INSTALLATION AND OPERATING INSTRUCTIONS FOR RADIO RECEIVER MODEL SX-43

GENERAL INFORMATION

1. INSTALLATION

It is recommended that, upon receipt, the carton and then the unpacked receiver be carefully examined for any damage which may have occurred during shipment. Should any damage be apparent, immediately file claim with the carrier, stating the extent of damage.

IMPORTANT. Unless otherwise marked, this receiver is operated from 105 to 125 volts 50-60 cycle a-c power. If in doubt call your local utility company for information.

Connect the R-42 Reproducer, or the R-44, as the case may be, to the 500 and "C" terminals on the SX-43.

Turn the VOLUME control to the left as far as possible. (See Fig. 2) This turns off the radio. Plug the power cord into the a-c outlet.

Attach an antenna (aerial) to the post marked A-1. This antenna wire should be, preferably, outdoors above surrounding structures and from 25 to 100 feet long. Attach a wire from a good ground to the post marked GND. In general the better the antenna system, the better the signal will be heard.

Having followed instructions to this point you are now ready to operate your receiver. Let's first tune in a-m (standard broadcast) stations.

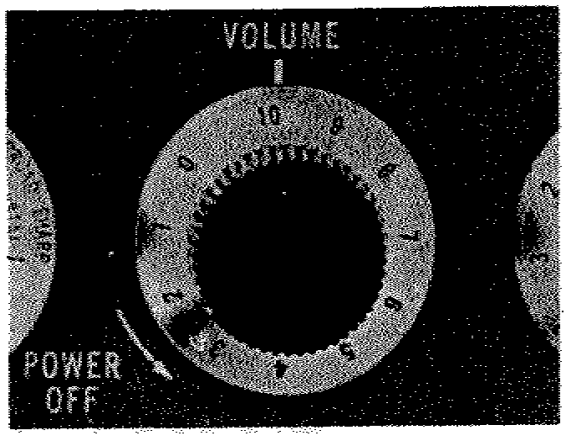


Figure 2. View showing Volume Control

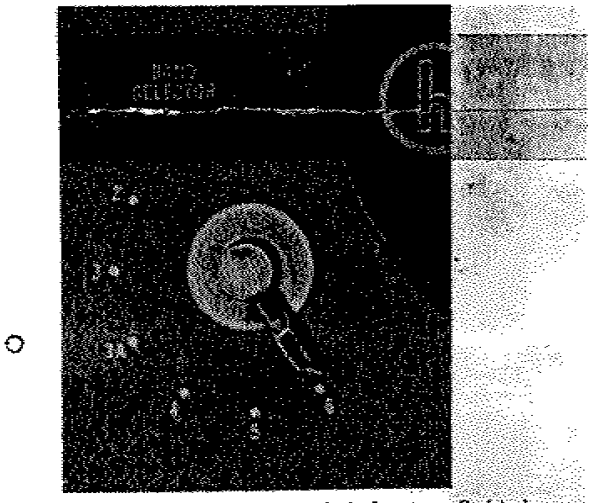


Figure 3. View showing Band Selector Switch

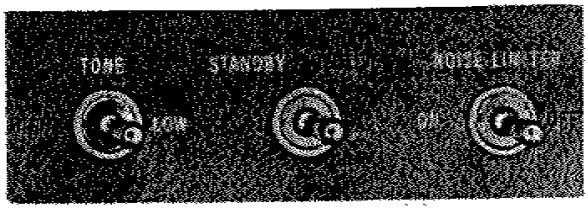


Figure 4. View showing three toggle switches

2. GENERAL OPERATION

1. To turn the receiver on, the VOLUME control is turned to the right to about 4 on the knob scale. When the receiver is on, the dial scales and the meter will light up.

2. Turn the BAND SELECTOR knob left to the red dot. (See Fig. 3)

3. Set the three toggle switches to the "right" hand position. (See Fig. 4)

4. Set four of the six right-hand control knobs to the following positions: "SELECTIVITY" to red dot, "RECEPTION" to red dot, "SENSITIVITY" to 10, and "VOLUME" to 4 or the desired amount of volume. (See Fig. 5)

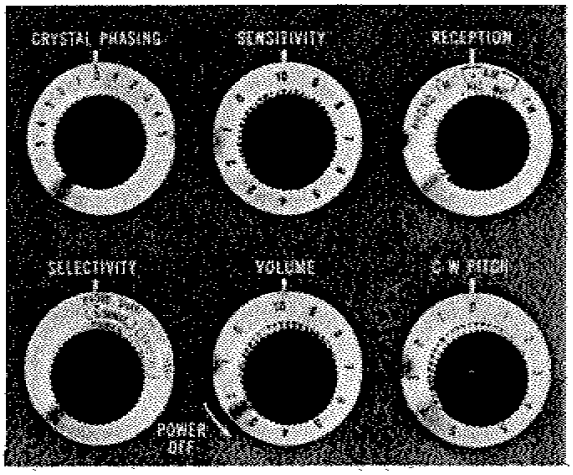


Figure 5. View showing six right hand controls

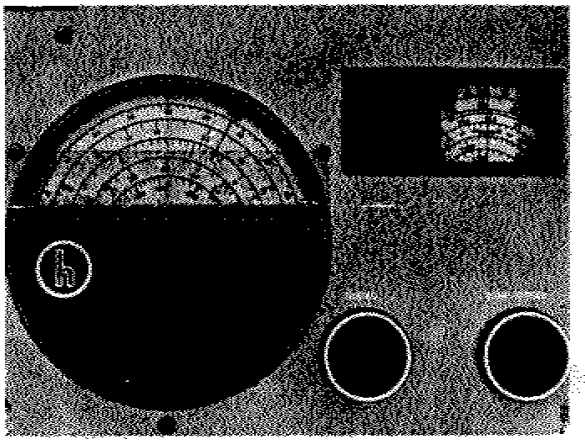


Figure 6.
View showing Bandspread and Main Tuning Dials

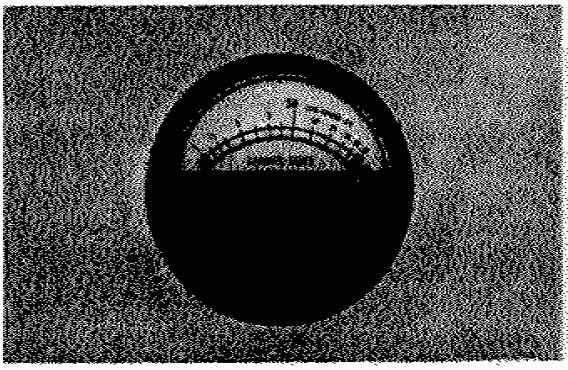


Figure 7. View showing Carrier Meter

5. Set the bandspread (fine tuning) dial to the high end of the dial, (counterclockwise).

6. Now tune in stations by tuning with the main control knob. (See Fig. 6) As the station is tuned in, the carrier metsr needle (See Fig. 7) will move from the left side of the scale to the right. Carefully tune the receiver by causing the meter needle to move as far to the right as possible. At this point the recsiver is properly tuned to the station.

7. To control the volume, adjust the VOLUME control (See Fig. 2) by turning it to the right for a louder signal or to the left for a softer signal.

8. The frequency calibration on the main tuning dial for the broadcast band is shown on the scale at the bottom of the dial. (See Fig. 6). This scale as all other scales is calibrated in kilocycles and tunes over the broadcast band from 540 to 1650 kc.

9. The next control which will be of interest to you, will be the TONE switch. (See Fig. 4). When it is set to the left, the receiver produces substantially all musical tones as sent out by the radio station. However, by setting this control to BASS, low notes will be amplified.

10. The next control in sequence of importance is the SELECTIVITY control (See Fig. 8). This control is very useful when it is desired to tune in a weak station on a frequency close to a powerful one, in which instance the control should be switched to SHARP.

11. The knobs for CRYSTAL PHASING, RECEPTION, CW PITCH, and SENSITIVITY should in all cases be left set at the red dot or "0".

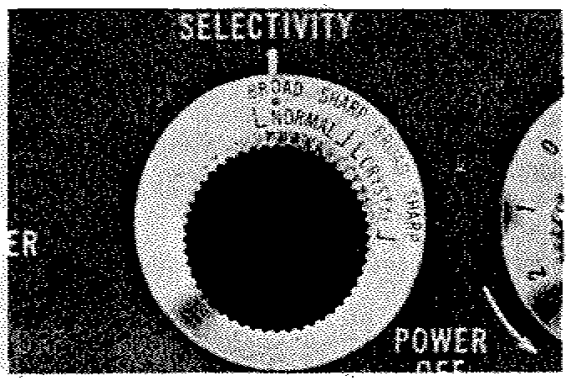


Figure 8. View showing Selectivity Control

Thus far we have tuned the receiver for a-m rsception. If it is desired to use it on f-m reception, all controls should be aet as previously deecribed with the exception of the following:

1. The RECEPTION knob should be switched to FM (green dot).

2. The BAND SELECTOR switch should be set cn the green dot. This covers the band 86 to 109 mc. Most f-m stations are on this band; the few that are not can be tuned in by changing the BAND SELECTOR knob to band 5, 44 to 55 mc.

3. Tune in f-m stations by turning the BANDSPREAD tuning knob until the BANDSPREAD tuning dial indicates the desired f-m frequency. As the station is being tuned, the meter pcinter will deflect when tuned to a transmitted signal. When meter pointer is at maximum deflection the station is tuned in.

4. The carrier level meter reads the relative aignal strength received as well aa indicating when the aignal is properly tuned in by the maximum deflection of the meter needle. When using the carrier level meter, the "Reception" switch should be set to the RED dot for AM reception or to the GREEN dot for FM reception. The "Sensitivity" control must be set to 10 and the volume controlled by the "Volume" control.

So far we have covered thrse bands of the receiver (Broadcast, and the f-m bands 86-109 mc and 44-55 mc). For the other three bands of the set, operation is the same, the only difference being in the setting of the BAND SELECTOR switch knob, which may be turned to the desired band.

1. GENERAL

The Model SX-43 is a 11 tube superheterodyne radio receiver designed to provide amplitude modulated (AM) reception over the frequency range of 540 kc to 55 mc and frequency modulated (FM) reception over the frequency range of 44 to 55 mc and 86 to 109 mc bands. Calibrated bandspread is provided for the 80, 40, 20, and the 10 meter Amateur bands.

FREQUENCY COVERAGE

BAND	*COVERAGE*	*TYPE OF RECEPTION*
1	.540 to 1.65 mc	AM/CW
2	1.65 to 5.0 mc	AM/CW
3	5.0 to 15.1 mc	AM/CW
3A	13.9 to 14.4 mc	AM/CW
4	15.1 to 44.0 mc	AM/CW
5	44.0 to 55.0 mc	AM/FM
6	86.0 to 110 mc	FM

Adequate overlap is provided at ends of all bands.

The receiver as normally supplied is designed to operate from a 105 to 125 volts 50/60 cycle, single phase source of a-c power. These operating instructions also cover Universal Models which operate from a 105 to 250 volts, 25/60 cycle single phase a-c source.

2. A-C OPERATION

Be sure line voltage is 105 to 125 volts and frequency is 50 to 60 cycles before inserting power cord plug into power outlet. Be sure all tubes are securely inserted in their proper sockets before receiver power is turned on. The chart below lists the current and voltage data.

Power Consumption	90 Watts
Frequency	50/60 Cycles
Line Voltage	117 Volts
Line Current	0.77 Amperes

During a-c opsration, the shorting plug supplied with the receiver must be in the octal socket on the rear apron of the chassis.

3. D-C OPERATION

The receiver may be operated from a 6 volt d-c source, generally a storage battery, and a 270 volt d-c supply in the form of "B" batteries or vibrator type power pack. Consult the chart on power requirements at the end of this paragraph and provide battery or power pack facilities capable of supplying these demands. The receiver is connected to the d-c supply as follows:

1. Remove the octal shorting plug for a-c operation from the socket SO-1 located on the rear apron of the receiver chassis.

2. Wire an octal plug, as shown in Fig. 9, and plug it into socket SO-1. Use #19 (AWG) wire leads for the 270 volt "B" supply connections to pins #3 and #5, and #12 (AWG) wire leads for the 6 volt battery connections to pins #1, #7, and #8. ***CAUTION:*** Check the wiring carefully before connecting to the battery supply. The chart below lists the current voltage data.

"B" Voltage	270 Volts
"B" Current	105 ma.
Filament Voltage	6 Volts
Filament Current	3.8 Amperes

Total battery drain when operating from a 6-volt vibrator power supply is approximately 11 amperes.

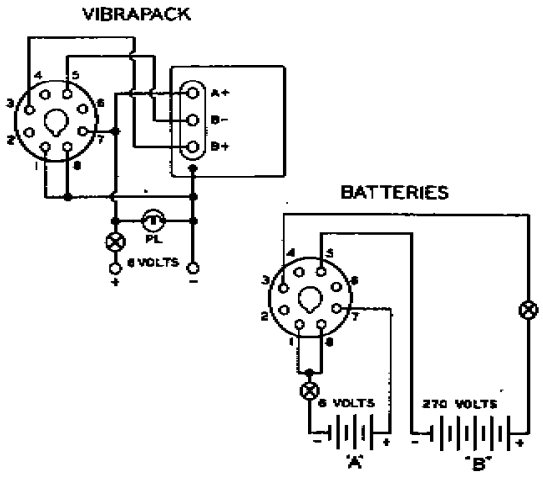


Figure 9. Octal plug wiring diagram

4. OUTPUT CONNECTIONS

Output connections for the speaker are provided for on the rear apron of the chassis. Two output impedances are available. Either the

500 or the 5,000 ohm speaker connection may be used according to the output impedance desired. This arrangement of dual output impedances will accommodate most rsquirements. The Hallicrafters Model PM-23 speaker requires 5000 ohms impedance; the Hallicrafters Model R-42 and R-44, requires 500/600 ohms. However, any standard type, permanent magnet dynamic speaker with proper output transformer may be connected to the output terminals. If the permanent magnet dynamic speaker impedance is unknown, try the 5000 ohm and then the 500/600 ohm impedance, and use the one which gives the better tone quality and volume.

5. PHONO INPUT CONNECTION

A receptacle is provided on the rear apron of the chassia for connecting a phonograph record player to the receiver. Thia receptecle is designed to accommodate a Cinch, type M-93, pin connector plug. (See Fig. 10 for diagram)

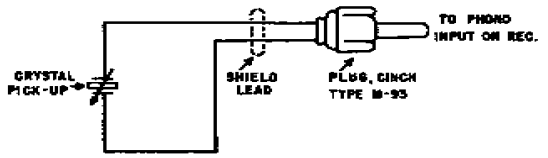


Figure 10. Phono input diagram

6. ANTENNA AND GROUND CONNECTIONS

The Model SX-43 is designed for a 300 ohm antenna impedance. The antenna impedance is not critical and excellent reception can be obtained from an antenna of from 50 tc 600 ohm impedance. For maximum performance, the best possible antenna should be employed.

The antenna terminals on the Model SX-43 are arranged for any type of antenna from those requiring a ground to those using a transmission line. The transmission type of antenna connects to the A-1 and A-2 terminals whereas a single wire antenna utilizes terminal A-1 for the antenna lead. A-2 and GND terminals must be connected together and connected to a good ground.

7. DETAILED OPERATIONS

a. *Controls and Their Functions*. In order to obtain the deaired results from the receiver, it is recommended that you become familiar with the function of each control. Red indicaters on the controls for broadcast reception and green for f-m reception are there to simplify operation. Controls and their functions are as follows:

(1) *BAND SELECTOR*. The BAND SELECTOR knob operates the bandswitch to select the desired band frequencies.

(a) *General Coverage Dial*. The general coverage dial has four calibrated scales and a logging scale. Three scales are calibrated in megacycles and the broadcaet scale is calibrated in kilocycles. The outer logging scale is divided into 100 divisions for logging use. The dial settings for the various amateur bands are indicated on the main tuning dial by red lines and the abbreviations 80 M, 40 M, etc. directly above the lines. When tuning the amateur bands with the calibrated bandspread dial, the general coverage dial must be set at the setting corresponding to the amateur band desired. Since the general coverage and bandspread tuning systems are electrically related on the first four bands, it is necessary to *set the bandspread dial to the high frequency end or minimum capacity when tuning the receiver with the general coverage dial control to obtain correct receiver frequency readings on the general coverage dial*.

(b) *Bandspread Dial*. The bandsprsad dial has four scales calibrated for the smateur bands and two scales calibrated for the two high frequency FM bands. The first four scales are calibrated to read receiver frequencies in kilocycles when the general coverage dial has been set to the corresponding indexing line. All FM and the 6 meter amateur band tuning is done with the bandspread dial as the general coverage dial and condenser is switched out of the circuit on bands 5 and 6. On band 5 the receiver employs dual conversion, substantially reducing image interference and permitting normal bandwidth for 6 meter AM amateur reception.

(2) *NOISE-LIMITER-ON Switch*. This switch opens or closes the noise limiter circuit and is to be set at ON when the operator wishes to limit excessive noise resulting from automobile ignition and other forms of noise interference.

The noise limiter circuit "clips" the intermittent noise peaks down to the level of the desired signal where they tend to become unnoticeable.

(3) *RECEIVER-STANDBY Switch*. When set at STANDBY, this switch renders the receiver

inoperative, while transmitting or for any other purpose, although the tube heaters remain hot and ready for instant use.

(4) *CRYSTAL PHASING Control*. This control permits the discrimination of code signals whose frequencies are very nearly the same. The SELECTIVITY control must be set at one of its two crystal selectivity positions when using the phasing control.

It is extremely simple to attain single signal c-w reception with the SX-43. First, set the RECEPTION switch at CW and the SELECTIVITY control at CRYSTAL SHARP. Pick a good solid c-w signal, prefsrably a commercial station because a commercial is likely to stay on long enough for you to complete the phasing adjustment for single signal reception.

You will find on tuning across this signal that it has two amplitudes. Tune first to the weaker of these two amplitudes. Now, turn the CRYSTAL PHASING control until the weaker of the two amplitudes is reduced to a minimum. Then, tune to the stronger of the two amplitudes and adjust the PITCH control to a tone most pleasing to you. This adjustment for single signal selectivity will hold with no further adjustment unless you change the phasing control. (See Fig. 11 for an illustration of single signal operation.)

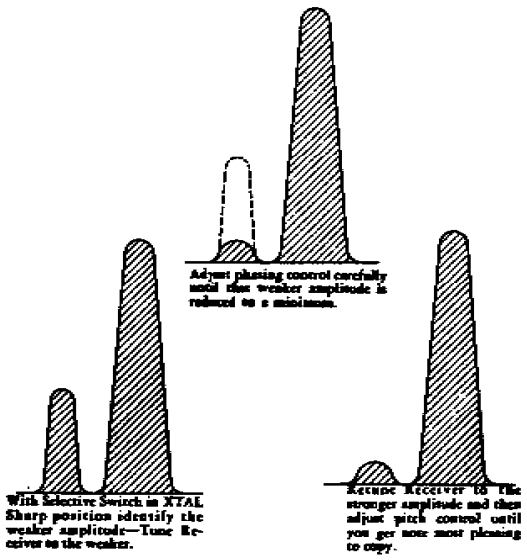


Figure 11.
Illustration showing Single Signal Operation

(5) *SELECTIVITY Control*. This control determines the sharpnees of the response. Four degrees of selectivity are provided, ranging from CRYSTAL SHARP for c-w code reception under difficult receiving conditions to NORMAL BROAD response for BC reception.

1. BROAD I-F (for high fidelity reception).
2. SHARP I-F (reduced adjacent channel interferences and gives less highs.
3. CRYSTAL BROAD (similar to sharp i-f but sharper cutting on sidebands).
4. CRYSTAL SHARP (position of extreme selectivity - practically no sideband content).

(6) *TONE Control*. This control selects the tone qualities desired by the operator. The types of response available are LOW, and HIGH.

(a) *LOW*. The high audio frequencies are attenuated to provide a minimum response for voice reception when the background noise level is objectionably high.

(b) *HIGH*. The bass and high frequencies are passed at the same level thereby providing as near a true reproduction of the original transmitted signal as possible. The response is essentially flat between 70 and 8,000 cycles per second for good fidelity reception.

(7) *CW PITCH Control*. This control varies the frequency of the beat frequency oscillator thus varying the pitch of the c-w code signal as desired.

(8) *SENSITIVITY Control*. This control adjusts the sensitivity by varying the resistance in the cathodes of the r-f and i-f amplifiers. Turning the control to the right increases the sensitivity. This control must be set at maximum sensitivity when using the carrier level meter. At any other setting of this control, readings of the carrier meter are meaningless.

8. "S" METER ADJUSTMENT

Adjustment of the "S" meter control is performed by varying the knurled knob located on the rear apron of the receiver chassis. This control enables you to properly set the "S"

meter to zero. In order to make the adjustment corrsctly, advance the SENSITIVITY control to 10. Set the "reception" switch to AVC position. Short the two antenna terminals to the ground terminal and tune receiver off station. Then adjust the "S" meter control until pointer rests at "0". Remove the short from the antenna terminals and the meter will indicate the relative carrier strength of each incoming signal as it is tuned in.

SERVICE

1. REPLACING TUBES

All tubes are accessible at the top of the chassis through the hinged cover of the cabinet. When replacing tubes, check tube type carefully and replace with the correct type. Refer to top view of the chassis to determine the location of the tubes (See Fig. 12).

2. REPLACING DIAL LAMPS

The receiver employs three dial lamps with the bayonet type sockets to illuminate the main and bandspread tuning dials as well as the meter scale. The lamps are to be replaced with 6-8 volt, 250 ma, (blue bead) #44 G.E. type, or equivalent. The color code referred to is the color of the glass bead above the glass stem inside the envelope of the lamps.

3. SERVICE OR OPERATING QUESTIONS

For further details regarding operation or servicing of the receiver, contact your dealer directly. Make no service shipments directly to the factory before first writing for authorization and instructions. *The factory cannot accept responsibility for unauthorized shipments.*

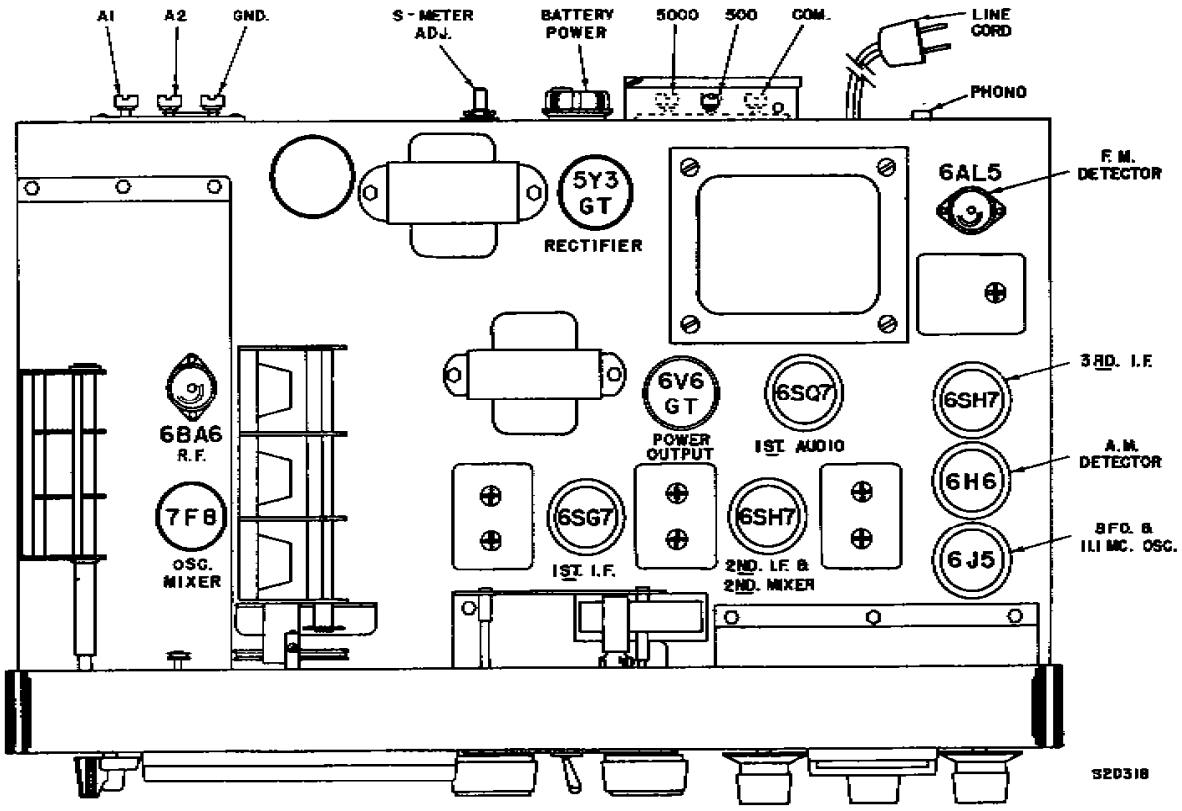


Figure 12. Top view of Chassis

REMOTE CONTROL OPERATION

Connect a single pole single throw relay to pins #5 and 8 on PL1 located on the rear apron of the receiver. Receiver "SEND- RECEIVE" switch is then placed in "SEND" pcaition. When the Transmitter is turnsd on the Receiver is automatically disabled.

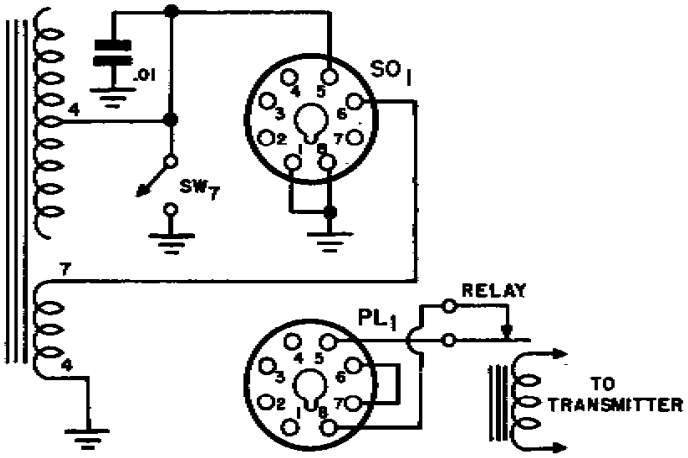
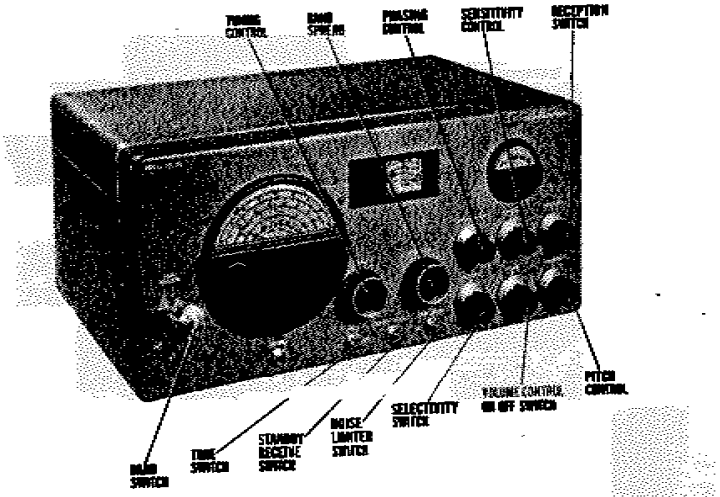
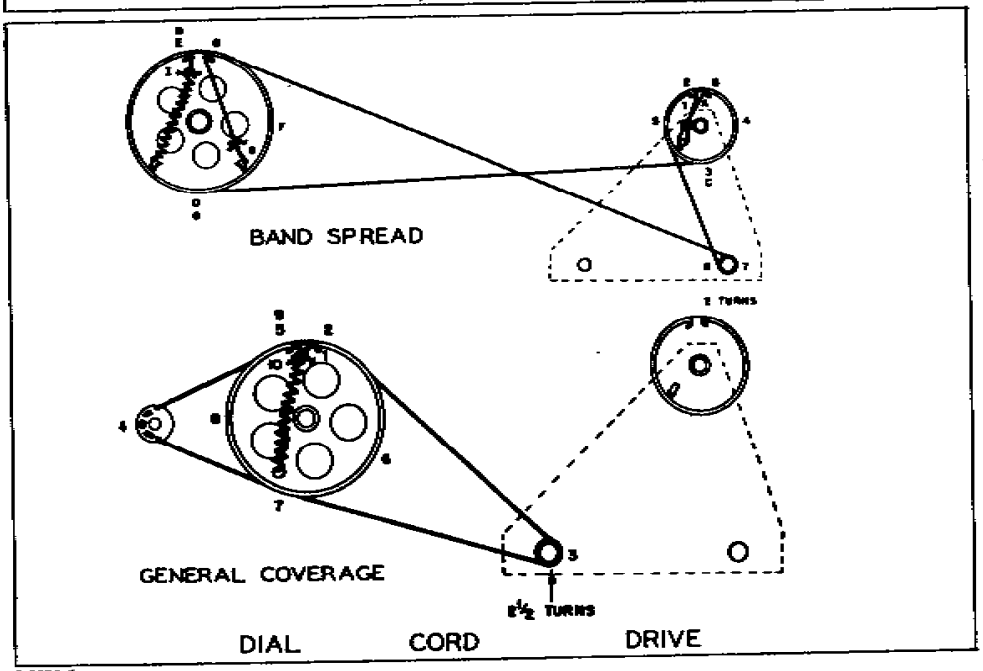


Figure 13. Schematic Remote Control Operation

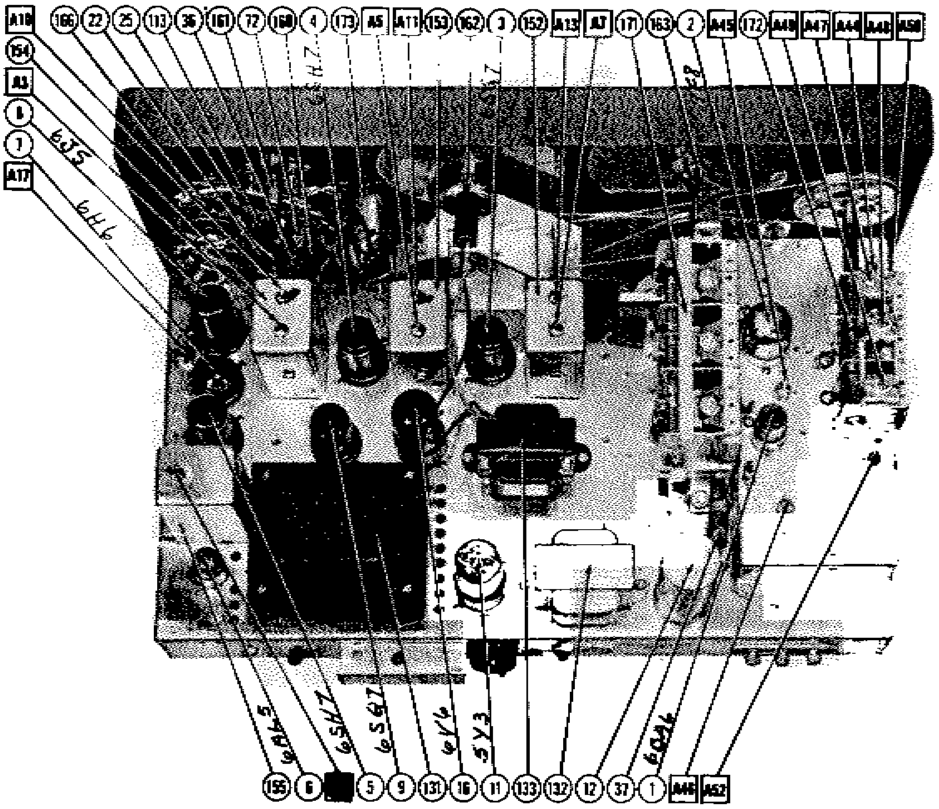


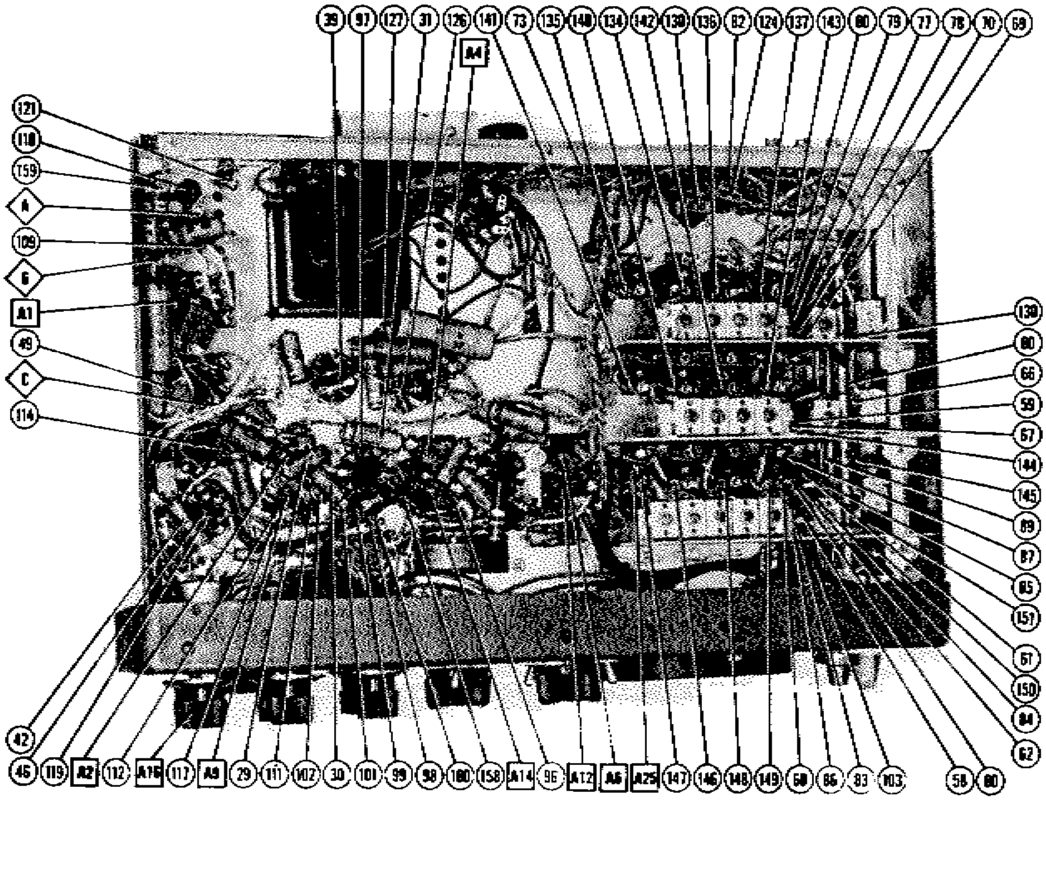
HALLICRAFTERS MODEL SX-43

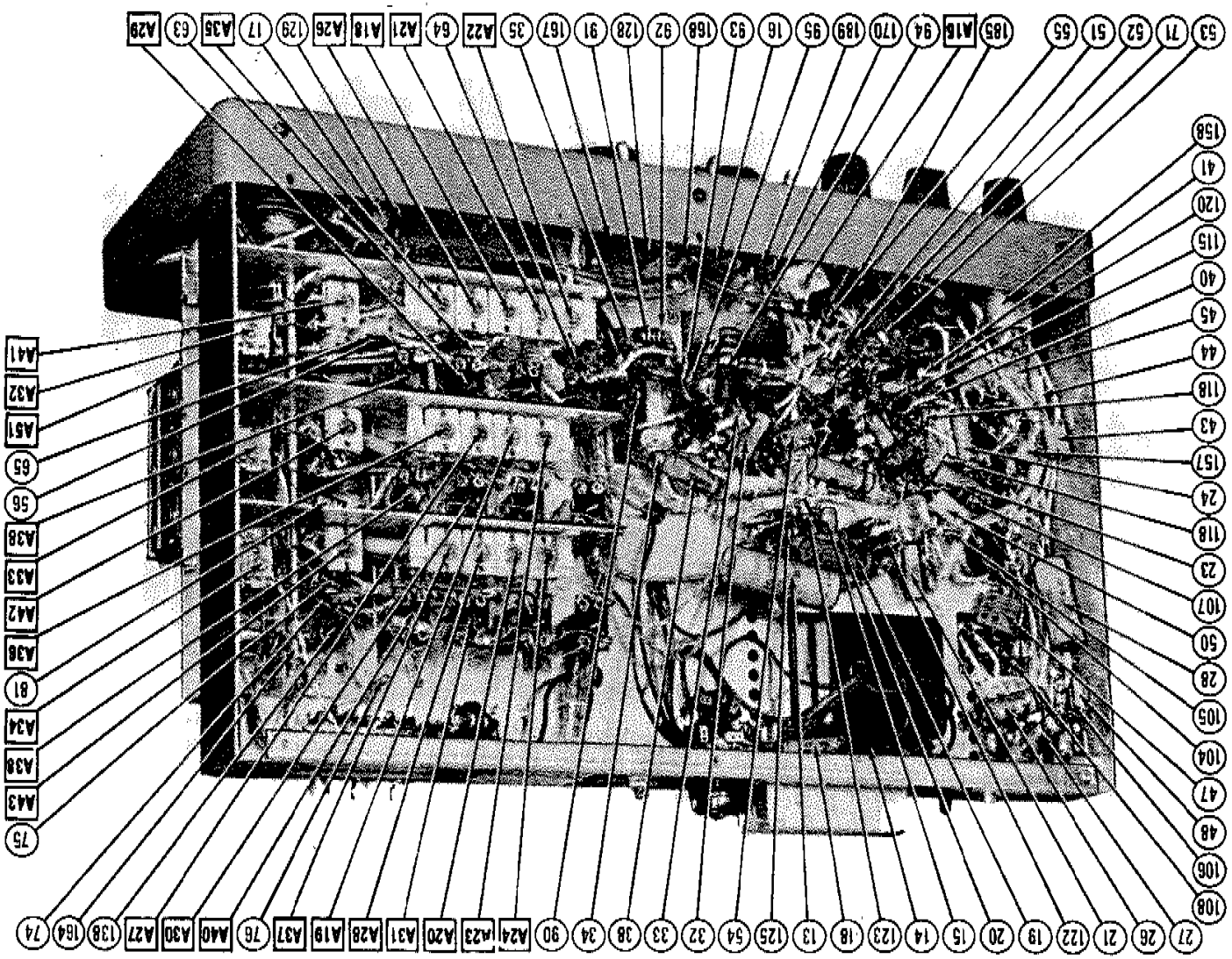
TRADE NAME	Hallicrafters, Model SX-43
MANUFACTURER	Hallicrafters Co., 5th & Kostner Avenues, Chicago 24, Ill.
TYPE SET	AC Operated Multi-Band AM-FM Commercial Communications Receiver
TUBES (ELEVEN)	Types, 6BA6 RF Amp., 7F8 Converter, 6BG7 1st IF Amp., 6BH7 2nd IF-2nd Mixer, 6BH7 3rd IF Amp., 6AL5 FM Ratio Det., 6H6 AM Det., 6J5 BFO-2nd Osc., 6BQ7 AF Amp., 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC
RATING	.58 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1700KC SHORT WAVE 1.7-5MC, 5-16MC, 14-14.4MC, 15.5-44MC, 44-55MC FREQ. MOD. 44-56MC, 86-109MC



HALLICRAFTERS MODEL
SX-43


A10
166
22
25
113
36
161
72
160
4
173
A5
A11
153
162
3
152
A13
A7
171
163
2
A45
172
A49
A47
A44
A48
A50
154
A3
8
7
A17
6J5
6H6
6SH7
6SG7
6V6
5Y3
155
6
5
9
131
16
11
133
132
12
37
1
A46
A52


39
97
127
31
126
141
73
135
140
134
142
130
136
82
124
137
143
80
79
77
78
70
69
A4
121
118
159
A
109
G
A1
49
C
114
139
80
66
59
67
144
145
89
87
85
151
61
150
84
62
42
45
119
A2
112
A16
117
A9
29
111
102
30
101
99
98
100
158
A14
96
A12
A6
A25
147
146
148
149
60
86
83
103
58
80


A29
63
A36
17
129
A26
A18
A21
64
A22
35
167
91
128
92
168
93
16
95
189
170
94
A16
185
55
51
52
71
53
158
41
120
115
40
45
44
118
43
157
24
118
23
107
50
28
105
104
47
48
106
108
27
26
21
122
19
20
15
14
123
18
13
125
54
33
32
38
34
90
A24
A23
A20
A31
A28
A19
A37
76
A40
A30
A27
138
164
74
75
A43
A38
A34
81
A38
A42
A33
A38
56
65
A51
A32
A41

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HALLICRAFTERS PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6BA6	6BA6	7BK	
2	Converter	7F8	7F8	8BW	
3	1st IF Amp.	6BQ7	6BQ7	8BK	
4	2nd IF-2nd Mixer	6BH7	6BH7	8BK	
5	3rd IF Amp.	6BH7	6BH7	8BK	
6	FM Ratio Det.	6AL5	6AL5	6BT	
7	AM Det.	6H6	6H6	7Q	
8	BFO-2nd Osc.	6J5	6J5	6Q	
9	AF Amp.	6BQ7	6BQ7	8Q	
10	Power Output	6V6GT	6V6GT	7AC	
11	Rectifier	5Y3GT	6Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HALLICRAFTERS PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
12A	60	450	45B113	AF444J	UP22224S	DY-3x30-450	EL-420	= Filter
B	20	450						■ "
C	20	400		PR8450-40	BR2045	M-40-450	UT-20	▲ "
13	10	25	42A033	PR825-10	BR102A	M-10-25	TA-35	Cathode Bypass
14	.01	400	46AW103J	464-01	DT481	MPH-4-01	TC-11	Line Filter
15	.005	600	46AY502J	684-005	DT6D5	ST-6-005	TC-28	Tone Compensation
16	.02	600	46AY203J	684-02	DT682	ST-6-02	TC-12	" "
17	.006	600	46AY502J	684-006	DT6D5	ST-6-006	TC-25	" "
18	.1	200	46AU104J	484-.1	DT2P1	ST-2-1	TC-1	Filament Bypass
19	.05	600	46AY503J	684-05	DT685	ST-6-05	TC-15	Output Screen Bypass
20	.02	400	46AW203J	464-02	DT422	ST-4-02	TC-12	Audio Coupling
21	.006	400	46AW502J	464-006	DT4D5	ST-6-006	TC-28	" "
22	.02	400	46AW203J	484-03	DT482	ST-4-02	TC-12	" "
23	.05	200	46AU503J	484-05	DT285	ST-4-05	TC-15	AVC Filter
24	.02	400	46AW203J	464-02	DT282	ST-4-02	TC-12	Audio Coupling
25	.01	400	46AW103J	484-01	DT451	ST-4-01	TC-11	AVC Filter
26	.05	200	46AU503J	484-05	DT485	ST-4-05	TC-15	Diode Load Cap.
27	.05	200	46AU503J	484-05	DT285	ST-4-05	TC-15	" " "
28	.25	400	46AU254J	484-.28	DT2P25	ST-4-25	TC-2	3rd IF Screen Bypass
29	.01	400	46AW103J	464-01	DT481	ST-4-01	TC-11	2nd IF Plate Decoupling
30	.01	400	46AW103J	484-01	DT451	ST-4-01	TC-11	2nd IF Screen Bypass
31	.05	200	46AU503J	464-05	DT285	ST-4-05	TC-15	2nd IF Cathode Bypass
32	.01	400	46AW103J	464-01	DT481	ST-4-01	TC-11	1st IF Plate Decoupling
33	.01	400	46AW103J	464-01	DT481	ST-4-01	TC-11	1st IF Screen Bypass
34	.01	400	46AW103J	484-01	DT481	ST-4-01	TC-11	AVC Filter
35	.01	400	46AW103J	484-01	DT451	ST-4-01	TC-11	Conv. Plate Decoupling
36	.02	400	46AW203J	484-02	DT482	ST-4-03	TC-12	RF Gain Control Bypass
37	.05	200	46AU503J	484-05	DT285	ST-4-05	TC-15	AVC Filter
38	.05	200	46AU503J	484-05	DT285	ST-4-05	TC-15	1st IF Cathode Bypass
39	100	500	CC25UK101K	1468-0001	5W5T1	MO.5-31	1FM-31	AF Plate Bypass-Cer.
40	100	500	CC25UK101K	1468-0001	5W5T1	MO.5-31	1FM-31	Diode RF Filter-Cer.
41	100	500	CC25UK101K	1468-0001	5W5T1	MO.5-31	1FM-31	" " " "
42	10000	350	47A167	684-01	DT681	ST-6-01	TC-11	BFO Coupling - Cer.
43	270	500	CM30A271J	1468-0003	5W5T3	MO.5-33	1FM-33	Fixed Trimmer
44	100	500	CC25UK101K	1468-0001	5W5T1	MO.5-31	1FM-31	BFO Grid Cap.-Cer.
45	470	500	CM20A471J	1468-0005	5W5T5	MO.5-35	1FM-35	Fixed Trimmer
46	8	500	47A160-4					2nd Osc. Coupling-Cer.
47	1000	500	CM20A102K	1467-001	1W5D1	MW.5-21	1FM-21	RF Bypass
48	1000	500	CM20A102K	1467-001	1W5D1	MW.5-21	1FM-21	De-emphasis
49	5000	450	47A168	684-005	1D5D5	MW.5-25	1FM-25	3rd IF Decoupling-Cer.
50	220	500	CM20A221K	1468-00025	5W5T25	MO.5-325	1FM-325	IF Coupling
51	5000	400	47A168	684-005	1D5D6	MW.5-25	1FM-25	RF Gain Control Byp.-Cer.
52	5000	450	46AW502J	684-005	1D5D5	MW.5-25	1FM-25	" " " "
53	820	500	CM35A821K	1479-0008	1W5T8	MW.5-38	1FM-38	Diode RF Filter
54	22	500	CM20A220K	1468-000025	5W5Q25	MO.5-425	MS-42	RF Coupling
55	15	500	CC20UK150K				MS-415	Fixed Trimmer-Cer.
56	22	500	CM20A220K	1468-000025	5W5Q25	MO.5-425	MS-42	Conv. Plate Bypass
57	1500	350	47A161	1467-001	1W5D15	MW.5-215	1FM-215	RF Byp. Power Supply-Cer. See Note
58	10000	350	47A167	484-01	DT681	ST-6-01	TC-.1	Conv. Cathode Byp.-Cer.
59	220	500	CM20B221K	1468-00025	5W5T25	MO.5-325	1FM-325	RF Coupling

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HALLICRAFTER PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
112	2.2 Meg.	½	RC20AE225K	BTS-2.2 Meg	Red-Red-Grn. AVC Network
113	150Ω	½	RC20AE151K		Br.-Grn.-Br. AVC Shunt
114	2.7 Meg.	½		BTS-2.7 Meg	Red-Vi.-Grn. Noise Limiter Load
115	62KΩ	½	RC20AE623K	BTS-62K	Gray-Red-Or. Diode Load
116	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Br.-Blk.-Grn. Noise Limiter Bias Network
117	260KΩ	½	23BX2543	BTS-270K	Red-Grn.-Yl. Diode Load
118	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Br.-Blk.-Grn. Noise Limiter Bias Network
119	47KΩ	½	RC20AE473K	BTS-47K	Yl.-Vi.-Or. BFO Grid
120	15KΩ	1	RC30AE153K	BTA-15K	Br.-Grn.-Or. BFO Plate
121	470KΩ	½	RC20AE474K	BTS-470K	Yl.-Vi.-Yl. Phono Shunt
122	15 Meg.	½	RC20AE156K	BTS-15 Meg.	Br.-Grn.-Blue AF Grid
123	220KΩ	½	RC20AE224K	BTS-220K	Red-Red-Yl. AF Plate Load
124	1000Ω	1	RC30AE109K	BTA-1000	Br.-Blk.-Red Output Screen Dropping
125	470KΩ	½	RC20AE474K	BTS-470K	Yl.-Vi.-Yl. Output Grid
126	270Ω	1	RC30AE271K	BW-1-270	Red-Vi.-Br. Output Cathode
127	33KΩ	1	RC30AE333K	BTA-33K	Or.-Or.-Or. Tone Comp.
128	1000Ω	1	RC30AE102K	BTA-1000	Br.-Blk.-Red " "
129	470Ω	1	RC30AE471K	BTA-470	Yl.-Vi.-Br. Head phones shunt
130	4700Ω	1	RC30AE472K	BTA-4700	Yl.-Vi.-Red Filter

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: HALLICRAFTERS PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: MERIT PART No.
131	117V AC	530V CT @ .74A	6.2V AC @ 2.0A, .100A DC@	6.3V AC @ 4.0A	52C143	P-8313		P-2955*

*Add series resistor to reduce plate voltage.

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE @ CURRENT (DC)	REPLACEMENT DATA: HALLICRAFT. PART NO.	REPLACEMENT DATA: STANCOR PART NO.	REPLACEMENT DATA: THORDARSON PART NO.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
132	.052A DC	290Ω	17 Henries	56B087	C-1709	T20028	C-29901	Will one new mounting hole.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: HALLICRAFT. PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
133	40000Ω	5000Ω 500Ω	360Ω	310Ω 38Ω	55B095				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: HALLICRAFTERS PART No.	REPLACEMENT DATA: MEISSNER PART No.
	Band				
134	Ant.Coil 1	86Ω	5Ω	51B926	
135	" " 2	1.5Ω	.3Ω	51B927	
136	" " 3	.2Ω	.1Ω	51B936	
137	" " 4	.1Ω	0Ω	51B925	
138	" " 5	0Ω	0Ω	51B924	
139	" " 6	0Ω	0Ω	51B923	
140	RF Coil 1	.3Ω	.1Ω	51B934	
141	" " 2	.2Ω	.1Ω	51B933	
142	" " 3	.6Ω	.1Ω	51B932	
143	" " 4	.2Ω	0Ω	51B931	
144	" " 5	0Ω	0Ω	51B930	
145	" " 6	0Ω	0Ω	51B929	
146	Osc. " 1	6.3Ω	.1Ω	51B935	
147	" " 2	1.8Ω	.1Ω	51B938	
148	" " 3	.4Ω	.1Ω	51B937	

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	HALLICRAFTER PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	
60	Temp.	Comp.	44A159					Osc. Plate Bypass
61	61	500	CC20UK510K	1468-00005	5W5Q5	MO.5-45	1FM-45	Osc. Grid Cap.-Cer.
62	100	500	CC25UK101K	1468-0001	5W5T1	MO.5-31	1FM-31	Osc. Coupling-Cer.
63	3900	500	CM35A392J					Fixed Pad.
64	1500	500	CM30A152J	1464-0015	1R5D15	MW.5-215		" "
65	15	500	CC20UK150K				MS-415	Fixed Trimmer-Cer.
66	25	500	47A141	1468-000025	5W5Q25	MO.5-425	MS-425	RF Coupling-Cer.
67	25	500	47A141	1468-000025	5W5Q25	MO.5-425	MS-425	" "
68	1500	350	47A61	1467-0015	1W5D15	MW.5-215	1FM-215	RF Decoupling-Cer.
69	1500	350	47A61	1467-0015	1W5D15	MW.5-215	1FM-215	RF Screen Bypass-Cer.
70	10000	350	47A167	684-01	DT681	GT-5-01	TC-11	RF Cathode Bypass-Cer.

Note-Not used in some models.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	HALLICRAFT. PART No.	IRC PART No.	CLAROSTAT PART No.	
71A	2 Meg.	½	25B601	D13-139	M-66-2	Volume Control
B	Shaft		Not Req.	A	Not Req.	Attach to 71A per instructions
C	Switch		" "	41	SW-A	" " " "
72A	10KΩ	½	25B577	D16-118	M-30-V	Sensitivity Control
B	Shaft		Not Req.	A	Not Req.	Attach to 72A per instructions
73	500Ω	1	25A569	W-500	43-500	"S" Meter Control

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	HALLICRAFTER PART No.	IRC PART No.	
74	47Ω	½	RC20AE470K		Yl.-Vi.-Blk. Ant. Loading
75	27Ω	½	RC20AE270K		Red-Vi.-Blk. Parasitic Suppressor
76	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
77	6.8Ω	½	23A011		Grn.-Blue-Gold Par. Suppressor
78	68Ω	½	RC20AE680K		Blue-Gray-Blk. RF Cathode
79	27KΩ	1	RC30AE273K	BTA-27K	Red-Vi.-Or. Bleeder
80	15KΩ	2	RC40AE153K	BT-2-15K	Br.-Grn.-Or. RF Screen Dropping
81	6.8Ω	½	23A011		Grn.-Blue-Gold Par. Suppressor
82	1000Ω	½	RC20AE102K	BTS-1000	Br.-Blk.-Red Decoupling
83	47Ω	½	RC20AE470K		Yl.-Vi.-Blk. Par. Suppressor
84	33Ω	½	RC20AE330K		Or.-Or.-Blk. " "
85	22KΩ	½	RC20AE223K	BTS-22K	Red-Red-Or. Osc. Grid
86	10KΩ	1	RC30A3103K	BTA-10K	Br.-Blk.-Or. Osc. Plate Load
87	2.2 Meg.	½	RC20AE225K	BTS-2.2 Meg	Red-Red-Grn. Conv. Grid
88	1000Ω	½	RC20AE102K	BTS-1000	Br.-Blk.-Red Conv. Cathode
89	15Ω	½	RC20AE150K		Br.-Grn.-Blk. Par. Suppressor
90	10Ω	½	RC20AE100K		Br.-Blk.-Blk. " "
91	47KΩ	1	RC30AE473K	BTA-47K	Yl.-Vi.-Or. Conv. Plate Dropping
92	22KΩ	½	RC20AE223K	BTS-22K	Red-Red-Or. Bleeder
93	82Ω	½	RC20AE820K		Gray-Red-Blk. 1st IF Cathode
94	15KΩ	2	RC40AE153K	BT-2-15K	Br.-Grn.-Or. 1st IF Screen
95	27KΩ	1	RC30AE273K	BTA-27K	Red-Vi.-Or. Bleeder
96	3300Ω	½	RC20AE332K	BTS-3300	Or.-Or.-Red 1st IF Plate Decoupling
97	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Br.-Blk.-Grn. 2nd IF Grid
98	82Ω	½	RC20AE820K		Gray-Red-Blk. Series "S" Meter
99	150Ω	½	RC20AE151K		Br.-Grn.-Br. 2nd IF Cathode
100	680Ω	½	RC20AE681K	BTS-680	Blue-Gray-Br. 2nd IF Cathode
101	33KΩ	1	RC30AE333K	BTA-33K	Or.-Or.-Or. 2nd IF Screen
102	3300Ω	½	RC20AE332K	BTS-3300	Or.-Or.-Red 2nd IF Plate Decoup.
103	1000Ω	½	RC20AE102K	BTS-1000	Br.-Blk.-Red 2nd IF Cathode
104	220KΩ	½	RC20AE224K	BTS-220K	Red-Red-Yl. 3rd IF Grid
105	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
106	150Ω	½	RC20AE151K		Br.-Grn.-Br. Par. Suppressor
107	100KΩ	1	RC30AE104K	BTA-100K	Br.-Blk.-Yl. 3rd IF Decoupling
108	100KΩ	½	RC20AE104K	BTS-100K	Br.-Blk.-Yl. De-emphasis
109	100KΩ	½	RC20AE104K	BTS-100K	Br.-Blk.-Yl. Ratio Det. Diode Load
110	100KΩ	½	RC20AE104K	BTS-100K	Br.-Blk.-Yl. " " " "
111	100KΩ	½	RC20AE104K	BTS-100K	Br.-Blk.-Yl. AM Diode Filter

DATE 9/48-44015-13

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	HALLICRAFTER PART No.	MEISSNER PART No.	
149	Osc. Coil 4	.1Ω	0Ω	51B936		
150	" " 5	0Ω	0Ω	51B935		
151	" " 6	0Ω	0Ω	51B941		
152	1st IF AM	8.5Ω	6.8Ω‡	50C212		‡Includes both secondaries.
B	" " FM	1.2Ω				
153	2nd IF AM	12*	7.8Ω	50C213		*Includes both primaries.
B	" " FM		.1Ω			
154	3rd IF AM	9.6Ω*	6Ω	50C214		
B	" " FM		.7Ω			
155	FM Det. Trans.	8Ω	1.2Ω	50C808		
156	AM BFO Coil		14Ω	54B033-1		
157	Ind. Osc. "		0Ω	51B984		
158	RF Choke		3.8Ω	53A108		
159	" "		.8Ω	53B009		
160	" "		9.5Ω	53A107		

DIAL LIGHT

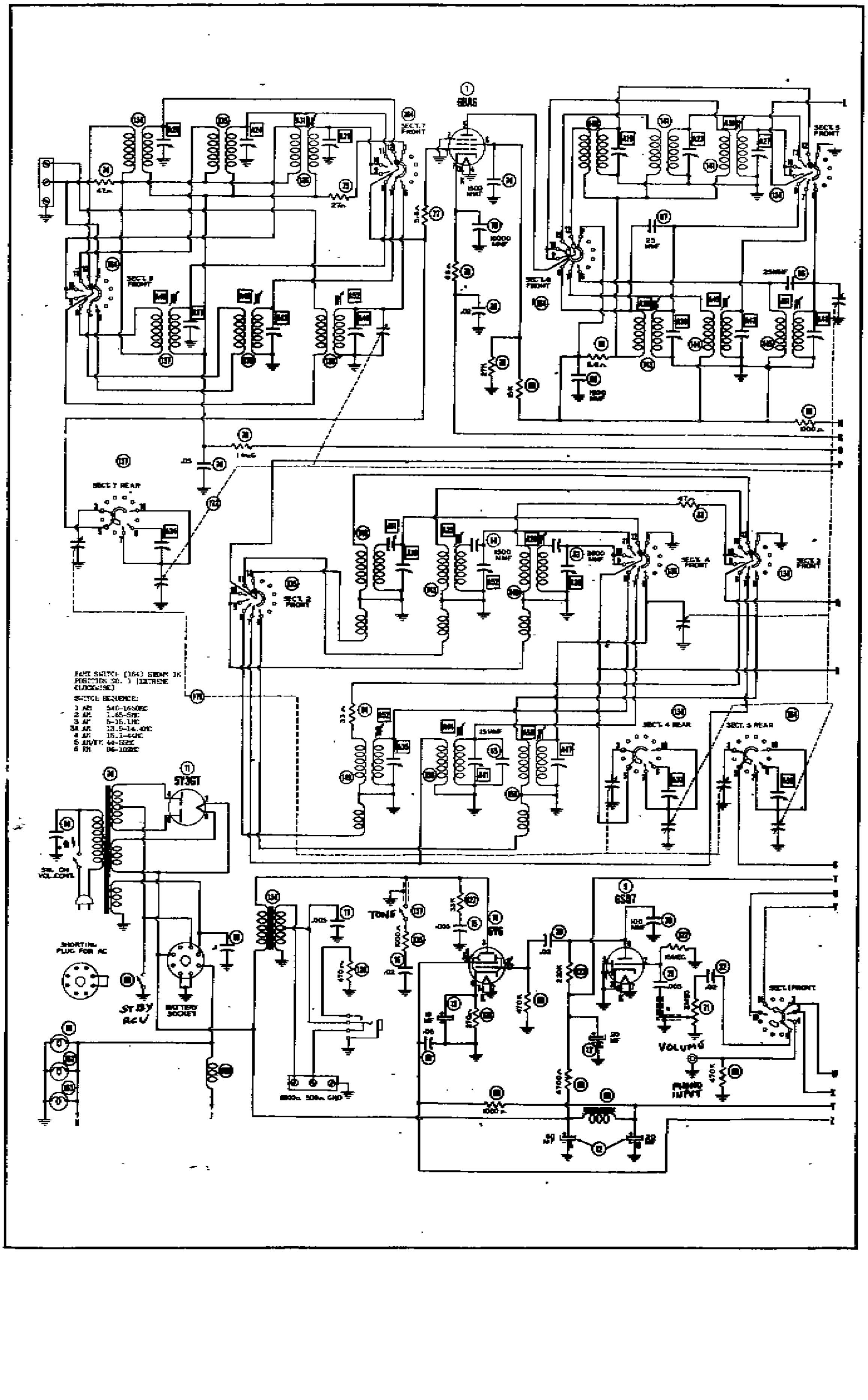
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					HALLICRAFT. PART No.		
161	Bayonet	6-8	0.15	Brown	39A004		Type 47
162-163	"	"	0.25	Blue			Type 44

MISCELLANEOUS

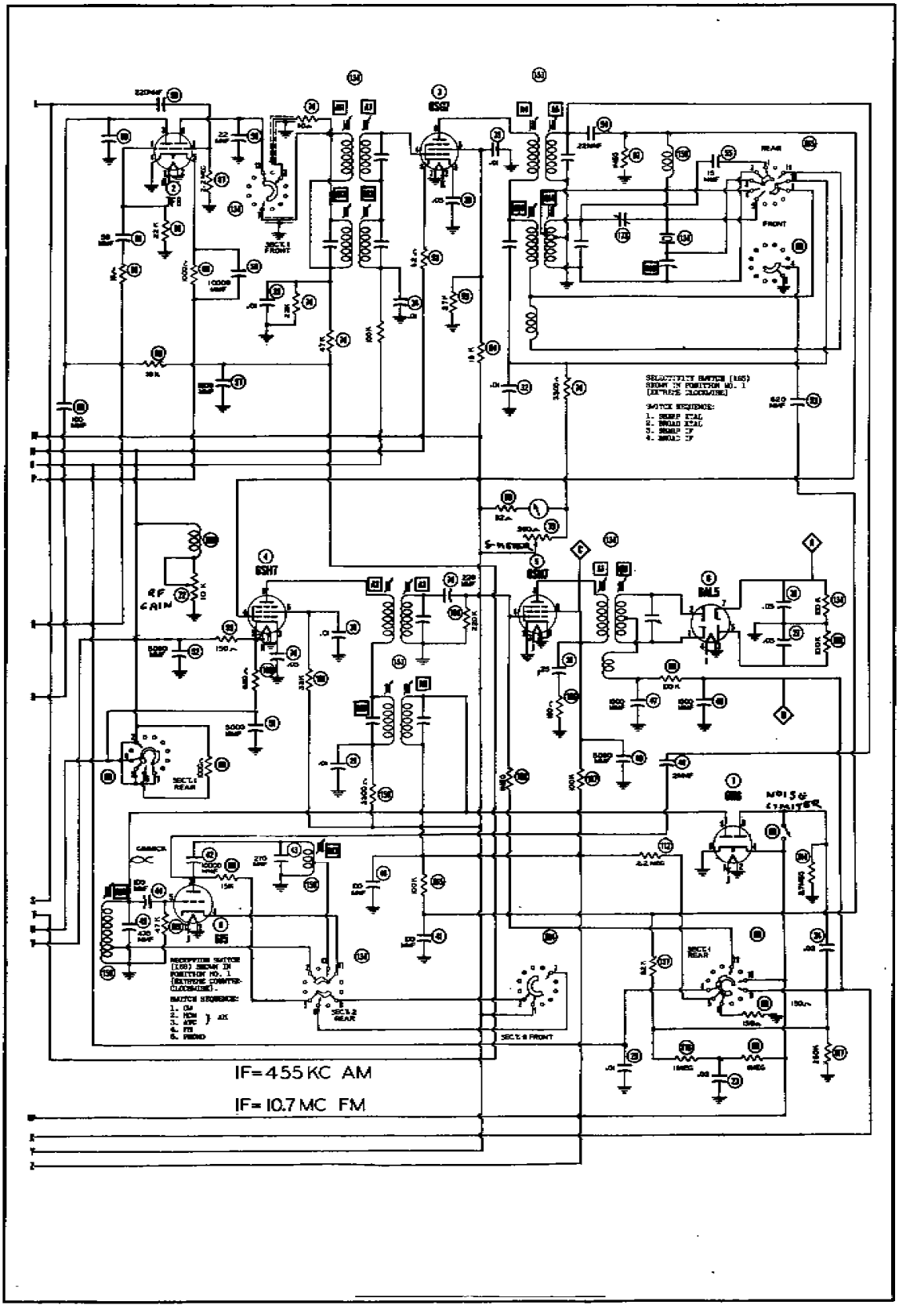
ITEM No.	PART NAME	HALLICRAFTERS PART No.	NOTES
164	Switch	60C261	Band
165	"	60B263	Selectivity
166	"	60B262	Reception
167	"	60A133	Tone
168	"	60A136	Standby-Receive
169	"	60A136	Noise Limiter
170	Crystal	19A123	455KC
171	3 Gang Var. Cap	48C174	(15-476mmFD) Each section (AM)
172	" " "	48C173	(Bandspread-FM)
173	Phasing Control		
	Capacitor	48A182	
	Trimmer	44A047	A15
	Trimmer Strip Assby.	44B197	A18, A21, A22, A26, A35
	" "	44B199	A19, A23, A27, A36
	" "	44B199	A20, A24, A28, A37
	Trimmer	44A047	A32, A33, A34, A48, A49
	"	44A200	A41, A42, A46
	"	44A115	A47
	Meter	82B125	Carrier Level

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 6-8V. 250MA. 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. #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.



6BA6
5Y3GT
SECT. 7 REAR
SECT. 2 FRONT
SECT. 4 FRONT
SECT. 3 FRONT
SECT. 4 REAR
SECT. 5 REAR
SECT. 1 FRONT
SWITCH SEQUENCE:
SHORTING PLUG FOR AC
BATTERY SOCKET
STBY
RCV
TONE
VOLUME
PHONO INPUT


RF GAIN
IF=455 KC AM
IF=10.7 MC FM

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BA6	0V.	0V.	6.3VAC	0V.	250VDC	120VDC	8VDC	-
2	7F8	-2VDC§	0V.	180VDC	0V.	.6VDC	65VDC	6.3VAC	-.5VDC
3	6SQ7	0V.	6.3VAC	1.6VDC	0V.	1.6VDC	155VDC	0V.	260VDC
4	6SH7	0V.	6.3VAC	4.6VDC	0V.	4.6VDC	225VDC	0V.	270VDC
5	6SH7‡	0V.	0V.	0V.	-.4VDC	0V.	35VDC	6.3VAC	35VDC
6	6AL5‡	0V.	0V.	0V.	6.3VAC	.4VDC	0V.	-.4VDC	-
7	6H6	0V.	0V.	0V.	0V.	-.5VDC	0V.	6.3VAC	0V.
8	6J5**	0V.	0V.	160VDC	0V.	-6.4VDC§	0V.	6.3VAC	0V.
9	6SQ7	0V.	-.4VDC	0V.	0V.	0V.	120VDC	0V.	6.3VAC
10	6V6GT	0V.	0V.	280VDC	270VDC	0V.	240VDC	6.3VAC	12.5VDC
11	5Y3GT	0V.	290VDC	0V.	265VAC	0V.	265VAC	0V.	290VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BA6	3.6 Meg.	0Ω	.1Ω	0Ω	20KΩ	15KΩ	78Ω	-
2	7F8	22KΩ	0Ω	30KΩ	0Ω	1KΩ	20KΩ	.1Ω	2.2 Meg.
3	6SQ7	0Ω	.1Ω	92Ω	2.6 Meg.	92Ω	15KΩ	0Ω	24KΩ
4	6SH7	0Ω	.1Ω	69ΩΩ	5Ω	69ΩΩ	50KΩ	0Ω	24KΩ
5	6SH7‡	0Ω	0Ω	0Ω	220KΩ	0Ω	120KΩ	.1Ω	120KΩ
6	6AL5‡	INF.	INF.	0Ω	.1Ω	100KΩ	0Ω	100KΩ	-
7	6H6	0Ω	0Ω	1.3 Meg.	1.3 Meg.	400KΩ	0Ω	.1Ω	0Ω
8	6J5**	0Ω	0Ω	25KΩ	0Ω	47KΩ	0Ω	.1Ω	4Ω
9	6SQ7	0Ω	15 Meg.	0Ω	0Ω	0Ω	240KΩ	0Ω	.1Ω
10	6V6GT	0Ω	0Ω	20KΩ	21KΩ	470KΩ	20KΩ	.1Ω	26ΩΩ
11	5Y3GT	INF.	20KΩ	INF.	70Ω	INF.	65Ω	INF.	20KΩ

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.
RECEIVE-STANDBY SWITCH IN RECEIVE POSITION.
**TAKEN IN ON POSITION. NOISE LIMITER OFF.
SENSITIVITY CONTROL FULL ON.
SELECTIVITY CONTROL FULL ON.
TONE HIGH.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

STAGE GAIN MEASUREMENTS		
ANTENNA TO RF GRID	2X	600KC
RF GRID TO CONV. GRID	2X	600KC
CONVERSION GAIN	15X	IN 600KC OUT 455KC
INPUT IF TRANSFORMER	1.5X	455KC
1st IF TUBE	175X	455KC
INTER IF TRANS.	.1X	455KC
2nd IF TUBE	200X	455KC
OUTPUT IF TRANS.	.3X	455KC
AUDIO	35X	400 ∿
OUTPUT	28X	400 ∿

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by connecting negative (-) 3 volts to the AVC line.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Set all controls as follows except where noted otherwise: "Crystal-phasing" to zero, "Sensitivity" at maximum, "Reception" to "AM-MVC", "Selectivity" to "Normal-Sharp", "Volume" at maximum"CW Pitch" to zero, Tone switch to "High", Standby-Receive switch to "Receive" and Noise Limiter to "Off". Set bandspread tuning cap. fully open at all times with exception of Bands 5 & 6 where it only is used for tuning.

Use insulated alignment screwdriver for all adjustments.

10.7 MC IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1	Direct	High side to rear stator of center section of bandspread tuning cap.	10.7MC (Unmodulated)	Band "5"	50 on logging scale.	DC probe to Point ⊕. Common to ground.	A1,A2, A3,A4, A5,A6, A7	Turn reception switch to "FM" and adjust for maximum deflection.
2	"	"	"	"	"	DC probe to Point ⊕. Common to ground.	A8	Adjust for zero deflection. Continue with AM alignment in Step 5.

10.7 MC IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use freq. modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
1	.05 MFD	High side to Pin 4 (grid) of 6BH7 2nd IF Tube (4). Low side to chassis.	10.7MC (Freq. Mod.)	Band "5"	50 on logging scale.	Vertical input in series with .05 MFD. cap. to Point ⊕. Low side to chassis.	A2,A3	Turn reception switch to FM and adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.
2	.05 MFD	High side to Pin 4 (grid) of 6BH7. Low side to chassis.	"	"	"	"	A4,A5	"
3	.05 MFD	High side to rear stator of center section of bandspread tuning cap.	"	"	"	"	A6,A7	"
4	.05 MFD	High side to Pin 4 (grid) of 6BH7 2nd IF Tube (4). Low side to chassis.	"	"	"	Vertical input to Point ⊕. Ground to chassis.	A1,A8	Alternately adjust A1 for maximum amplitude and A8 for maximum straightness of crossover lines with crossover occurring at center of pattern per Fig. 2. Continue with AM Alignment in Step 5.

AM IF ALIGNMENT

In Steps 5, 6, 7 and 8 set sig. gen. to exact crystal frequency as follows: Set sig. gen. to approximately 455KC. Turn BFO on and set CW pitch for approximately a 1000 ∿ note. Set selectivity control to "Crystal-Sharp" and tune sig. gen. to weakest of the two response frequencies on either side of zero beat. Adjust "Crystal-Phasing" control for minimum audio output. Retune sig. gen. for maximum output on the opposite side of zero beat.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
5	Direct	High side to rear stator of center section of tuning cap. Low side to chassis.	455KC (See pre-alignment notes)	Band "4"	50 on logging scale.	Across voice coil	A9,A10, A11,A12 A13	Turn selectivity switch to normal sharp and adjust A9, A10, A11, A12 and A13 for maximum output.
6	Direct	"	"	"	"	"	A14	Turn selectivity switch to "Crystal-Broad". Adjust A14 for maximum output.
7	Direct	"	"	"	"	"	A15	Turn selectivity switch to "Normal-Sharp". Adjust A15 for maximum output.
8	Direct	"	"	"	"	"	A16	Turn reception switch to "CW". Remove CW pitch control knob and adjust A16 for zero beat. Replace knob with zero at index line. Repeat 10.7 MC IF alignment to insure that they have not been detuned in the process of aligning 455KC IF
9	Direct	"	10.7MC	Band "5"	"	"	A17	Adjust for maximum output. Tune sig. gen. to 11.61MC. If signal is not heard retune sig. gen. to 10.7 MC and adjust A17 counter clockwise to next peak. Adjust for maximum output and recheck for image. Reassembly receiver in cabinet.

RF ALIGNMENT

RMA Dummy consists of 200 MMFD cap. in series with 20 microhenry choke with choke shunted by a 400 MMFD cap. in series with a 400Ω carbon resistor.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
10	RMA Dummy (see prealignment notes)	High side to ant. terminal "A1". Low side to "A2" with "A2" grounded.	1500KC	Band 1	1500KC	Across voice coil	A18, A19, A20	Adjust for maximum output in order given.
11	"	"	600KC	"	600KC	"	A21	Adjust for maximum output in order given. Repeat Steps 10 & 11 until no further improvement can be made.
12	"	"	4.5MC	Band 2	4.5MC	"	A22, A23, A24	Adjust for maximum output in order given.
13	"	"	2MC	"	2MC	"	A25	Adjust for maximum output in order given. Repeat Steps 12 & 13 until no further improvement can be made.
14	330Ω carbon res.	"	14MC	Band 3	14MC	"	A26	Adjust for maximum output.
15	"	"	"	"	Tune for maximum output.	"	A27, A28	Rock tuning cap. and adjust for maximum output.
16	"	"	6MC	"	6MC	"	A29	Adjust for maximum output.
17	"	"	"	"	Tune for maximum output.	"	A30, A31	Rock tuning cap. and adjust for maximum output. Repeat Steps 14 thru 17 until no further improvement can be made.
18	"	"	14MC	Band 3A	Main tuning dial at 20 meter band marker. Bandspread at 14MC.	"	A32	Adjust for maximum output.
19	"	"	14.2MC	"	Main tuning dial at 20 meter band marker. Bandspread tuned maximum output.	"	A33, A34	Rock tuning cap. and adjust for maximum output.
20	"	"	36MC	Band 4	36MC	"	A35	Adjust for maximum output. Tune sig. gen. to 35.1MC. If signal is not heard, retune sig. gen. to 36MC and close A35 to next peak. Adjust for maximum output and recheck for image.
21	"	"	"	"	Tune for maximum output.	"	A36, A37	Rock tuning cap. and adjust for maximum output.
22	"	"	18MC	"	18MC	"	A38	Adjust for maximum output.
23	"	"	"	"	Tune for maximum output.	"	A39, A40	Rock tuning cap. and adjust for maximum output. Repeat Steps 20 thru 23 until no further improvement can be made.
24	"	"	54MC	Band 5	54MC (On bandspread dial)	"	A41	Adjust for maximum output.
25	"	"	"	"	Tune for maximum output.	"	A42, A43	Rock tuning cap. and adjust for maximum output.
26	"	"	46MC	"	46MC	"	A44	Adjust for maximum output.
27	"	"	"	"	Tune for maximum output.	"	A45, A46	Rock tuning cap. and adjust for maximum output. Repeat Steps 24 thru 27 until no further improvement can be made.
28	"	"	"	"	44.6MC (See remarks)	"	A17	Tune for fourth harmonic of the second oscillator at approx. 44.6MC If signal is not heard A17 is adjusted to the image frequency and Step 9 must be repeated.
						CONNECT VTVM		
29	330Ω carbon res.	High side to out. terminal "A1". Low side to "A2" with "A2" grounded	106MC	Band 6	106MC	DC probe to Point ◇ .Common to chassis	A47	Adjust for maximum deflection.
30	"	"	"	"	Tune for maximum deflection.	"	A48, A49	Rock tuning cap. and adjust for maximum deflection.
31	"	"	88MC	"	88MC	"	A50	Adjust for maximum deflection.
32	"	"	"	"	Tune for maximum deflection.	"	A51, A52	Rock tuning cap. and adjust for maximum deflection. Repeat Steps 29 thru 32 until no further improvement can be made.

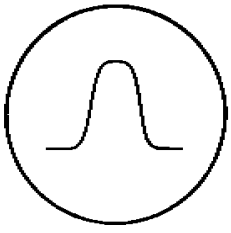


FIG. 1

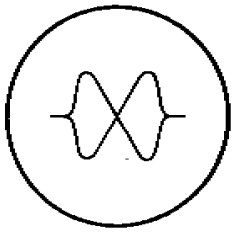


FIG. 2

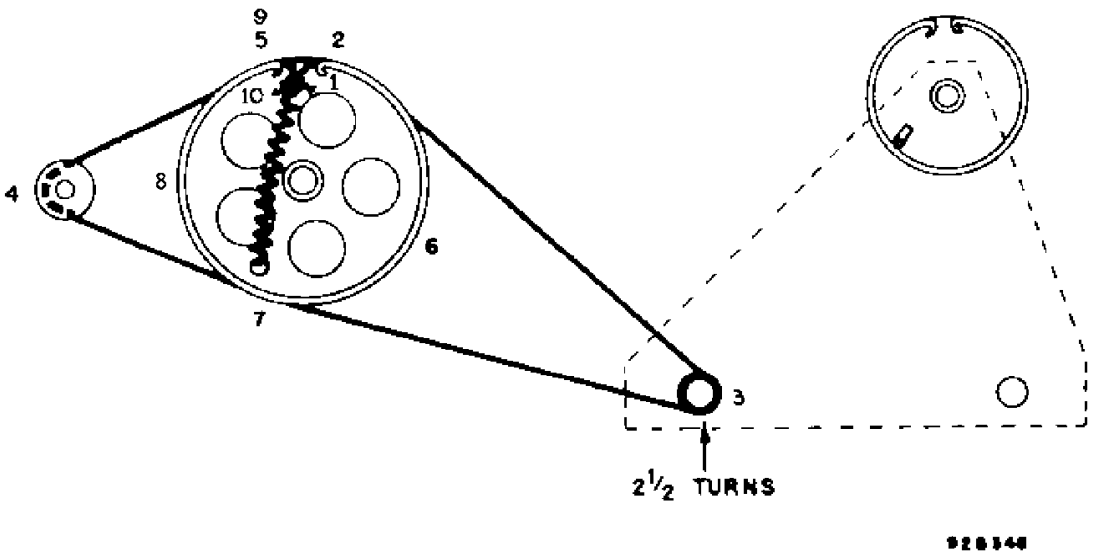


Fig. 1. Dial cable stringing, general coverage dial

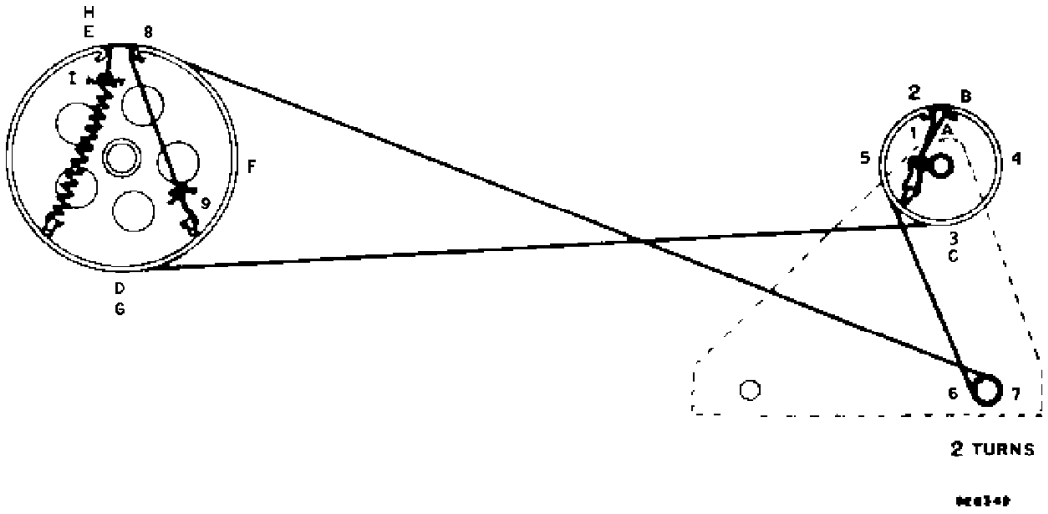


Fig. 2. Dial cable stringing, band spread dial.

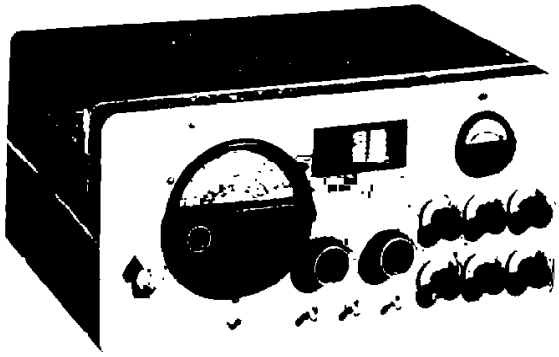
JUNE
FORM
RUN
SEE CHAS.
STAMP.

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/1.7 mc.
Power Supply	105–125 V. 50/60 cycles AC.
Power Consumption	75 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 1–8 (approximately 34 inches long) and the other lettered A to I (approximately 27 inches long). In production the short, numbered route, string is threaded through first in the bandspread drive.

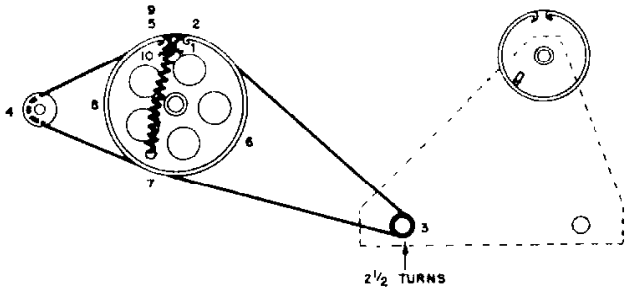


Fig. 1. Dial cable stringing, general coverage dial

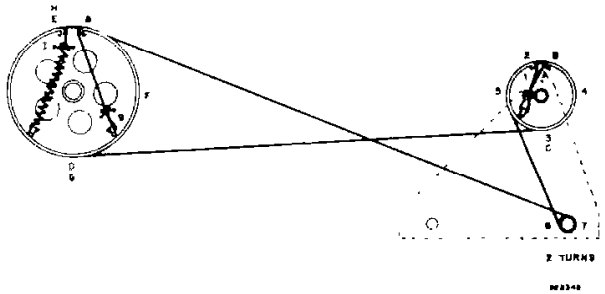


Fig. 2. Dial cable stringing, band spread dial.

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. .25 AMA. 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.*

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 detunning during adjustments in steps 3, 4, and 5.						
8	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	BAND SEL.-1 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	1500 kc	B*, C, D	Adjust for max. audio output.
			600 kc		600 kc	E*	
10	Std. RMA dummy	See step 9.	4.5 mc	BAND SEL.-2 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	4.5 mc	F*, G, H	Adjust for max. audio output.
			2 mc		2 mc	S16*	
11	330-ohm carbon res.	See step 9.	14 mc ***	BAND SEL.-3 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	14 mc	I*, J, K	Adjust for max. audio output.
			6 mc ***		6 mc	S17*, S18 S19	
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*** 18 mc***	BAND SEL.-4 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	36 mc 18 mc	O*, P, Q S20*, S21, S22	Adjust for max. audio output. Osc. falls on low freq. side of signal.
15	330-ohm carbon res	See step 9	54 mc *** 46 mc ***	BAND SEL.-5 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	54 mc 46 mc	R*, S, T S23*, S24 S25	Adjust for max. audio output
16	330-ohm carbon res.	See step 9	106 mc *** 89 mc ***	BAND SEL.-6 REC. sw.-AM-MVC SEL. sw.-NORMAL-SHARP	106 mc 89 mc	U*, V, W, S26*, S27, S28	See step 1.

For footnotes - see previous page.

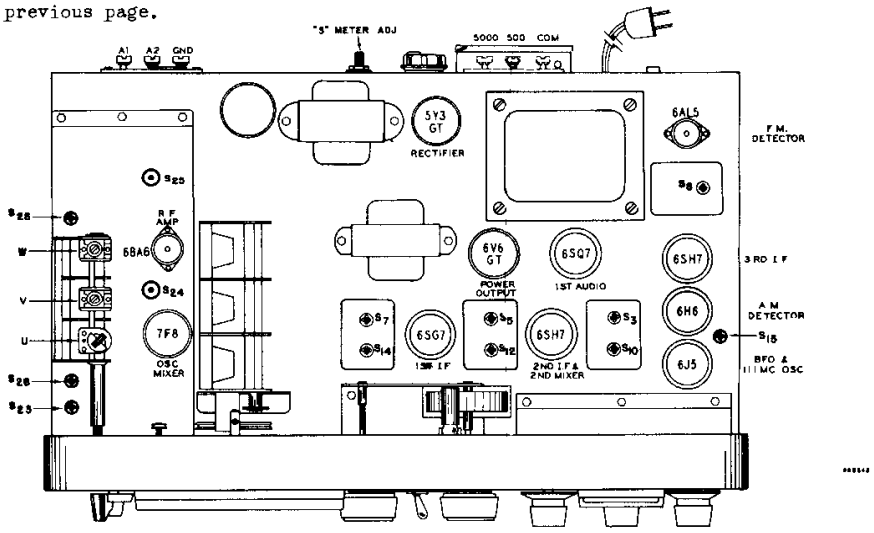


Fig. 3. Alignment adjustments, top view.

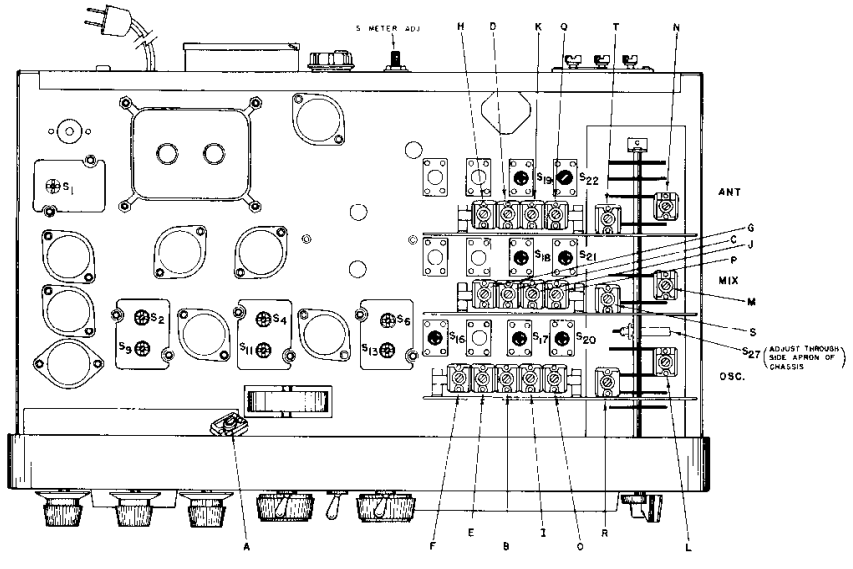


Fig. 4. Alignment adjustments, bottom view.

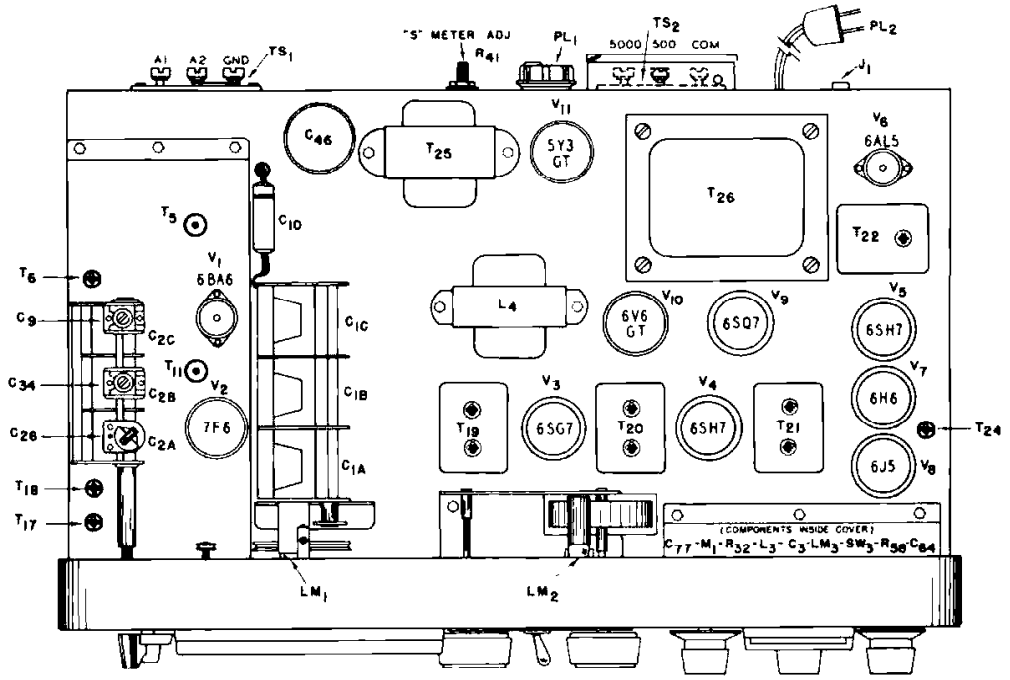


Fig. 5. Component location, top view.

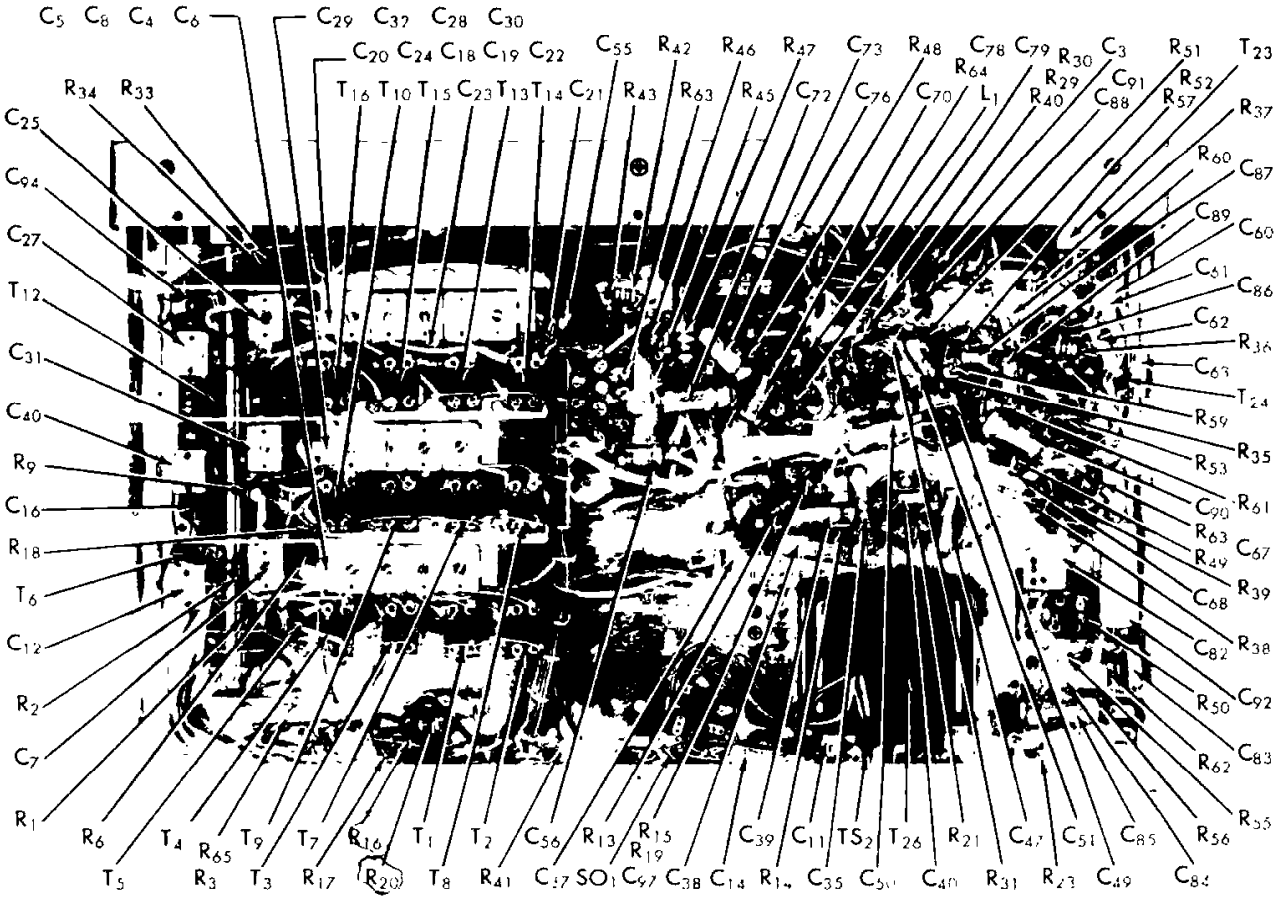


Fig. 6. Component location, bottom view.

92X720

SERVICE PARTS LIST

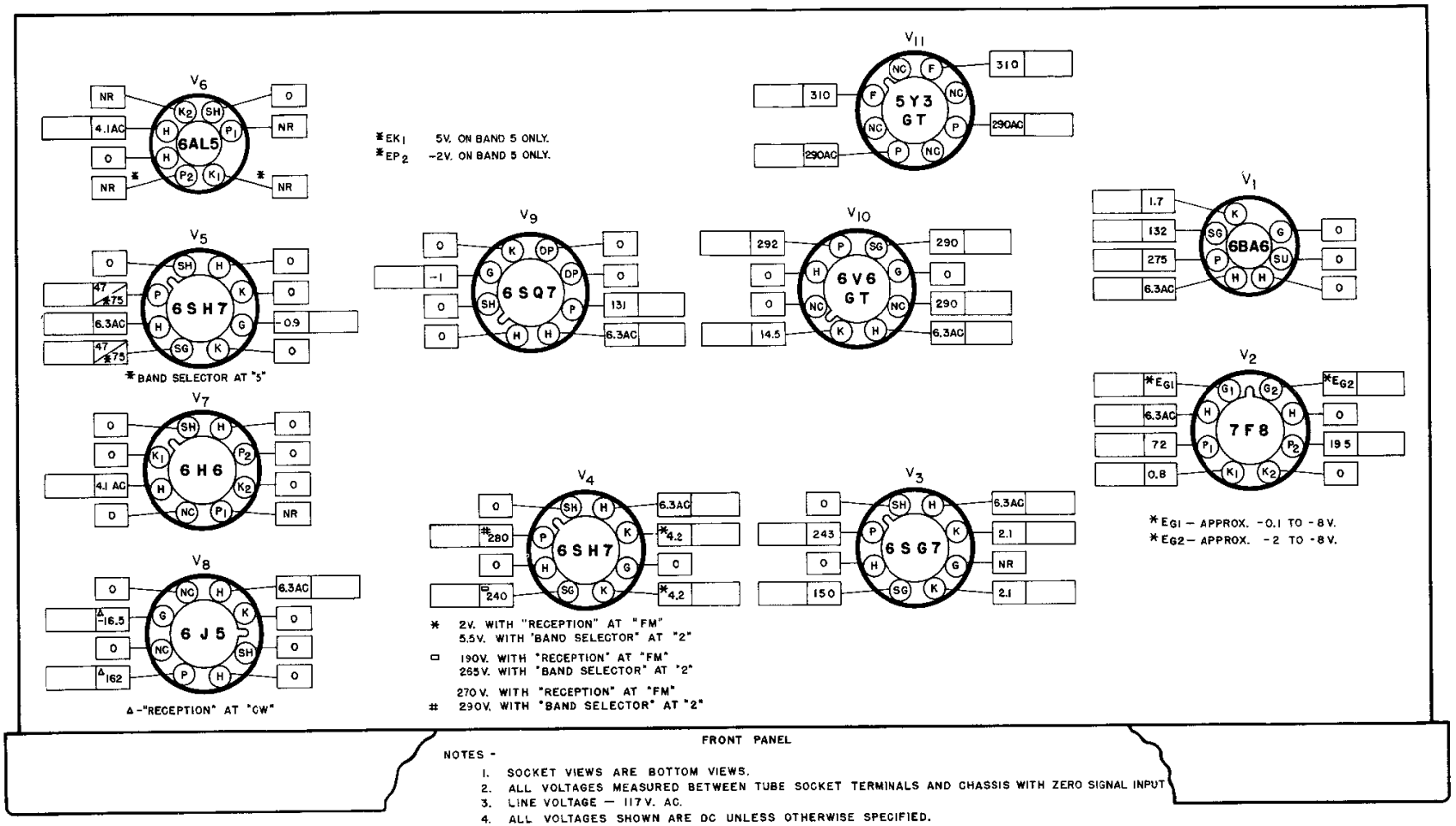
REF. NO.	DESCRIPTION	HALLICRAFTER'S PART NUMBER
	CAPACITORS	
C-1	Capacitor, general coverage	48C174
C-2	Capacitor, band spread	48C173
C-3,39,48,89	.02 mfd 400 V., tubular paper	46AW203J
C-4,5,6,8,28, 29,30,32	Capacitor, trimmer strip assy.	44B199
C-7,25,31	Capacitor, trimmer, 4-50 mmf	44A200
C-9,12,27,34,96 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	CM25AB21K
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
	RESISTORS	
R-1,10	47 ohms ½ watt, carbon	RC20AE470K
R-2	27 ohms ½ watt, carbon	RC20AE270K
R-3,38,54,59,61	1 meg-ohm ½ watt, carbon	RC20AE105K
R-4,9	6 ohms ½ watt, carbon	23A011
R-5	68 ohms ½ 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 ½ 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 ½ 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 ½ watt, carbon	RC20AE102K
R-18,29,58	150 ohms ½ watt, carbon	RC20AE151K
R-19,39	220,000 ohms ½ watt, carbon	RC20AE224K
R-20	4700 ohms 1 watt, carbon	RC30AE472K
R-21	15 megohms ½ watt, carbon	RC20AE156K
R-22	Resistor, variable, VOLUME control	25B601
R-24	15 ohms ½ watt, carbon	RC20AE150K
R-25,42	22,000 ohms ½ watt, carbon	RC20AE223K
R-27	10,000 ohms 1 watt, carbon	RC30AE103K
R-28,52	2.2 megohms ½ watt, carbon	RC20AE225K
R-29,58,62	150 ohms ½ watt, carbon	RC20AE151K
R-30	680 ohms ½ watt, carbon	RC20AE681K
R-32	Resistor, variable, SENSITIVITY control	25B577
R-33	10 ohms ½ watt, carbon	RC20AE100K
R-35,48	3300 ohms ½ watt, carbon	RC20AE332K
R-36	47,000 ohms ½ watt, carbon	RC20AE473K
R-37	15,000 ohms 1 watt, carbon	RC30AE153K
R-40,45	82 ohms ½ 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 ½ watt, carbon	RC20AE104K
R-53,65	6.8 megohms ½ watt, carbon	RC20AE685M
R-57	82,000 ohms ½ watt, carbon	RC20AE823K
R-60	250,000 ohms ½ watt, carbon	RC20AE254K
R-62,63	6.8 Ohms 1 watt, carbon	RC30AE068K
R-64	680,000 ohms ½ watt, carbon	RC20AE684M

SERVICE PARTS LIST (Continued)

REF NO	DESCRIPTION	HALLICRAFTER'S PART NUMBER
	COILS AND TRANSFORMERS	
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.

	TUBES AND LAMPS	
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
	SWITCHES	
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	
	PLUGS AND SOCKETS	
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, loctal, tube	6A223
	Socket, pilot lamp, dial	86B050
	Socket, pilot lamp, meter	6A262
	MISCELLANEOUS COMPONENTS	
M-1	Meter, carrier level	82B125
	Knob, TUNING and BANDSPREAD	15A048
	Knob, CW PITCH	15A089
	Knob, BAND SELECTOR	158088-1
	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

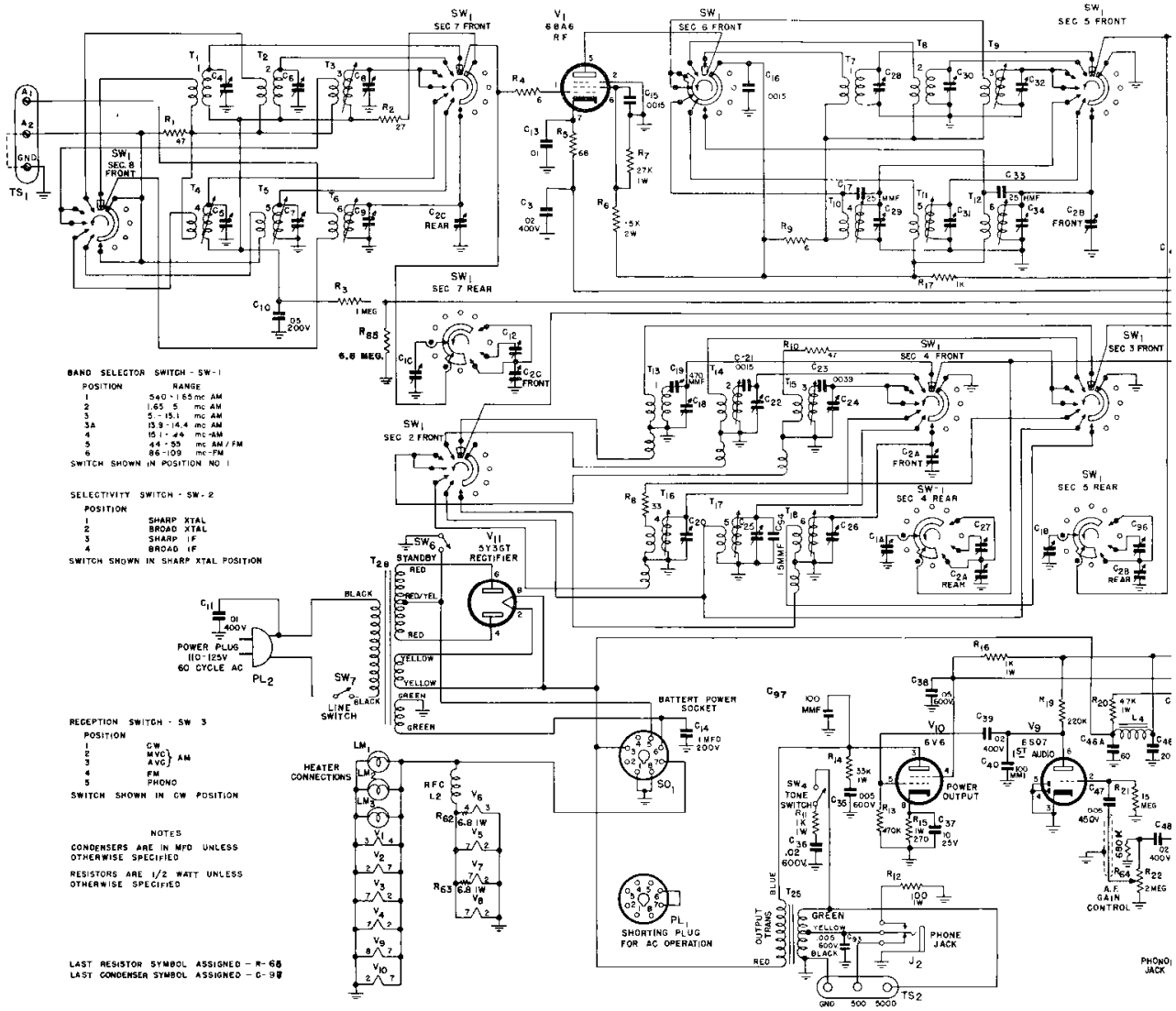


NOTES -

1. SOCKET VIEWS ARE BOTTOM VIEWS.
2. ALL VOLTAGES MEASURED BETWEEN TUBE SOCKET TERMINALS AND CHASSIS WITH ZERO SIGNAL INPUT
3. LINE VOLTAGE — 117 V. AC.
4. ALL VOLTAGES SHOWN ARE DC UNLESS OTHERWISE SPECIFIED.
5. VOLTAGES SHOWN WERE MEASURED WITH AN ELECTRONIC VOLTMETER
6. "NC" — NO CONNECTION (VOLTAGE SHOWN FOR THIS TERMINAL ONLY WHEN TERMINAL IS USED AS A TIE LUG.)
7. CONTROL SETTING —
   "RECEPTION" AT "AM (MVC)" UNLESS OTHERWISE NOTED.
   "STANDBY-RECEIVE" AT "RECEIVE".
   "BAND SELECTOR" AT "4" UNLESS OTHERWISE NOTED.
   "SENSITIVITY" CONTROL — MAXIMUM GAIN.
8. "NR" NOT READABLE. VOLTAGES MEASURED AT THESE TERMINALS GENERALLY MEANINGLESS
9. ▭ SPACE PROVIDED FOR SERVICE METER READINGS.

92D719

Fig. 7. Tube socket voltage chart.


SW1 SEC 7 FRONT
V1 6BA6 RF
SW1 SEC 6 FRONT
SW1 SEC 5 FRONT
SW1 SEC 8 FRONT
SW1 SEC 7 REAR
SW1 SEC 4 FRONT
SW1 SEC 3 FRONT
SW1 SEC 2 FRONT
SW1 SEC 4 REAR
SW1 SEC 5 REAR
V11 5Y3GT RECTIFIER
V10 6V6 POWER OUTPUT
V9 6SQ7 1ST AUDIO
POWER PLUG 110-125V 60 CYCLE AC
PL2
SW7 LINE SWITCH
SW6 STANDBY
BATTERY POWER SOCKET
SO1
PL1 SHORTING PLUG FOR AC OPERATION
HEATER CONNECTIONS
SW4 TONE SWITCH
OUTPUT TRANS
PHONE JACK
J2
TS2
A.F. GAIN CONTROL
PHONO JACK
TS1
BAND SELECTOR SWITCH - SW-1
POSITION RANGE
1 540 - 1650 kc AM
2 1650 - 5000 kc 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
1 SHARP XTAL
2 BROAD XTAL
3 SHARP IF
4 BROAD IF
SWITCH SHOWN IN SHARP XTAL POSITION
RECEPTION SWITCH - SW-3
POSITION
1 CW
2 MVC } AM
3 AVC }
4 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-68
LAST CONDENSER SYMBOL ASSIGNED - C-98

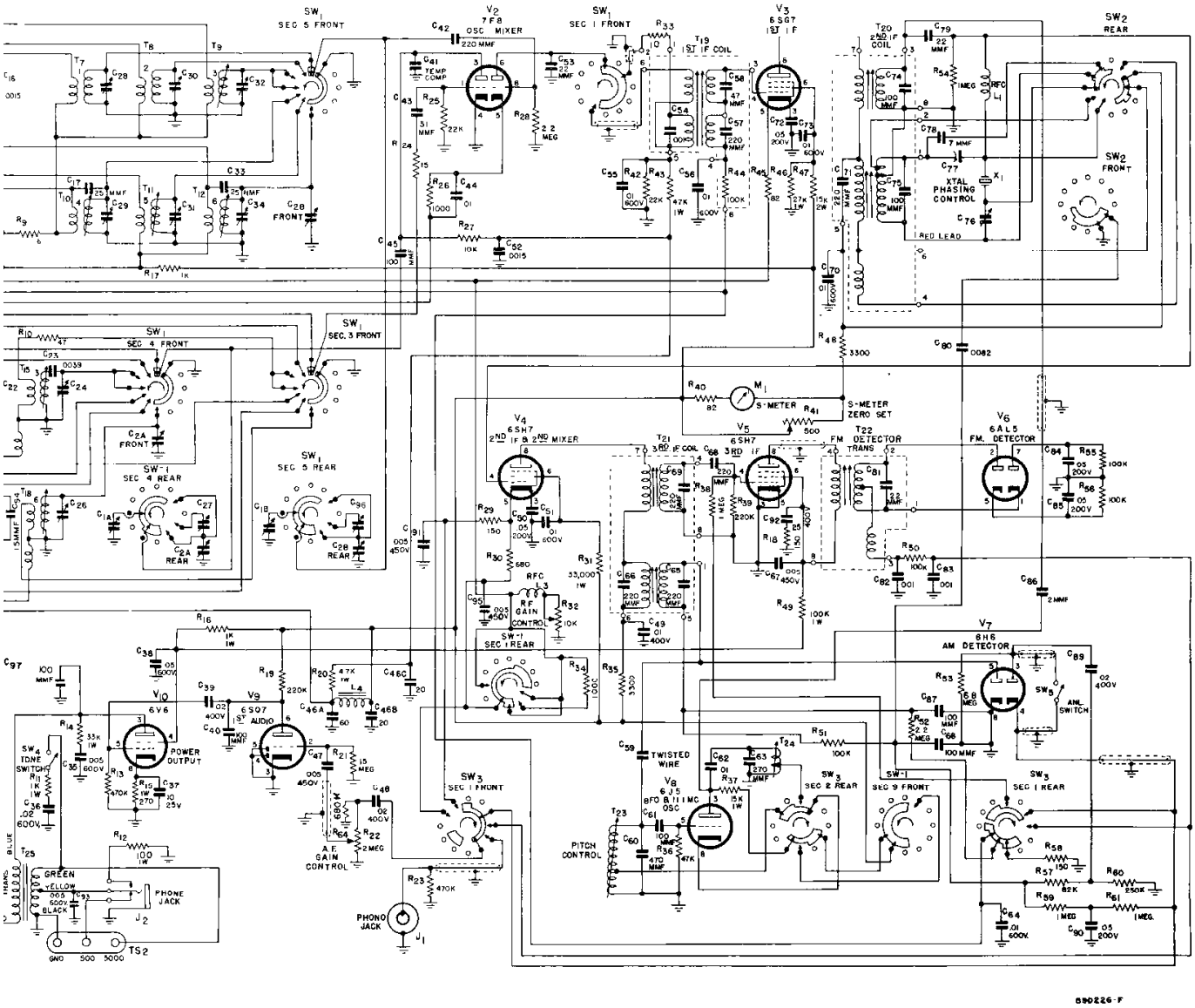


Fig. 8. Schematic diagram.

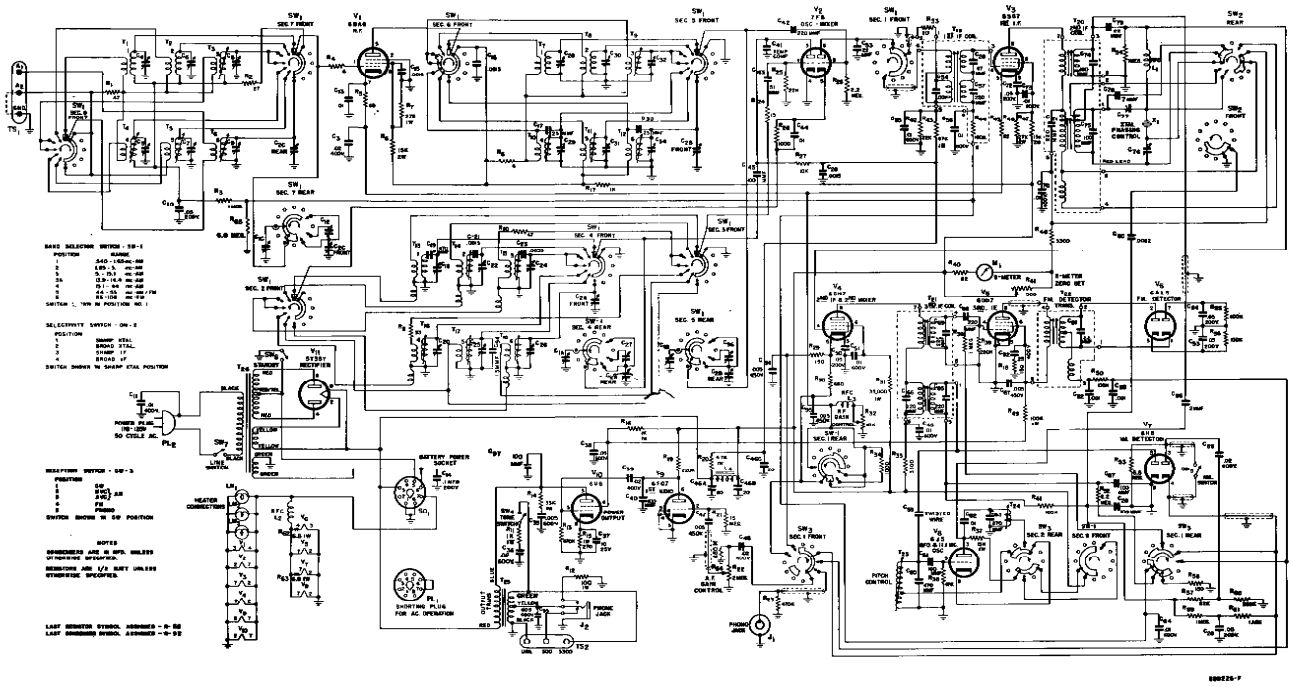


Fig. 8. Schematic diagram.