

the SPDT auxiliary contacts to pin 8 of the octal male plug. Connect the normally open contact to the hot terminal of the telegraph key. Do not connect anything to the third auxiliary contact. Connect the ground side of the telegraph key to pin one of the octal plug. Note that it is necessary to have a key with a shorting lever on it or, it will be necessary to add a switch across the key.

G. The microphone plugs into the MIC jack on the panel as usual. If the microphone has a push-to-talk button that disconnects or shorts the microphone, the button will have to be locked in the TALK position or the contacts should be disconnected. The key contacts must not be connected to the microphone plug.

H. Insert the octal plug into the socket at the rear of the transmitter.

I. Follow steps I, J and K given above for phone operation.

To operate with this arrangement, all that is necessary to change from transmit to receive is to step on the foot switch or operate the toggle switch. If the transmission is to be on CW, the shorting lever on the key must be open. It must be closed for phone operation.

ALIGNMENT

The TX-62 has a number of broadband circuits to eliminate the need for several panel adjustments usually found on this type of equipment. An additional advantage of the broadband circuits is the reduction of spurious outputs. This is because there are two tuned circuits used where there is usually only one, giving better attenuation of the unwanted harmonics in the multiplier stages.

These circuits are not likely to require any adjustment unless they have been tampered with or, if a special frequency range is needed.

The normal alignment gives satisfactory drive to the final over the whole 2 meter band and from 50 to 52 Mc. on the 6 meter band. There are two reasons for tuning for 2 instead of 4 Mc. on 6 meters. First, there is very little activity above 52 Mc., even in good band openings. Second, it permits slightly better attenuation of spurious signals. Data is given later for 50 to 54 Mc. alignment.

EQUIPMENT REQUIRED:

1. A variable frequency oscillator with accurate frequency calibrations having a frequency spread of 7.5 Mc. to 9.5 Mc. with at least 7 volts output. A similar instrument having a frequency spread of 22.5 Mc. to 28.5 Mc. with at least 1.0 volt output will also do.
2. A vacuum tube voltmeter.
3. A tuning wrench with 0.100" hex on both ends.
4. A 50 ohm dummy load.
5. A telegraph key with a shorting lever and phone plug.

ALIGNMENT PROCEDURE: (SEE FIGURES 5 AND 6)

1. Disconnect the blue wire from R42 - the 15,000 ohm wire wound resistor.
2. Connect the VFO to the crystal socket of the transmitter. The grounded side of the socket is nearest to the MIC jack.
3. Connect the dummy load to the antenna jack of the transmitter.
4. Plug in the key.
5. Preset the controls on the transmitter as follows: POWER switch to OFF, PHONE-CW switch to CW, VFO-CRYSTAL switch to VFO, METER selector switch to GRID, MIC GAIN control completely counter clockwise to "Spot" position. DRIVE control near maximum. BAND switch to 6 meters. PLATE and LOAD adjust-

ments will be given later on.

6. Turn the transmitter on and allow it to warm up for a full minute.

7. With the VTVM on the 50 or 100 volt DC scale, connect it to the transmitter — the common or ground lead to the chassis (for all tests) and the hot probe to the L3 - 100K junction.

8. Key the transmitter and tune the cores in L2 and L3 for maximum reading with the VFO set at 8.33 Mc. (25.0 Mc.). The first setting (8.33 Mc.) is for a 7.5 Mc. to 9.5 Mc. VFO. The figure in the parenthesis is for a 22.5 Mc. to 28.5 Mc. VFO. If the maximum voltage is less than 60 volts, check the VFO to see that it is delivering sufficient output. Also, check V1 and the voltages on its socket with the voltage chart. If the voltage reading is satisfactory, continue with the alignment.

9. Readjust the cores in L2 and L3 until the VTVM reading is over 35 volts in the VFO range from 8.0 Mc. (24.0 Mc.) to 8.67 Mc. (26.0 Mc.). Typical readings are 80 volts at 8.0 Mc. (24.0 Mc.), 50 volts at 8.33 Mc. (25.0 Mc.) and 90 volts at 8.67 Mc. (26.0 Mc.). There is normally a dip in the middle and a sharp drop above 8.67 Mc. (26.0 Mc.).

10. Shift the VTVM probe to the L5 - R13 junction.

11. Turn the MIC GAIN control away from "Spot".

12. At 8.33 Mc. (25.0 Mc.) tune L4 and L11 for maximum reading on the TRANSMITTER meter — but do not allow this reading to exceed 5 ma. for more than a few seconds.

13. Turn the BAND switch to 2 meters.

14. Tune L5 for maximum VTVM reading at 8.0 Mc. (24.0 Mc.).

15. Turn the BAND switch to 6 meters.

16. Adjust L4 and L11 to get as flat or even a reading as possible on the transmitter meter over the 8.33 Mc. (25.0 Mc.) to 8.67 Mc. (26.0 Mc.) range. Typical grid current is 6 to 9 ma. with the drive control at maximum. Do not permit the grid current to exceed 5 ma. for more than a few seconds.

17. Turn the BAND switch to 2 meters.

18. Disconnect the VTVM.

19. Adjust the core in L5 and adjust the spacing of the turns on L8 to obtain the maximum transmitter meter reading at approximately mid band. Then adjust these two until the meter reads about the same at the two ends of the band. If only a portion of the band is used, use the limits of the part you use instead of the ends of the band. The ends of the band are 8.0 Mc. (24.0 Mc.) and 8.22 Mc. (24.67 Mc.). The center is 8.11 Mc. (24.33 Mc.).

20. Turn the power off and reconnect the blue wire to R42. Turn the power on and allow at least a full minute for warm-up.

21. Check out the transmitter on the dummy load, using the normal operating instructions.

22. Repeat Step 19 only.

ALIGNMENT FOR 50-54 MC. OPERATION

The TX-62 is normally aligned for 50-52 Mc. operation. If service is desired over the entire 50 to 54 Mc. band, the following alignment procedure should be used. The coupling between L2 and L3 must be increased to permit the larger bandwidth. Solder a piece of plastic covered hookup wire — about 1-1/2" long — to each end of C8. Be sure that the free ends of the two wires are covered with their insulation. Twist these two wires together in one turn — not too tight — to form an easily adjusted small capacitor. Follow the first part of the alignment instructions above for L2 and L3, but work for the wider bandwidth desired. Try several adjustments on the twisted wire capacitor, readjusting after each