PRELIMINARY TESTS

If a voltmeter (VTVM or a 20,000 ohms/volt VOM) is available, use the + DC volt scales, set the receiver controls as follows, and make the following measurements: Refer to Figure 21. If any of the measurements do not correspond (within ± 20%), recheck the wiring and soldering, and be sure the components are not shorting together or to the chassis.

OFF-STBY-RCV-CAL	RCV position
RF GAIN	Full clockwise
A-B-BAND-C-D	Position A
PEAK-OFF-NULL	OFF position
AF GAIN	Full counterclockwise
BFO-MVC-AVC-ANL	MVC position

Stand the receiver on its back.

☑ Between ground and hole 18 of the IF printed circuit board, the meter should read 183 v.

☑ Between ground and hole 26 of the IF printed circuit board, 180 v.

☑ Between ground and hole 13 on the RF printed circuit board, 180 v.

☑ Between ground and hole 37 of the IF printed circuit board, 2.5 v.

☑ Between ground and hole A on the RF printed circuit board, 1.0 v. Now, turning the RF GAIN control slowly counterclockwise, the meter should read from 1.0 v through 15 v.

☐ Connect an antenna to the terminal marked "A". If you use a coaxial antenna lead in, connect it to J-1. Connect a ground wire to the terminal marked "G".

Set the controls as follows:

RF GAIN	Full clockwise
BFO-MVC-AVC-ANL	AVC position
BANDSPREAD TUNING (Check that the hairline on the high-frequency end of the BAND-SPREAD dial coincides with the hairline on the crystal.)	Full clockwise
AF GAIN	Half clockwise

☐ Use the MAIN TUNING control to tune in a standard broadcast station. You should be able to hear strong local stations. Now tune through the range with the bandswitch in the B, then the C and D positions. If noise and some type of signal are heard on each band the receiver is ready for alignment. However, if any band sounds "dead" DO NOT ATTEMPT TO ALIGN THE RECEIVER. Read the service hints and correct any fault before proceeding with the alignment.

ALIGNMENT PROCEDURE

Two methods of receiver alignment are outlined in this section: Alignment using signal generator and meter; and alignment "on the air". The most accurate alignment can be achieved by using a signal generator and meter. If it is not possible to obtain the use of these instruments, the receiver can be aligned by the methods outlined in the section "Alignment On The Air." To obtain the full sensitivity of the receiver, accurate alignment is necessary.

CAUTION: DO NOT ATTEMPT TO ADJUST COILS L-1 THROUGH L-12 IF ANY BAND OF THE RECEIVER SOUNDS "DEAD". THE COILS ARE PRE-ALIGNED AND ONLY SLIGHT ADJUSTMENT IS NEEDED FOR ALIGNMENT.

ALIGNMENT USING SIGNAL GENERATOR AND METER

The meter used can be the built-in S-Meter, if you have one, or any VTVM or a volt-ohmmeter with at least 5000Ω per volt AC sensitivity.

If you are using the S-Meter, connect your speaker or plug in your headphones. If you use a VTVM or VOM, remove the headphone plug because it opens the circuit to the speaker terminals. Connect the VTVM or VOM across the speaker terminals. (Ground lead goes to terminal G.)

Turn the receiver to RCV and listen for random noise to be sure that the receiver is ready for alignment. Disconnect the antenna.

IF ALIGNMENT

☑ Short out the oscillator section of the MAIN TUNING capacitor by connecting a wire between chassis and terminal 3 of the MAIN TUNING capacitor. See Figure 20.

Set controls as follows:

BFO-MVC-AVC-ANL	AVC (if you use the S-Meter) MVC (if you use an external meter)
AF GAIN	Fully clockwise (Reset later when necessary)
RF GAIN	Fully clockwise
PEAK-OFF-NULL	OFF
A-B-BAND-C-D	A
MAIN TUNING capacitor	Plates fully meshed
BANDSPREAD capacitor	Plates fully meshed

☐ Raise the tube shield of V-2, the 6BH8 oscillator tube, about 1" above the tube. Be careful not to short the tube shield against the chassis. Set the signal generator at 455 kc modulated output, using the maximum output available. Connect the generator output cable to the tube shield of V-2.