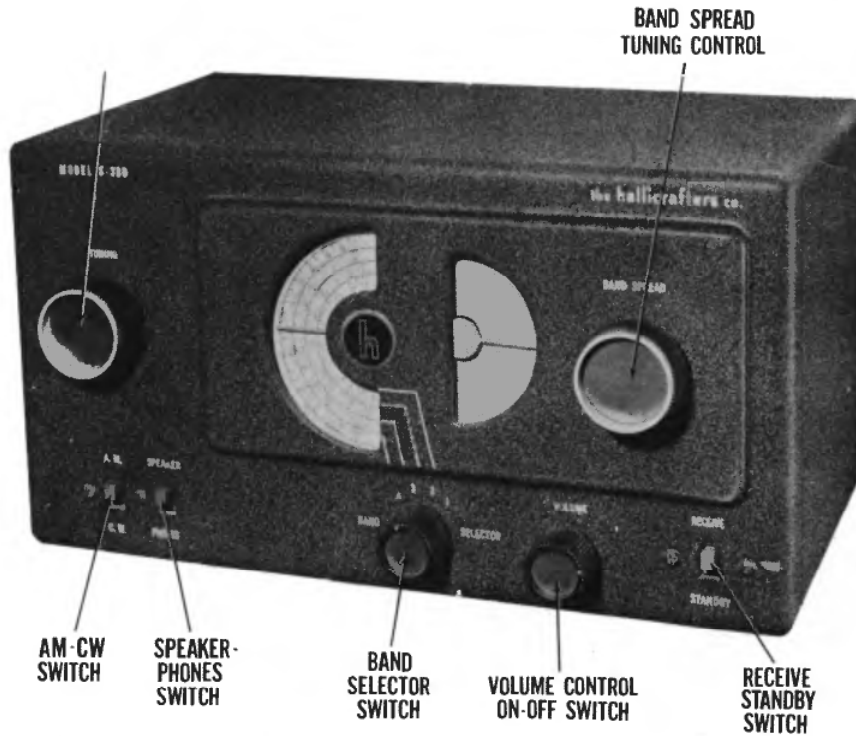




HALLICRAFTERS
MODEL S-38B



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HALLICRAFTERS MODEL S-38B

TRADE NAME	Hallcrafters, Model S-38B		
MANUFACTURER	The Hallcrafters Co., 5th and Kostner Ave., Chicago, Illinois		
TYPE SET	AC-DC Operated 4 Band Superheterodyne Communications Receiver		
TUBES	Types 12SA7 Converter, 12SK7 1st IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier		

POWER SUPPLY	105-125 Volts AC-DC	RATING	.23 Amp. @ 117Volts AC
TUNING RANGE-	(Band #1) 550-1650KC, (Band #2) 1.7-5.1MC, (Band #3) 5-14.5MC, (Band #4) 13-31MC		

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn both tuning gangs fully open and set both pointers so they are vertical and over the vertical lines at the upper end of the dial scales.
The RMA dummy antenna referred to in the alignment consists of a 200MMF capacitor in series with a 20 microhenry choke which is shunted by a 400MMF capacitor in series with a 400Ω carbon resistor.
Use isolation transformer if available. If not, connect a .1MFD capacitor in series with low side of signal generator and chassis.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

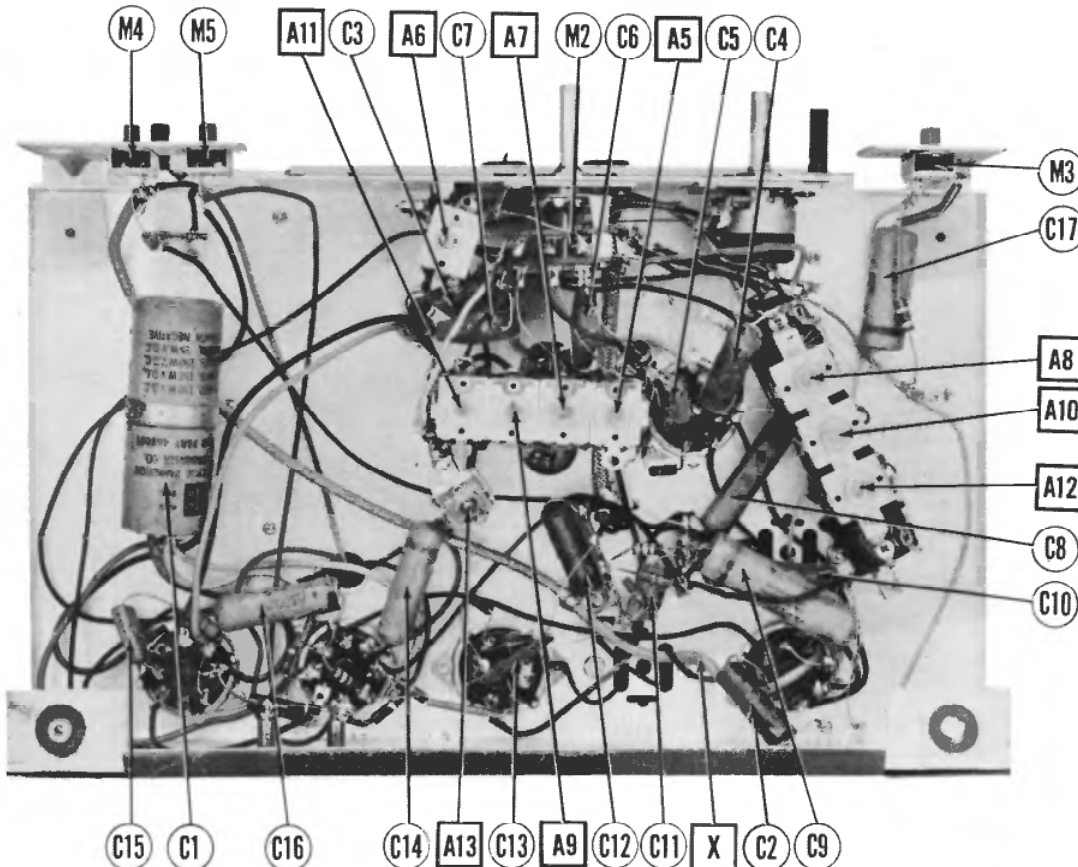
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. .01MFD	High side to stator plates on front section of tuning gang. Low side to chassis.	455KC (400 % Mod.)	1	1000KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	Tune in a strong CW station and turn the "AM-CW" switch to CW. If the beat note is weak indicating insufficient BFO injection, move wire "X" nearer the IF amp. tube socket.						
3.	RMA High side to antenna terminal "A". (Connect link between A2 and A3). Low side to chassis.	30MC (400 % Mod.)	4	30MC	Across voice coil.	A5, A6	Adjust for maximum output.
4.	"	14MC	3	14MC	"	A7, A8	"
5.	"	5MC	2	5MC	"	A9, A10	"
6.	"	1500KC	1	1500KC	"	A11, A12	"
7.	"	600KC	1	600KC	"	A13	Adjust for maximum output. Repeat steps 6 and 7 until no further improvements can be made.

HOWARD W. SAMs & CO., INC. • Indianapolis 1, Indiana

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CHASSIS—TOP VIEW



HALICRAFTERS
MODEL S-38B

PARTS LIST AND DESCRIPTIONS TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		INSTALLATION NOTES
		Hallicrafters PART No.	STANDARD REPLACEMENT	
V1	Converter	90X125A7	125A7	
V2	1st IF Amp.	90X25K7	125K7	8R
V3	Det.-AVC-AF	90X25Q7	125Q7	8N
V4	Power Output	90X50L6GT	50L6GT	8Q
V5	Rectifier	90X35Z5GT	35Z5GT	7AC
				6AD

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.	AFROVOX PART No.	CORNELL-DUBILIER PART No.	
C1A	60	45 B091	PR8150/40-40	E25535C	Filter Yellow
C1B	40		PR25/25		Filter Yellow
C1C	40				Filter Blue
C1D	20				Output Cath.
C2	.01	46AY103J	P688-01	PTE681	Ant. Isolation
C3	2700	47X30A272J	P488-02	PTE482	Fixed Pad
C4	.02	46AV203J	1468-0002	5W5T2	AVC Filter
C5	220	47X20A221K	1468-0003	IR5D3	Osc. Grid Cup
C6	3000	47X20A302J		MS-23	Fixed Pad
C7	2200	47X30A222J		PTE485	Fixed Pad
C8	.05	46AU053J	P288-05	G12P25	RF Bypass
C9	.25	46AT254I	P488-25	PTE485	RF Bypass
C10	.05	46AU053J	P288-05	PTE485	RF Bypass
C11	100	47X20A103K	DF-101	5W5T2	Diode Rectifier
C12	100	46AV103J	P688-01	PTE681	Diode Rectifier
C13A	220	46A151	512P0-01	5W5T2	Diode Rectifier
C13B	220		512P0-02	5W5T2	Diode Rectifier
C13C	220		512P0-05	5W5T2	Diode Rectifier
C14	200	46AV203J	P688-01	PTE681	Diode Rectifier
C15	5000	CM20A471M	P688-02	PTE682	Diode Rectifier
C16	470	46AV470J	1468-0005	5W5T5	Diode Rectifier
C17	.1	46AV104J	P688-02	PTE682	Diode Rectifier
			P488-1	PTE481	Line Isolation

* Model S-36A uses .25MFD in this application.

CONTROLS

ITEM No.	RATING RESIST. ANCE	WATTS	REPLACEMENT DATA			INSTALLATION NOTES
			Hallicrafters PART No.	IRC PART No.	CAROSTAT PART No.	
R1A	2Meg		25B896	Q13-139	AG-66-Z	Volume control
B	Shaft		Not req.	Not req.	Not req.	Attach to R1A per instructions
C	Switch		Not req.	Not req.	Not req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA		IDENTIFICATION CODES
			Hallicrafters PART No.	IRC PART No.	
R2	470KΩ				Converter Grid
R3	47KΩ		23X20X47M		Parasitic Supp
R4	2KΩ		23X20X20M		Oscillator Grid
R5	33KΩ		23X20X33M		Parasitic Supp - See Note 1.
R6	5Meg				Parasitic Supp - See Note 2.
R7	470Ω		23X20X47K		AVC Network
R8	300Ω		23X20X30I		Bias Network
R9	56KΩ		23X20X56K		IF Amp. Cathode
R10	470KΩ		23X20X474M		Diode Filter - See Note 3
R11	15Meg		23X20X150M		Diode Load
R12	220KΩ		23X20X224M		AF Amp. Grid - See Note 4
R13	470KΩ		23X20X474M		AF Amp. Plate
R14	150Ω		23X20X151K		Output Grid
R15	15Ω		23X20X150M		Output Transformer Shunt

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING	REPLACEMENT DATA		IDENTIFICATION CODES
		Hallicrafters PART No.	IRC PART No.	
R16	10KΩ	23X20X103M		Antenna Coil Shunt
R17	1000Ω	23X20X102M	BTS-1000	Filter
R18	220Ω	23X30X221M	BTA-220	Filter
R19	33Ω	23X20X221M	BTS-330	Surge Limiter - See Note 1.
R20	330Ω	23X20X221M	BTS-330	Pilot Light Shunt

Note 1. Some models use 22Ω resistor in this application.
 Note 2. Some models use 2.2meg resistor in this application.
 Note 3. Some models use 47KΩ resistor in this application.
 Note 4. Some models use 10meg resistor in this application.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING	REPLACEMENT DATA		INSTALLATION NOTES
		Hallicrafters PART No.	STANCOR PART No.	
T1	IMPEDANCE PRI. 1.5KΩ SEC. 1.7KΩ V. C. 3.2Ω DIA. 1/2"	55A127	A.3876	A 2928 RO-2

SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA		NOTES
		Hallicrafters PART No.	JENSEN PART No.	
SP1	FIELD RES. 3.2Ω V. C. IMP. 3.2Ω P.M.	85C030	ST-105 Mod. P5-X	QUAM PART No. 5A1
SP2	CONE DIA. 4 1/2"			

R F COILS

ITEM No.	USE	REPLACEMENT DATA		MEISSNER PART No.	NOTES
		Hallicrafters PART No.	51C921		
L1A	Ant. Coil	5.5Ω			Band 1
L1B	Ant. Coil	1.1Ω			Band 2
L1C	Ant. Coil	1.1Ω	.2Ω		Band 3
L1D	Ant. Coil	.5Ω	.0Ω	51B1015	Band 4
L2A	Osc. Coil	2.8Ω		51C922	Band 1
L2B	Osc. Coil	3.2Ω			Band 2
L2C	Osc. Coil	.1Ω			Band 3
L2D	Osc. Coil	.0Ω		50B183	Band 4
L4	1st IF	22Ω		50B184	
L5	2nd IF	22Ω			

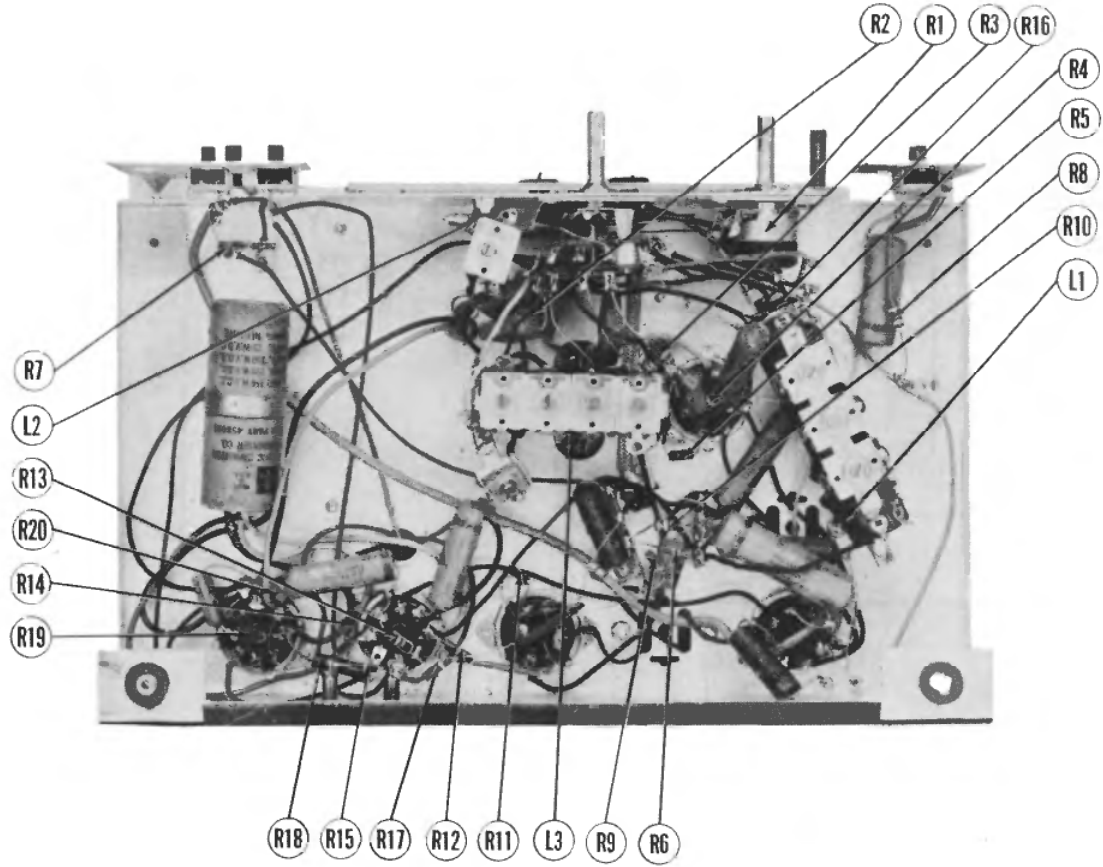
DIAL LIGHTS

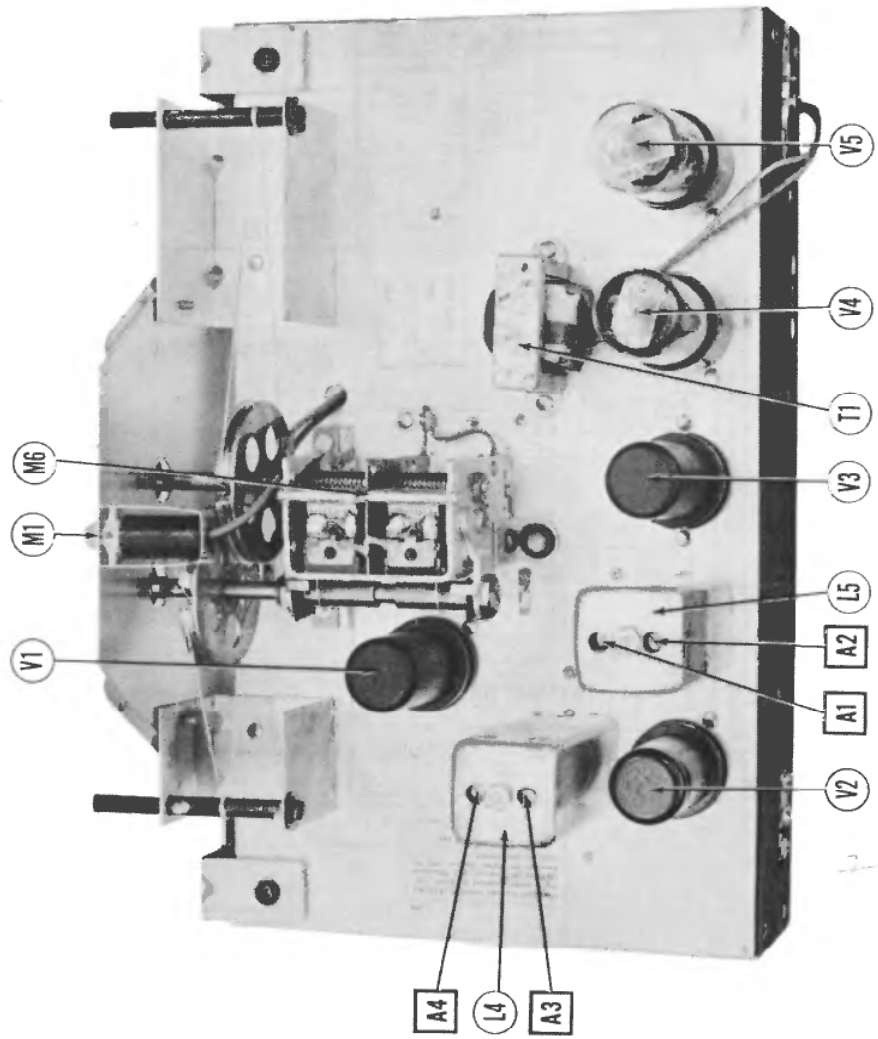
ITEM No.	BASE TYPE	VOLTS	AMPS	REPLACEMENT DATA		NOTES
				BEAD COLOR	Hallicrafters PART No.	
M1	Bayonet	6-8	.15	Brown	39A004	Type Number 47

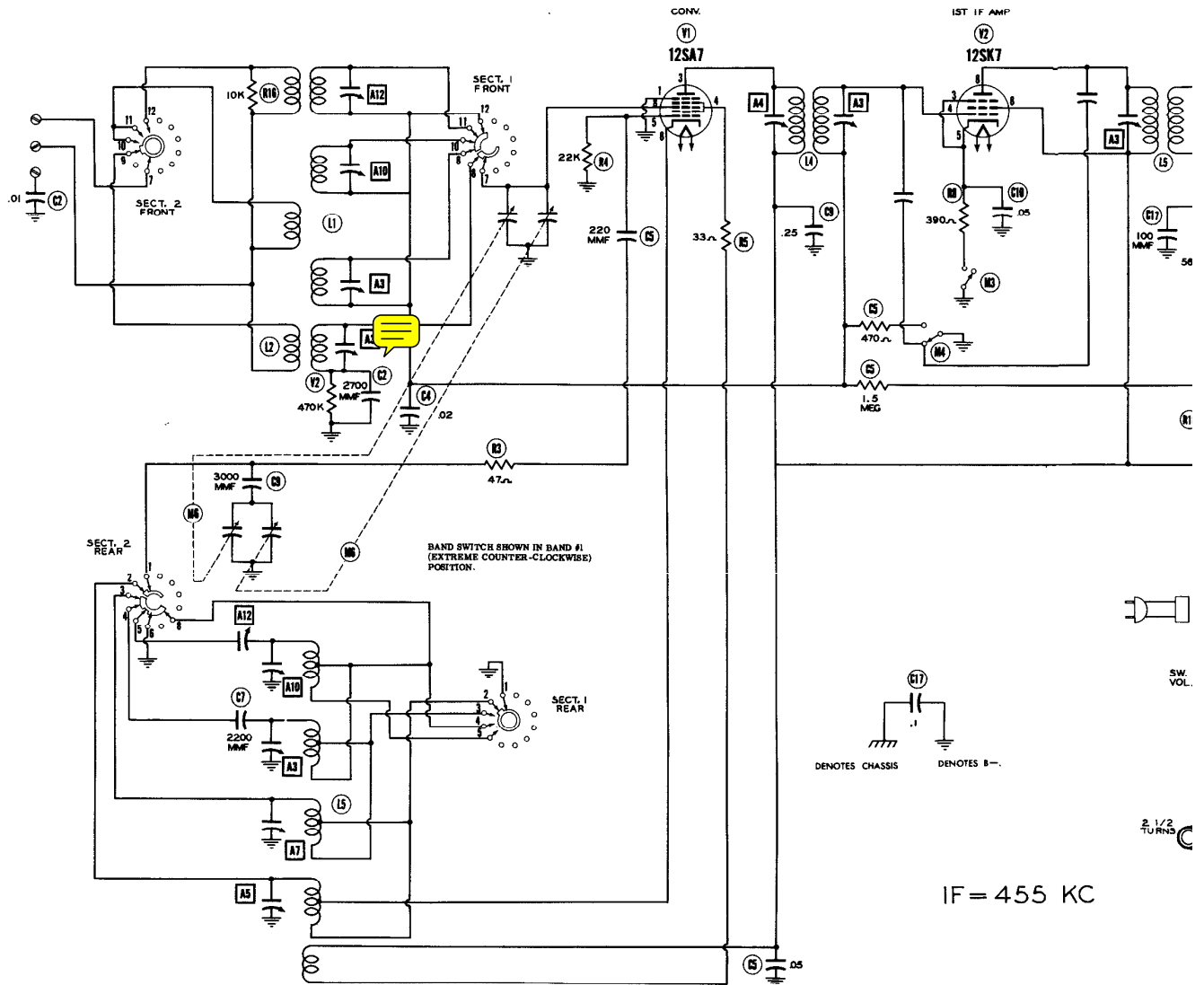
MISCELLANEOUS

ITEM No.	PART NAME	Hallicrafters PART No.	NOTES
M2	Switch	60C393	Band
M3	Switch	60A244	Receive - Standby
M4	Switch	60A243	AM-CW
M5	Switch	60A243	Speaker - Phones
M6	2 Gang Var. Cap	46C165-1	(2-46)MMF, 15-46(MMF)
A6	Trimmer	44A039	Band #4 Ant. Adj.
A13	Padder	44A349	Band #1 Osc. Adj.
	Dial Scale	83C373	

CHASSIS—BOTTOM VIEW







VOLTAGE READINGS									
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	0V	28VAC	85VDC	85VDC	1-7.7VDC	0V	13VAC	.5VDC
V 2	12SK7	0V	37VAC	85VDC	85VDC	8.5VDC	85VDC	28VAC	85VDC
V 3	12SK7	0V	.8VDC	0V	8.5VDC	8.5VDC	85VDC	13VAC	0V
V 4	50L6GT	0V	37VAC	85VDC	85VDC	0V	108VDC	85VAC	6VDC
V 5	58L6GT	0V	117VAC	117VAC	117VDC	117VAC	0V	85VAC	117VDC

† TAKEN WITH VACUUM TUBE VOLTMETER

ALL MEASUREMENTS TAKEN WITH BANDSWITCH IN POSITION 1

RECEIVER - STAND BY SWITCH IN RECEIVE POSITION

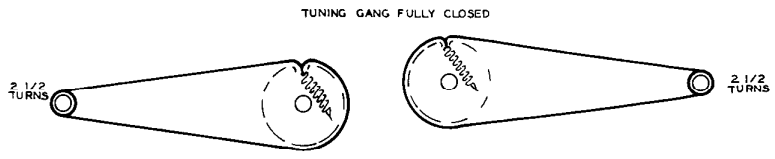
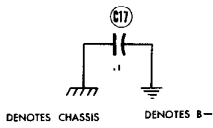
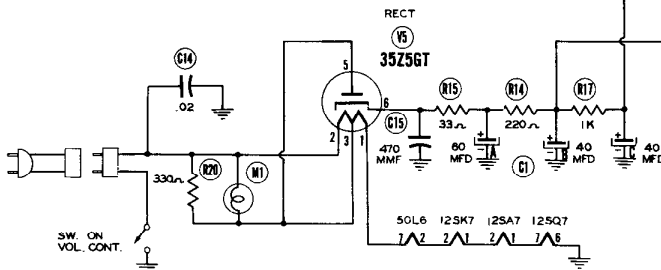
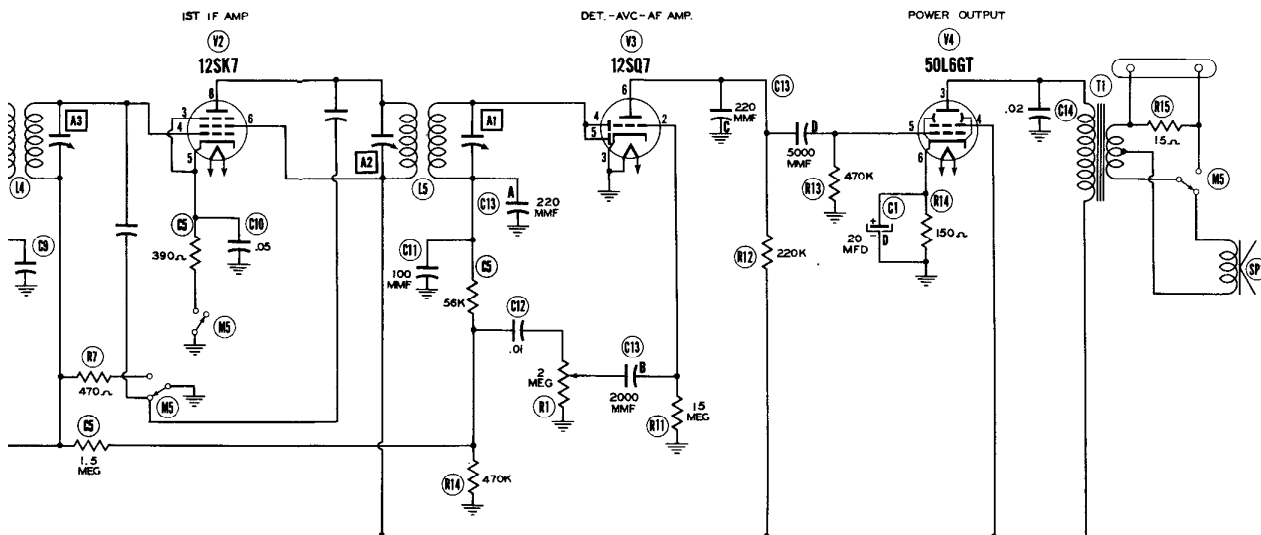
* AM-CW SWITCH IN AM

‡ AM-CW SWITCH IN CW

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

A PHOTOFAC STANDARD NOTATION SCHEMATIC
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- DC Voltage measurements are at 20,000 ohms per volt; AC 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 vari $\pm 10\%$ in voltage and resistance readings.
- Volume control at maximum, no signal applied for voltage measurements.



IF = 455 KC

5

RESISTANCE READINGS												
Pin 6	Pin 7	Pin 8	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
0V	13VAC	5VDC	V 1	12SA7	00	25Ω	±1.2KΩ	±1.2KΩ	22KΩ	1.1Ω	12Ω	2Meg
85VDC	25VAC	85VDC	V 2	12SK7	00	38Ω	390Ω	±470Ω	390Ω	±1.3KΩ	25Ω	±1.2KΩ
85VDC	13VAC	0V	V 3	12SQ7	00	15Meg	00	±500KΩ	±400KΩ	±220KΩ	12Ω	00
105VDC	85VAC	8VDC	V 4	50L6GT	00	38Ω	±400Ω	±1.2KΩ	470KΩ	±250Ω	00Ω	150Ω
0V	85VAC	117VDC	V 5	35L6GT	Inf.	120Ω	115Ω	133Ω	115Ω	Inf.	90Ω	40KΩ

* ALL MEASUREMENTS TAKEN WITH BANDSWITCH IN POSITION 1
 † MEASURED FROM PIN 8 OF V5
 ‡ AM-CW SWITCH IN AM
 § AM-CW SWITCH IN CW

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

Voltage measurements are at 20,000 ohms per volt; AC Voltages read at 1,000 ohms per volt.
 Connections are shown as bottom views.
 Grid values are from socket pin to common negative.
 Voltage maintained at 117 volts for voltage readings.
 Normal tolerance on component values makes possible a variation of 1/2% in voltage and resistance readings.
 Full control at maximum, no signal applied for voltage measure-

121-7