 VAC filament supply through a half wave rectifier circuit. It works fairly well producing markers on 3.5, 7, 14, 21 and 28 MHz.

The receiver chassis is also pre-punched for a crystal socket and a 7 pin tube socket if you wanted to build a tube type band edge marker.

Even with the band edge marker finding the frequency you want within a Ham band is generally pretty much impossible especially on the upper bands but at least you can find the band.

I operate a lot of AM on HF. I set the receiver up with a Heathkit DX60B transmitter and have made AM contacts with this combination on 10, 15 and 40 meters. Operation with the receiver can be a bit of a challenge especially on the upper frequencies because you are never quite sure on what frequency you will be receiving when you go from transmit to receive. Another issue is trying to find the frequency you want to use because of the poor dial accuracy of both the DX60B's VFO (HG-10B) and the 9R-59D. Despite all of the above, it is a fun receiver to play with if you don't have high performance expectations.

Matching Equipment and Accessories

Trio produced a matching transmitter to go with this receiver. I could not find much information about it. It was the TX-88 and had two or more variations. I know of an A and D version. The design was quite conventional for the time. It was crystal controlled and capable of CW and AM and had a built in plate modulator.

The transmitter covered 80 through 6 meters and the power may have been 10 or 25 Watts depending on the variation. I don't know if this was input or output power. Output tube may have been either an 807 or 2E26 depending on the variation.

There was a pre-selector/converter produced also. I could not find much information on this either. The model number is SM-5D. I believe it converted the upper Ham band, 7, 14, 21 and 28 MHz to a lower frequency to be tuned with 9R-59D. It essentially made the receiver dual conversion with the receiver acting as a tunable IF.

I don't know if a VFO was ever produced for the transmitter.

May 5, 2014

UPDATE: November 14, 2017

About two years ago I added a computer fan to the top inside cover of the 9R-59D receiver. The fan sucks the air out. This addition greatly improved the long term stability of the receiver. It decreased the amount of drift after about a 30 minute warm up of the receiver.

The fan is power by a wall wart mounted inside the receiver and turns on when the receiver power switch is turned on.

I found this addition is worthwhile.