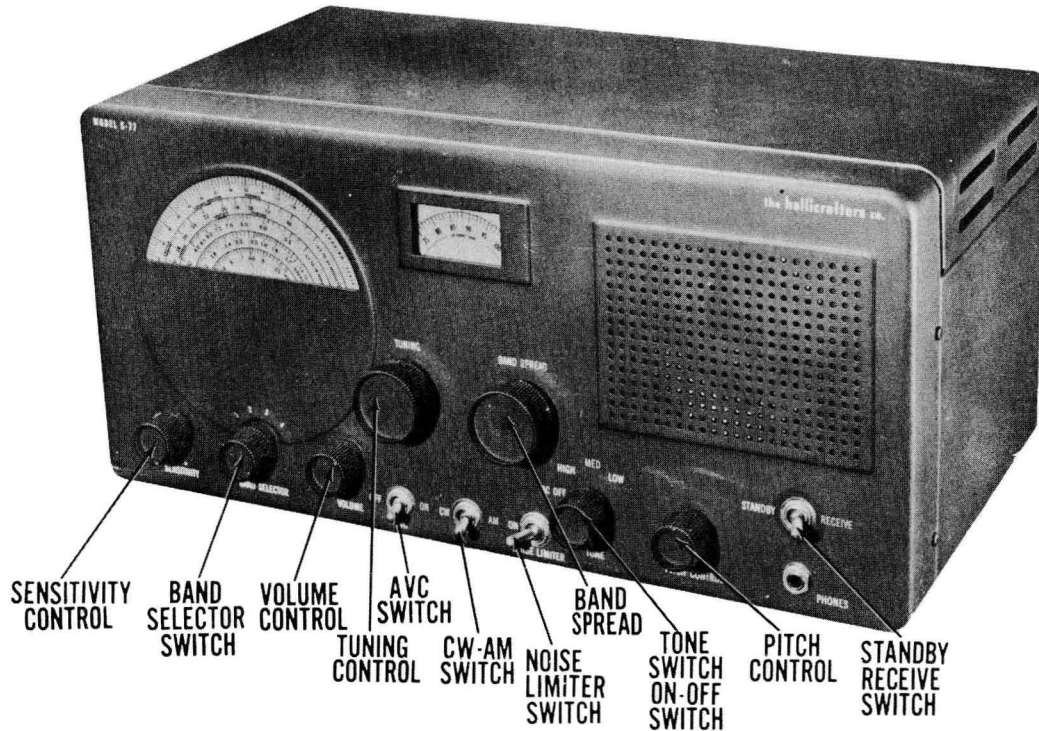




HALLICRAFTERS
MODEL S-77



- SENSITIVITY CONTROL
- BAND SELECTOR SWITCH
- VOLUME CONTROL
- AVC SWITCH
- TUNING CONTROL
- CW-AM SWITCH
- NOISE LIMITER SWITCH
- BAND SPREAD
- TONES SWITCH ON-OFF SWITCH
- PITCH CONTROL
- STANDBY RECEIVE SWITCH

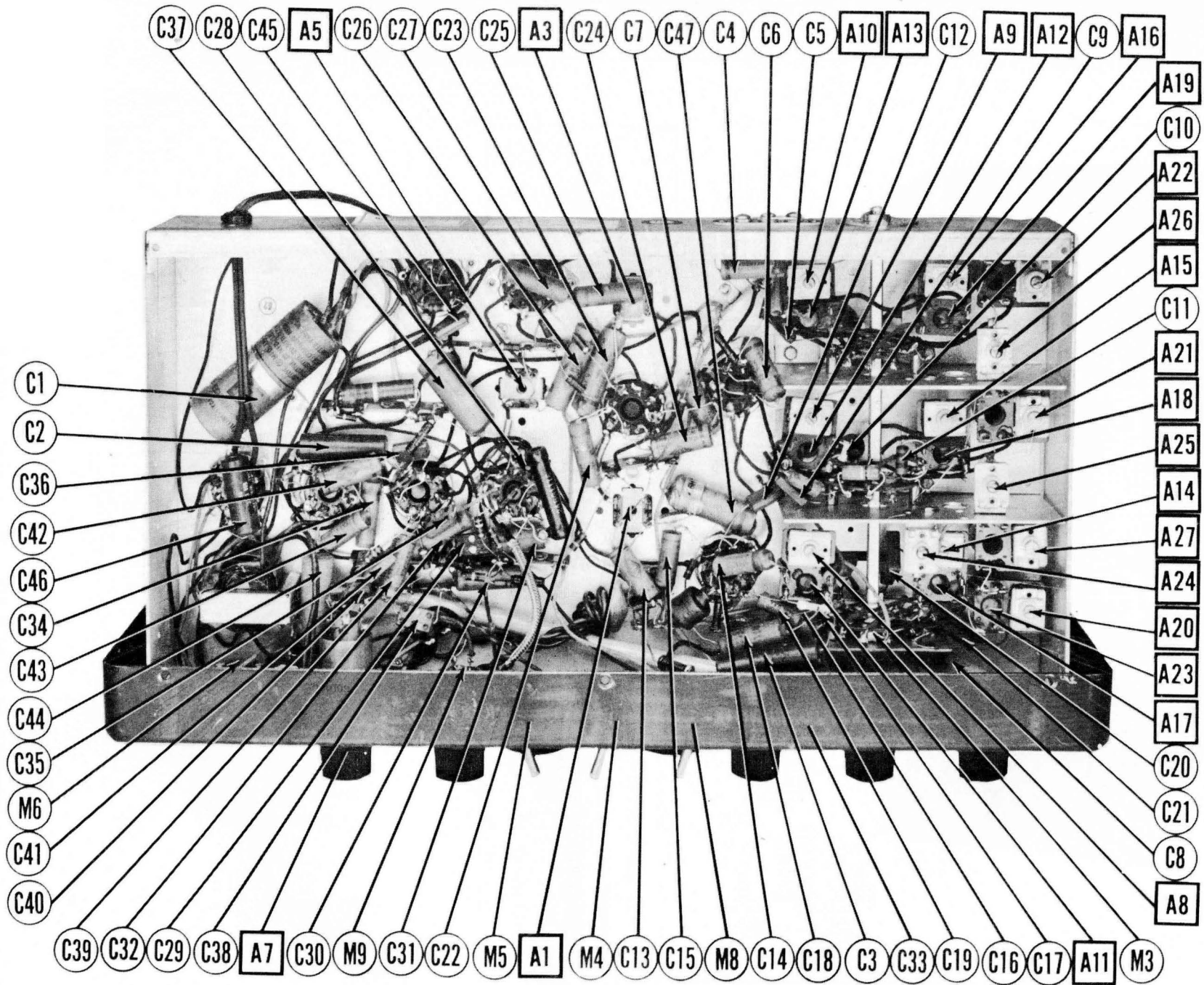
HALLICRAFTERS
MODEL S-77

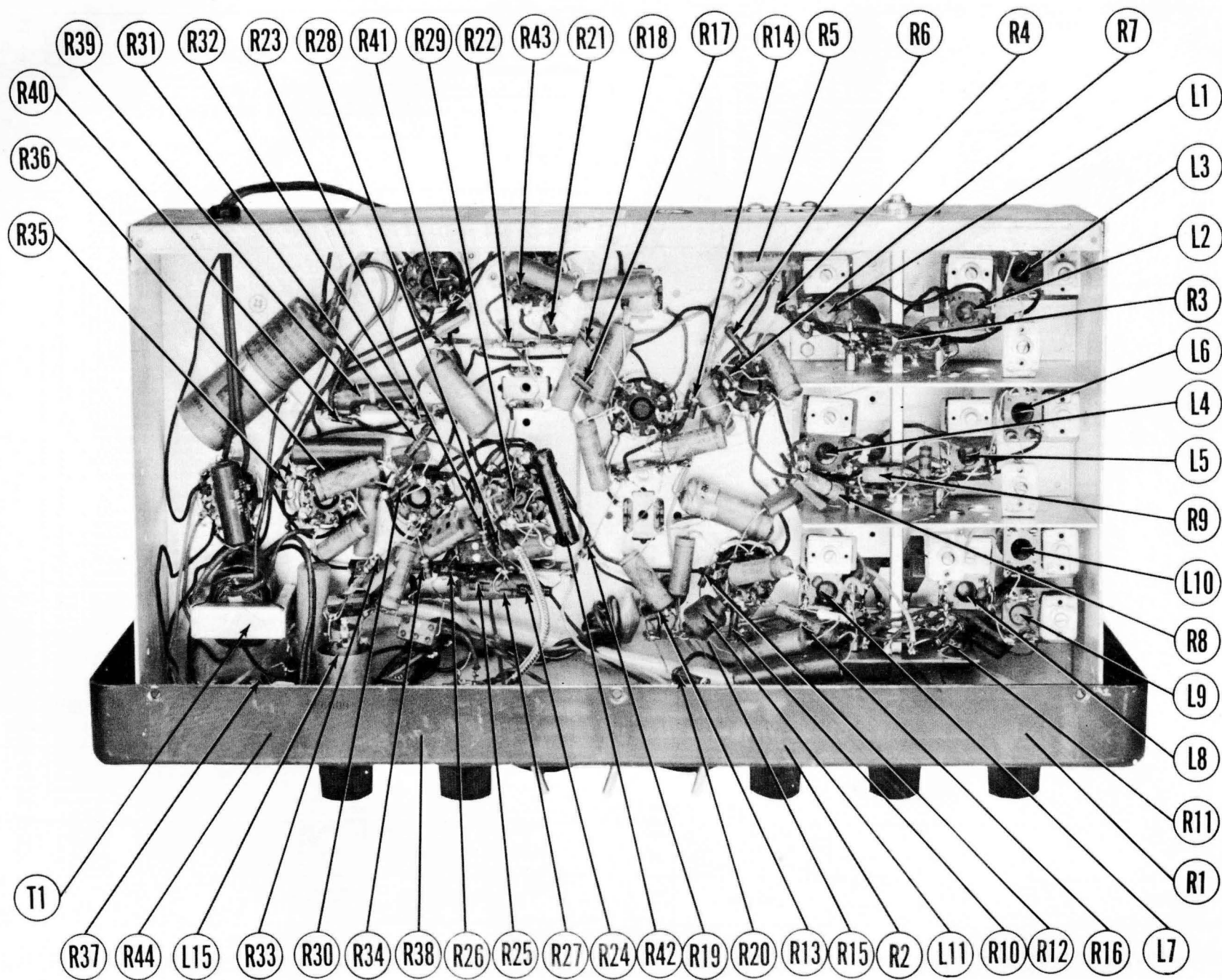
TRADE NAME	Hallicrafters, Model S-77	
MANUFACTURER	The Hallicrafters Co., 5th and Kostner Avenues, Chicago 24, Illinois	
TYPE SET	AC-DC Operated Communications Type Multi-Band Superheterodyne Receiver	
TUBES (EIGHT)	Types 6SG7 RF Amp., 6SA7 Converter, 6SK7 1st IF Amp., 6SK7 2nd IF Amp., 6H6 Det. -AVC-ANL, 6SC7 AF Amp. -BFO, 25L6GT Power Output, 25Z6GT Rectifier.	
POWER SUPPLY	105-125 Volts AC-DC	RATING .4Amp. @ 117 Volts AC
TUNING RANGE--	Band #1 540-1680KC, Band #2 1.68-5.4MC Band #3 5.3-15.5MC, Band #4 15.3-44MC	

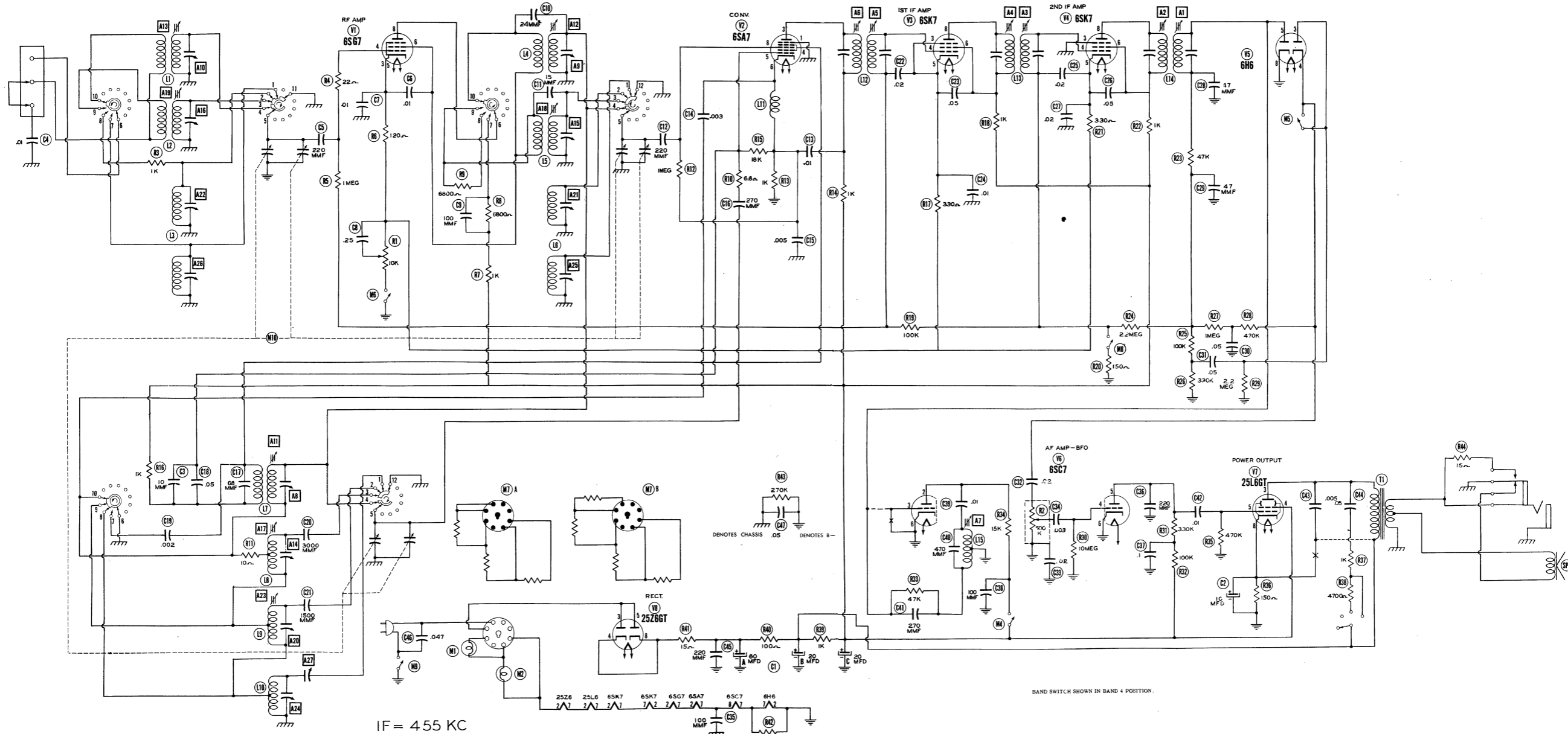
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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IF = 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	a 0V	24VAC	16VDC	-1VDC	16VDC	100VDC	17.5VAC	100VDC
V 2	6SA7	a 0V	17.5VAC	100VDC	95VDC	85.8VDC	10.8VDC	11.8VAC	1.8VDC
V 3	6SK7	a 0V	24VAC	16VDC	-1VDC	16VDC	100VDC	30VAC	100VDC
V 4	6SK7	a 0V	36VAC	0V	-1VDC	16VDC	100VDC	30VAC	100VDC
V 5	6H6	a 0V	0V	0V	0V	-4VDC	-4VDC	4.8VAC	0V
V 6	6SC7	a 0V	90VDC	0V	-8VDC	39VDC	0V	4.8VAC	11.3VAC
V 7	25L6GT	0V	60VAC	110VDC	105VDC	0V	0V	36VAC	8.8VDC
V 8	25Z6GT	0V	85VAC	117VAC	125VDC	117VAC	125VDC	60VAC	125VDC
V 9	Ballast	0V	95VAC	117VAC	117VAC	0V	0V	85VAC	90VAC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	a 0Ω	20Ω	10KΩ	3.7Meg	10KΩ	12.1KΩ	14Ω	19KΩ
V 2	6SA7	a 0Ω	14Ω	12.1KΩ	12.1KΩ	19KΩ	1.1KΩ	8Ω	13Meg
V 3	6SK7	a 0Ω	20	10KΩ	3.7Meg	10KΩ	13.1KΩ	26Ω	13.1KΩ
V 4	6SK7	a 0Ω	32Ω	0Ω	2.6Meg	10KΩ	12.1KΩ	26Ω	12.1KΩ
V 5	6H6	a 0Ω	0Ω	1Meg	1Meg	475KΩ	475KΩ	5Ω	0Ω
V 6	6SC7	a 0Ω	110KΩ	0Ω	10Meg	143KΩ	0Ω	5Ω	8Ω
V 7	25L6GT	Inf.	37	1295Ω	11.1KΩ	470KΩ	0Ω	32Ω	150Ω
V 8	25Z6GT	Inf.	49Ω	117Ω	30KΩ	117Ω	30KΩ	37Ω	30KΩ
V 9	Ballast	0Ω	55Ω	117Ω	117Ω	Inf.	0Ω	49Ω	52Ω

* TAKEN WITH VACUUM TUBE VOLTMETER.
 † MEASURED FROM PIN 8 OF V8.
 ALL MEASUREMENTS TAKEN IN BAND 1 (AM) POSITION.
 * MEASURED FROM CHASSIS.
 † MEASURED IN CW SWITCH POSITION.
 SENSITIVITY CONTROL-FULLY COUNTERCLOCKWISE.
 AVC SWITCH IN "ON" POSITION.
 CW-AM SWITCH IN AM POSITION.
 NOISE LIMITER IN "OFF" POSITION.
 TONE IN "MED." POSITION.
 STANDBY AND RECEIVE SWITCH IN "RECEIVE" POSITION.
 PITCH CONTROL FULLY COUNTERCLOCKWISE POSITION.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 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 makes possible a variation of $\pm 10\%$ in voltage and resistance readings.
- Volume control at maximum, no signal applied for voltage measurements.

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	Hallcrafters	IRC	CLAROSTAT	CENTRALAB	
			PART No.	PART No.	PART No.	PART No.	
RIA	10K Ω	$\frac{1}{2}$	25B590	Q13-116	AM-81-Z	B-15	Sensitivity Control Attach to R1A Per Instructions
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	
R2A	500K Ω	$\frac{1}{2}$	25B586	Q13-133	AG-60-Z	B-60	
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	Hallcrafters	IRC	
			PART No.	PART No.	
R3	1000 Ω		23X20X102K	BTS-1000	Antenna Loading
R4	22 Ω		23X20X220K		Parasitic Suppressor
R5	1Meg		23X20X105M	BTS-1Meg	RF Amp. Grid
R6	120 Ω		23X20X121K	BTS-120	RF Amp. Cathode
R7	1000 Ω		23X20X102K	BTS-1000	RF Amp. Decoupling
R8	6800 Ω		23X30X682K	BTA-6800	RF Amp. Plate
R9	6800 Ω		23X30X682K	BTA-6800	RF Amp. Plate
R10	6.8 Ω		23X20X068K		Parasitic Suppressor
R11	10 Ω		23X20X100K		Parasitic Suppressor
R12	1Meg		23X20X105M	BTS-1Meg	Conv. Grid
R13	1000 Ω		23X20X102K	BTS-1000	Conv. Cathode
R14	1000 Ω		23X20X102K	BTS-1000	Conv. Decoupling
R15	18K Ω		23X20X183K	BTS-18K	Osc. Grid
R16	1000 Ω		23X20X102K	BTS-1000	Osc. Anode
R17	330 Ω		23X20X331K	BTS-330	1st IF Amp. Cathode
R18	1000 Ω		23X20X102K	BTS-1000	1st IF Amp. Decoupling
R19	100K Ω		23X20X104M	BTS-100K	AVC Network
R20	150 Ω		23X20X151K	BTS-150	AVC Load
R21	330 Ω		23X20X331K	BTS-330	2nd IF Amp. Cathode
R22	1000 Ω		23X20X102K	BTS-1000	2nd IF Amp. Decoupling
R23	47K Ω		23X20X473K	BTS-47K	Diode Filter
R24	2.2Meg		23X20X225M	BTS-2.2Meg	AVC Network
R25	100K Ω		23X20X104M	BTS-100K	Diode Load
R26	330K Ω		23X20X334M	BTS-330K	Diode Load
R27	1Meg		23X20X105M	BTS-1Meg	AVC Network
R28	470K Ω		23X20X474M	BTS-470K	AVC Network
R29	2.2Meg		23X20X225M	BTS-2.2Meg	ANL Load
R30	10Meg		23X20X106M	BTS-10Meg	AF Amp. Grid
R31	330K Ω		23X20X334M	BTS-330K	AF Amp. Plate
R32	100K Ω		23X20X104M	BTS-100K	AF Amp. Decoupling
R33	47K Ω		23X20X473K	BTS-47K	BFO Grid
R34	15K Ω		23X20X153K	BTS-15K	BFO Plate
R35	470K Ω		23X20X474M	BTS-470K	Output Grid
R36	150 Ω		23X20X151K	BTS-150	Output Cathode
R37	1000 Ω		23X20X102K	BTS-1000	Tone Compensation-See Note
R38	4700 Ω		23X20X472K	BTS-4700	Tone Compensation-See Note
R39	1000 Ω		23X40X102K	BTB-1000	Filter
R40	100 Ω		23X20X101K	BTS-100	Filter
R41	15 Ω		23X20X150K		Surge Limiter
R42	110 Ω		24BG11E		Filament Shunt-Wire Wound
R43	270K Ω		23X20X274K	BTS-270K	Isolation
R44	15 Ω		23X30X150M	BW-1-15	Output XFMR Shunt

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Hallcrafters	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T1	2.2K Ω	15 Ω Tap 3.2 Ω	180 Ω	.9 Ω	55B110		A-2902 ①		① Drill new mounting holes.

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			Hallcrafters	JENSEN	QUAM	
	FIELD RES.	V. C. IMP.	PART No.	PART No.	PART No.	
SP1	PM	3.2 Ω	85B050	ST105 Mod. P5-X	5A1	
	CONE DIA.	V. C. DIA.				
SP2	5"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Hallcrafters	MEISSNER	
				PART No.	PART No.	
L1	Ant. Coil	.2 Ω	0 Ω	51B783		Band 4 Includes Trimmer Band 3 Includes Trimmer Band 2 and 1 Band 4 Includes Trimmer Band 3 Includes Trimmer Band 2 Includes Trimmer Band 2 and 1 Band 4 Includes Trimmer Band 3 Includes Trimmer Band 2 Includes Trimmer Band 1 Includes Padder
L2	Ant. Coil	.2 Ω	0 Ω	51B782		
L3	Ant. Coil	A0 Ω	B0 Ω	51B1241		
L4	RF Coil	1.45 Ω	0 Ω	51B786		
L5	RF Coil	8.5 Ω	0 Ω	51B786		
L6	RF Coil	A0 Ω	B0 Ω	51B1240		
L7	Osc. Coil	.4 Ω	0 Ω	51B791		
L8	Osc. Coil	.1 Ω	Tap0 Ω	51B913		
L9	Osc. Coil	1.2 Ω	Tap0 Ω	51B789		
L10	Osc. Coil	3 Ω	Tap0 Ω	51B912		
L11	Cathode Choke	120 Ω		53A138		
L12	1st IF	9 Ω	9 Ω	50C243		
L13	2nd IF	9 Ω	9 Ω	50C243		
L14	3rd IF	16 Ω	16 Ω	50C242		
L15	BFO Osc.	17 Ω	Tap6 Ω	54B044		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Hallcrafters		
					PART No.		
M1	Bayonet	6-8	.15	Brown	39A004		Type number 47.
M2	Bayonet	6-8	.15	Brown	39A004		Type number 47.

MISCELLANEOUS

ITEM No.	PART NAME	HALLICRAFTERS	NOTES
		PART No.	
M3A	Switch, Band	60B389	Ant. Wafer
B		62B039	RF Wafer
C		62B044	Osc. Wafer
M4	Switch	60A138	AM-CW
M5	Switch	60A138	ANL
M6	Switch	60A138	Stand-by/Receive
M7A	Ballast	24B875	117Volt
B	Ballast	24B874	220Volt
M8	Switch	60A138	AVC
M9	Switch	60A225	Off-On/Tone
M10	Tuning Gang	48C240-B	
A24	Trimmer	44A191	Band #1 Osc. Adj.
A25	Trimmer	44A191	Band #1 RF Adj.
A26	Trimmer	44A191	Band #1 Ant. Adj.
	Dial	83C240	Main Tuning
	Dial	83B372	Band Spread
	Knob	15A266	Band
	Knob	15A058	Pitch Control
	Knob	15A047	Tuning and Band Spread
	Knob	15A049	Sensitivity, Volume and Tone

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

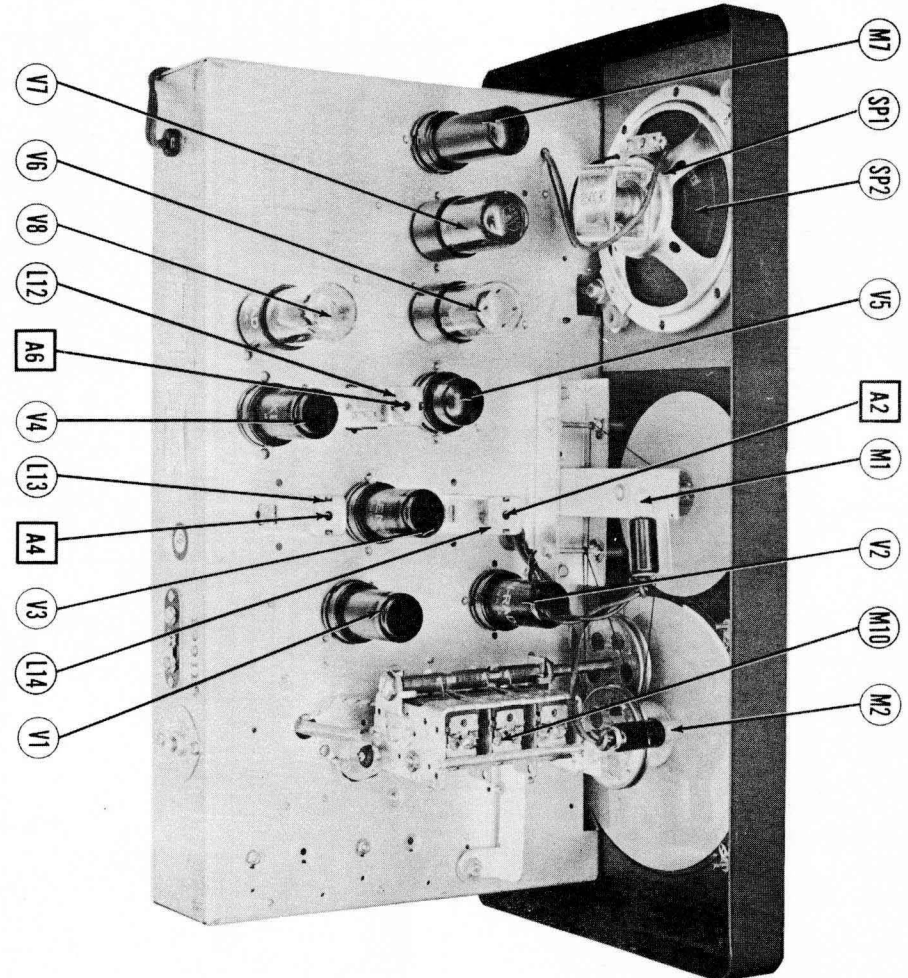
ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		HALLICRAFTERS	STANDARD		
		PART No.	REPLACEMENT		
V1	RF Amplifier	90X6SG7	6SG7	8BK	
V2	Converter	90X6SA7	6SA7	8R	
V3	1st IF Amplifier	90X6SK7	6SK7	8N	
V4	2nd IF Amplifier	90X6SK7	6SK7	8N	
V5	Detector-AVC-ANL	90X6H6	6H6	7Q	
V6	AF Amplifier-BFO	90X6SC7	6SC7	8S	
V7	Power Output	90X25L6GT	25L6GT	7AC	
V8	Rectifier	90X25Z6GT	25Z6GT	7Q	

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	Hallcrafters PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	60	175	45B128-C	PRS200/30-30		EDL7V225		R1137	Filter
C1B	20	175		PRS250/20-20		BR2025			Filter
C1C	20	175							Filter
C2	10	25	45A121	PRS25/10		BR102A		TVA-1204	Output Cathode
C3	10	150	45A097	PRS150/12		BR1015		TVA-1406	Osc. Anode Dec.
C4	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Ant. Isolation
C5	220	500	47X20B221K	1469-00025	D6-221	5R5T25	GP2K-221		RF Coupling
C6	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	RF Amp. Screen
C7	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	RF Bypass
C8	.25	200	46A T254J	P488-25		G2P25		2TM-P25	Sensitivity Cont. Bypass
C9	100	500	47X20B101K	1468-0001	D6-101	5W5T1	GPIK-101	1FM-31	RF Coupling
C10	24		47X25UK240M	SI25NPO	TCZ-24		NPOK-240	5TCC-Q25	RF Coupling
C11	15		47X21UK150M		TCN-15		N750K-150	5TCU-Q15	RF Coupling
C12	220	500	47X20B221K	1469-00025	D6-221	5R5T25	GP2K-221		RF Coupling
C13	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Conv. Plate Dec.
C14	.003	600	46AY302J	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Osc. Feedback
C15	.005	600	46AZ502J	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Conv. Cathode Bypass
C16	270	500	47X20B271K	1469-0003		5R5T3		MS-33	Osc. Grid Cap.
C17	68		47X25UK680K		TCZ-68		NPO-333-680	5TCC-Q68	Fixed Trimmer
C18	.05	200	46AU503J	P288-05	DF-503	PTE4S5		2TM-S5	Osc. Anode Dec.
C19	.002	600	46AZ202J	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Osc. Anode Bypass
C20	3000	500	47X35B302K	1467-003	D6-302	1W5D3	GP2-333-302	MS-23	Fixed Padder
C21	1500	500	47X35C152J	1467-0015	D6-152	1W5D15	GP2L-152	1FM-215	Fixed Padder
C22	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	AVC Filter
C23	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	1st IF Amp. Dec.
C24	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	1st IF Amp. Cathode
C25	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	AVC Filter
C26	.05	600	46AY503J	P688-05	DF-503	PTE6S2		6TM-S5	2nd IF Amp. Dec.
C27	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	2nd IF Amp. Cathode
C28	47	500	47X20B470K	1468-00005	D6-470	5W5Q5	GPIK-470	1FM-45	Diode RF Filter
C29	47	500	47X20B470K	1468-00005	D6-470	5W5Q5	GPIK-470	1FM-45	Diode RF Filter
C30	.05	200	46AU503N	P288-05	DF-503	PTE4S5		2TM-S5	RF Bypass
C31	.05	200	46AU503J	P288-05	DF-503	PTE4S5		2TM-S5	Audio Coupling
C32	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	Audio Coupling
C33	.02	200	46AU203J	P488-02	DF-203	PTE4S2		2TM-S2	Vol. Cont. Isolation
C34	.003	600	46AY302J	P488-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Audio Coupling
C35	100	500	47X20B101K	1468-0001	D6-101	5W5T1	GPIK-101	1FM-31	AF Amp. Fil.
C36	220	500	47X20B221K	1469-00025	D6-221	5R5T25	GP2K-221		AF Amp. Plate
C37	.1	600	46AY104J	P688-1	DF-104	PTE6P1		6TM-P1	RF Bypass
C38	100	500	47X20B101K	1468-0001	D6-101	5W5T1	GPIK-101	1FM-31	RF Bypass
C39	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	BFO Feedback
C40	470	500	47X20B471J	1469-0005		5R5T5		MS-35q	Fixed Trimmer
C41	270	500	47X20B271K	1469-0003		5R5T3		MS-33	BFO Grid Cap.
C42	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C43	.005	600	46AZ502J	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Output Plate
C44	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	Tone Comp.
C45	220	500	47X20B221K	1469-00025	D6-221	5R5T25	GP2K-221		RF Bypass
C46	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	Line Filter †
C47	.05	600	46A150	P688-05 *	DF-503 *	PTE6S5 *		6TM-S5 *	Line Isolation ‡

CHASSIS—TOP VIEW



† Some models use .02MFD in this application (Mfgs. Part No. 46BR203L6).

‡ Special resonate Cap.

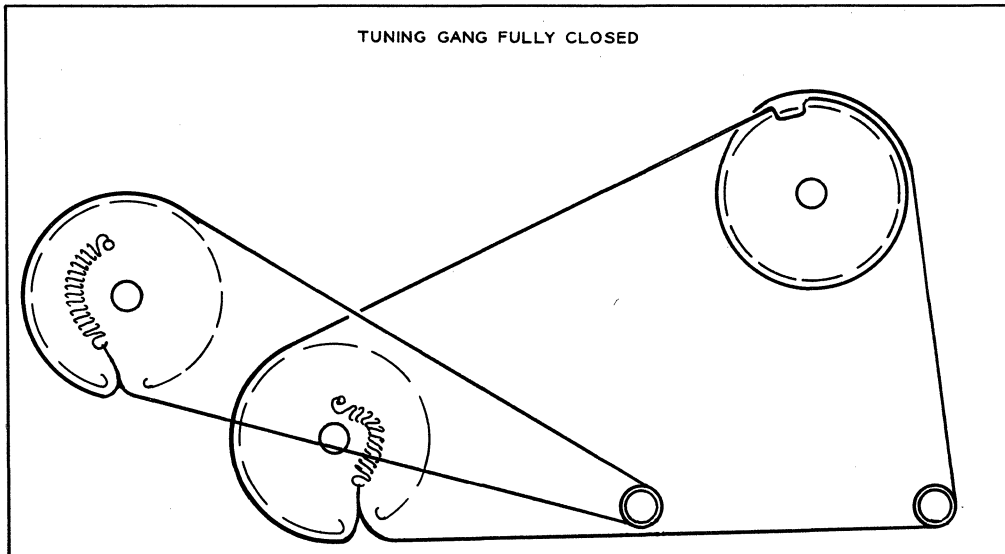
* When replacing, duplicate original coil wound on C47.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set the main dial scale, turn main tuning gang fully closed and set the zero on the logging scale under the window index.
 To set bandspread scale, turn band spread tuning gang fully open and set the zero on the scale under the window index.
 The RMA dummy antenna consists of a 200MMF capacitor in series with a 20 microhenry coil which is shunted by a 400MMF capacitor in series with a 400Ω carbon resistor.

Set the controls as follows:
 Sensitivity to maximum
 Volume to maximum
 AVC switch to OFF
 Bandspread to zero
 CW/AM switch to AM
 Noise limiter to OFF
 Standby receive switch to RECEIVE
 Tone switch to HIGH

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Direct	High side to stator on center section of tuning gang. Low side to chassis.	455KC (400v Mod.)	1	1000KC	Across voice coil.	A1, A2, A3, A4, A5, A6	Adjust for maximum output. Attenuate signal generator to maintain 50MW output.
2.	"	"	455KC (Unmod.)	"	"	"	A7	Turn CW/AM switch to CW. Remove pitch control knob. Adjust A7 for zero beat in the speaker. Replace the knob with the index mark straight up.
3.	RMA	High side to antenna terminal "A1," (Connect link between A2 and G). Low side to chassis.	36MC (400v Mod.)	4	36MC	"	A8, A9, A10	Adjust for maximum output.
4.	"	"	18MC (400v Mod.)	"	18MC	"	A11, A12, A13	Adjust for maximum output. Repeat steps 3 and 4 until no further improvement can be made.
5.	"	"	14MC (400v Mod.)	3	14MC	"	A14, A15, A16	Adjust for maximum output.
6.	"	"	10MC (400v Mod.)	"	10MC	"	A17, A18, A19	Adjust for maximum output. Repeat steps 5 and 6 until no further improvement can be made.
7.	"	"	5MC	2	5MC	"	A20, A21, A22	Adjust for maximum output.
8.	"	"	1.8MC	"	1.8MC	"	A23	Adjust for maximum output. Repeat steps 7 and 8 until no further improvement can be made.
9.	"	"	1500KC	1	1500KC	"	A24, A25, A26	Adjust for maximum output.
10.	"	"	600KC	"	600KC	"	A27	Adjust for maximum output. Repeat steps 9 and 10 until no further improvement can be made.



DIAL CORD DRIVE