

HT-44 MIC AMP AND T2 ADJUSTMENTS

The following discussion concerns the T2 adjustments as set forth in the factory manual. Below section 9-10 will appear in blue print and discussion notes will be in green print.

The HT-44 was designed to deliver 100 to 130 watts pep in SSB, 100 to 130 watts in CW and 25 to 35 watts in AM. It should be noted that the HT-44 is capable of being adjusted to 150 to 190 watts SSB/CW and 50 to 60 watts carrier in AM. However, the sideband generator and AM modulator are not designed to process that level of power.

There are those who use the HT-44 for CW only operation. They claim they adjust it for max power in CW mode and have had no problems with it. I have not analyzed that type of operation. I would assume that if the spurious and harmonic emissions stay with-in specifications it is feasible. This level of operation is well within the limits of the driver and finals. You might note the difference in 130watts and 160watts is 0.9db which is not even an S unit on the receiver end.

The adjustment of T2 will be required numerous times during trouble shooting and alignment processes. Keep in mind this adjustment should also be the *last thing repeated* before replacing the covers and putting the unit back in service.

The HT-44 was designed to operate with a dynamic, 600-ohm microphone. With a dynamic mic the normal setting of the MIC GAIN should fall between 3 and 6. The design of the front end of the mic amp train also took into consideration the use of a crystal microphone. The crystal microphone MIC GAIN setting will fall between 1 and 3. If the MIC GAIN setting fall outside these ranges then some investigation of the mic or the mic amplifier ckt is indicated.

Amplified and "studio" microphones should not be used on the HT-44. The output on these microphones tend to peak in the 4000 to 6000 Hz range. The HT-44 mic audio range is limited to 500 to 2500 Hz. Over driving outside of the spec range of the audio circuits will cause spurious emissions and adjacent frequency interference.

SECTION 9-10

With the transmitter tuned to 14.25 MC (20-meter band) into a 50-ohm resistive dummy load, this transformer (T2) is adjusted to set the overall gain of the transmitter. Proceed as follows:

Connect an audio signal generator to the MIC connector (pin 1); ground pin 2 of the mic connector, set the OPERATION switch to USB or LSB and the MIC GAIN control at maximum (10). Set the audio signal generator to 1000CPS and adjust the generator output level to approximately 3 millivolts RMS (8.4vpp). Detune the core of the balanced modulator output transformer (T2) so that the 3 millivolts of audio will produce 70 (98 watts) to 80 (128 watts) volts RF at the transmitter output (70 to 80 on the panel meter). The difference between 98 watts and 128 watts is 1.6db.

The standard output level for the dynamic, 600-ohm microphone is 5mvrms (.014vpp). So, with T2 set for 80vrms (128 watts) at 3 millivolts input, the likelihood is, that higher amplitude voice inflections of normal speech will produce envelope peak power in excess of 140watts.