

# 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

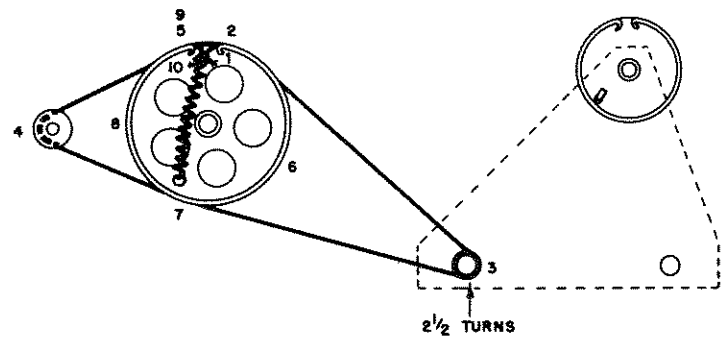
- BAND SELECTOR - As required by markings.
- RECEPTION - As required by markings.
- SELECTIVITY - As required by markings.
- SENSITIVITY - Zero at full counter clockwise rotation.
- VOLUME - Zero at full counter clockwise rotation.
- CW PITCH - See alignment chart.
- CRYSTAL PHASING - Zero with plates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

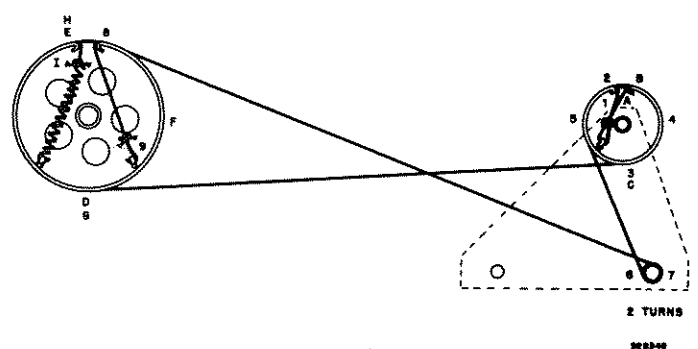
### REPLACING LAMPS

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 600 kc	B*, C, D E*	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.

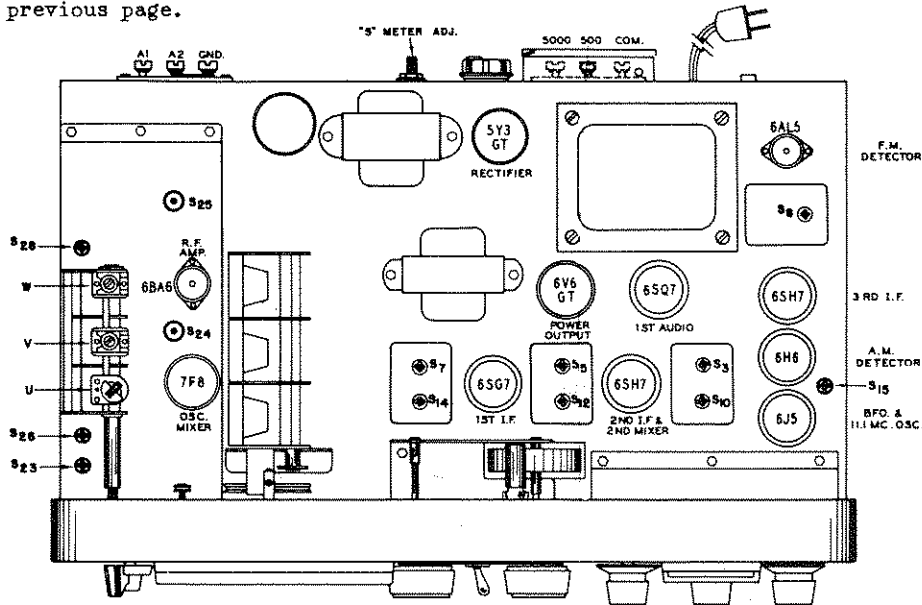


Fig. 3. Alignment adjustments, top view.

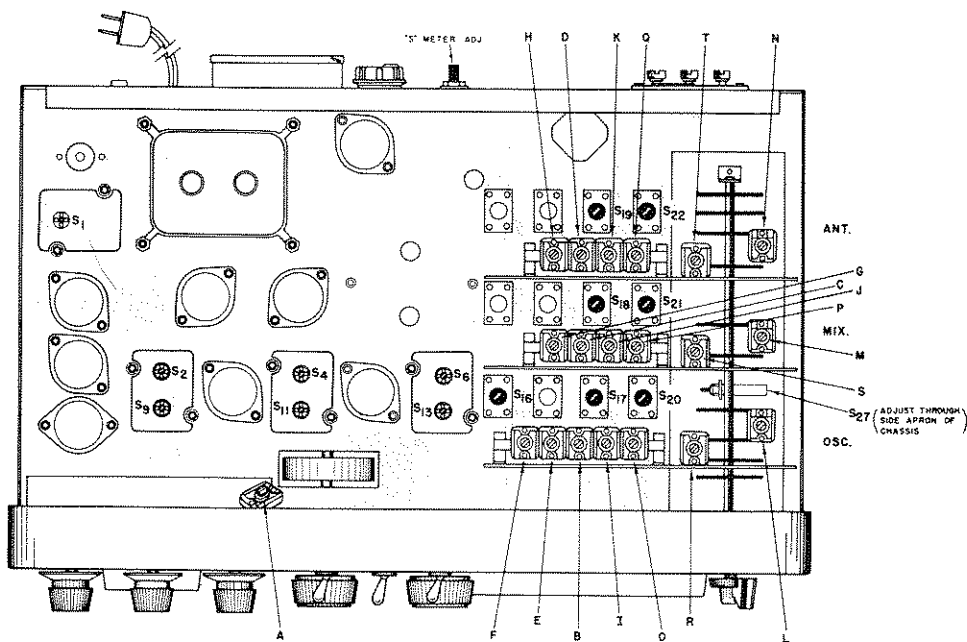


Fig. 4. Alignment adjustments, bottom view.

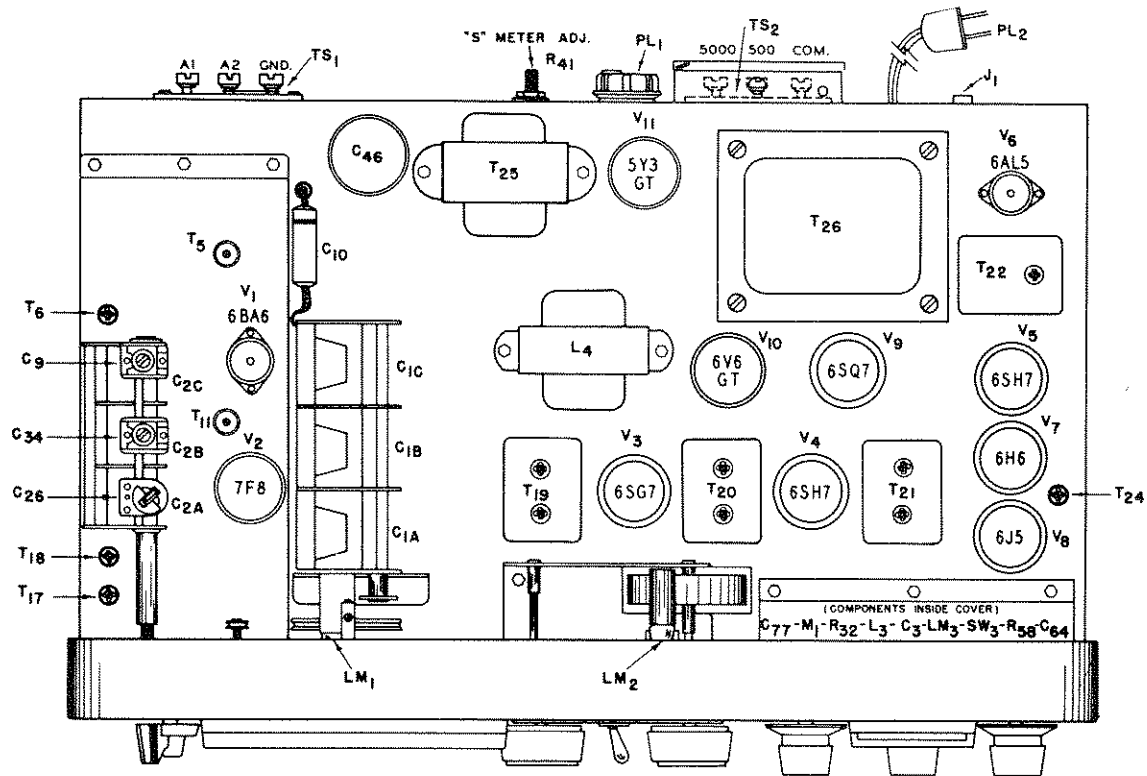


Fig. 5. Component location, top view.

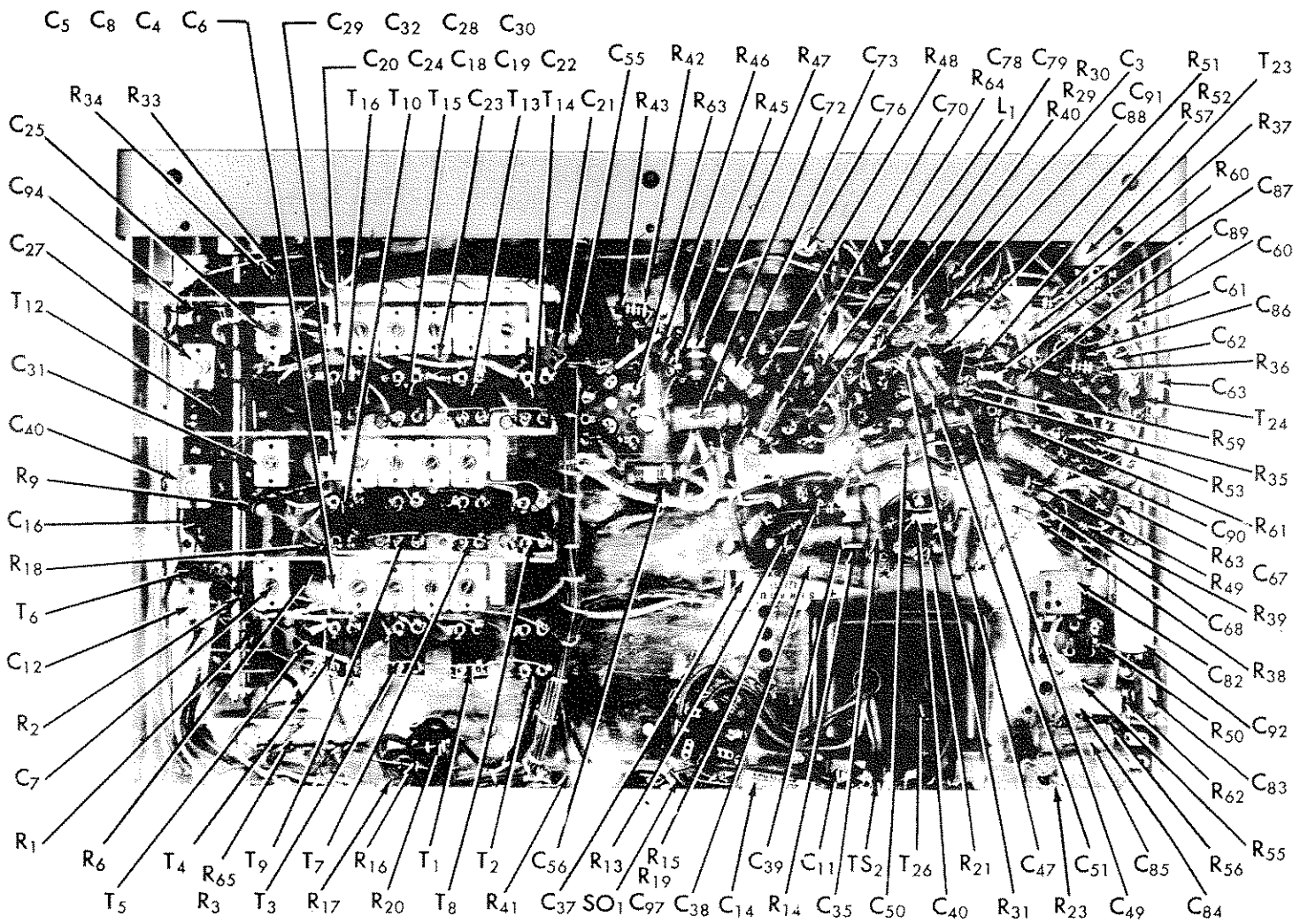


Fig. 6. Component location, bottom view.

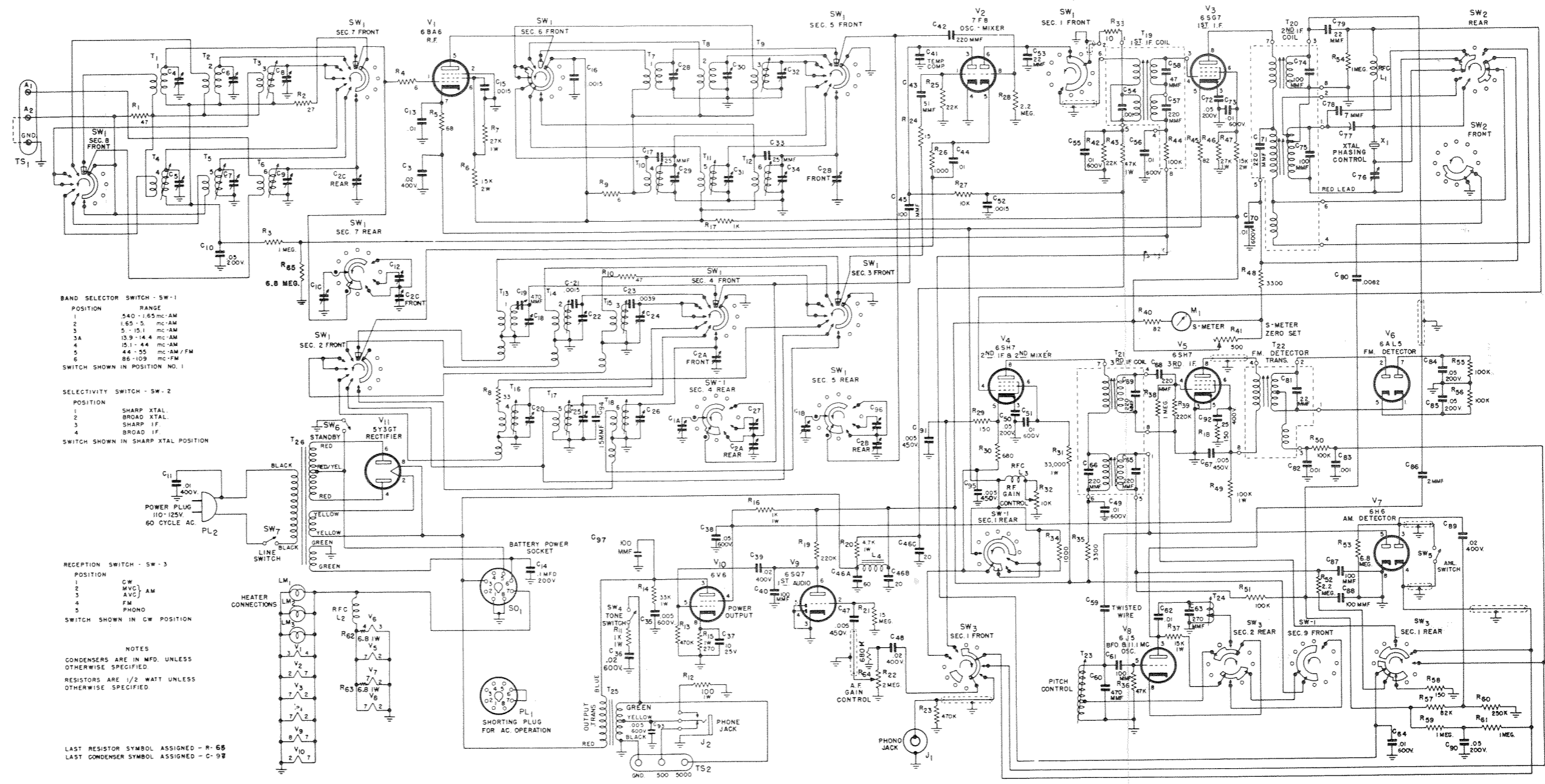
**SERVICE PARTS LIST**

**SERVICE PARTS LIST (Continued)**

REF. NO.	DESCRIPTION	HALLICRAFTER'S PART NUMBER
<b>CAPACITORS</b>		
C-1	Capacitor, general coverage	48C174
C-2	Capacitor, band spread	48C173
C-3, 39, 48, 89	.02 mfd 400 V., tubular paper	46AW203J
C-4, 5, 6, 8, 28, 29, 30, 32	Capacitor, trimmer strip assy.	44B199
C-7, 25, 31	Capacitor, trimmer, 4-50 mmf	44A200
C-9, 12, 27, 34, 96, 76, 96	Capacitor, trimmer, 2-30 mmf	44A047
C-10	.05 mfd 200 V., tubular paper	46A091
C-11	.01 mfd 600 V., molded paper	46AC103J
C-13, 44, 62	.01 mfd 350 V., ceramic	47A167
C-14	.1 mfd 200 V., tubular paper	46AU104J
C-15, 16, 52	1500 mmf 350 V., ceramic	47A161
C-17, 33	25 mmf 500 V., ceramic	47A141
C-18, 19, 20, 22, 24	Capacitor, trimmer strip assy.	44B197
C-21	1500 mmf 500 V., mica	CM30A152J
C-23	3900 mmf 500 V., mica	CM35A392J
C-26	Capacitor, trimmer, 4-20 mmf	44A115
C-35, 93	.005 mfd 600 V., tubular paper	46AY502J
C-36	.02 mfd 600 V., tubular paper	46AY203J
C-37	10 mfd 25 V., electrolytic	42A033
C-38	.05 mfd 600 V., tubular paper	46AY503J
C-40, 45, 61, 87, 88, 97	100 mmf 500 V., ceramic	CC25UK101K
C-41	Capacitor, T.C.	44A158
C-42	220 mmf 500 V., mica	CM20B221K
C-43	51 mmf 500 V., ceramic	CC20UK510K
C-46	60-20-20 mfd 450 V., electrolytic	45B113
C-47, 67, 91, 95	.005 mfd 450 V., ceramic	47A168
C-49, 51, 55, 56, 64, 70, 73	.01 mfd 600 V., tubular paper	46AZ103J
C-50, 72, 84, 85, 90	.05 mfd 200 V., tubular paper	46AU503J
C-53, 79	22 mmf 500 V., mica	CM20A220K
C-60	470 mmf 500 V., mica	CM20A471J
C-63	270 mmf 500 V., mica	CM20A271J
C-68	220 mmf 500 V., mica	CM20A221K
C-77	Capacitor, variable, CRYSTAL PHASING	48A182
C-78	7 mmf 500 V., ceramic	CC20UK070K
C-80	820 mmf 500 V., mica	CM25A821K
C-82, 83	1000 mmf 500 V., mica	CM20A102K
C-86	2.2 mmf 500 V., ceramic	47A160-4
C-92	.25 mfd 400 V., tubular paper	46AV254J
C-94	15 mmf 500 V., ceramic	CC20UK150K
<b>RESISTORS</b>		
R-1, 10	47 ohms 1/2 watt, carbon	RC20AE470K
R-2	27 ohms 1/2 watt, carbon	RC20AE270K
R-3, 38, 54, 59, 61	1 meg-ohm 1/2 watt, carbon	RC20AE105K
R-4, 9	6 ohms 1/2 watt, carbon	23A011
R-5	68 ohms 1/2 watt, carbon	RC20AE680K
R-6, 47	15,000 ohms 2 watts, carbon	RC40AE153K
R-7, 46	27,000 ohms 1 watt, carbon	RC30AE273K
R-8	33 ohms 1/2 watt, carbon	RC20AE330K
R-11, 16	1000 ohms 1 watt, carbon	RC30AE102K
R-12	100 ohms 1 watt, carbon	RC30AE101M
R-13, 23	470,000 ohms 1/2 watt, carbon	RC20AE474K
R-14, 31	33,000 ohms 1 watt, carbon	RC30AE333K
R-15	270 ohms 1 watt, carbon	RC30AE271K
R-17, 26, 34	1000 ohms 1/2 watt, carbon	RC20AE102K
R-18, 29, 58	150 ohms 1/2 watt, carbon	RC20AE151K
R-19, 39	220,000 ohms 1/2 watt, carbon	RC20AE224K
R-20	4700 ohms 1 watt, carbon	RC30AE472K
R-21	15 megohms 1/2 watt, carbon	RC20AE156K
R-22	Resistor, variable, VOLUME control	25B601
R-24	15 ohms 1/2 watt, carbon	RC20AE150K
R-25, 42	22,000 ohms 1/2 watt, carbon	RC20AE223K
R-27	10,000 ohms 1 watt, carbon	RC30AE103K
R-28, 52	2.2 megohms 1/2 watt, carbon	RC20AE225K
R-29, 58, 62	150 ohms 1/2 watt, carbon	RC20AE151K
R-30	680 ohms 1/2 watt, carbon	RC20AE681K
R-32	Resistor, variable, SENSITIVITY control	25B577
R-33	10 ohms 1/2 watt, carbon	RC20AE100K
R-35, 48	3300 ohms 1/2 watt, carbon	RC20AE332K
R-36	47,000 ohms 1/2 watt, carbon	RC20AE473K
R-37	15,000 ohms 1 watt, carbon	RC30AE153K
R-40, 45	82 ohms 1/2 watt, carbon	RC20AE820K
R-41	Resistor, variable, "S" meter control	25C022
R-43	47,000 ohms 1 watt, carbon	RC30AE473K
R-49	100,000 ohms 1 watt, carbon	RC30AE104K
R-50, 51, 55, 56	100,000 ohms 1/2 watt, carbon	RC20AE104K
R-53, 65	6.8 megohms 1/2 watt, carbon	RC20AE685M
R-57	82,000 ohms 1/2 watt, carbon	RC20AE823K
R-60	250,000 ohms 1/2 watt, carbon	RC20AE254K
R-62, 63	6.8 Ohms 1 watt, carbon	RC30AE068K
R-64	680,000 ohms 1/2 watt, carbon	RC20AE684M

REF. NO.	DESCRIPTION	HALLICRAFTER'S PART NUMBER
<b>COILS AND TRANSFORMERS</b>		
L-1	R-F choke, special	53A108
L-2	R-F choke, special	53B009
L-3	R-F choke, 540 uh	53A107
L-4	Filter choke, 11 h. 75 ma.	56B067
T-1	Transformer, antenna, band 1	51B928
T-2	Transformer, antenna, band 2	51B927
T-3	Transformer, antenna, band 3	51B926
T-4	Transformer, antenna, band 4	51B925
T-5	Transformer, antenna, band 5	51B924
T-6	Transformer, antenna, band 6	51B923
T-7	Transformer, mixer, band 1	51B934
T-8	Transformer, mixer, band 2	51B933
T-9	Transformer, mixer, band 3	51B932
T-10	Transformer, mixer, band 4	51B931
T-11	Transformer, mixer, band 5	51B930
T-12	Transformer, mixer, band 6	51B929
T-13	Transformer, oscillator, band 1	51B939
T-14	Transformer, oscillator, band 2	51B938
T-15	Transformer, oscillator, band 3	51B937
T-16	Transformer, oscillator, band 4	51B936
T-17	Transformer, oscillator, band 5	51B935
T-18	Transformer, oscillator, band 6	51B941
T-19	Transformer, 1st I-F	50C212
T-20	Transformer, 2nd I-F	50C213
T-21	Transformer, 3rd I-F	50C214
T-22	Transformer, F-M detector	50C208
T-23	Transformer, B.F.O.	54B033-1
T-24	Transformer, oscillator, 11 mc.	51B984
T-25	Transformer, output	55B095
T-26	Transformer, power, 105-125V. 60 cycles	52C143
T-26*	Transformer, power 115/130/150/220/250 V. 25/60 cycles	52C142
* Note — Used on special universal model only.		
<b>TUBES AND LAMPS</b>		
V-1	Tube, type 6BA6	90X6BA6
V-2	Tube, type 7F8	90X7F8
V-3	Tube, type 6SG7	90X6SG7
V-4, 5	Tube, type 6SH7	90X6SH7
V-6	Tube, type 6AL5	90X6AL5
V-7	Tube, type 6H6	90X6H6
V-8	Tube, type 6J5	90X6J5
V-9	Tube, type 6SQ7	90X6SQ7
V-10	Tube, type 6V6GT	90X6V6GT
V-11	Tube, type 5Y3GT/G	90X5Y3GT
LM-1, 2	Lamp, dial illumination, 6-8 V. 250 ma. G.E. #44	39A003
LM-3	Lamp, meter illumination, 6-8 V. 150 ma. G.E. #47	39A004
<b>SWITCHES</b>		
SW-1	Switch assembly, BAND SELECTOR	60C261
SW-2	Switch assembly, SELECTIVITY	60B263
SW-3	Switch assembly, RECEPTION	60B262
SW-4, 5, 6	Switch, toggle, SPST	60A138
SW-7	Switch, power, part of R-22	
<b>PLUGS AND SOCKETS</b>		
PL-1	Plug, octal, jumpers for a-c operation	35A003
PL-2	Plug and cord assy, a-c power	87A078
J-1	Jack, phono input	36A029
J-2	Jack, headphones	36A036
	Socket, octal (Tube & SO-1)	6A035
	Socket, miniature, tube	6A193
	Socket, octal, tube	6A223
	Socket, pilot lamp, dial	86B050
	Socket, pilot lamp, meter	6A262
<b>MISCELLANEOUS COMPONENTS</b>		
M-1	Meter, carrier level	82B125
	Knob, TUNING and BANDSPREAD	15A048
	Knob, CW PITCH	15A089
	Knob, BAND SELECTOR	15B088-1
	Knob, RECEPTION	15A094
	Knob, SELECTIVITY	15A095
	Knob, VOLUME and SENSITIVITY	15A097
	Knob, CRYSTAL PHASING	15A087
X-1	Crystal, 455KC	19A123
TS-1, TS-2	Terminal strip, antenna or speaker	88A567
	Screw, knurled (For TS-1 or TS-2)	3A1371
	Cover, speaker terminals	69B173





**BAND SELECTOR SWITCH - SW-1**

POSITION	RANGE
1	540 - 1165 mc-AM
2	1.65 - 5 mc-AM
3	5 - 15.1 mc-AM
3A	13.9 - 14.4 mc-AM
4	15.1 - 44 mc-AM
5	44 - 55 mc-AM/FM
6	86 - 109 mc-FM

SWITCH SHOWN IN POSITION NO. 1

**SELECTIVITY SWITCH - SW-2**

POSITION	SETTING
1	SHARP XTAL.
2	BROAD XTAL.
3	SHARP IF
4	BROAD IF

SWITCH SHOWN IN SHARP XTAL POSITION

**RECEPTION SWITCH - SW-3**

POSITION	SETTING
1	CW
2	MVC
3	AVC
4	AM
5	FM
5	PHONO

SWITCH SHOWN IN CW POSITION

**NOTES**

CONDENSERS ARE IN MFD. UNLESS OTHERWISE SPECIFIED.

RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED.

LAST RESISTOR SYMBOL ASSIGNED - R-65  
 LAST CONDENSER SYMBOL ASSIGNED - C-99

Fig. 8. Schematic diagram.