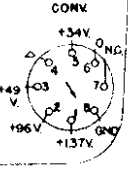
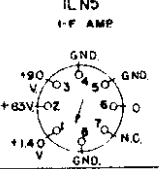
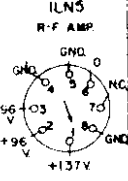
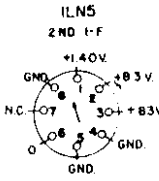
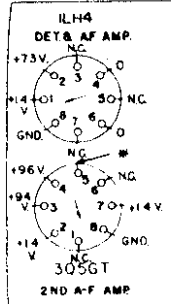
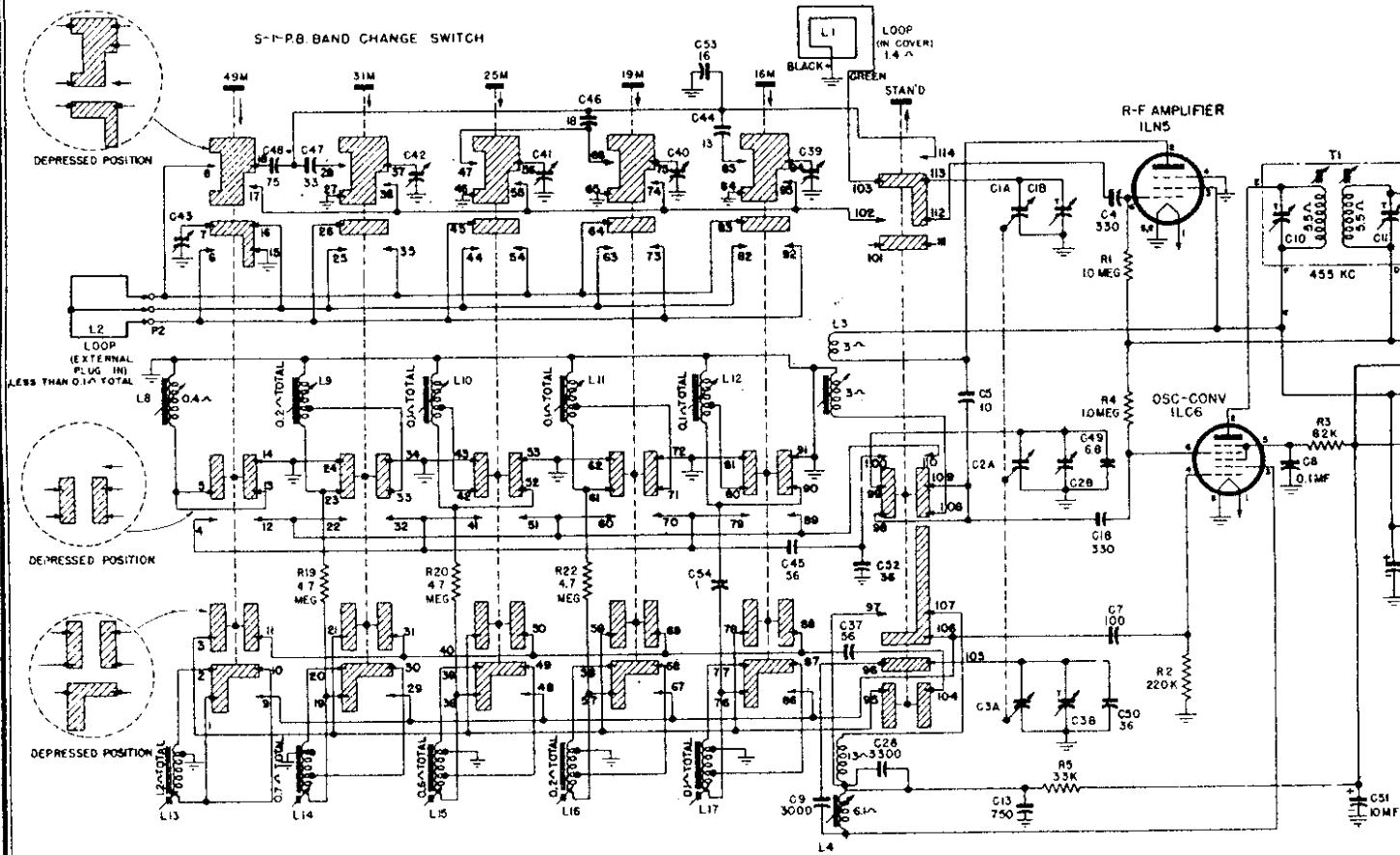


16-78

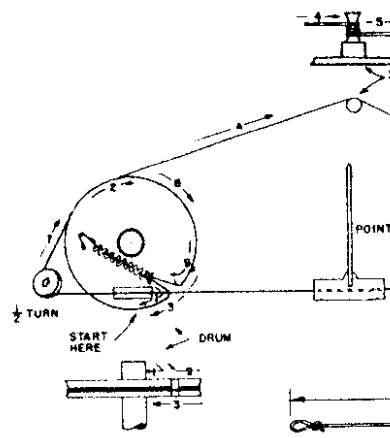


UNDERSIDE OF CHASSIS

CONDITIONS OF TEST
ALL MEASUREMENTS D-C
MEASUREMENTS MADE TO GROUND
MEASUREMENTS MADE WITH 20,000 OHM/VOLT METER
LINE VOLTAGE 117V- BATTERY FULLY CHARGED
VOL CONTROL MAX CLOCKWISE
TONE CONTROL TREBLE POSITION
RECEIVER OPERATING ON BROADCAST BAND

NC - NOT CONNECTED TO TUBE
= .45V IF MEASURED WITH VTVM
CENTER POST ON ALL LOctal TUBES IS GROUNDED
Δ READING AFFECTED BY INSTRUMENT

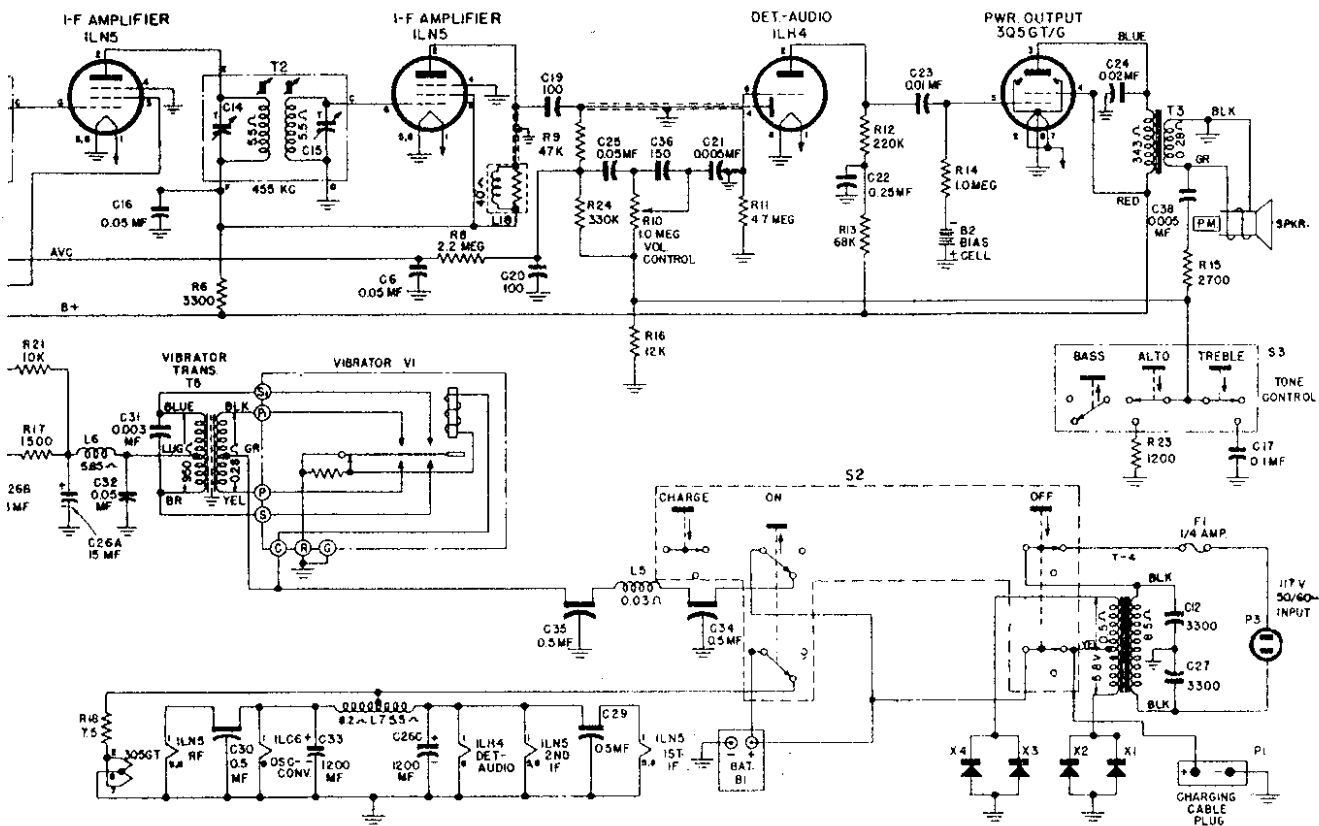
Socket Voltage Diagram



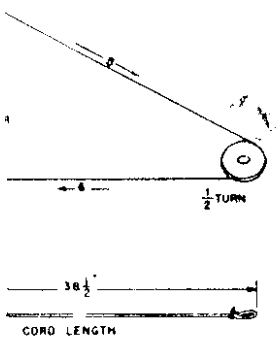
Dial Stringing

ELECTRIC CO.

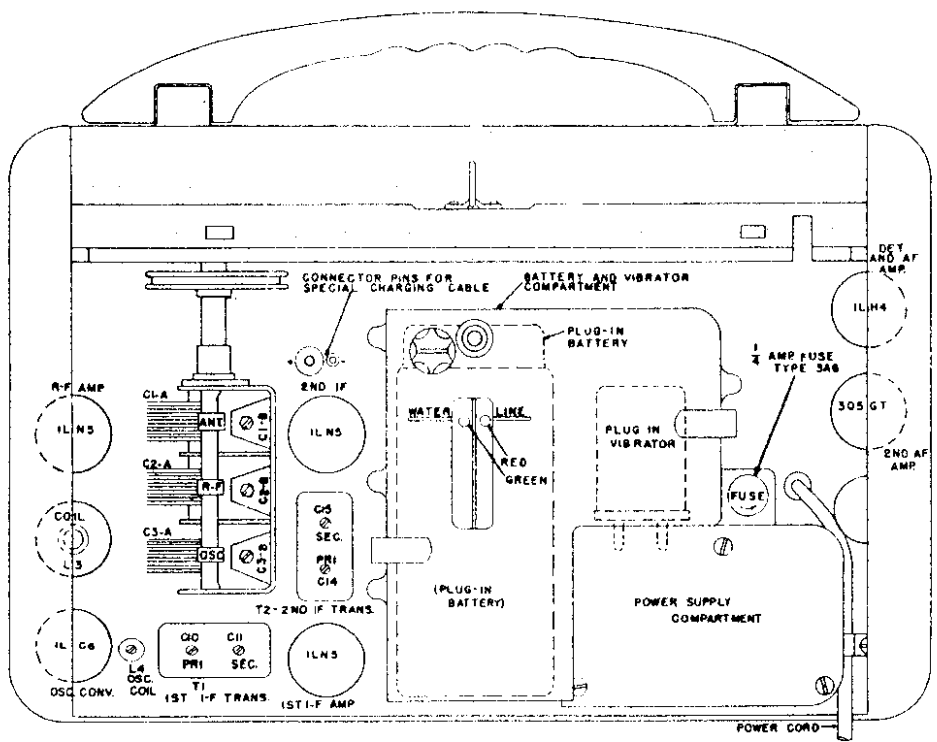
MODEL 260



TURN ON TUNING SHAFT



Diagram



Tube and Trimmer Location

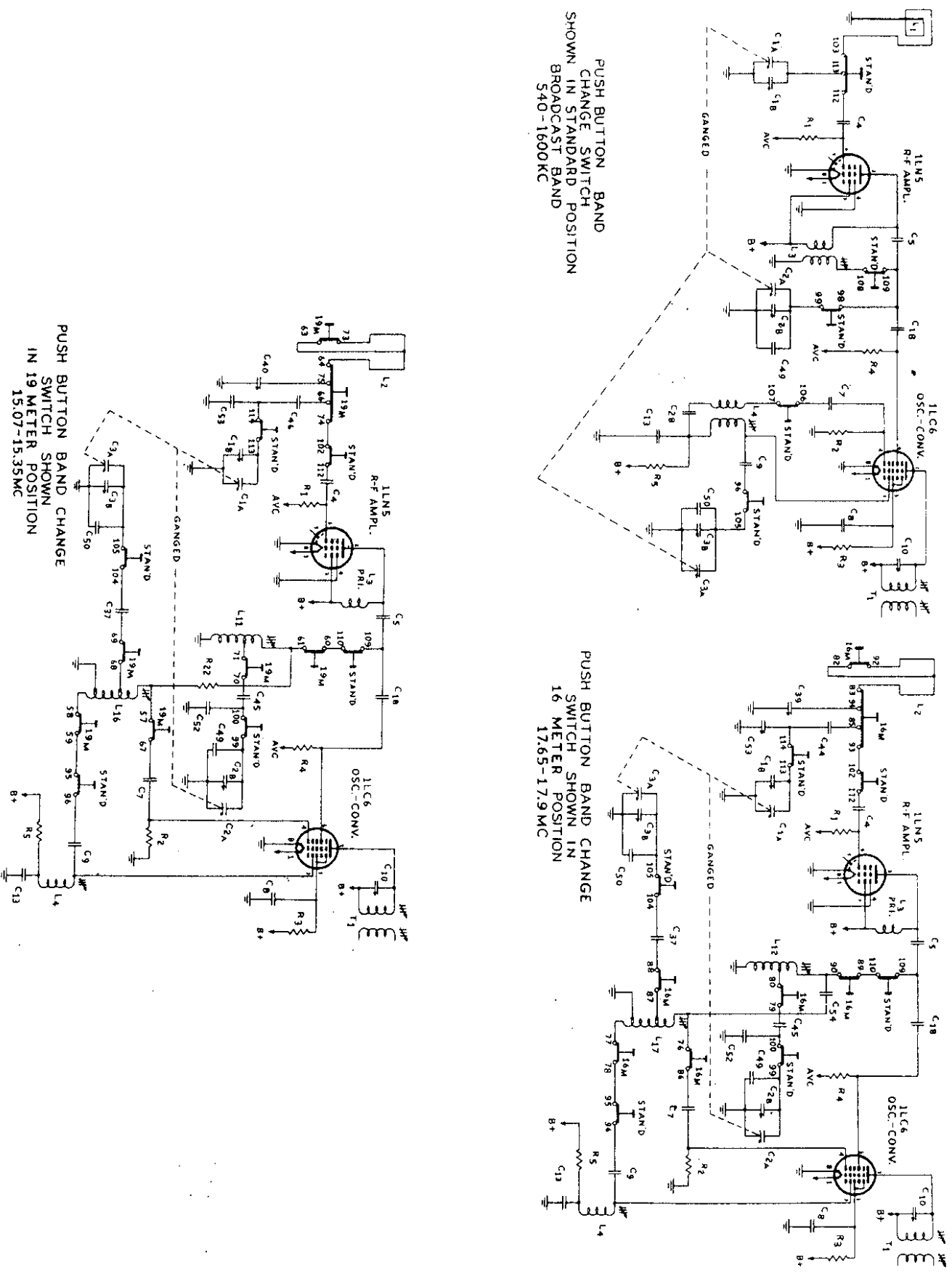
GENERAL ELECTRIC CO.

MODEL 260

PUSH BUTTON BAND CHANGE SWITCH SHOWN IN STANDARD POSITION
BROADCAST BAND
540-1600KC

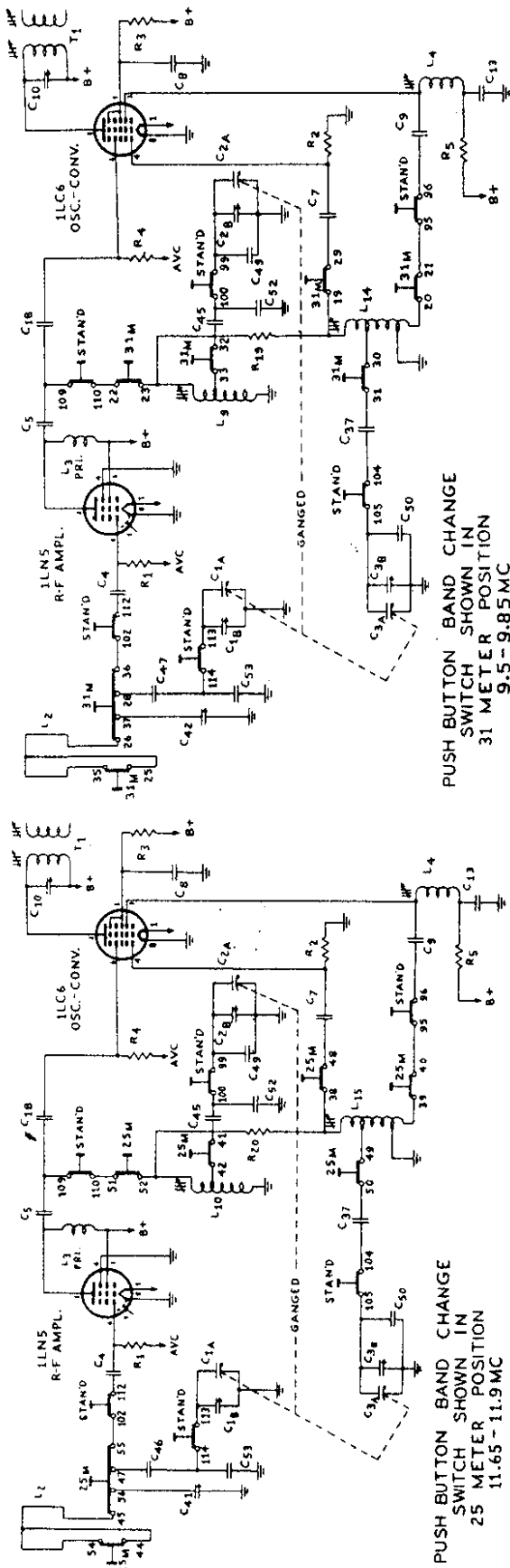
PUSH BUTTON BAND CHANGE SWITCH SHOWN IN 16 METER POSITION
17.65-17.9 MC

PUSH BUTTON BAND CHANGE SWITCH SHOWN IN 19 METER POSITION
15.07-15.35 MC



MODEL 260

GENERAL ELECTRIC CO.



ELECTRICAL CIRCUIT ALIGNMENT

1. EQUIPMENT REQUIRED.

1. Signal Generator with Audio Tone Modulation.
2. A-c output meter, 1 or 1½ volts full scale, 1000 ohms/volt.
3. Insulated screwdriver.

2. ALIGNMENT PROCEDURE.

1. General.—The alignment procedure is given in table form for convenience. Reference is made to Figures 3, 5, and 6 for the trimmer locations. The low side of the signal generator should be connected to the chassis of the receiver for i-f alignment; the high side should be connected as indicated in the Alignment Chart. A meter or some other suitable indicating device must be connected to the output of the receiver. Two methods for connecting an output meter are given in later paragraphs.

When aligning the receiver, the Volume Control on the receiver should be turned to its maximum position and the TREBLE push button should be depressed. The output signal of the signal generator should be kept as low as possible at all times; the reading of a meter connected across the voice coil leads of the receiver should be kept below ½ volt by changing the signal generator output. If the signal level is too high, the AVC becomes effective and alignment errors may result.

The following paragraphs give greater details regarding the connection of the output meter and the signal generator to the receiver during alignment.

2. Connecting the Output Meter.—In aligning the receiver, some means for indicating differences in the output voltage will be required. Either of the following methods is satisfactory. The first requires more disassembly of the receiver case than the second, but the second requires additional test equipment.

Method 1.—A satisfactory method for indicating differences in output is to connect a rectifier-type a-c meter of 1 or 1½ volts full scale deflection across the speaker voice coil terminals. To gain access to the speaker, remove the front panel from the radio as previously described. Connect a lead to the green lead that connects to the ungrounded side of the speaker voice coil. Thread this lead through into the rear compartment. The front panel is reinstalled in place so that the stray capacities in the set will be the same as when the set is operating normally. Connect the meter between this lead and ground. A convenient ground connection may be obtained by removing the push-button band change switch escutcheon, and connecting a clip lead to the exposed chassis.

STAGE GAINS AND VOLTAGE CHECKS

Stage gain measurements may be made with a vacuum tube voltmeter to check circuit performance and to locate stages which are not operating properly. The gain values listed may have a tolerance of 20%.

1. R-F and I-F Stage Gains.

- R-F amplifier grid (6) to converter grid (6) 8.0 at 1000 kc
- R-F amplifier grid (6) to converter grid (6) 6.0 at 6100 and 9600 kc
- R-F amplifier grid (6) to converter grid (6) 5.0 at 11.8, 15.2 and 17.8 mc
- Converter grid (6) to 1st IF grid (6) 26 at 455 kc
- Converter grid (6) to 1st IF grid (6) 15 at 1000 kc
- Converter grid (6) to 1st IF grid (6) 15 at 6100 kc, 9600 kc, 11.8 mc, 15.2 mc, and 17.8 mc
- 1st IF grid (6) to 2nd IF grid (6) 69 at 455 kc
- 2nd IF grid (6) to diode plates 3.9 at 455 kc

2. Audio Gain.

The power output across the speaker voice coil should be approximately 50 milliwatts with a 400 cps audio signal of 0.07 volts applied across the volume control, R10 (volume control maximum—TREBLE push button depressed).

3. Oscillator Grid Bias.

The d-c voltage developed across the oscillator grid leak (R2) averages 6.5 volts at 1000 kc.

Method 2.—The following is an alternate method which eliminates the necessity of removing the front panel of the set, but which requires additional test equipment. Make an indicating device by connecting a 4- to 6-inch diameter magnetic speaker or the high-impedance leads from the output transformer of a good p-m dynamic speaker to the terminals of a rectifier-type microammeter with a full scale deflection of 100 microamperes or less. For convenience, the meter and speaker may be mounted in a small box in such a way that the meter will be visible when the speaker is placed in front of the speaker on the receiver being aligned.

To use this device, place its speaker in front of and about an inch away from the speaker of the receiver being aligned. The meter will then deflect in proportion to the intensity of the sound produced by the speaker, and therefore may be used as an output meter. The meter must not be moved during alignment.

3. Connecting the Signal Generator.—For aligning the i-f transformers, the output of the signal generator should be coupled through a 0.05 mf. capacitor to the grid (pin 6) of the 1LC6 oscillator-converter tube. This may be accomplished easily by connecting the capacitor to the stator of C2-A, the middle section of the tuning gang, as this stator is connected to the converter grid through a blocking condenser. The low side of the signal generator output should be connected to the chassis ground to complete the circuit.

For aligning the oscillator, r-f, and loop circuits, the r-f signal should be inductively coupled by means of a three- or four-turn, 6-inch diameter, loop of bell wire across the signal generator output terminals. The loop should be located about one foot from the radio cover, with cover open for broadcast alignment, and about one foot away from the external loop when making the shortwave band alignment. To prevent possible errors in peak-readings, the position of the loop with respect to the receiver should not be changed during any one set of adjustments.

4. Alignment Suggestions.—The dial pointer should fall under the extreme left end mark on the dial scale when the gang condenser is fully closed. If necessary, move the dial pointer along the dial drive cord until such registration is obtained.

To gain access to the shortwave oscillator tuning slugs, L13 through L17, remove the snap cover from the bottom of the receiver. The short-wave antenna and converter trimmers are accessible when the push-button band-change switch escutcheon (right-hand side) is removed. When aligning the trimmers on the gang condenser (for broadcast band alignment), close the cabinet back cover and make the adjustments through the snap button openings in the back cover.

The oscillator operates on the high frequency side of the signal on all bands. With this method of operation, and with the dial set at an alignment point, the image response should be heard when the signal generator is tuned to a frequency 910 kc. higher than the alignment frequency.

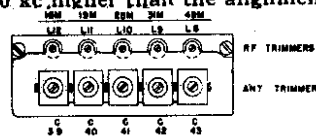


Fig. 5. RF and Antenna Trimmer Location

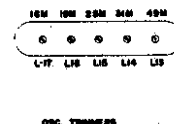


Fig. 6. Oscillator Trimmer Location

GENERAL ELECTRIC CO.

ALIGNMENT CHART
 Depress Treble Push Button
 Turn Volume Control to Maximum

Step	Sig. Gen. Setting	Connect Signal Generator to	Depress Push Button	Dial Scale Setting	Adjust
1	455 kc	Stator of C-2A in series with .05 mf	Standard	Below 550 kc	2nd i-f (T2) trimmers for max.
2	455 kc	Stator of C-2A in series with .05 mf	Standard	Below 550 kc	1st i-f (T1) trimmers for max.
3	1500 kc	Inductively coupled	Standard	1500 kc	**C-3B, C-2B, and C-1B for max in sequence given
4	580 kc	Inductively coupled	Standard	580 kc	* L4 and L3 for max.
5	R e p e a t S t e p 3				
6	6.1 mc	Inductively coupled	49 M	6.1 mc	L13 for max.
7	6.1 mc	Inductively coupled	49 M	6.1 mc	* L8 and C43 for max.
8	9.6 mc	Inductively coupled	31 M	9.6 mc	L14 for max.
9	9.6 mc	Inductively coupled	31 M	9.6 mc	* L9 and C42 for max.
10	11.8 mc	Inductively coupled	25 M	11.8 mc	L15 for max.
11	11.8 mc	Inductively coupled	25 M	11.8 mc	* L10 and C41 for max.
12	15.22 mc	Inductively coupled	19 M	15.22 mc	L16 for max.
13	15.22 mc	Inductively coupled	19 M	15.22 mc	* L11 and C40 for max.
14	17.8 mc	Inductively coupled	16 M	17.8 mc	L17 for max.
15	17.8 mc	Inductively coupled	16 M	17.8 mc	* L12 and C39 for max.

* Alternately peak circuits to obtain peak while rocking gang condenser.

** Remove snap buttons on back cover to permit these adjustments and close back cover while aligning.

NOTE.—The oscillator operates on the high frequency side of the signal on all bands.

BATTERY INFORMATION

The receiver uses a 2-volt Willard Radio Battery No. 25-2 or equivalent. It has a 25 ampere-hour capacity and should be cared for in the same manner as any other storage battery.

Charge Indicator

The degree of charge of the battery can be determined by raising the back cover of the radio and referring to the charge ball indicators visible through the hole in the metal battery case.

If the battery is fully charged, two indicator balls will be visible at the surface of the liquid in the battery. When the battery discharges, these ball indicators will sink and disappear in the following order:

1. Green indicator sinks when approximately 20 per cent of battery capacity has been discharged.
2. The red ball sinks when battery is 80 per cent discharged.

On charge, the balls rise or float in the reverse order and the charge may be stopped when both balls appear in the opening.

To Charge Battery

The battery is charged by merely plugging the receiver power cord in the rated a-c power outlet and depressing the CHARGE push button. Frequent check should be made of the charge indicator and when both indicator balls are visible, the battery is adequately charged. Charging the battery after all indicator balls are visible will not harm the battery except that it will evaporate the water faster. A completely discharged battery will be restored usually within 20 to 30 hours.

When operating the receiver from the a-c house current, the battery floats or is being charged at a slow rate. Thus, if you wish to operate the receiver at the same time that you are charging even a fully discharged battery, plug the power cord in the a-c receptacle and depress the ON push button. Prolonged operation in this manner usually will cause the battery potential to stabilize at some voltage determined by the line voltage and the characteristics of the charging circuit components. The degree of charge obtainable with this method of operation likewise is dependent on the line voltage and the characteristics of the charging circuit components.

Battery Operating Instructions

1. Add distilled or tap water in the filler cap at sufficiently frequent intervals to keep liquid level at indicator mark as viewed through opening in battery case. DO NOT OVER-FILL as this impairs the nonspill feature.
2. Whenever possible, it is best not to allow the battery to become discharged to the extent that both indicators disappear. However, if both indicators have sunk, the battery should be recharged immediately or within 24 hours.
3. A battery will continually discharge at a slow rate even when not in use. For this reason, monthly checks should be made of the charge condition, and the battery should be placed on charge when necessary. This will prevent damage to the battery such as freezing during cold weather.

BATTERY INSTALLATION

The following instructions should be carefully followed in installing a battery, or replacing an old one:

1. Remove new battery from packing carton.
2. If needed, add water to bring liquid level to indicator mark on battery container. Do not overfill.
3. Raise back cover on radio, remove battery case cover. The latter is removed by unclipping the two catches. Pry off cover.
4. Unplug old battery if present, and replace with new battery.
5. Place battery on charge, if necessary, as described in a previous paragraph, until both indicators are showing in the opening in the case cover.