

## The Ratnick Twoer, Mark IV

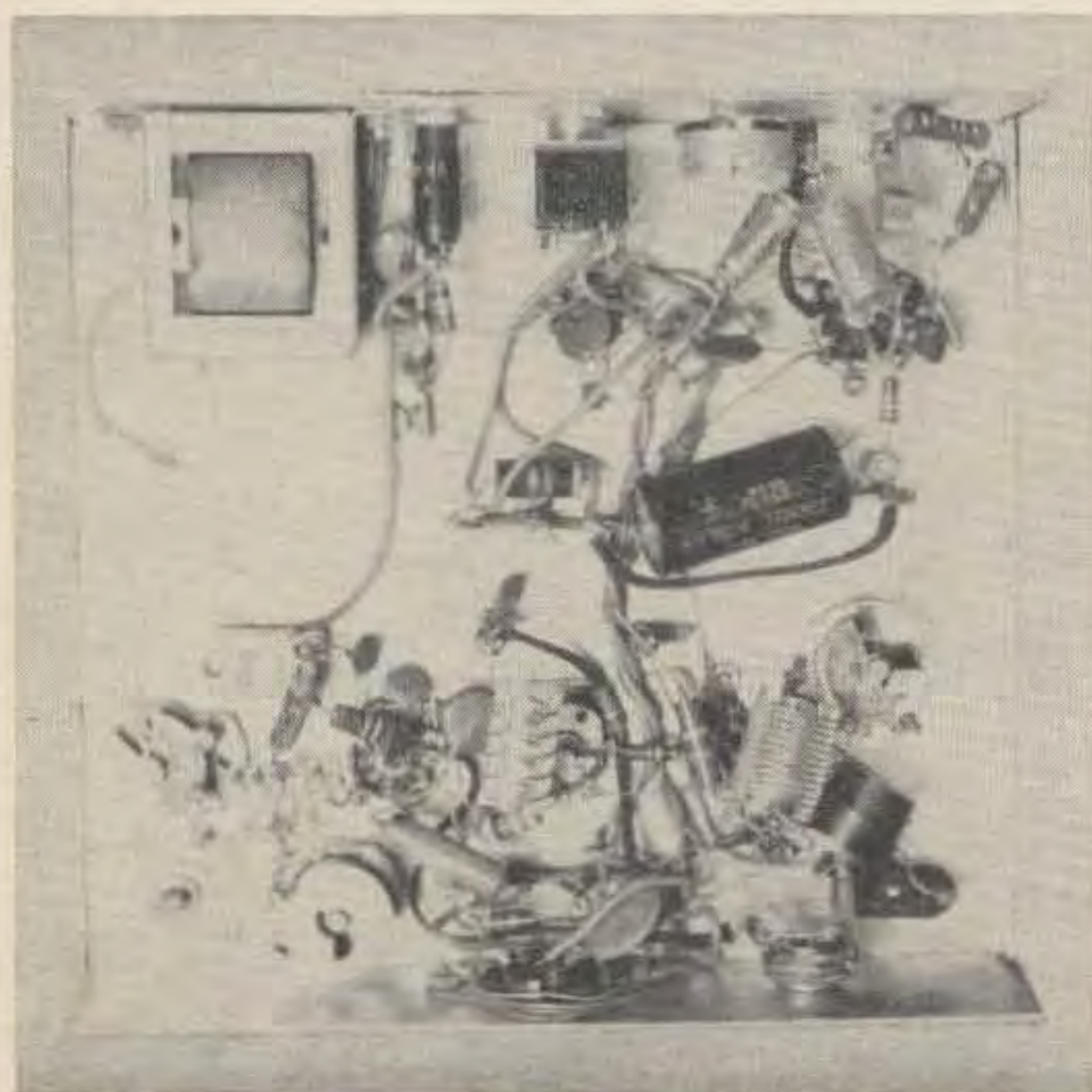
A very simple two meter transmitter for local contacts

The Ratnick Twoer Mark IV is a simple two meter transmitter capable of a good signal with modulation percentage closely approaching 100%. As VHF transmitters go it is easy to duplicate. The circuit is straight forward and little trouble should be encountered as long as good VHF construction techniques are used. All rf carrying leads should be as short as humanly possible. The rule for bypassing is as follows: if you can't see the leads from the bypass capacitor you may consider it well bypassed. The lead arrangement of the audio section is not critical and any arrangement that appeals to the builder may be used.

The crystal oscillator is an electron-coupled type that oscillates on 8 MHz and has its output tuned to the third harmonic.

It is very stable and may be driven by almost any high impedance VFO. The 24-MHz energy is tripled to 72 MHz in the second half of the 6U8. The final amplifier is a 5763 that doubles to 144 MHz. While this does not provide good efficiency it does simplify matters greatly in that the final does not have to be neutralized. The output is in the area of two watts and it is suggested that a high Q filter be employed in the output circuit to prevent the transfer of the spurious energy, i.e. TVI. Provision is made to key the final for CW though exceptional care should be taken to properly bypass the keyed cathode.

V3A and V3B are voltage amplifiers which are in turn fed into the 6AQ5 power amplifier. A neon indicator is used to show



Top view of the Ratnick two meter transmitter.



Bottom of the Ratnick two meter transmitter.



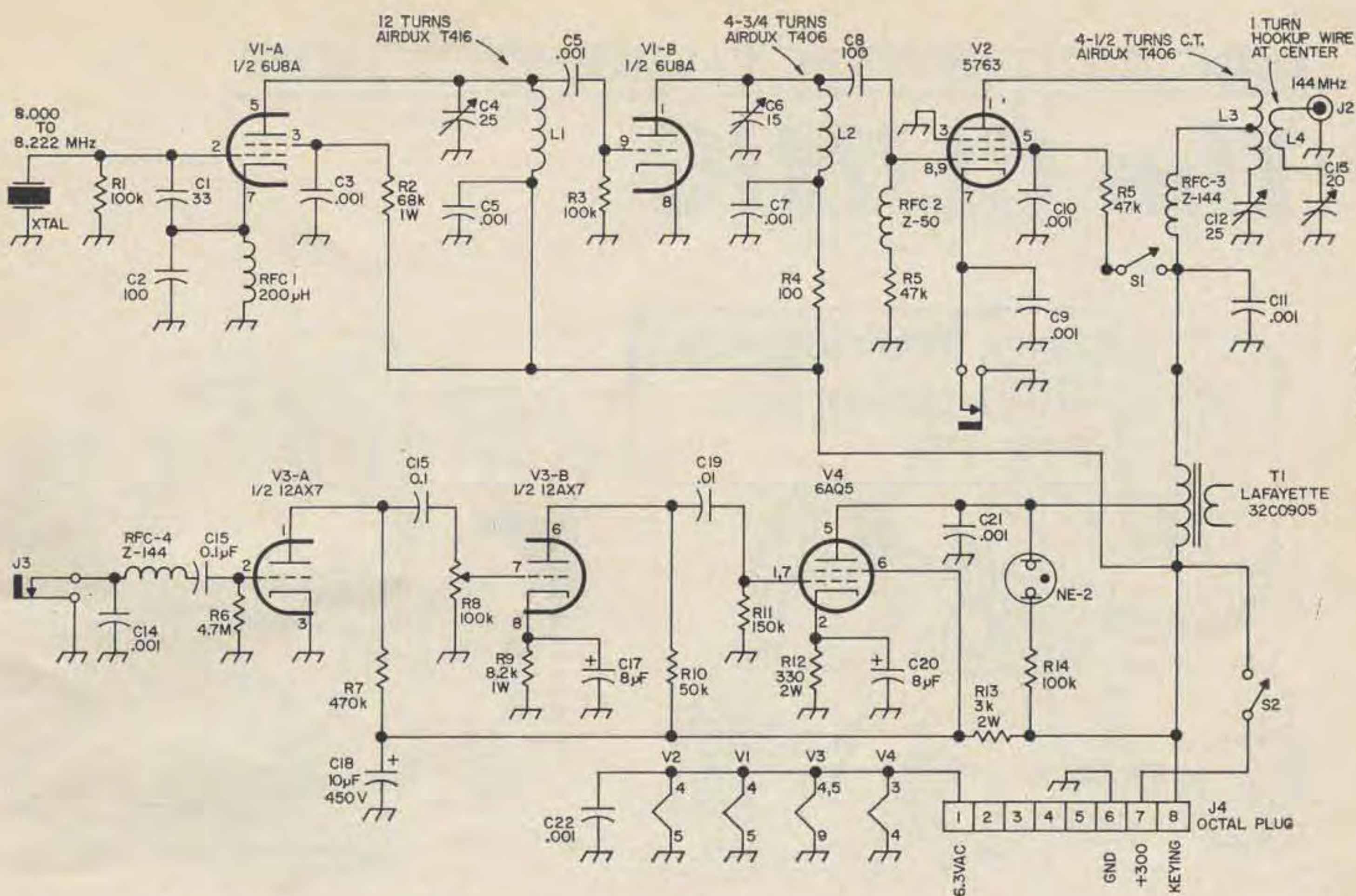


Fig. 1. Schematic of the Ratnick Twoer Mark IV. S2 is in parallel with an external relay connected to the "Keying" terminal.

the operator if he is modulating properly.

If the exact values given for the tuned circuits are used no trouble should be encountered at all. The tuned circuits will just cover the frequency range needed and it should not be possible to tune them to the wrong harmonic. However, it would be wise to double check this with a grid dip meter. Insert a crystal in the socket and connect a dummy load to the transmitter through an SWR bridge. Simply tune for maximum output—it will be impossible to exceed the maximum plate dissipation of the tubes. Again double check the output of each stage with the dipper. Next plug in a microphone and slowly increase the audio gain control until the neon stays brightly lit as you talk. You will find that you have plenty of audio gain to spare. You are now ready to operate.

Results with this little peanut whistle (2 watts out) have been very gratifying and exciting. I have worked stations who said that when my signal approached the noise level the audio was still readable. While this rig is designed primarily for local rag-chewing and nets it can give you quite a thrill DX'ing. With an eight element beam

and a slight band opening I have worked New Hampshire, Massachusetts, Pennsylvania, Delaware, and Maryland without really trying and with crystal control. I also work the Windblowers in less time than many hundred watt boys. CW is also a thrill. One evening when the band was closed and no one was working anything I worked Chichester, N. H. with 5/1/9 signals. Not very strong but he was only 5/3/9 with his 400 watts. So, here's wishing you good luck and I'll see you on low power on two.



QSL cards from stations worked with the Ratnick transmitter and 829 linear from the Bronx.