

Further Instructions on Data Sheet 70

NORMAL VOLTAGE READINGS

The voltages listed in the accompanying table are measured from the respective socket terminals to the chassis base, with the set in operation but no signal tuned in. For further details reference should be made to the general layout diagram.

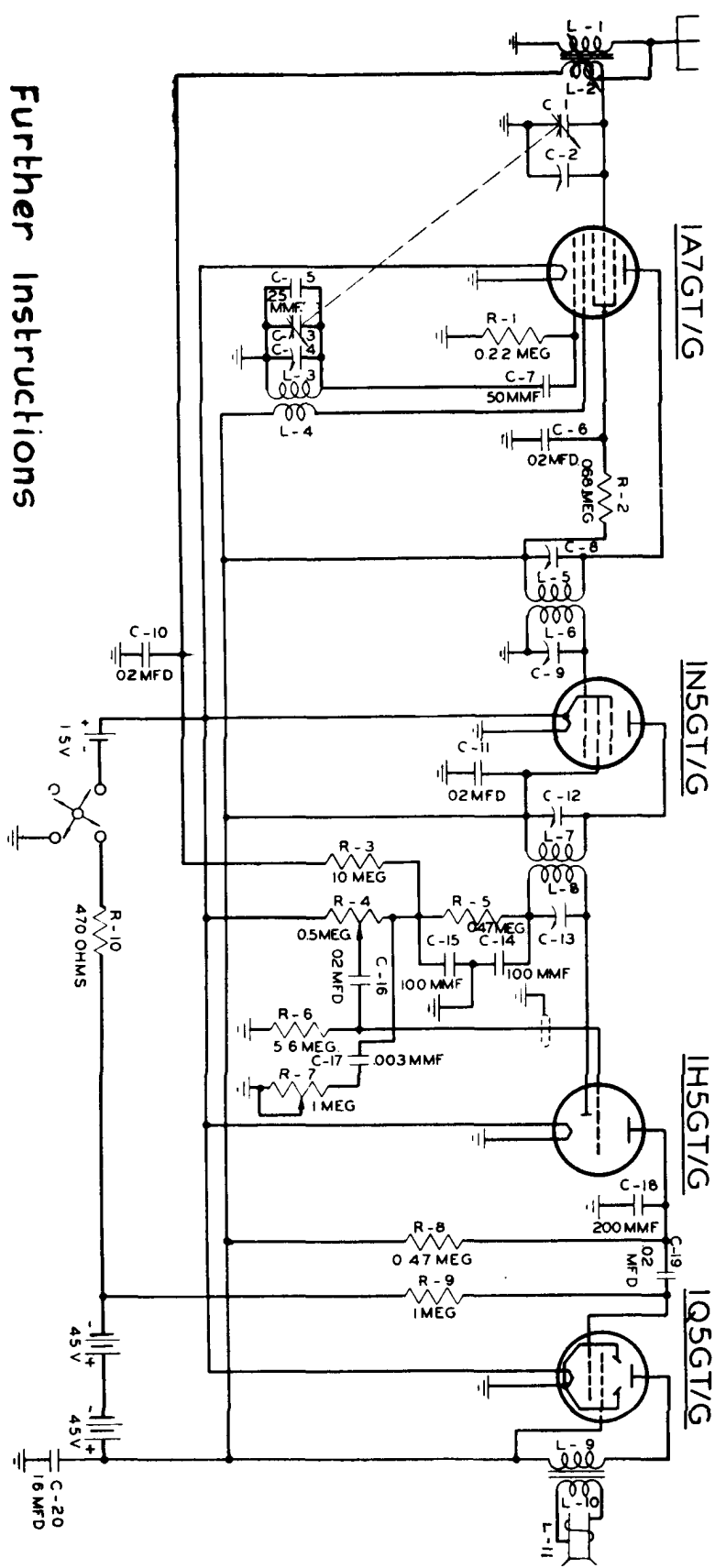
Voltages are given for a battery voltage of 90 volts, and allowance should be made for differences when the voltage is higher or lower. A meter having a resistance of at least 1000 ohms per volt should be used for measuring the D.C. voltages. Voltage values shown are those obtained on the lowest possible scale of a meter having the following ranges: 0-2.5, 0-10, 0-100.

VOLTAGE TABLE

Tube	1	2	3	4	5	6	7	8
1A7GT	0	1.45	85	37	-2.1	85	0	-
1N5GT	0	1.45	85	85	-	0	-	-
1H6GT	0	1.45	57	-	-	-	-	-
1Q5GT	-5.2	1.45	83	85	-5.	0	0	85

1946-47 BATTERY MODEL 541

I.F. = 460KC.

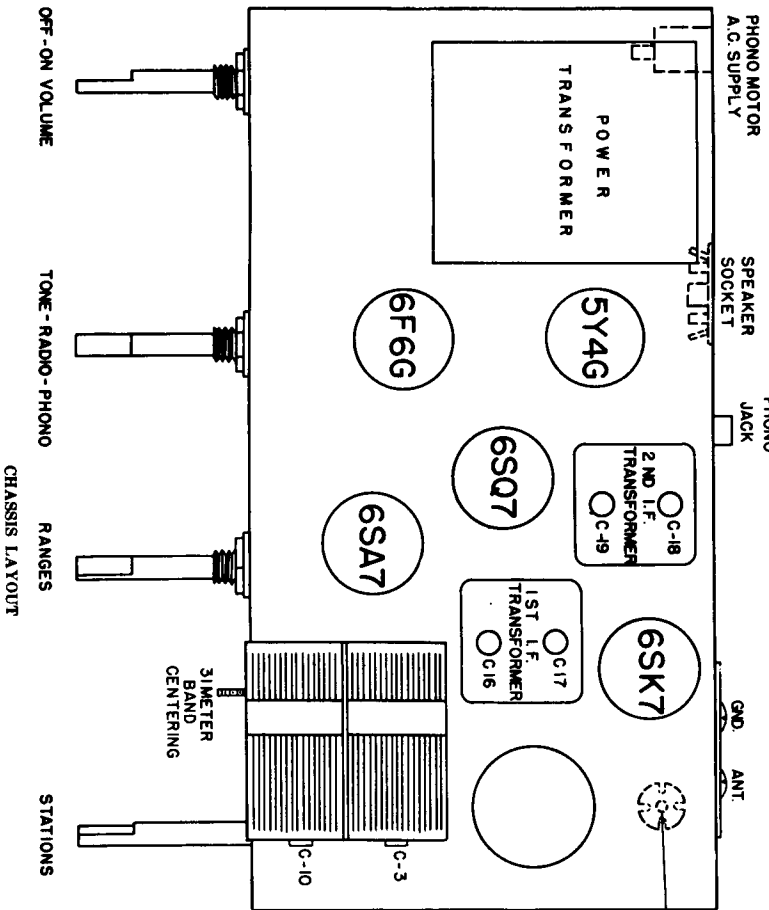


ALIGNMENT PROCEDURE

1. **Dial Adjustment**—
With the plates of the gang tuning capacitor fully engaged set the dial pointer in a horizontal position directly parallel with the dividing line between the dark and light sections of the dial, pointing towards the 550 Kcs. designation.
2. **Intermediate Frequency Adjustments**—
2.1 Tune the set to the extreme low frequency position (variable capacitor plates all the way in).
2.2 Connect the ground terminal of the signal generator to the ground terminal of the receiver.
2.3 Introduce a modulated 460 Kc. signal, using a .1 mfd. capacitor in series with the lead from the signal generator to the "grid" terminal of the IATG7 tube.
2.4 Adjust the I.F. aligning capacitors for maximum output in the following order:
A Secondary of 2nd I.F. Transformer C13
B Primary of 2nd I.F. Transformer C12
C Secondary of 1st I.F. Transformer C9
D Primary of 1st I.F. Transformer C8
2.5 Repeat A, B, C, D until maximum performance is obtained.
3. **Radio Frequency Adjustments**—
3.1 Replace the .1 mfd. capacitor in series with the output lead of the signal generator with a 200 mfd. capacitor and connect it to the receiver antenna terminal.
3.2 Set the signal generator's frequency and the receiver's tuning dial to 1400 Kc.
3.3 Adjust the oscillator aligning capacitor C4 and the antenna aligning capacitor C2 for maximum signal and correct calibration.
3.4 Set both the signal generator's frequency and the receiver's tuning dial to 600 Kc. Adjust the antenna coil iron core by means of the "600 Kc. Ant. Adjust" screw for maximum output, while "locking" the gang.
3.5 Repeat 3.3 and 3.4 until no further gain can be obtained and the calibration is correct.

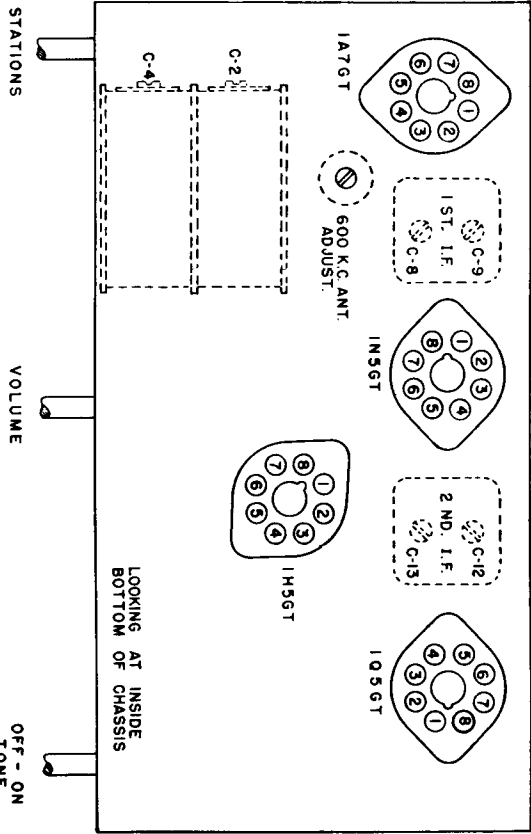
See Data Sheet 69

See Data Sheet 71



1946-47 — I.F. 460 Kc

**ALIGNMENT INSTRUCTIONS
BATTERY MODEL 541
A-C MODEL 552**

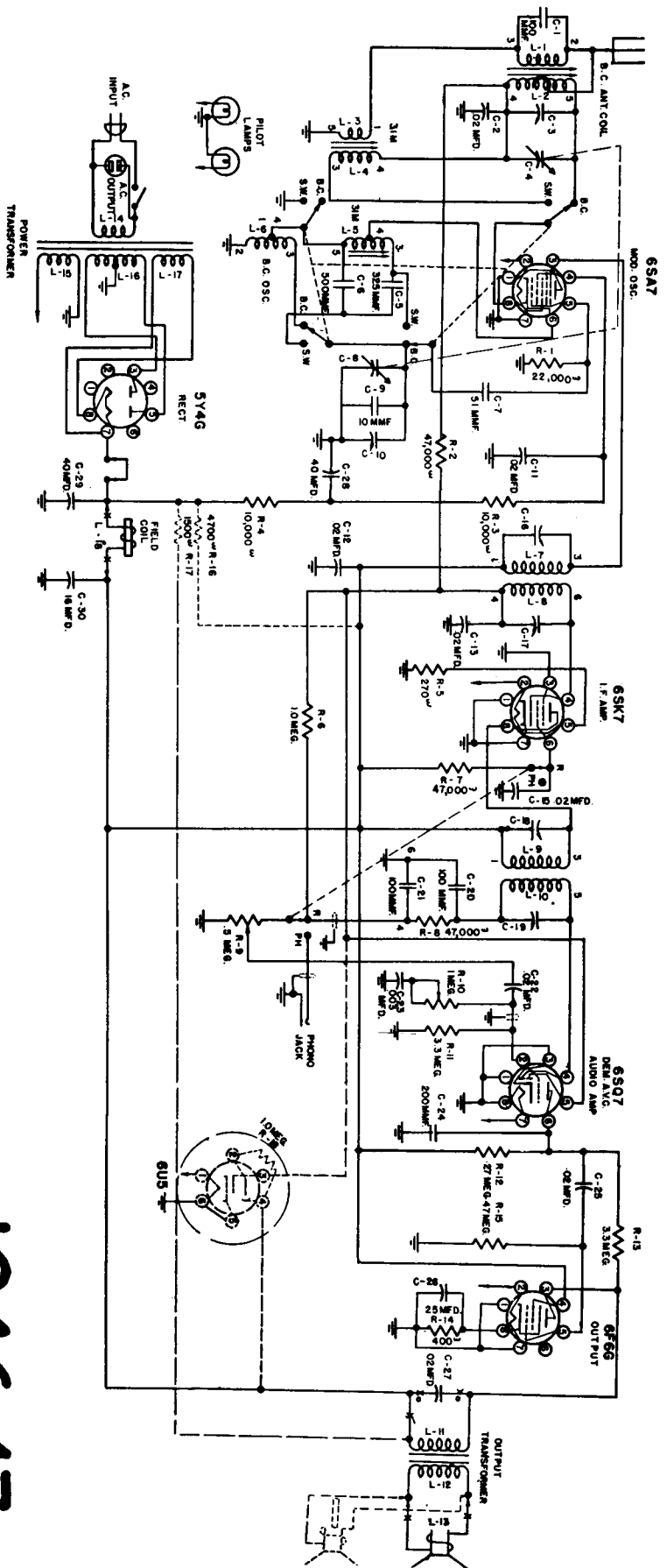


31METER ANT. TRIMMER ALIGNING INFORMATION

Never re-align unless absolutely necessary. Use a good modulated signal generator (test oscillator with variable output voltage) and a sensitive output meter across the voice coil of the speaker. Always align using the smallest possible input from the signal generator, as a strong signal makes adjustments inaccurate. Always turn the receiver volume control full on.

ALIGNING PROCEDURE (Follow this order exactly).

1. **Dial Pointer Adjustment.**
With the plates of the gang condenser fully engaged, check to be sure that the dial pointer is in a vertical position. If it is not, adjust the dial pointer to the low frequency end of the dial scale. It appears as a small opening in the gold border, in line with the center gold dividing line. Adjust if necessary.
2. **Intermediate Frequency Adjustments.**
2.1—Set the range switch to "BC" broadcast position.
2.2—Set pointer to the extreme low frequency end of the dial.
2.3—Connect the ground terminal of the signal generator to the chassis ground terminal.
2.4—Introduce a modulated 460 kilocycle signal to the grid of the 6SA7 modulator tube (28 terminal or C3) using a .1 mfd. capacitor in series with the output lead of the signal generator.
2.5 Adjust the I.F. 460 Kc. trimmers for maximum output in the following order:
A—Secondary of 2nd I. F. Transformer C13
B—Primary of 2nd I. F. Transformer C12
C—Secondary of 1st I. F. Transformer C17
D—Primary of 1st I. F. Transformer C16
3. **Radio Frequency Adjustments.**
Broadcast Range.
3.1—Set the range switch to Broadcast ("BC").
3.2—Set the signal generator frequency and the receiver tuning dial to 1500 Kc.
3.3—Connect a 200. mfd. capacitor in series with the antenna lead from the signal generator to the "Ant." terminal on the set, replacing the .1 mfd. capacitor on the set.
3.4—Adjust the "BC" band oscillator trimmer C10 for maximum signal and correct calibration.
3.5—Adjust antenna trimmer C4 for maximum output. Lock the gang to obtain maximum peak.
3.6—Check calibration and sensitivity at 600 Kc. Adjust the gang to 600 Kc. Ant. adjust for maximum sensitivity.
3.7—Repeat 3.4 and 3.5 until further adjustment at 600 Kc. makes no improvement in performance.
4. **31 Meter Spread Band Range.**
4.1—Set the Range Switch to Short Wave (SW).
4.2—Set the Signal Generator frequency and the receiver tuning dial to 3,250 megacycles.
4.3—Connect a 400 ohm carbon resistor in series with the antenna lead from the Signal Generator to the "Ant." terminal on the set, replacing the 200. mfd. capacitor.
4.4—Adjust the "31 meter Band Centering" screw for maximum signal and correct calibration.
4.5—Adjust the "31 meter antenna trimmer" for maximum output. "Rock" the gang to obtain maximum peak.
4.6—Check sensitivity at 3,250 megacycles and 9,750 megacycles.



Further Instruction
on Data Sheet 70

1. F. = 460 KC.

NORMAL VOLTAGE READINGS

Take all readings with the chassis operating and tuned to 1000 Kc.—no signal.
Use a line voltage of 117 volts or make allowance for any variations.

Use a good high resistance voltmeter having a resistance of at least 1000 ohms per volt.
Read from indicated terminals to chassis base.

See the Location Chart for position of sockets. AC voltages are indicated by italics.

NORMAL VOLTAGE READINGS—MODEL 552

Tube	Circuit	1	2	3	4	5	6	7	8
6SA7	Modulator & Oscillator			250	110	-12		0	-6
6SK7	I. F. Amplifier					-1.8	105	6	250
6SQ7	Demodulator, AVC, Audio			.5		-6	90	6	
6F6G	Output						240	250	6
5Y4G	Rectifier						310		305

TERMINALS OF SOCKETS

**1946-47
MODEL
552**

A-C

NOTE -
"TUNING EYE" SHOWN IN DOTTED LINES USED ON RECEIVERS—
662-L
662-APT
P.M. SPEAKER SHOWN IN DOTTED LINES USED ON—
662-APT
TWO RESISTORS SHOWN IN DOTTED LINES USED ON—
662-APT
CONNECTIONS MARKED "X" WILL NOT BE MADE ON 662-APT
IF MARKED "X" NOT MADE ON 662-L