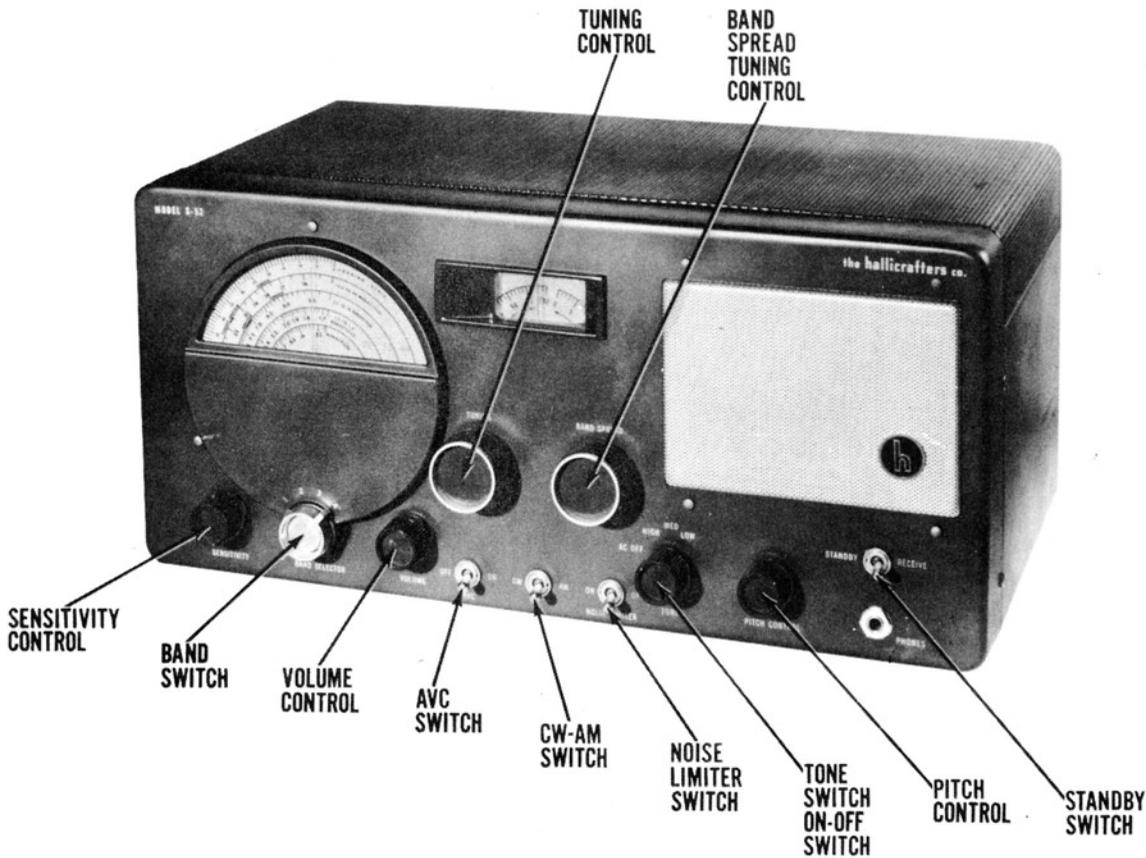


HALLICRAFTERS
MODEL S-52



HALLICRAFTERS
MODEL S-52

HALLICRAFTERS MODEL S-52

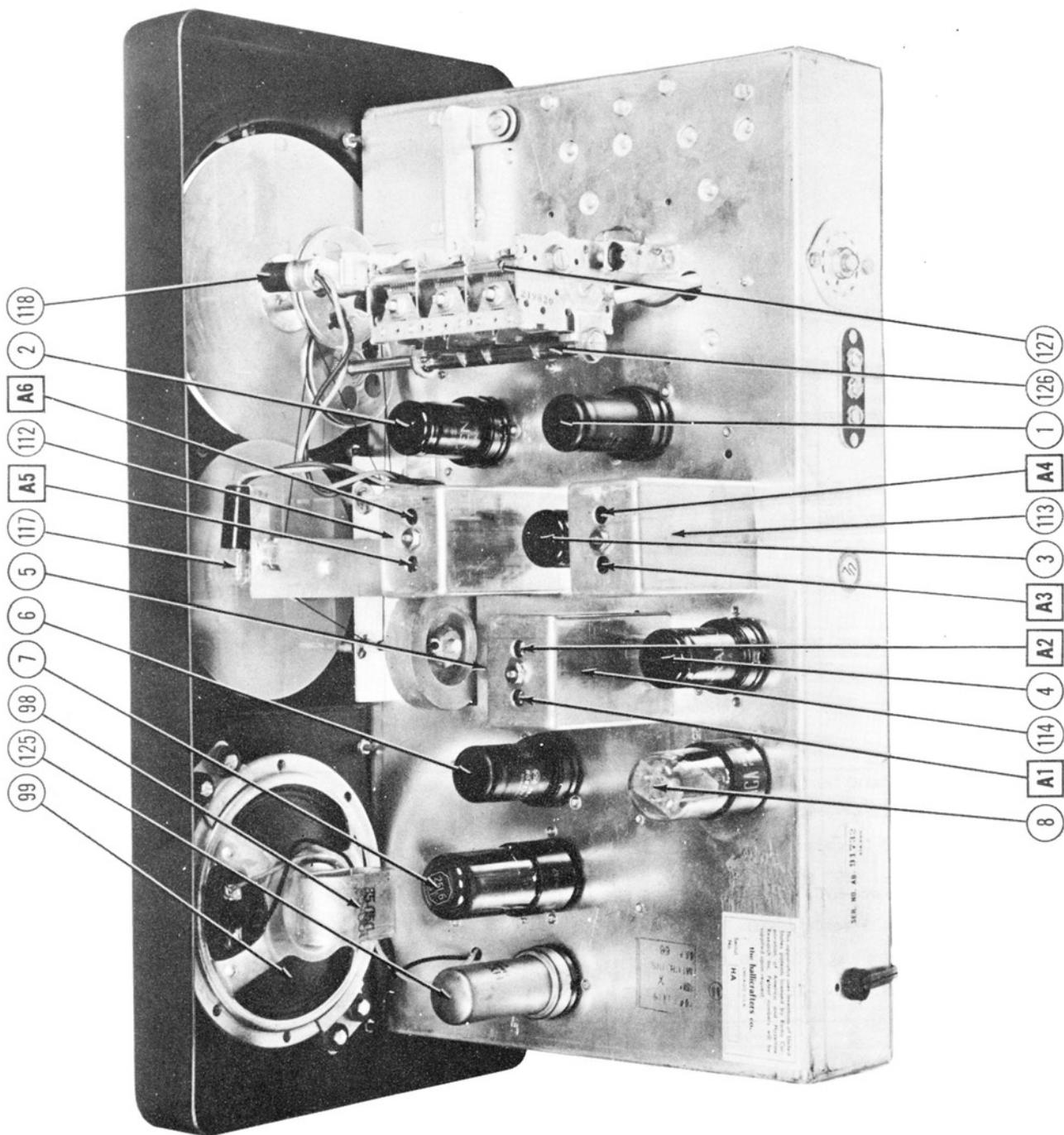
TRADE NAME	Hallcrafters, Model S-52		
MANUFACTURER	Hallcrafters Co., 5th & Kostner Avenues, Chicago 24, Ill.		
TYPE SET	AC-DC Operated Multi-Band Commercial Type Superheterodyne Receiver		
TUBES (EIGHT)	Types, 6SG7 RF Amp., 6SA7 Converter, 6SK7 1st IF Amp., 6SK7 2nd IF Amp., 6H6 Det.-AVC, 6SC7 AF Amp., 25L6GT Power Output, 25Z6GT Rectifier.		
POWER SUPPLY	105-125 Volts AC-DC		
RATING	.39 Amp. @ 117 Volts AC		
TUNING RANGE-BROADCAST	540-1680KC	SHORT WAVE - Band #2-	1680KC-5.4MC, Band #3- 5.3-15.5MC, Band #4- 15.5-44MC

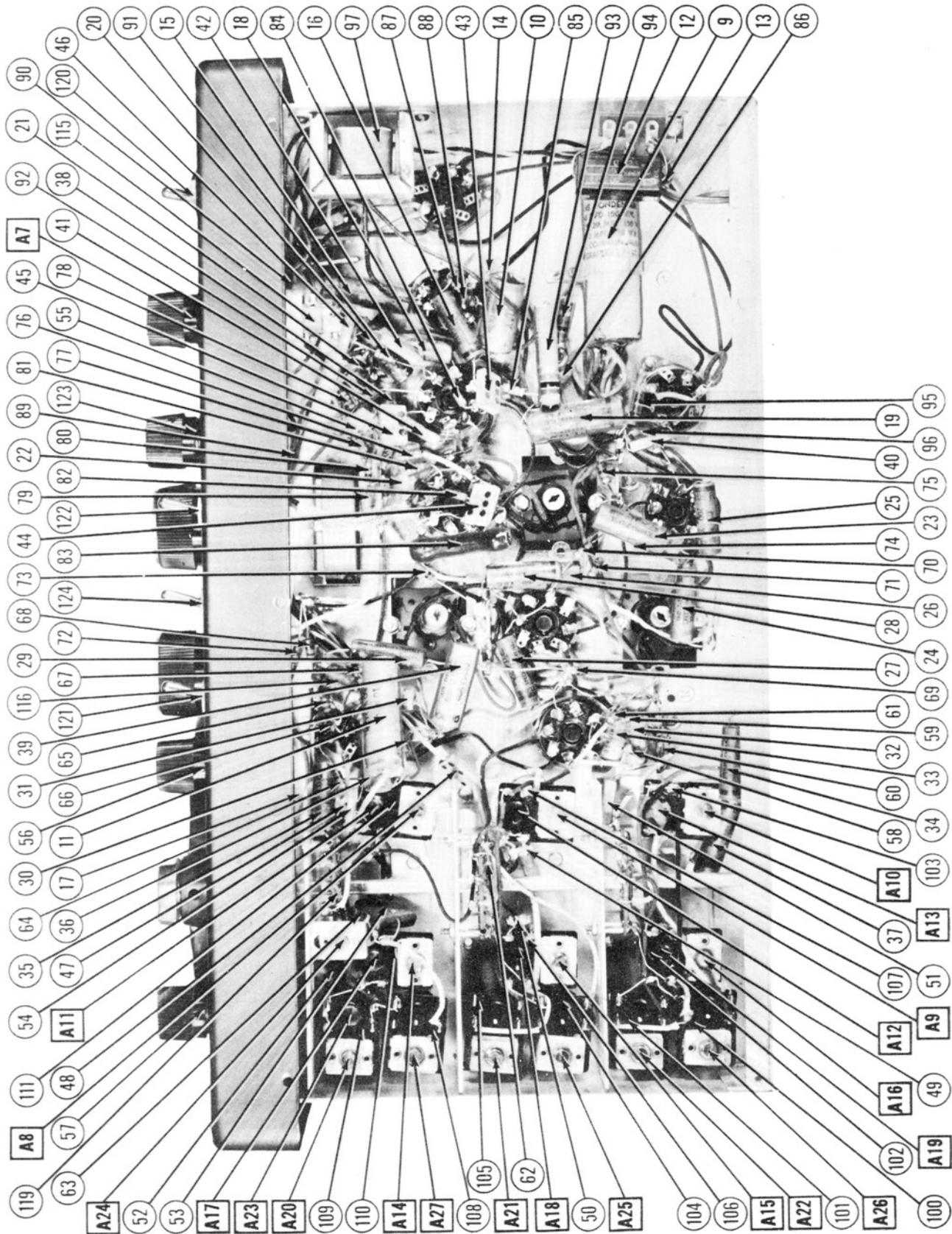
HOWARD W. SAMS & CO., INC.

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PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		HALLICRAFT. PART No.	MEISSNER PART No.
		PRI.	SEC.	HALLICRAFT. PART No.	SEC.		
100	Ant. Coil	27.6Ω	6Ω	51B780			
101	"	.4Ω	1.5Ω	51B781			
102	"	.3Ω	.1Ω	51B782			
103	"	.4	.3Ω	51B783			
104	RF	.3Ω	5.9Ω	51B784			
105	"	.9Ω	.9Ω	51B785			
106	"	8.1Ω	.2Ω	51B786			
107	"	1.5Ω	0Ω	51B787			
108	Osc.	3.6Ω	3.6Ω	51B912			
109	"	1.3Ω	1.3Ω	51B789			
110	"	.1Ω	.1Ω	51B913			
111	"	.5Ω	0Ω	51B791			
112	1st IF	14.5Ω	14.5Ω	50C185			
113	2nd IF	12Ω	12Ω	50C186			
114	3rd IF	18.5Ω	18.5Ω	50C192			
115	BF Osc. Coil	17.5Ω	17.5Ω	54B033-2			
116	Cath. Chk.	13Ω	13Ω	53B433			

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					HALLICRAFT. PART No.	HALLICRAFT. PART No.	
117	Bayonet	6-8	0.15	Brown	39A004		Type 47
118	"	6-8	0.15	"	39A004		"

MISCELLANEOUS

ITEM No.	PART NAME	HALLICRAFTERS PART No.	NOTES
119	Bandswitch	62B039	Ant. Section
120	"	62B039	RF
121	"	62B044	Osc.
122	"	60A138	Standby
123	"	60A138	AVC
124	"	60A225	ANL
125	"	60A138	Tone/On-Off
126	Ballast Tube	24B875	CW/AM
127	"	24B874	110 Volt Operation
128	"	48C136	220 Volt Operation
129	"	44A149	Bandspread
130	"	44A149	Main Tuning (12-412Hz) each section
131	"	44A143	A14
132	"	44A147	A14
133	"	44A191	A20, A21, A22, A25, A26
134	"	51B912	A24
135	"	83D240	A27
136	"	83B254	Main Bandspread

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		INSTALLATION NOTES
		HALLICRAFTERS PART No.	STANDARD REPLACEMENT	
1	RF Amp.	6SG7	6SG7	
2	Converter	6SA7	6SA7	
3	1st IF	6SK7	6SK7	
4	2nd IF	6SK7	6SK7	
5	Det.-AVC	6H6	6H6	
6	AF Amp.	6SC7	6SC7	
7	Power Output	25L6GT	25L6GT	
8	Rectifier	25Z6GT	25Z6GT	

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.	VOLT	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
			HALLICRAFTERS PART No.	AEROVOX PART No.	CORNELL DUBIER PART No.	SOLAR PART No.	
9A	60	150	45B128	FRS1150/20-20	FRZ42215F	4A-530	Filter-Red
B	20	150		FRS150/50	4SR2015	4M-20-150	" -Blue
C	20	150				TA-10	Output Cathode Byp.
10	10	150	45A121	FRS25/10	BR102A	UT-121	Conv. Screen Decoupl.
11	10	150	45A097	694-02	BR1215	TC-12	Line Filter
12	.02	600	46A2003J	694-02	DT652	TC-12	Line Isolation
13	.02	800	46A150	694-02	DT652	TC-25	Output Plate Bypass
14	.005	800	46A2502J	694-05	DT655	TC-15	Tone Coupling
15	.005	800	46AY033J	694-05	DT655	TC-11	Audio Coupling
16	.01	600	46A2103J	694-01	DT651	TC-12	Vol. Control Isolation
17	.02	600	46A2033J	694-02	DT652	TC-12	Audio Coupling
18	.003	600	46A2302J	694-003	DT653	TC-23	AF Plate Decoupling
19	.1	400	46AY104J	484-1	DT4P1	TC-11	BFO Coupling
20	.01	600	46A2103J	694-01	DT651	TC-15	Limiter Filter
21	.05	600	46AY033J	694-05	DT655	TC-15	Audio Coupling
22	.05	200	46A5033J	484-05	DT285	TC-15	2nd IF Decoupling
23	.05	600	46AY033J	694-05	DT655	TC-15	AVC Filter
24	.02	200	46A2033J	484-02	DT282	TC-12	1st IF Decoupling
25	.02	200	46A2033J	484-02	DT282	TC-12	2nd IF Cath. Bypass
26	.01	600	46AY033J	694-05	DT655	TC-15	1st IF Cath. Bypass
27	.01	600	46A2103J	694-01	DT651	TC-11	AVC Filter
28	.01	600	46A2033J	484-02	DT282	TC-12	Conv. Plate Decoupling
29	.01	600	46A2103J	694-01	DT651	TC-11	Osc. Coupling
30	.003	600	46A2302J	694-003	DT6D3	TC-23	Conv. Cathode Bypass
31	.005	600	46A2502J	694-005	DT6D5	TC-25	RF Screen Bypass
32	.005	600	46A2502J	694-005	DT6D5	TC-25	FF Cathode Bypass
33	.005	600	46A2502J	694-005	DT6D5	TC-25	Ext. Cnd. Iso.
34	.01	600	46A2103J	694-01	DT651	TC-11	Conv. Screen Bypass
35	.01	600	46A2103J	694-01	DT651	TC-11	RF Bypass
36	.05	200	46A5033J	484-05	DT285	TC-15	Audio Coupling
37	.02	200	46A5033J	484-05	DT285	TC-15	Line Isolation
38	.02	200	46A2033J	484-02	DT282	TC-12	RF Byp. Pwr. Supply
39	.03	600	CM20A221M	694-03	DT6S3	TC-13	Fill. Bypass
40	220	500	CM20A101M	1468-0001	SM5T1	1PM-31	AF Plate Cap.
41	270	500	CM20A271K	1468-00025	SM5T1	1PM-31	BFO Plate Bypass
42	270	500	CM20A271K	1468-0002	SM5T2	1PM-32	Diode Filter
43	220	500	CM20A470M	1468-00005	SM5S5	1PI-45	Fixed Trimmer
44	47	500	CM20A470M	1468-00005	SM5S5	1PI-45	Osc. Grid Cap.
45	470	500	CM20A470M	1468-00005	SM5S5	1PI-45	RF Coupling
46	470	500	CM20A471J	1468-00025	SM5T25	1PM-45	"
47	270	500	CM20A271K	1468-00005	SM5S5	1PM-45	"
48	56	500	CM20A560K	1468-000025	SM5S25	1PM-425	"
49	24	300	CC21UK240M	1468-000025	SM5S25	1PM-425	"
50	15	300	CC21UK150M	1468-000075	SM5S7	MS-47	"
51	82	500	CM20A820K	1468-000075	SM5T15	MS-215	Fixed Pad -Silver
52	1500	300	CM20C152J	1464-0015	1RS15	MS-25	"
53	3000	300	CM20C302K	1464-0003	1RS15	MS-25	Fixed Trimmer-Cer.
54	68	300	CC25UK680K	1468-00001	SM5T1	1PM-31	RF Bypass Pwr. Supply
55	100	500	CM20A101M	1468-00001	SM5T1	MO.5-31	"

Note-Not used in all models.

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA		INSTALLATION NOTES
	RESISTANCE	WATTS	HALLICRAFT PART No.	CLAROSTAT PART No.	
56A	500K Ω	1/2	25B586	M-60-Z	Volume Control Attach to 56A per instructions Sensitivity Control
57	10K Ω	1/2	D13-133 A	Not Req.	
			25B587		

RESISTORS

ITEM No.	RATING	REPLACEMENT DATA		IDENTIFICATION CODES
		HALLICRAFT PART No.	IRC PART No.	
58	22 Ω	RC20AE220M	BTS-220K	Red-Red-Blk. Parasitic supp.
59	120 Ω	RC20AE121M	BTS-1000	Br.-Red-Br. RF Cathode
60	220K Ω	RC20AE224M	BTS-1000	Red-Red-Vl. RF Grid
61	1000 Ω	RC20AE102M	BTS-6800	Br.-Blk.-Red. RF Decoupl.
62	6800 Ω	RC20AE682K	BTS-1000	Blue-Gray-Red. RF Plate Load
63	10 Ω	RC20AE100M	BTS-18K	Br.-Blk.-Blk. Parasitic Suppressor
64	1000 Ω	RC20AE102M	BTS-1000	Br.-Blk.-Red. Conv. Screen Decoupling
65	18K Ω	RC20AE182K	BTS-1000	Br.-Gray-Or. Osc. Grid
66	6-8 Ω	RC20AE068K	BTS-1000	Blue-Gray-Gold Parasitic Suppressor
67	1 Meg.	RC20AE108M	BTS-1000	Br.-Blk.-Grn. Conv. Grid
68	1000 Ω	RC20AE102K	BTS-1000	Br.-Blk.-Red. Conv. Cathode
69	1000 Ω	RC20AE102K	BTS-1000	Br.-Blk.-Red. Conv. Plate Decoupl.
70	1000 Ω	RC20AE102K	BTS-1000	Br.-Blk.-Red. 1st IF Cathode
71	1000 Ω	RC20AE102K	BTS-1000	Br.-Blk.-Red. 1st IF Decoupl.
72	150 Ω	RC20AE151M	BTS-150	Br.-Blk.-Red. 1st IF Decoupl.
73	100K Ω	RC20AE100M	BTS-1000	Br.-Blk.-Red. 1st IF Decoupl.
74	1000 Ω	RC20AE102K	BTS-1000	Br.-Blk.-Red. 2nd IF Cathode
75	1000 Ω	RC20AE102M	BTS-1000	Br.-Blk.-Red. 2nd IF Decoupl.
76	47K Ω	RC20AE473M	BTS-47K	Yl.-Vl.-Or. Diode Filter
77	100K Ω	RC20AE100M	BTS-1000	Or.-Or.-Yl. Diode Load
78	350K Ω	RC20AE354M	BTS-350K	Br.-Blk.-Yl. Diode Load
79	2.2 Meg.	RC20AE225M	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
80	1 Meg.	RC20AE108M	BTS-1 Meg.	Br.-Blk.-Grn. Limiter Network
81	470K Ω	RC20AE474M	BTS-470K	Yl.-Vl.-Yl.
82	2.2 Meg.	RC20AE225M	BTS-2.2 Meg.	Red-Red-Grn.
83	110 Ω	24BG11E	AB-100	Limiter Filament Shunt
84	10 Meg.	RC20AE108M	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
85	330K Ω	RC20AE334M	BTS-330K	Or.-Or.-Yl. 1st AF Plate Load
86	100K Ω	RC20AE104M	BTS-100K	Br.-Blk.-Yl. 1st AF Plate Decoupl.
87	470K Ω	RC20AE474M	BTS-470K	Yl.-Vl.-Yl. Output Grid
88	150 Ω	RC20AE151M	BM-2-150	Br.-Grn.-Br. Output Cathode
89	4700 Ω	RC20AE472M	BTS-4700	Yl.-Vl.-Red. Tone Comp.
90	15 Ω	RC30AE150M	BM-1-15	Br.-Grn.-Blk. Output Transformer Sec. Loading
91	47K Ω	RC20AE473M	BTS-47K	Yl.-Vl.-Or. BFO Grid
92	15K Ω	RC20AE152M	BTS-15K	Br.-Grn.-Or. BFO Plate
93	1000 Ω	RC40AE102K	BM-1-1000	Br.-Blk.-Red. Filter
94	1000 Ω	RC30AE101K	BM-1-100	Br.-Blk.-Br.
95	15 Ω	RC20AE150M	BM-1-15	Br.-Grn.-Blk. Surge Limiter
96	270K Ω	RC20AE224M	BTS-270K	Red-Vl.-Yl. Line Isolation

TRANSFORMER (OUTPUT)

ITEM No.	RATING	REPLACEMENT DATA		INSTALLATION NOTES
		HALLICRAFT PART No.	THORDARN PART No.	
97	IMPEDANCE PRI SEC 58 1800 Ω 1800 Ω tapped (@ 3.2 Ω)	HALLICRAFT PART No. 55A110	MERIT PART No.	

SPEAKER

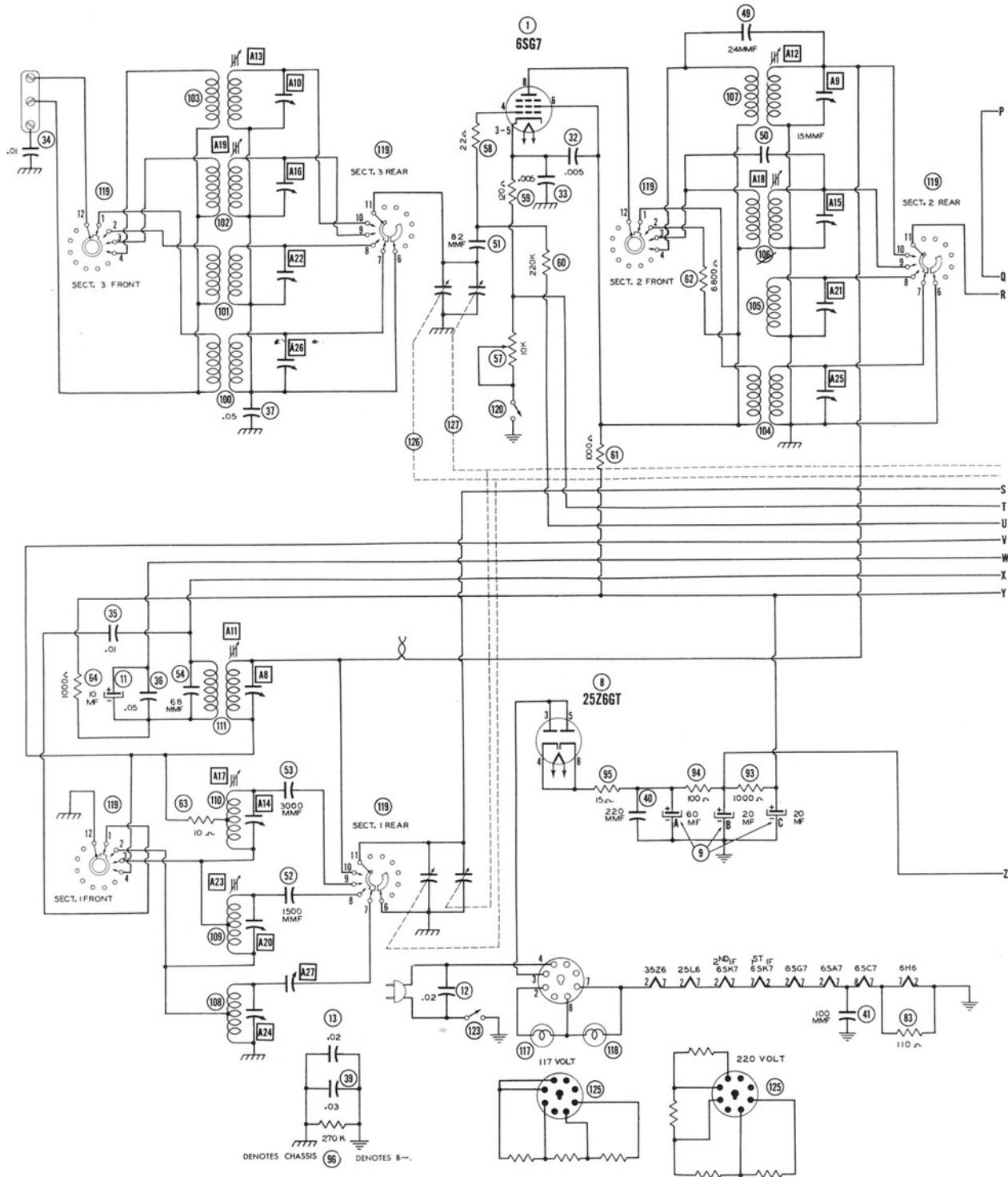
ITEM No.	RATINGS	REPLACEMENT DATA		INSTALLATION NOTES
		HALLICRAFT PART No.	JENSEN PART No.	
98	FIELD VC IMP. 3-25	HALLICRAFT PART No. 85B050	QUAM PART No. ST-1054	#Fabricate new mounting brackets.
99	CONE DIA. VC DIA. 4-3/4" 9/16"		5A154	

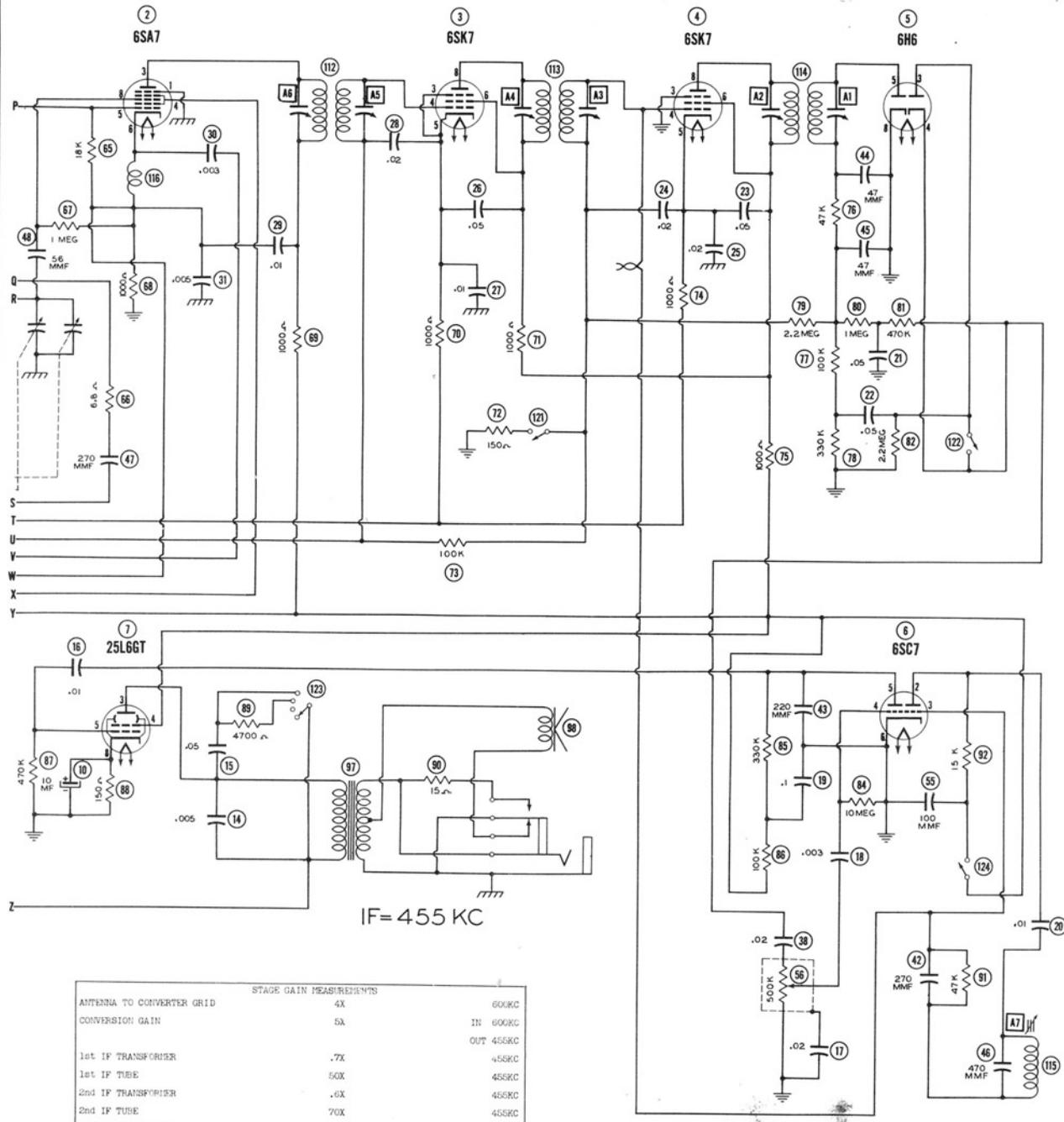
ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Standard dummy antenna consists of a 200 MFD cap. in series with a 20 Microhenry RF Choke, the choke being shunted by a 400 MFD cap. in series with a 400 Ω carbon resistor.
To set main tuning dial turn main tuning cap. fully closed and set main dial to "0" on logging scale. To set bandspread dial turn bandspread tuning cap. fully open and set bandspread dial to "0".
Use isolation transformer if available. If not connect a .1 MFD capacitor in series with low side of signal generator and B-.

Controls should be set as follows unless otherwise noted: sensitivity at maximum, volume at maximum, AVC switch at OFF, bandspread dial set at zero, CW/AM switch at AM, noise limiter switch at Off, standby receive switch at "receive", and tone switch at high. Output of sig. gen. should be no higher than necessary to obtain output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1 Direct	High side to center stator of tuning cap. Low side to chassis.	455KC	Band 1	1000KC	Across voice coil	A1,A2, A3,A4, A5,A6	Adjust for maximum output.
2 "	"	455KC (Unmodulated)	1	"	"	A7	Set "CW/AM" switch to "CW". Remove the pitch control knob and adjust A7 for maximum output. Replace knob with white dot in top center position.
3 See pre-alignment notes.	High side to ant. terminal "A1". Low side to "A2" with link connected.	36MC	Band 4	36MC	"	A8	Adjust for maximum output.
4 "	"	"	"	Tune for maximum output.	"	A9,A10	Rock tuning cap. and adjust for maximum output.
5 "	"	18MC	"	18MC	"	A11, A12, A13	Adjust for maximum output. Repeat Steps 3, 4 & 5 until no further improvement can be made.
6 "	"	14MC	Band 3	14MC	"	A14	Adjust for maximum output.
7 "	"	"	"	Tune for maximum output.	"	A15, A16	Rock tuning cap. and adjust for maximum output.
8 "	"	10MC	"	10MC	"	A17, A18, A19	Adjust for maximum output. Repeat Steps 6, 7 & 8 until no further improvement can be made.
9 "	"	5MC	Band 2	5MC	"	A20	Adjust for maximum output.
10 "	"	"	"	Tune for maximum output.	"	A21, A22	Rock tuning cap. and adjust for maximum output.
11 "	"	1.8MC	"	1.8MC	"	A23	Rock tuning cap. and adjust for maximum output. Repeat Steps 9, 10 & 11 until no further improvement can be made.
12 "	"	1500KC	Band 1	1500KC	"	A24	Adjust for maximum output.
13 "	"	"	"	Tune for maximum output.	"	A25, A26	" " " "
14 "	"	600KC	"	600KC	"	A27	Rock tuning cap. and adjust for maximum output. Repeat Steps 12, 13 and 14 until no further improvement can be made.





STAGE GAIN MEASUREMENTS

ANTENNA TO CONVERTER GRID	4X	60KC
CONVERSION GAIN	5X	IN 60KC
		OUT 45KC
1st IF TRANSFORMER	.7X	45KC
1st IF TUBE	50X	45KC
2nd IF TRANSFORMER	.6X	45KC
2nd IF TUBE	70X	45KC
OUTPUT TRANSFORMER	.7X	45KC
AUDIO	25X	400 ν
OUTPUT	15X	400 ν

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 and 3-volt battery bias substituted for measurement.

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PAGE 7

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	6SG7	0V.	24VAC	.8VDC	0V.	.8VDC	80VDC	18VAC	80VDC
2	6SA7	0V.	18VAC	85VDC	80VDC	-4.4VDC§	8.8VDC	12VAC	1.2VDC
3	6SK7	0V.	24VAC	3.8VDC	0V.	3.8VDC	75VDC	31VAC	75VDC
4	6SK7	0V.	37VAC	0V.	0V.	4VDC	80VDC	31VAC	80VDC
5	6H6	0V.	0V.	-.1VDC	0V.	-.3VDC	-.4VDC	4.8VAC	0V.
6	6SC7	0V.	80VDC	-1.5VDC§	-.6VDC	50VDC	0V.	4.8VAC	12VAC
7	25L6GT	0V.	60VAC	110VDC	85VDC	0V.	0V.	37VAC	6.5VDC
8	25Z6GT	0V.	85VAC	117VAC	125VDC	117VAC	125VDC	60VAC	125VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

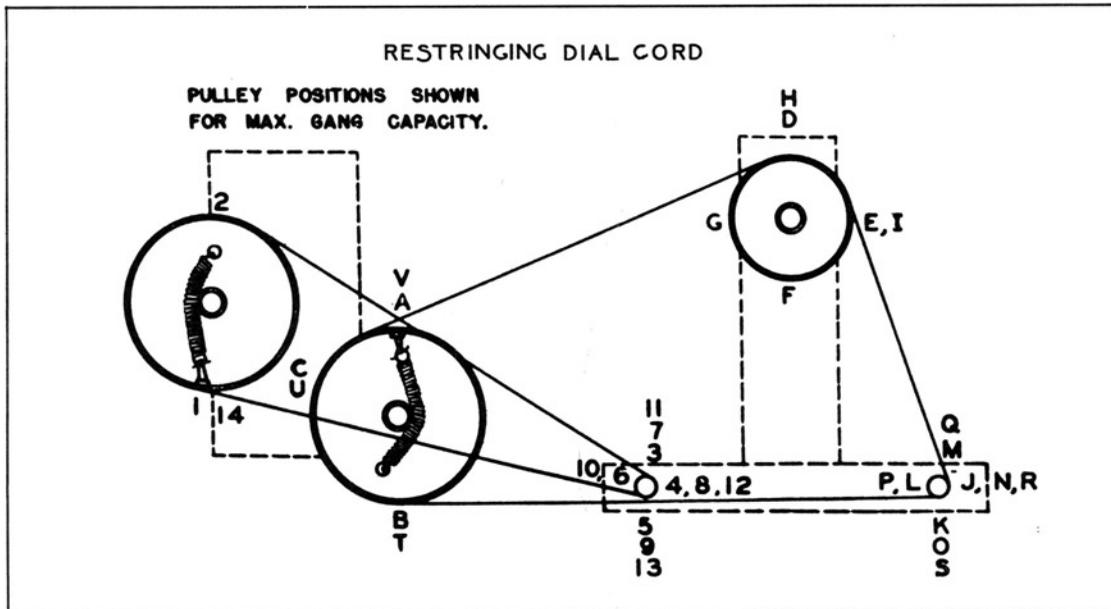
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SG7	270KΩ	20Ω	120Ω	3 Meg.	120Ω	90KΩ	15Ω	90KΩ
2	6SA7	270KΩ	15Ω	90KΩ	90KΩ	18KΩ	1KΩ	10Ω	1 Meg.
3	6SK7	270KΩ	20Ω	1000Ω	2.7 Meg.	1000Ω	90KΩ	25Ω	90KΩ
4	6SK7	270KΩ	30Ω	270KΩ	2.6 Meg.	1000Ω	90KΩ	2.5Ω	90KΩ
5	6H6	270KΩ	0Ω	2.2 Meg.	2 Meg.	480KΩ	500KΩ	5Ω	0Ω
6	6SC7	270KΩ	105KΩ	47KΩ	10 Meg.	520KΩ	0Ω	5Ω	10Ω
7	25L6GT	INF.	40Ω	90KΩ	90KΩ	470KΩ	0Ω	30Ω	150Ω
8	25Z6GT	INF.	60Ω	130Ω	90KΩ	130Ω	90KΩ	40Ω	90KΩ

TONE CONTROL IN HIGH POSITION. CW AM SWITCH IN SW POSITION FOR TUBE #6 (6SC7). STANDBY SWITCH IN RECEIVE POSITION. SENSITIVITY CONTROL SET AT MAXIMUM POSITION. VOLUME CONTROL AT MINIMUM. NOISE LIMITER IN "ON" POSITION. AVC IN "ON" POSITION.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
- 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 makes possible a variation of ±15% in voltage and resistance readings.
- Volume control at maximum, no signal applied for voltage measurements.



To restring the general coverage tuning dial cord, cut an 18-inch length of 30 lb. test dial cord and tie one end to the tension spring of the main tuning capacitor drive pulley at position "1" on the diagram. Follow the numbers "1" through "14", and at position "14" stretch the tension spring and tie the cord securely.

To restring the band spread tuning dial cord, cut a 36-inch length of dial cord and follow the procedure as above, starting at position "A" on the diagram. Note that the tuning drive shafts are wrapped with three turns of dial cord for proper traction.