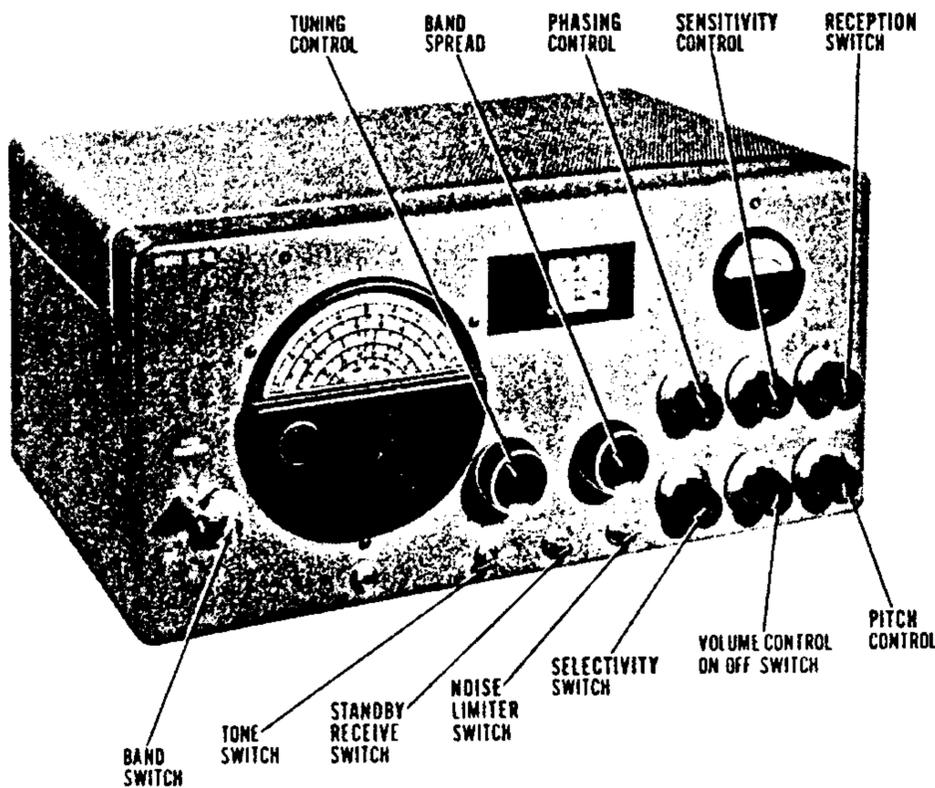


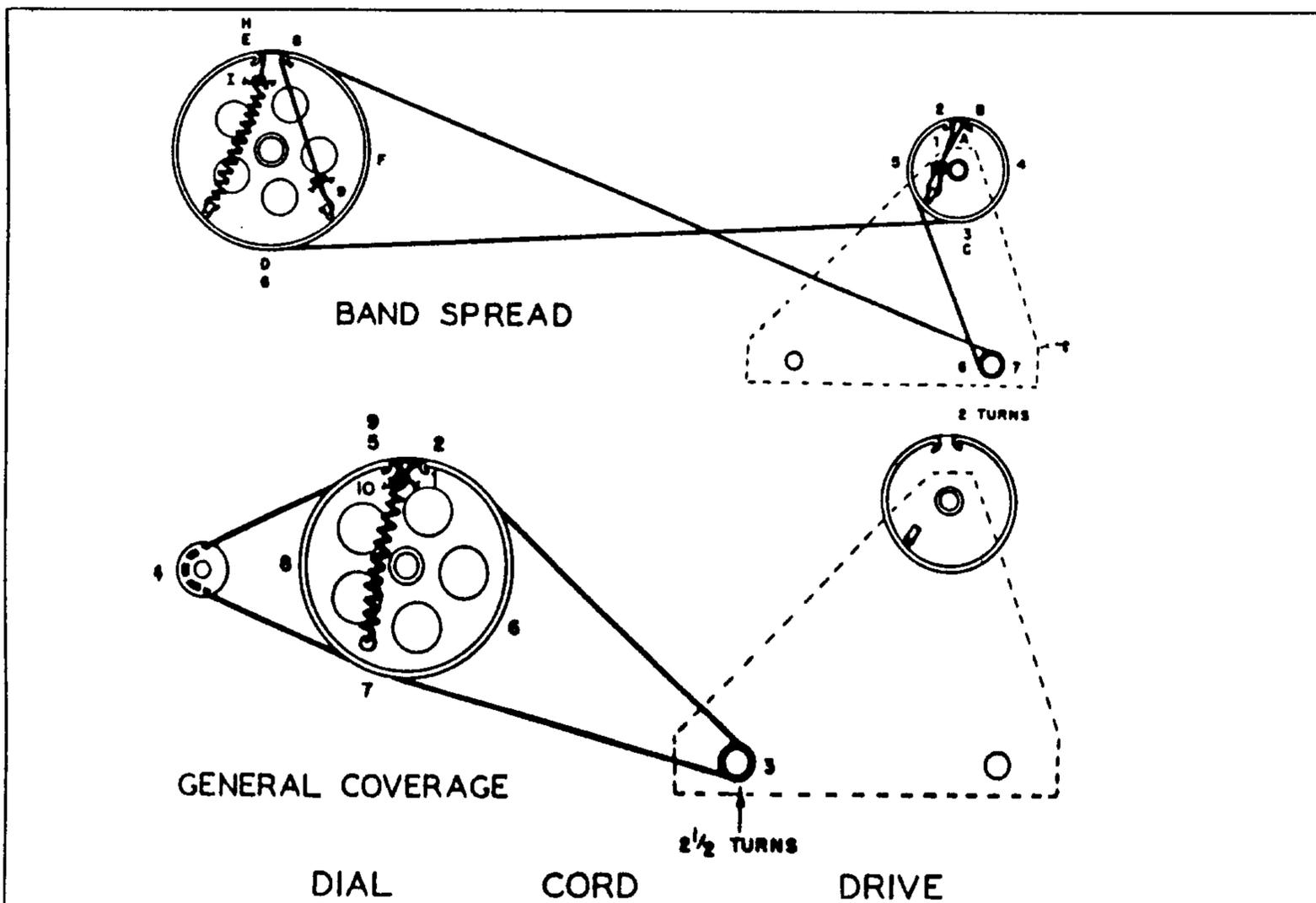
HALLICRAFTERS MODEL SX-43



HALLICRAFTERS MODEL SX-43

TRADE NAME	Hallcrafters, Model SX-43		
MANUFACTURER	Hallcrafters 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, 6SG7 1st IF Amp., 6SH7 2nd IF-2nd Mixer, 6SH7 3rd IF Amp., 6AL5 FM Ratio Det., 6H6 AM Det., 6J5 BFO-2nd Osc., 6SQ7 AF Amp., 6V6GT Power Output, 5Y3GT Rectifier.		
POWER SUPPLY	105-125 Volts AC		
RATING	.68 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.	44-55MC, 86-109MC

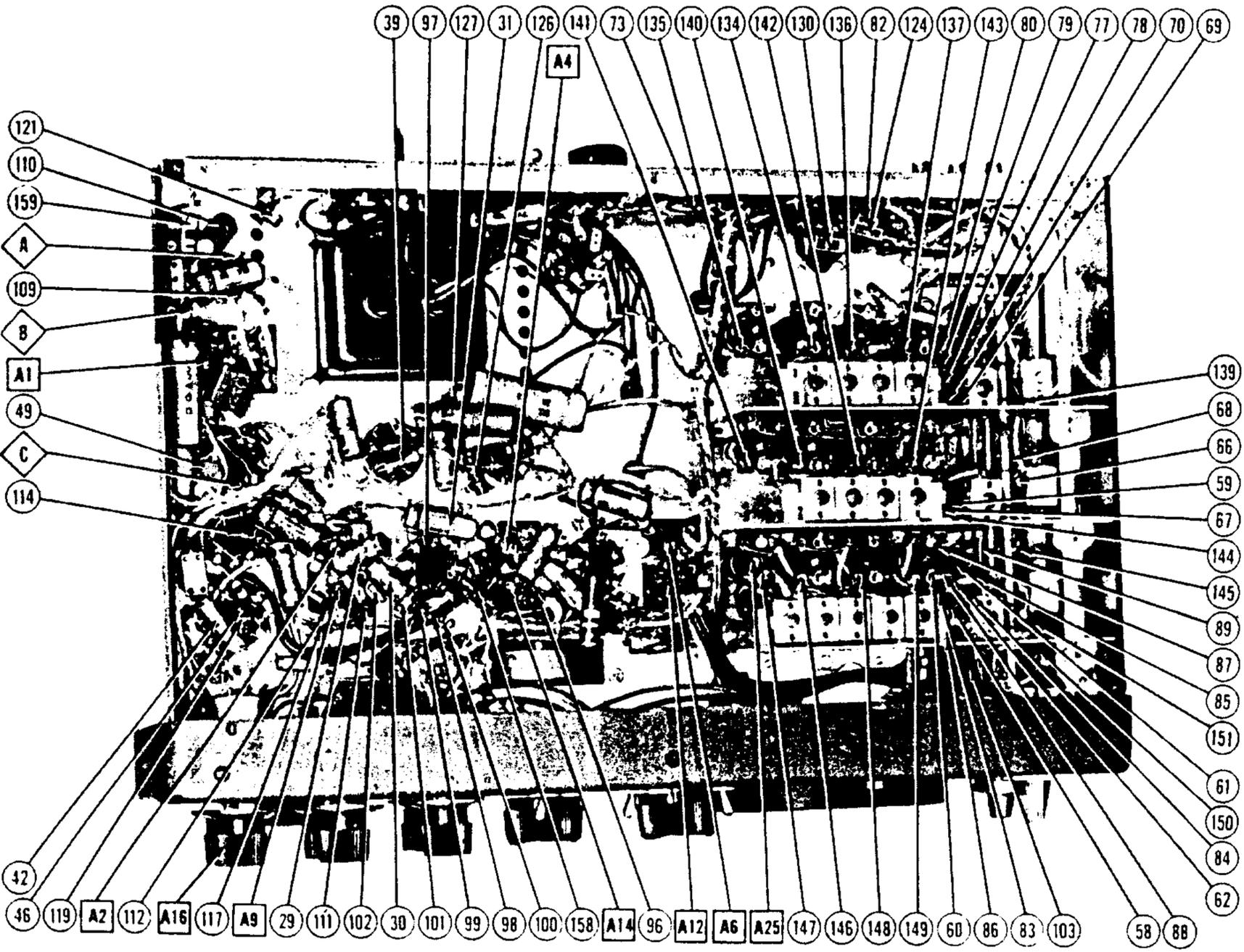
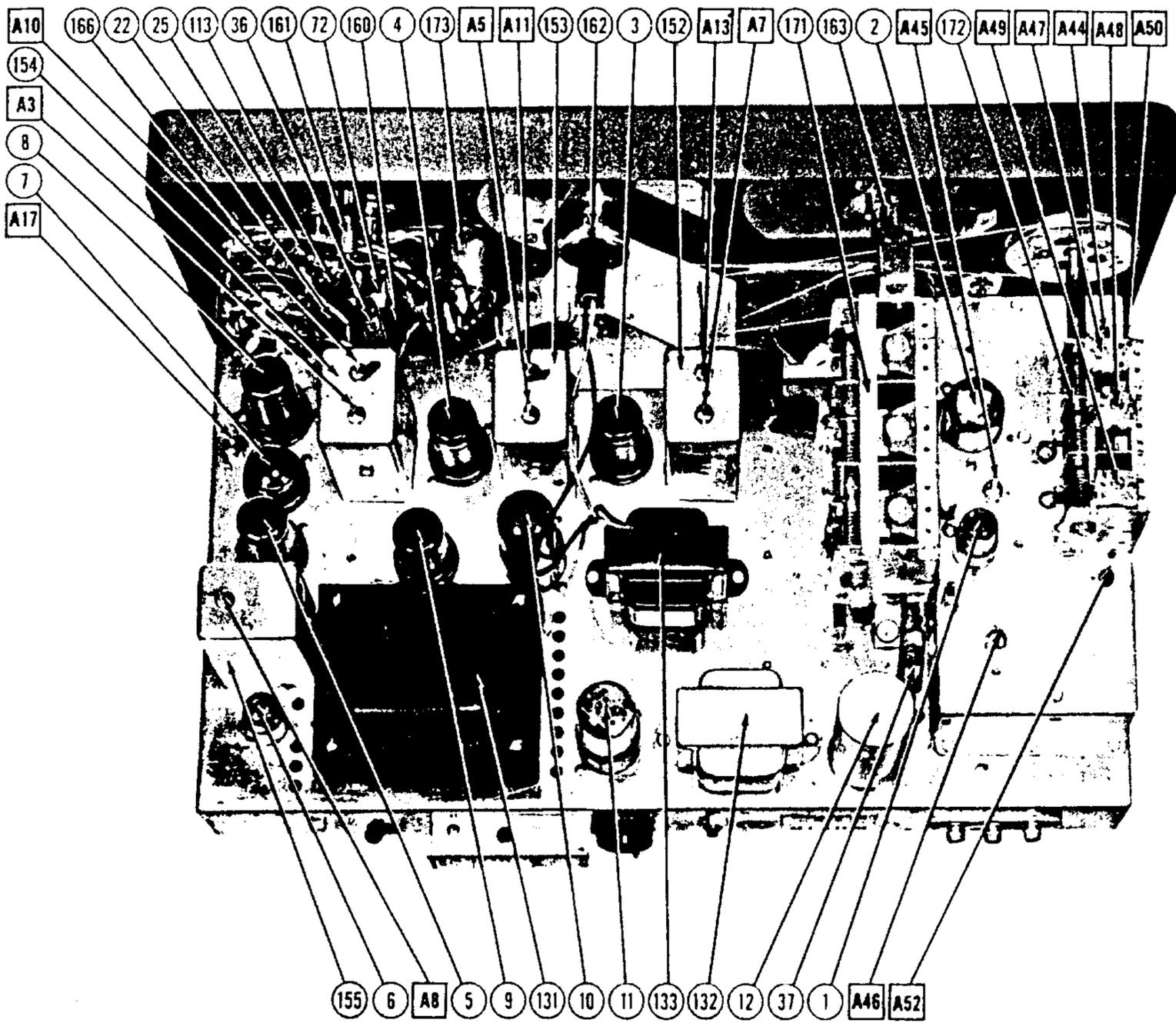
HALLICRAFTERS MODEL SX-43

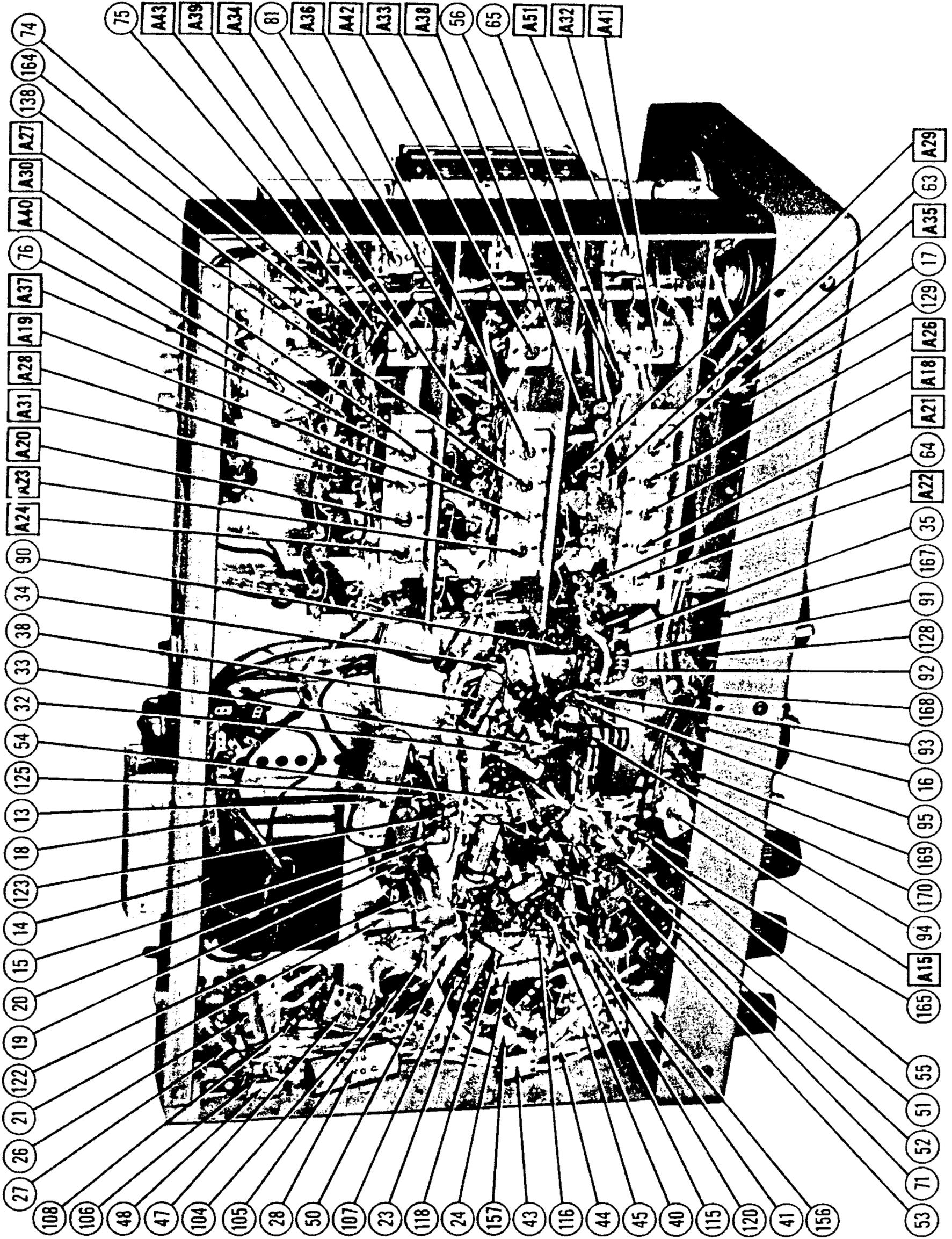


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**HALLICRAFTERS MODEL  
SX-43  
PAGE 3**

# PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA			RAMA BASE TYPE	INS. INSTALLATION NOTES
		HALLICRAFTERS PART No.	STANDARD REPLACEMENT	CORNEILL DUBILIER PART No.		
1	RF Amp.	6BA6	6BA6	7BK		
2	Converter	7F8	7F8	8BW		
3	1st IF Amp.	6SG7	6SG7	8BK		
4	2nd IF-2nd Mixer	6SH7	6SH7	8BK		
5	3rd IF Amp.	6SH7	6SH7	8BK		
6	FM Ratio Det.	6AL5	6AL5	6BT		
7	AM Det.	6H6	6H6	7Q		
8	BFO-2nd Osc.	6J5	6J5	6Q		
9	AF Amp.	6SQ7	6SQ7	8Q		
10	Power Output	6V6GT	6V6GT	7AC		
11	Rectifier	5Y3GT	5Y3GT	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	REPLACEMENT DATA			IDENTIFICATION AND INSTALLATION NOTES
		HALLICRAFTERS PART No.	AEROVOX PART No.	SOLAR PART No.	
12A	60 CAP.	45B113	AF444J	3x20-450	Filter
12B	450			UT-20	
12C	20			TA-25	
13	20	42A033	PRS450-40	TC-11	Cathode Bypass
14	.01	46AW103J	484-01	TC-12	Line Filter
15	.005	45AY502J	684-005	TC-12	Tone Compensation
16	.02	46AY203J	684-02	TC-12	
17	.005	46AY502J	684-005	TC-12	
18	.1	46AU104J	484-1	TC-15	Filament Bypass
19	.05	46AY503J	684-05	TC-15	Output Screen Bypass
20	.02	46AW203J	484-02	TC-15	Audio Coupling
21	.005	46AW502J	484-005	TC-15	
22	.02	46AW203J	484-02	TC-15	
23	.05	46AU503J	484-05	TC-15	
24	.02	46AW203J	484-02	TC-15	
25	.01	46AW103J	484-01	TC-15	
26	.05	46AU503J	484-05	TC-15	
27	.05	46AU503J	484-05	TC-15	
28	.25	46AU254J	484-25	TC-15	
29	.01	46AW103J	484-01	TC-15	
30	.01	46AW103J	484-01	TC-15	
31	.05	46AU503J	484-05	TC-15	
32	.01	46AW103J	484-01	TC-15	
33	.01	46AW103J	484-01	TC-15	
34	.01	46AW103J	484-01	TC-15	
35	.01	46AW103J	484-01	TC-15	
36	.02	46AW203J	484-02	TC-15	
37	.05	46AU503J	484-05	TC-15	
38	.05	46AU503J	484-05	TC-15	
39	100	CC25UK101K	1468-0001	TC-15	
40	100	CC25UK101K	1468-0001	TC-15	
41	100	CC25UK101K	1468-0001	TC-15	
42	10000	47A167	684-01	TC-11	
43	270	CH20A271J	1468-0003	TC-11	
44	100	CC25UK101K	1468-0001	TC-11	
45	470	CH20A471J	1468-0005	TC-11	
46	2	47A160-4	1467-001	TC-11	
47	1000	CH20A102K	1467-001	TC-11	
48	1000	CH20A102K	1467-001	TC-11	
49	5000	47A168	684-005	TC-11	
50	220	CH20A221K	1468-00025	TC-11	
51	5000	47A168	684-005	TC-11	
52	5000	46AW502J	684-005	TC-11	
53	820	CH25A821K	1479-0008	TC-11	
54	22	CH20A220K	1468-00025	TC-11	
55	15	CC20UK150K	1468-00025	TC-11	
56	22	CH20A220K	1467-001	TC-11	
57	1500	47A161	484-01	TC-11	
58	10000	47A167	484-01	TC-11	
59	220	CH20B221K	1468-00025	TC-11	

# PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING	REPLACEMENT DATA		IDENTIFICATION CODES
		HALLICRAFTERS PART No.	IRC PART No.	
112	2-2 Meg.	RC20AE25K	BTS-2.2 Meg.	Red-Red-3rn. 2.2 Meg. Network
113	150Ω	RC20AE151K	BTS-150Ω	Br.-Grn.-Br. 150Ω
114	2.7 Meg.		BTS-2.7 Meg.	Red-Vl.-3rn. Noise Limiter Load
115	82KΩ	RC20AE823K	BTS-82K	Gray-Red-Or. Noise Limiter Load
116	1 Meg.	RC20AE105K	BTS-1 Meg.	Br.-Blk.-Grn. Noise Limiter Bias Network
117	250KΩ	23BX2543	BTS-250K	Red-Grn.-Vl. Noise Limiter Bias Network
118	1 Meg.	RC20AE105K	BTS-1 Meg.	Br.-Blk.-Grn. Noise Limiter Bias Network
119	47KΩ	RC20AE473K	BTS-47K	Vl.-Vl.-Or. 47KΩ
120	15KΩ	RC30AE153K	BTA-15K	Br.-Grn.-Or. 15KΩ
121	470KΩ	RC20AE474K	BTS-470K	Vl.-Vl.-Vl. 470KΩ
122	15 Meg.	RC20AE156K	BTS-15 Meg.	Br.-Grn.-Blue 15 Meg.
123	220KΩ	RC20AE224K	BTS-220K	Red-Red-Vl. AF Plate Load
124	1000Ω	RC30AE102K	BTA-1000	Br.-Blk.-Red. Output Screen Dropping
125	470KΩ	RC20AE474K	BTS-470K	Vl.-Vl.-Vl. Output Grid
126	270Ω	RC30AE271K	BW-1-270	Red-Vl.-Br. Output Cathode
127	33KΩ	RC30AE333K	BTA-33K	Or.-Or.-Or. 33KΩ
128	1000Ω	RC30AE102K	BTA-1000	Br.-Blk.-Red. 1000Ω
129	470Ω	RC30AE471K	BTA-470	Vl.-Vl.-Br. Head phono shunt
130	4700Ω	RC30AE472K	BTA-4700	Vl.-Vl.-Red 4700Ω

# TRANSFORMER (POWER)

ITEM No.	RATING	REPLACEMENT DATA		STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
		HALLICRAFTERS PART No.	SEC. 3			
131	117V AC 550V CT 5.2V AC 6.3V AC @ 7.4A .100A DC @ 4.0A		52C143	P-6313		P-29537

†Add series resistor to reduce plate voltage.

# FILTER CHOKE

ITEM No.	RATINGS	REPLACEMENT DATA		STANCOR PART No.	THORDARSON PART No.	MERIT PART No.	INSTALLATION NOTES
		HALLICRAFTERS PART No.	INDUCTANCE (1000 μ)				
132	D.C. RESISTANCE 290Ω TOTAL DIRECT CURRENT .052A DC		56B067	C-1709	200E3	C-29901	†Drill one new mounting hole.

# TRANSFORMER (OUTPUT)

ITEM No.	RATING	REPLACEMENT DATA		STANCOR PART No.	THORDARSON PART No.	MERIT PART No.	INSTALLATION NOTES
		HALLICRAFTERS PART No.	DC RES.				
133	IMPEDANCE 4000Ω PRI. SEC. 5000Ω 360Ω PRI. SEC. 500Ω 36Ω		55B095				

# R F COILS

ITEM No.	USE	BAND	DC RES.		REPLACEMENT DATA		
			PRI.	SEC.	HALLICRAFTERS PART No.	MEISSNER PART No.	
134	Ant. Coil	1	26Ω	5Ω		51B928	
135	"	2	1.5Ω	.3Ω		51B927	
136	"	3	.2Ω	.1Ω		51B926	
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	0Ω	0Ω		51B931	
144	"	5	0Ω	0Ω		51B930	
145	"	6	0Ω	0Ω		51B929	
146	Osc.	1	5.3Ω	.1Ω		51B935	
147	"	2	1.6Ω	.1Ω		51B936	
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.	CORNEL DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	
60	Temp.	Comp.	44A158					
61	51	500	C220UK510K	1468-00005	5W5Q5	MO.5-45	1FM-45	Osc. Plate Bypass
62	100	500	C220UK101K	1468-00001	5W5T1	MO.5-31	1FM-31	Osc. Grid Cap.-Cer.
63	3900	500	CY35A392J					Osc. Coupling-Cer.
64	1500	500	CK30A152J	1464-0015	1R5D15	MM.5-215		Fixed Pad.
65	15	500	C220UK150K					Fixed Trimmer-Cer.
66	25	500	47A141	1468-00025	5W5Q25	MO.5-425	MS-425	RF Coupling-Cer.
67	25	500	47A141	1468-00025	5W5Q25	MO.5-425	MS-425	RF Coupling-Cer.
68	1500	350	47A61	1467-0015	1W5D15	MM.5-215	1FM-215	RF Decoupling-Cer.
69	1500	350	47A61	1467-0015	1W5D15	MM.5-215	1FM-215	RF Screen Bypass-Cer.
70	10000	350	47A167	684-01	DT6S1	ST-6-01	TC-11	RF Cathode Bypass-Cer.

Note-Not used in some models.

## CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	HALLICRAFTER PART No.	CLAROSTAT PART No.	CLAROSTAT PART No.		
71A	2 Meg.	1	25B601		M-66-Z	Volume Control	
B	Shaft		Not Req.		Not Req.	Attach to 71A per instructions	
C	Switch				SW-A		
72A	10K $\Omega$	1	25B577		M-30-V	Sensitivity Control	
B	Shaft		Not Req.		Not Req.	Attach to 72A per instructions	
73	500 $\Omega$	1	25A569		W-500	"S" Meter Control	

## RESISTORS

ITEM No.	RATING		REPLACEMENT DATA				IDENTIFICATION CODES
	RESISTANCE	WATTS	HALLICRAFTER PART No.	IRC PART No.	IRC PART No.		
74	47 $\Omega$	1/4	RC20AE470K			Y1.-V1.-Blk. Ant. Loading	
75	27 $\Omega$	1/4	RC20AE270K			Red-V1.-Blk. Parasitic Suppressor	
76	1 Meg.	1/4	RC20AE105K		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network	
77	5.6 $\Omega$	1/4	23A011			Grn.-Blue-Gold Par. Suppressor	
78	68 $\Omega$	1/4	RC20AE680K			Blue-Gray-Blk. RF Cathode	
79	27K $\Omega$	1/4	RC30AE273K		BTA-27K	Red-V1.-Or. Bleeder	
80	15K $\Omega$	1/4	RC40AE153K		BT-2-15K	Br.-Grn.-Or. RF Screen Dropping	
81	5.6 $\Omega$	1/4	23A011			Grn.-Blue-Gold Par. Suppressor	
82	1000 $\Omega$	1/4	RC20AE102K		BTS-1000	Y1.-V1.-Or. Conv. Plate Dropping	
83	47 $\Omega$	1/4	RC20AE470K			Red-Red-Or. Bleeder	
84	33 $\Omega$	1/4	RC20AE330K			Gray-Red-Blk. 1st IF Cathode	
85	22K $\Omega$	1/4	RC20AE223K			Br.-Grn.-Or. 1st IF Screen	
86	10K $\Omega$	1/4	RC30A3103K		BTA-10K	Red-V1.-Or. Bleeder	
87	2.2 Meg.	1/4	RC20AE225K		BTS-2.2 Meg	Or.-Or.-Red 1st IF Plate Decoupling	
88	1000 $\Omega$	1/4	RC20AE102K		BTS-1000	Br.-Blk.-Red 2nd IF Cathode	
89	15 $\Omega$	1/4	RC20AE150K			Br.-Grn.-Blk. Par. Suppressor	
90	10 $\Omega$	1/4	RC20AE100K			Br.-Blk.-Blk.	
91	47K $\Omega$	1/4	RC30AE473K		BTA-47K	Y1.-V1.-Or. Conv. Plate Dropping	
92	22K $\Omega$	1/4	RC20AE223K		BTS-22K	Red-Red-Or. Bleeder	
93	82 $\Omega$	1/4	RC20AE820K			Gray-Red-Blk. 1st IF Cathode	
94	15K $\Omega$	1/4	RC40AE153K		BT-2-15K	Br.-Grn.-Or. 1st IF Screen	
95	27K $\Omega$	1/4	RC30AE273K		BTA-27K	Red-V1.-Or. Bleeder	
96	3300 $\Omega$	1/4	RC20AE332K		BTS-3300	Or.-Or.-Red 1st IF Plate Decoupling	
97	1 Meg.	1/4	RC20AE105K		BTS-1 Meg.	Br.-Blk.-Grn. 2nd IF Grid	
98	82 $\Omega$	1/4	RC20AE820K			Gray-Red-Blk. Series "S" Meter	
99	150 $\Omega$	1/4	RC20AE151K			Br.-Grn.-Br. 2nd IF Cathode	
100	680 $\Omega$	1/4	RC20AE681K		BTS-680	Blue-Gray-Br. 2nd IF Cathode	
101	33K $\Omega$	1/4	RC30AE333K		BTA-33K	Or.-Or.-Or. 2nd IF Screen	
102	3300 $\Omega$	1/4	RC20AE332K		BTS-3300	Or.-Or.-Red 2nd IF Cathode	
103	1000 $\Omega$	1/4	RC20AE102K		BTS-1000	Br.-Blk.-Red 2nd IF Plate Decoupling	
104	220K $\Omega$	1/4	RC20AE224K		BTS-220K	Red-Red-Y1. 3rd IF Grid	
105	1 Meg.	1/4	RC20AE105K		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network	
106	150 $\Omega$	1/4	RC20AE151K			Br.-Grn.-Br. Par. Suppressor	
107	100K $\Omega$	1/4	RC30AE104K		BTA-100K	Br.-Blk.-Y1. 3rd IF Decoupling	
108	100K $\Omega$	1/4	RC20AE104K		BTS-100K	Br.-Blk.-Y1. De-emphasis	
109	100K $\Omega$	1/4	RC20AE104K		BTS-100K	Br.-Blk.-Y1. Ratio Det. Diode Load	
110	100K $\Omega$	1/4	RC20AE104K		BTS-100K	Br.-Blk.-Y1.	
111	100K $\Omega$	1/4	RC20AE104K		BTS-100K	Br.-Blk.-Y1. AM Diode Filter	

# PARTS LIST AND DESCRIPTIONS (Continued)

## R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	HALLICRAFTER PART No.	MEISSNER PART No.	
149	Osc. Coil 4	.1 $\Omega$	0 $\Omega$	51B936		
150	" 5	0 $\Omega$	0 $\Omega$	51B935		
151	" 6	0 $\Omega$	0 $\Omega$	51B941		
152	1st IF AM	2.5 $\Omega$	6.8 $\Omega$	50C212		*Includes both secondaries.
153	2nd IF AM	1.2 $\Omega$	1.2 $\Omega$	50C213		*Includes both primaries.
154	3rd IF AM	1 $\Omega$ *	7.8 $\Omega$	50C214		
155	FM Det.	9.6 $\Omega$ *	.1 $\Omega$	50C208		
156	4th BFO Coil	2 $\Omega$	.7 $\Omega$	54B033-1		
157	Ind. Osc.		1.2 $\Omega$	51B984		
158	RF Choke		0 $\Omega$	53A108		
159	"		3.2 $\Omega$	53B009		
160	"		.2 $\Omega$	53A107		
	"		9.5 $\Omega$			

## DIAL LIGHT

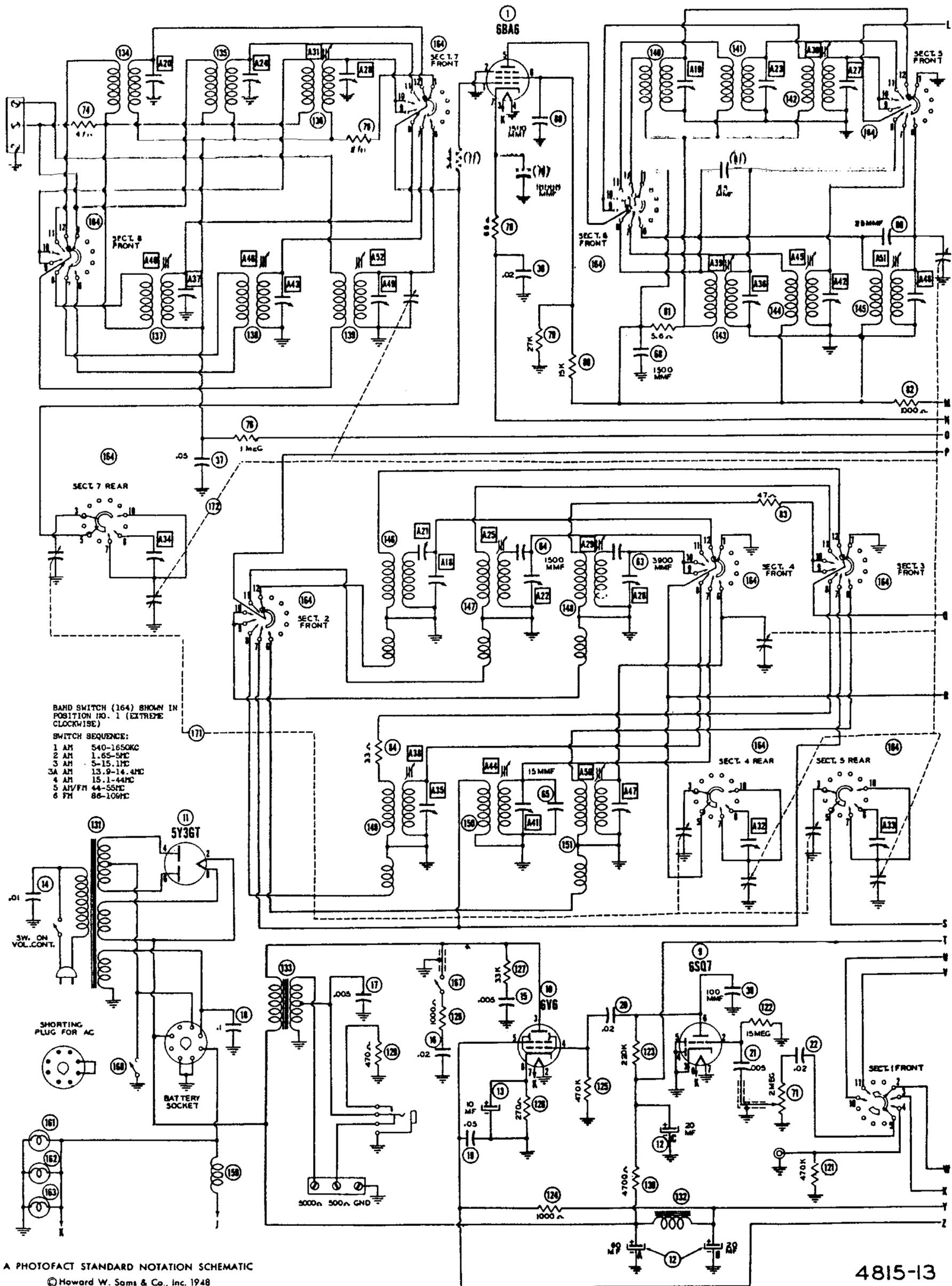
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					HALLICRAFTER PART No.		
161	Bayonet	6-8	0.15	Brown			Type 47
162	"	"	0.25	Blue	39A004		Type 44

## MISCELLANEOUS

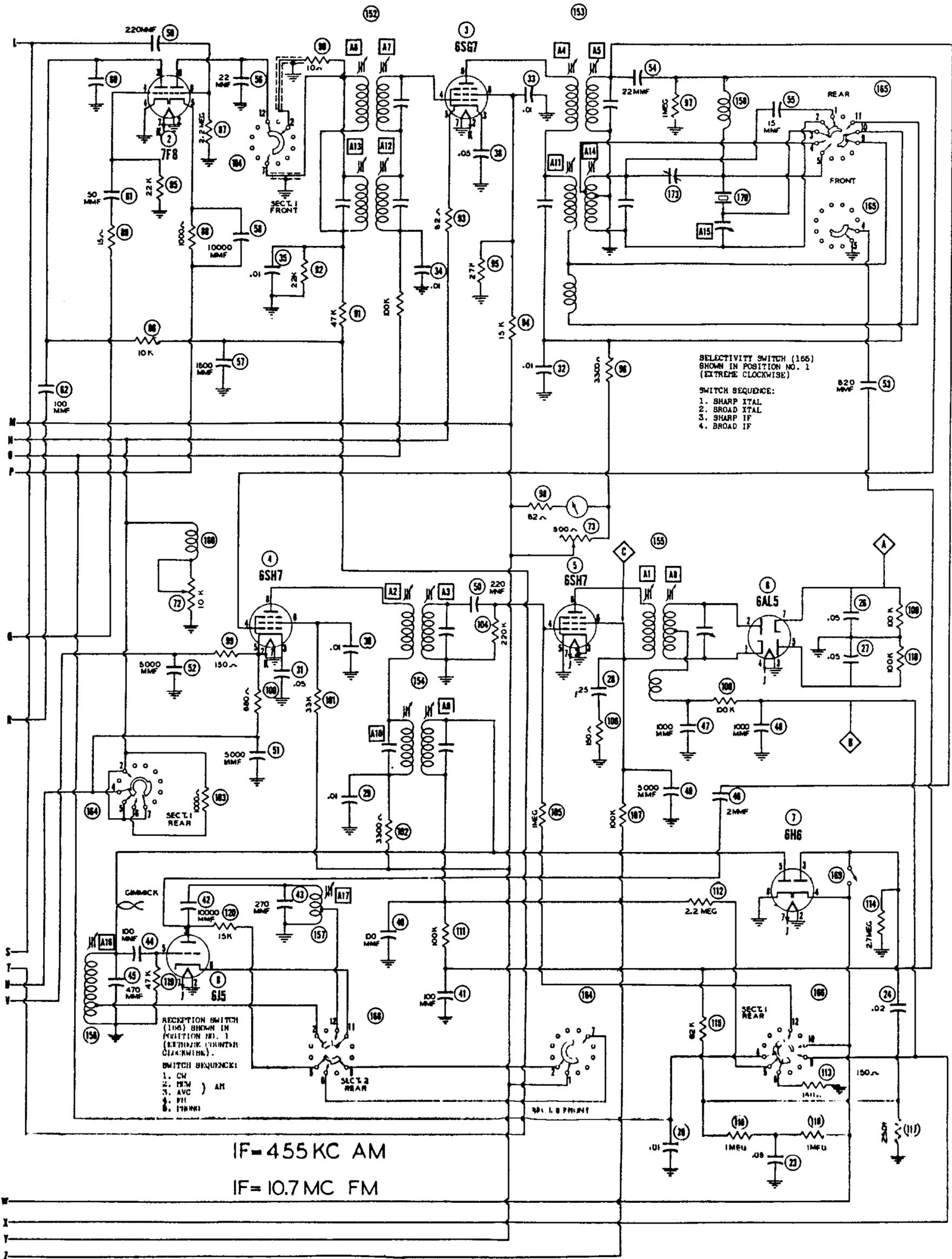
ITEM No.	PART NAME	HALLICRAFTERS PART No.	NOTES
164	Switch	60C261	Band Selectivity
165	"	60B263	Reception
166	"	60B262	Tone
167	"	60A138	Standby-Receive
168	"	60A138	Noise Limiter
169	"	60A138	455KC
170	Crystal	19A123	(15-475MFD) Each section (AM)
171	3 Gangs Var. Cap	48C174	(Bandspread-FM)
172	"	48C173	
173	Phase Control Capacitor	48A182	
	Trimmer	44A047	A15
	Trimmer Strip	44B197	A18, A21, A22, A26, A35
	Assby.	44B199	A19, A23, A27, A36
	"	44B199	A20, A24, A28, A37
	"	44A047	A32, A33, A34, A48, A49
	Trimmer	44A200	A41, A42, A43
	"	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.



A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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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	6Y3GT	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	690Ω	5Ω	690Ω	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	280Ω
11	6Y3GT	INF.	20KΩ	INF.	70Ω	INF.	65Ω	INF.	20KΩ

† VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

RECEIVE-STANDBY SWITCH IN RECEIVE POSITION.

\*\*TAKEN IN CW POSITION. NOISE LIMITER OFF.

SENSITIVITY CONTROL FULL ON.

SELECTIVITY CONTROL FULL ON.

OLUME HIGH.

- 1 - (X) Voltage measurements are at 20,000 ohms per volt; AΩ Voltages measured at 1000 ohms per volt.  
 † - Socket connections are shown as bottom views.  
 § - Measured values are from socket pin to common negative.  
 ‡ - Line voltage maintained at 117 volts for voltage readings.  
 † - Nominal tolerance on component values taken possible a variation of ± 1% in voltage and resistance readings.  
 ‡ - 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 "L"	50 on logging scale.	DC probe to Point $\diamond$ 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 $\diamond$ Common to ground.	A8	Adjust for zero deflection. Continue with AM alignment in Step 6.

## 10.7 MC IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use freq. modulated signal with 60  $\sim$  modulation and 450KC sweep. Use 120  $\sim$  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 6SH7 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 $\diamond$ 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 6SQ7. 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 6SH7 2nd IF Tube (4). Low side to chassis.				Vertical input to Point $\diamond$ 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 RFO on and set CW pitch for approximately a 1000  $\sim$  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)	1600KC	Band 1	1600KC	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. Band spread at 14MC.	"	A32	Adjust for maximum output.
19	"	14.2MC	"	Main tuning dial at 20 meter band marker. Band spread 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 band-spread 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.	106MC	Band 6	106MC	DC probe to Point $\diamond$ . Common to chassis	A47	Adjust for maximum deflection.
30	"	"	"	Tune for maximum deflection.	"	A48, A49	Rock tuning cap. and adjust for maximum deflection.
31	"	89MC	"	89MC	"	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.

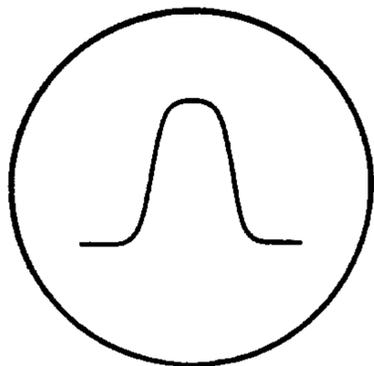


FIG. 1

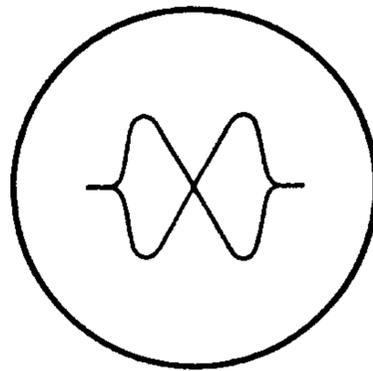


FIG. 2