

the hallicrafters co.

SERVICE BULLETIN FOR MODEL SX-43

GENERAL

- Tubes Ten plus rectifier
- Speaker Output. 500/5000 Ohms.
- Headset Output. Low impedance.
- Antenna Input For 72 to 600-ohm line or single wire lead-in.
- Phono Input High impedance.
- External Power Connector. Std. octal socket.
- Tuning Range. Band 1. 540 kc - 1700 kc. AM.
2. 1.7 mc - 5 mc. AM.
3. 5 mc - 16 mc. AM.
3A. 14 mc - 14.4 mc. AM.
4. 15.5 mc - 44 mc. AM.
5. 44 mc - 55 mc. AM/FM
6. 86 mc - 109 mc. FM
- Intermediate Frequency. . 455 kc/10.7 mc.
- Power Supply. 105-125 V. 50/60 cycles AC.
- Power Consumption 90 Watts.



92X721

CARRIER LEVEL METER ADJUSTMENT

1. Connect a jumper between the two antenna terminals and ground.
2. Set front panel controls as follows:
 - SENSITIVITY - Maximum.
 - RECEPTION - AM/AVC.
 - SELECTIVITY - NORMAL/SHARP.
 - BAND SELECTOR - 4.
 - VOLUME - Maximum. (No signal should be heard.)
3. Set "S" METER ADJ. (See Fig. 3.) on rear chassis apron for zero on the CARRIER LEVEL meter.

POSITIONING CONTROL KNOBS

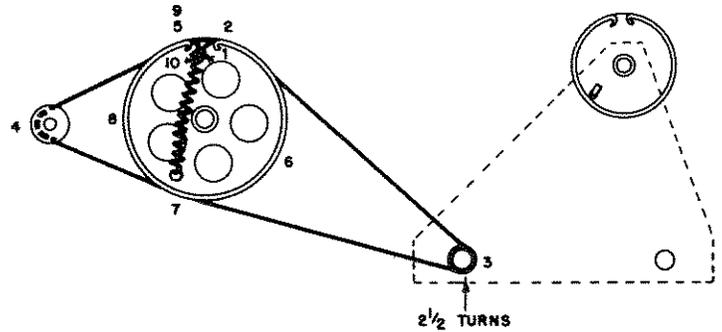
- BAND SELECTOR - As required by markings.
- RECEPTION - As required by markings.
- SELECTIVITY - As required by markings.
- SENSITIVITY - Zero at full counter clockwise rotation.
- VOLUME - Zero at full counter clockwise rotation.
- CW PITCH - See alignment chart.
- CRYSTAL PHASING - Zero with plates half meshed.

RESTRINGING DIAL CORD

Two separate dial drive mechanisms are used: one for the general coverage dial and one for the band spread dial. The stringing sequence for each is shown in Figs. 1. and 2. by a series of numbers and letters. Use 30 lb. test dial cord. Approximately 51 inches of cord will be required for the bandspread dial drive and about 26 inches for the general coverage dial drive. Note that the cording procedure for the bandspread dial starts with a knotted loop at the driving pulley and is threaded to the driven-pulley via two routes, one numbered 1-9 (approximately 24 inches long) and the other lettered A to I (approximately 27 inches long). In production the short, numbered route, string is threaded through first on the bandspread drive.

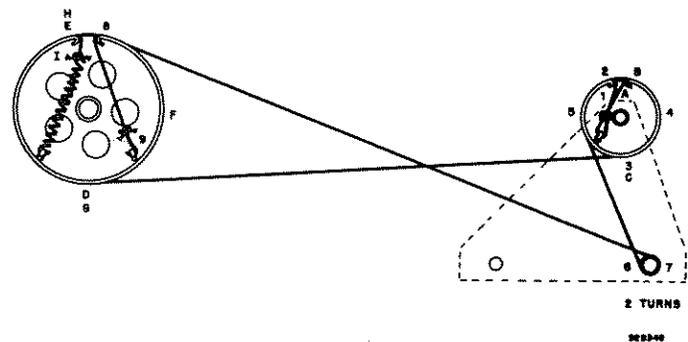
REPLACING LAMPS

The two dial lamps and meter lamp are accessible through the hinged cabinet cover. Remove two screws holding the metal light shield to expose the dial lamps. Replace these with 6-8 V. 250 MA. GE. #44 (Blue bead) or equivalent. The carrier level meter lamp is made accessible by removing the four screws holding the protective cover located directly behind the meter. Replace this lamp with a 6-8 V. 150 MA. GE. #47 (Brown bead) or equivalent. Do not use a 250 MA. lamp in the meter housing as the excessive heat will discolor the meter scale.



92B348

Fig. 1. Dial cable stringing, general coverage dial



92B349

Fig. 2. Dial cable stringing, band spread dial.

ALIGNMENT PROCEDURE

It will be necessary to remove the receiver chassis from the cabinet to make alignment adjustments on the i-f stages. The r-f stages receive final alignment through the holes in the bottom of the cabinet to compensate for the close proximity of the cabinet to the r-f coils. The chassis is held in the cabinet by seven screws along the edge of the flange of the front panel and by three screws through the bottom of the cabinet along the rear edge.

The standard RMA dummy antenna specified in the alignment chart consists of a 200 mmf condenser in

series with a 20 uh r-f choke which is shunted by a 400 mmf condenser in series with a 400 ohm carbon resistor.

The following control settings are to be set before alignment:

TONE Switch	- HIGH
STANDBY-RECEIVE	- RECEIVE
NOISE LIMITER	- OFF
VOLUME	- Max. gain
SENSITIVITY	- Max. sensitivity
Band Spread Dial	- High frequency stop

ALIGNMENT CHART

Step	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Receiver Control Settings	Receiver Dial Setting	Adjust	Remarks
1	None	Connect to center section (rear stator plates) of low capacity gang.	10.7 mc (No modulation)	BAND SEL.-5 REC. sw.-FM	General coverage dial at mid-scale	S1, S2, S3, S4, S5, S6, S7	Adjust for max. D.C. voltage as measured between pin #7 of the 6AL5 and ground with a V.T. voltmeter.
2	None	See step 1.	10.7 mc (No modulation)	See Step 1	See step 1.	S8	Adjust for zero D.C. voltage as measured between junction of R-50 and C-83 and ground with a V.T. voltmeter.
3	None	See step 1.	455 kc **	BAND SEL.-4 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	See step 1.	S9, S10, S12, S13, S14	Adjust for max. audio output.
4	None	See step 1.	455 kc **	BAND SEL.-4 REC. sw.-AM-MVC SEL. sw.-CRYSTAL-BROAD	See step 1.	S11	Adjust for max. audio output.
5	None	See step 1.	455 kc **	BAND SEL.-4 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	See step 1.	A	Adjust for max. audio output.
6	None	See step 1.	455 kc ** (No modulation)	BAND SEL.-4 REC. sw.-CW SEL. sw.-NORMAL-SHARP	See step 1.	CW PITCH control.	Remove CW PITCH control knob and set shaft for zero beat. Replace knob with zero at index line.
7	Repeat steps 1 & 2 for possible detuning during adjustments in steps 3, 4, and 5.						
8E	None	See step 1.	10.7 mc	BAND SEL.-5 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	See step 1.	S15*	Tune slug S15 to high freq. side of 10.7 mc (11.155 mc). Tune for max. audio output.
9	Std. RMA dummy	To terminals A1 and A2 with jumper between A2 and GND.	1500 kc 600 kc	BAND SEL.-1 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	1500 kc	B*, C, D	Adjust for max. audio output.
10	Std. RMA dummy	See step 9.	4.5 mc 2 mc	BAND SEL.-2 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	4.5 mc 2 mc	F*, G, H S16*	Adjust for max. audio output.
11	330-ohm carbon res.	See step 9.	14 mc *** 6 mc ***	BAND SEL.-3 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	14 mc 6 mc	I*, J, K S17*, S18 S19	Adjust for max. audio output.
12	330-ohm carbon res.	See step 9.	14 mc	BAND SEL.-3A REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	M.T. dial at 20M. band line B.S. dial at 14 mc	L*	Adjust for calibration. Check band spread calibration and reset trimmer L if necessary. Increase trimmer cap. to decrease bandspread etc.

* Note - Calibration adjustment.

** Note - Set generator frequency to exact crystal freq. as follows: Turn on BFO and set CW PITCH for approx. 1000 cycles with signal generator set at approx. 455 kc. Set SELECTIVITY control at CRYSTAL-SHARP and tune signal generator for weakest of two response frequencies on either side of zero beat; adjust CRYSTAL PHASING control for complete null; retune signal generator for maximum output on opposite side of zero beat for the exact IF alignment frequency.

*** Note - Rock signal generator when making adjustments.

Note - Step 8. adjusts the 11.155 mc oscillator for the dual conversion channel required for AM reception on band 5. After aligning band 5 in step 15, tune to approx. 44.6 mc and pick up fourth harmonic of the oscillator. If the oscillator harmonic falls at approx. 51.3 mcs, the oscillator is oscillating at the low frequency side or image frequency and must be readjusted.

ALIGNMENT CHART —Continued

Step	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Receiver Control Settings	Receiver Dial Setting	Adjust	Remarks
13	330-ohm carbon res.	See step 9.	14.2 mc ***	BAND SEL.—3A REC. sw.—AM-MVC SEL. sw.—NORMAL—SHARP	M.T. dial at 20 M. band index line. B.S. dial at 14.2 mc.	M, N	Adjust for max. audio output.
14	330-ohm carbon res.	See step 9	36 mc ***	BAND SEL.—4 REC. sw.—AM-MVC SEL. sw.—NORMAL—SHARP	36 mc	O*, P, Q	Adjust for max. audio output. Osc. falls on low freq. side of signal.
			18 mc ***		18 mc	S20*, S21, S22	
15	330-ohm carbon res.	See step 9	54 mc ***	BAND SEL.—5 REC. sw.—AM-MVC SEL. sw.—NORMAL—SHARP	54 mc	R*, S, T	Adjust for max. audio output
			46 mc ***		46 mc	S23*, S24, S25	
16	330-ohm carbon res.	See step 9	106 mc ***	BAND SEL.—6 REC. sw.—AM-MVC SEL. sw.—NORMAL—SHARP	106 mc	U*, V, W,	See step 1.
			89 mc ***		89 mc	S26*, S27, S28	

For footnotes — see previous page.

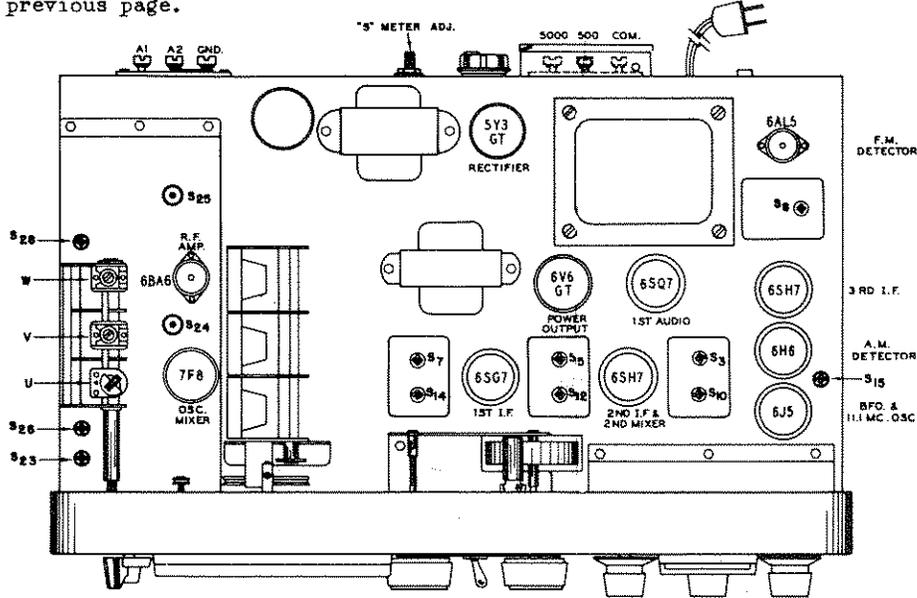


Fig. 3. Alignment adjustments, top view.

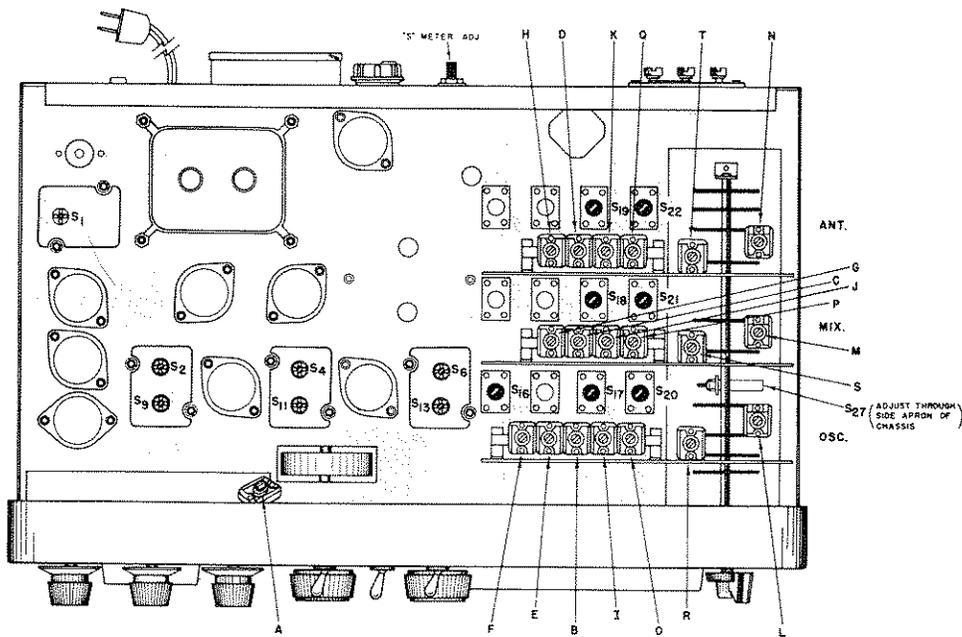


Fig. 4. Alignment adjustments, bottom view.

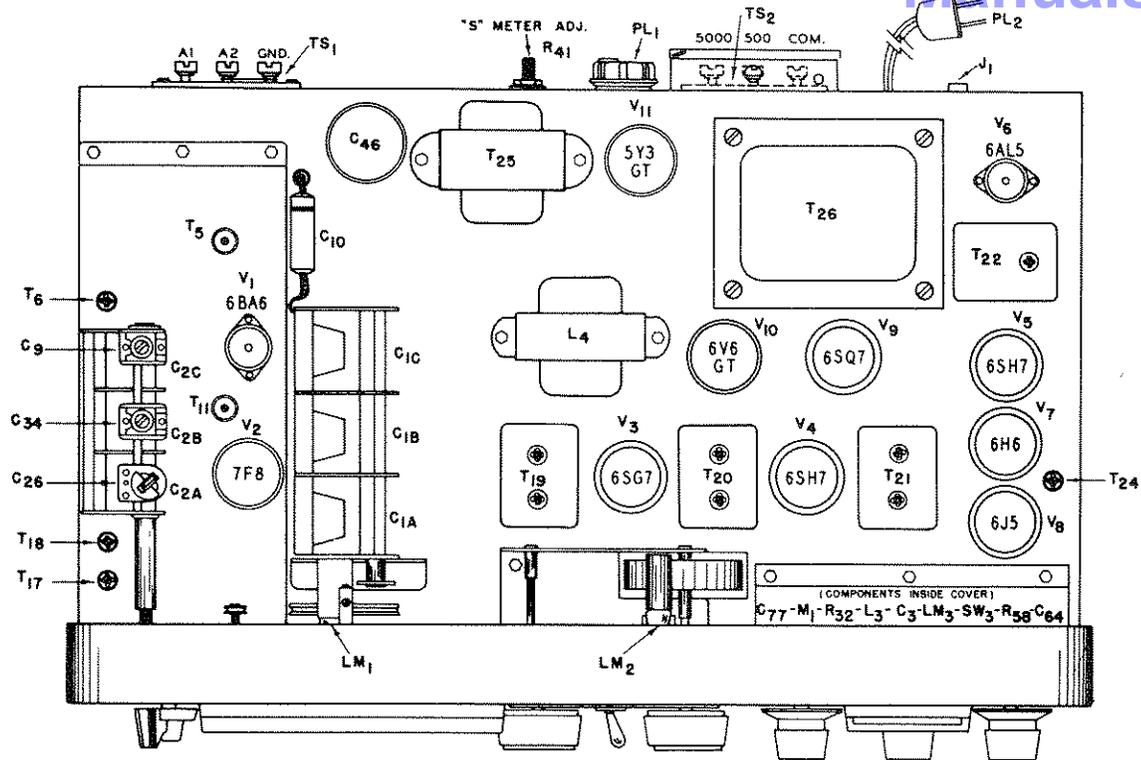


Fig. 5. Component location, top view.

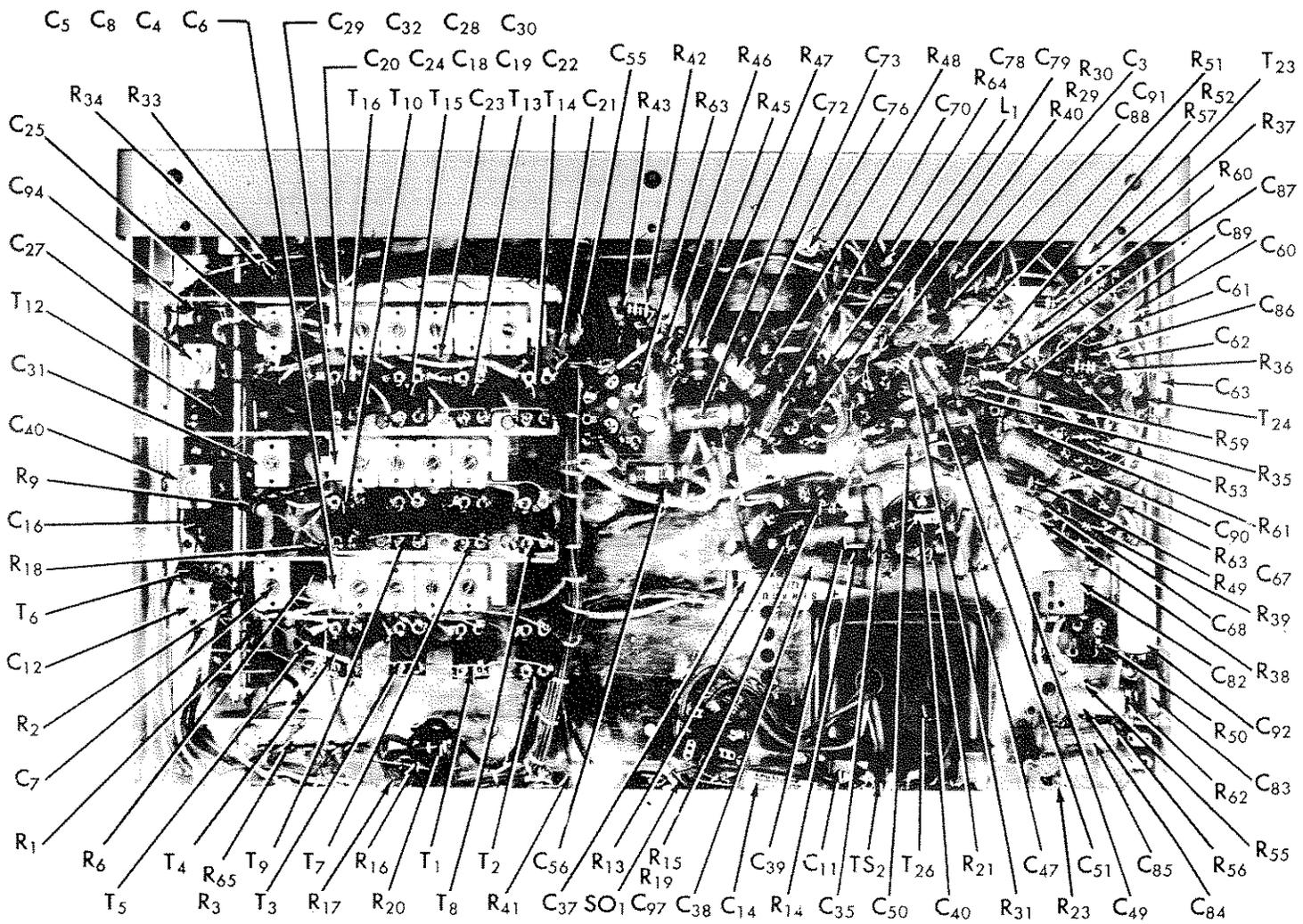


Fig. 6. Component location, bottom view.

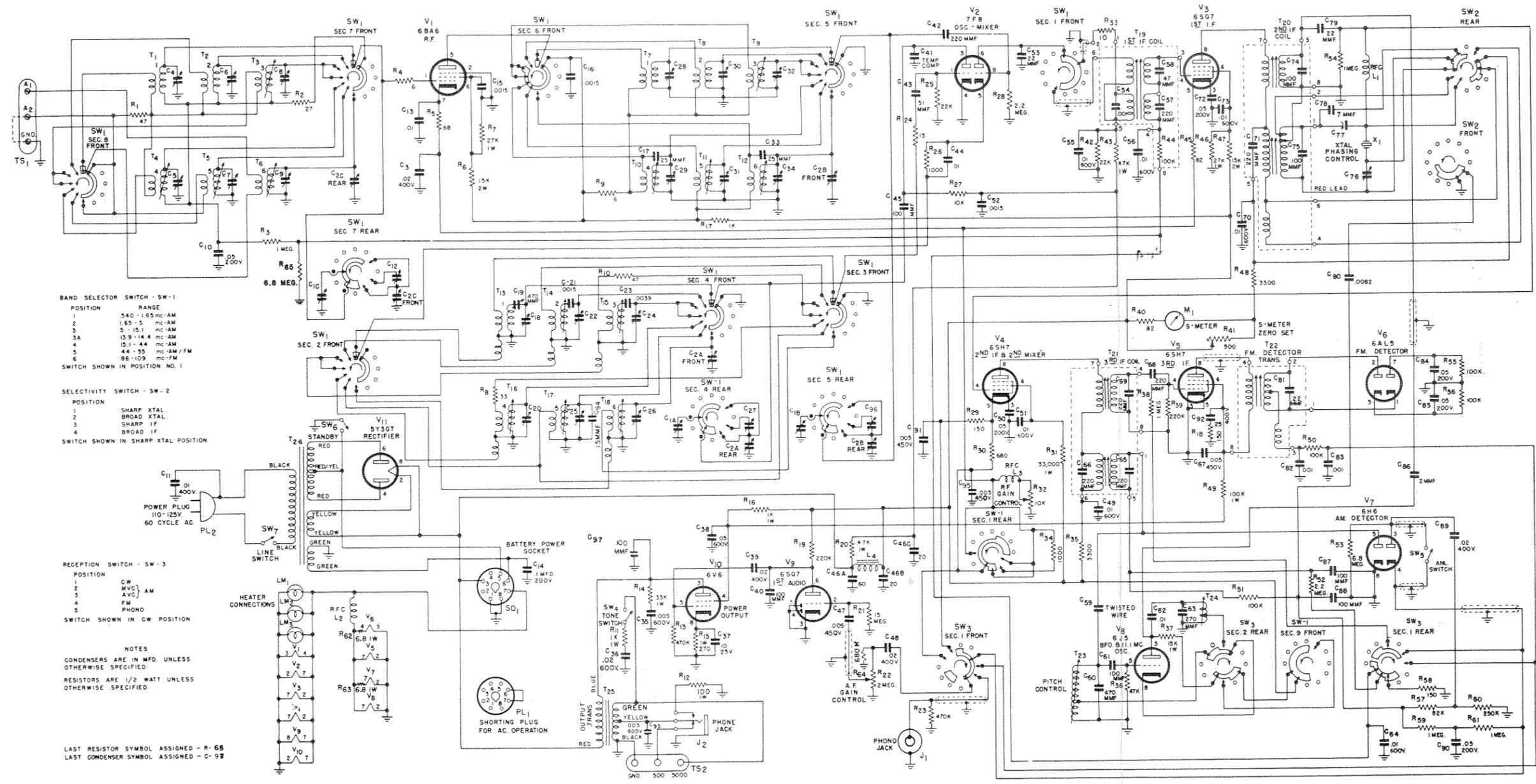


Fig. 8. Schematic diagram.