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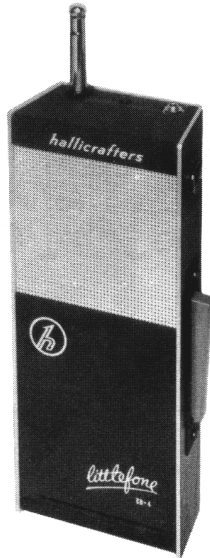
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**HALLICRAFTERS MODEL
LITTLEPHONE CB-4**

NOTICE

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES & REGULATIONS PART 19, SUBPART D, SECTION 19.71.)

TRADE NAME	Hallicrafters Model Littlefone CB-4		
MANUFACTURER	The Hallicrafters Co., 4400 W. 45th Street, Chicago 32, Illinois		
TYPE SET	Battery Operated 7 Transistor Portable Citizens Band Transmitter-Receiver		
POWER SUPPLY	12 Volts DC	RATING	13 MA @ 12 Volts DC (Receive, No Signal) 23 MA @ 12 Volts DC (Transmit, No Modulation)
TUNING RANGE	Any One of Citizens Band Channels 2 thru 23		

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
Use only enough generator output to provide a usable indication.	
Suggested Alignment Tools:	
A1, A2, A3.....	GENERAL CEMENT #8282, 8606, 8606-L, 9091 WALSCO #2526, 2541, 2542, 2543, 2544
A4, A5, A6.....	GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440 WALSCO #2526, 2543, 2544, 2545

RECEIVER ALIGNMENT

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455KC (Unmod.)	Channel 11 (27.085MC)	Across Volume Control	A1, A2, A3	Adjust for maximum deflection.
2.	"	Channel Freq.	Highest Channel Used	"	A4	Adjust for maximum deflection. Rock A4 to each side of peak. Note rate of dropoff. Set A4 just below peak on side of gradual dropoff.
3.	"	"	Center Freq.	"	A5	Adjust for maximum deflection.

TRANSMITTER ALIGNMENT

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SPECIAL INSTRUCTIONS	INDICATOR	ADJUST	REMARKS
4. Connect dummy load, RF wattmeter or antenna.	DC milliammeter in series with supply voltage.	A6	Set supply voltage for 12V DC. Key transmitter and adjust A6 for 22MA.

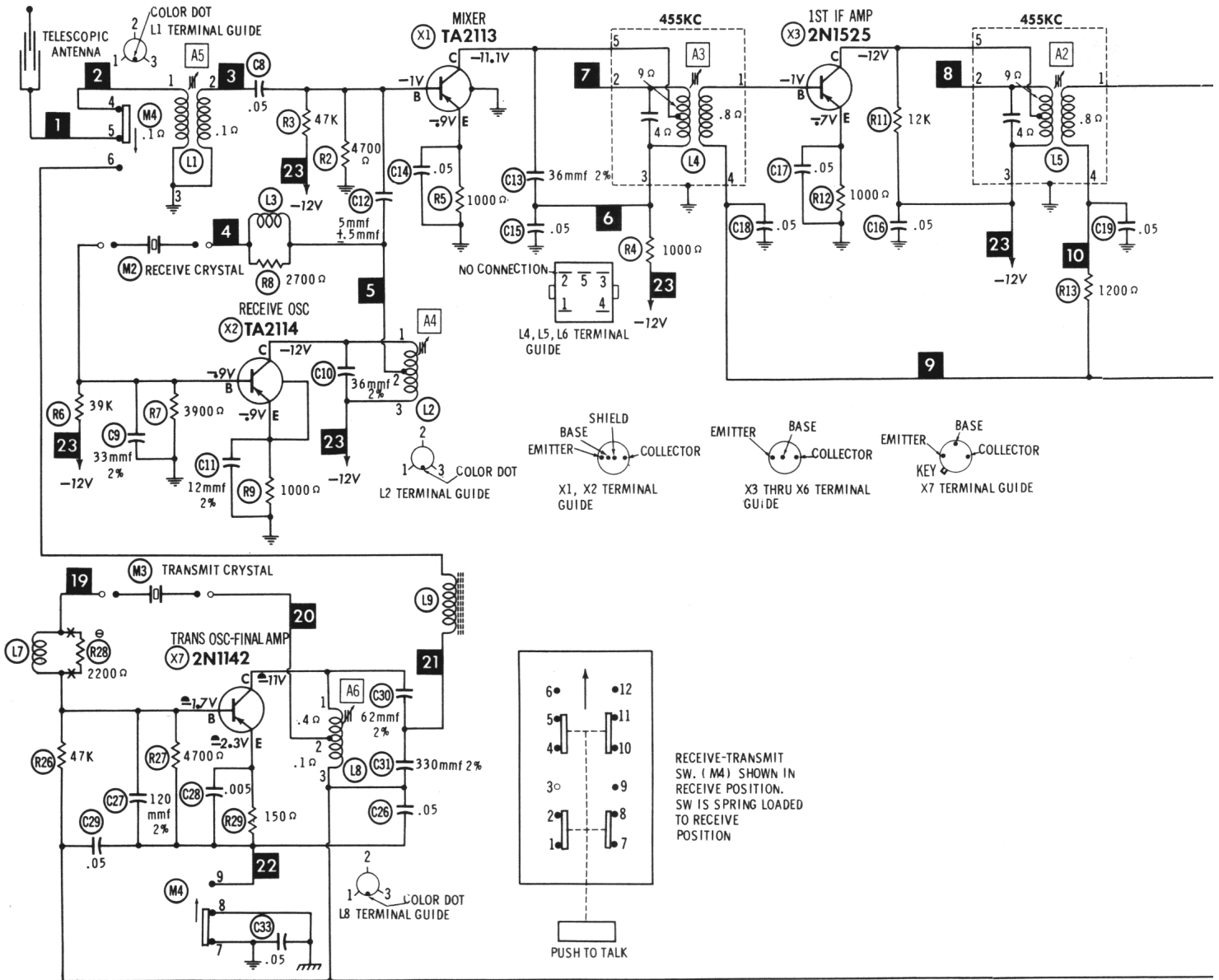
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of LY663

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. ©1962 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

**HALLICRAFTERS MODEL
LITTLEPHONE CB-4**



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

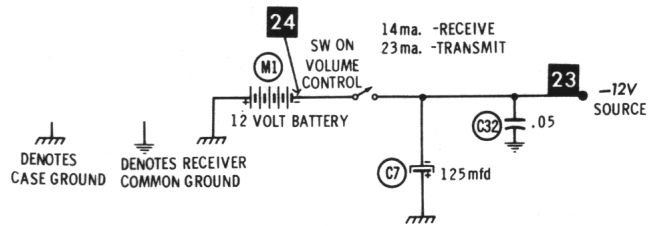
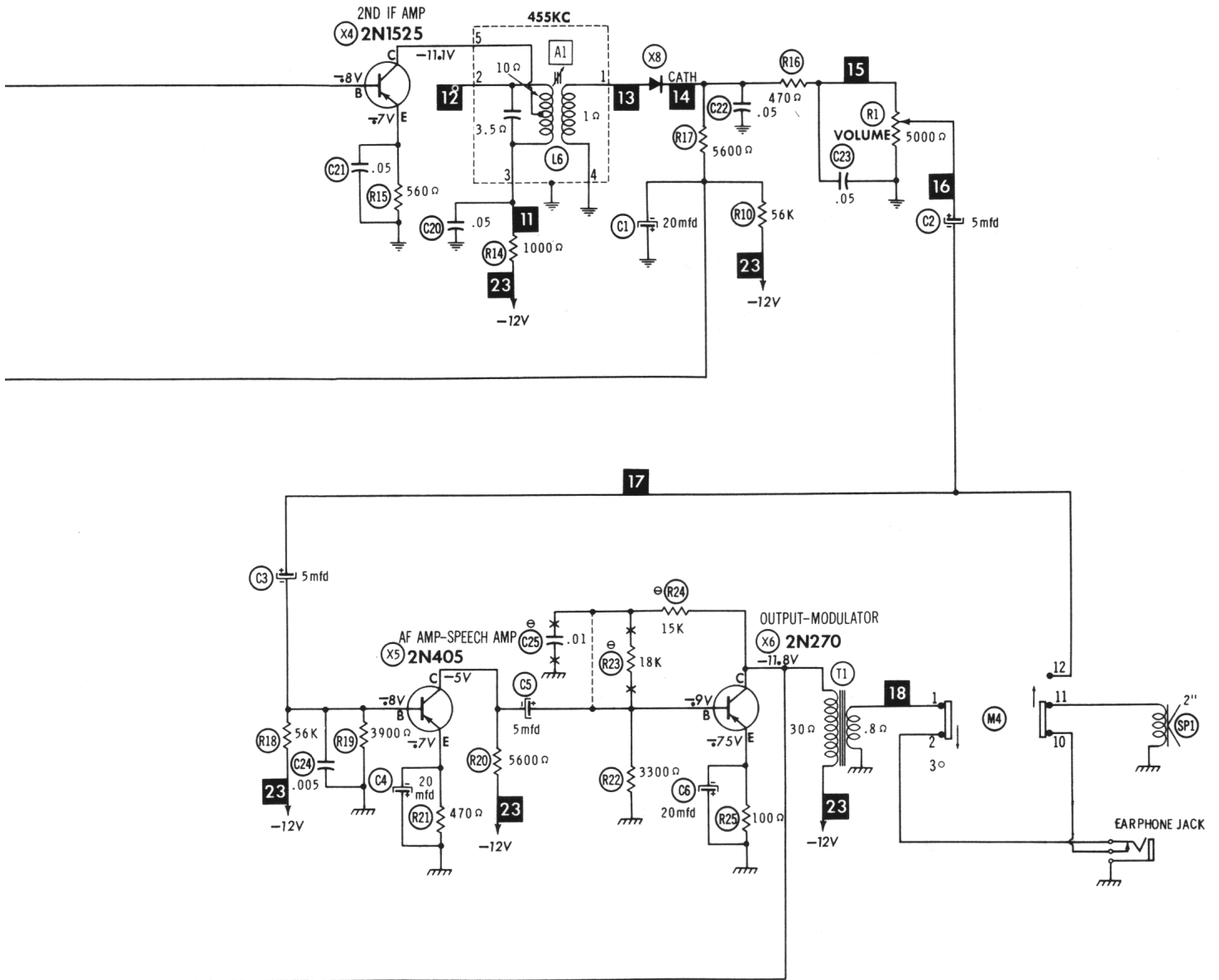
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

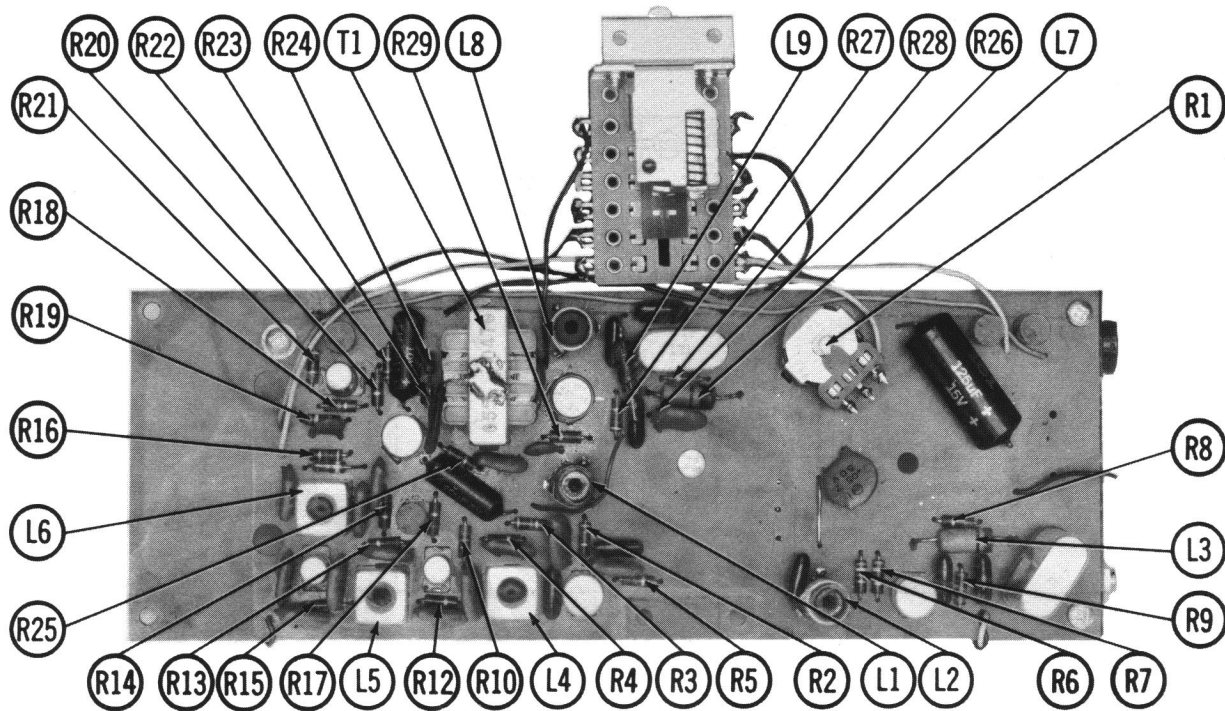
RESISTANCE READINGS

ITEM	TYPE	BASE	EMITTER	COLLECTOR
X1	TA2113	$\dagger 4700 \Omega$	1000 Ω	$\dagger 1000 \Omega$
X2	TA2114	$\dagger 3900 \Omega$	1000 Ω	$\dagger 0 \Omega$
X3	2N1525	11K	1000 Ω	$\dagger 4 \Omega$
X4	2N1525	12K	560 Ω	$\dagger 1000 \Omega$
X5	2N405	$\dagger 3900 \Omega$	470 Ω	$\dagger 5600 \Omega$
X6	2N270	$\dagger 3300 \Omega$	100 Ω	$\dagger 30 \Omega$
X7	2N1142	$\dagger 4700 \Omega$	$\dagger 150 \Omega$	$\dagger 30 \Omega$

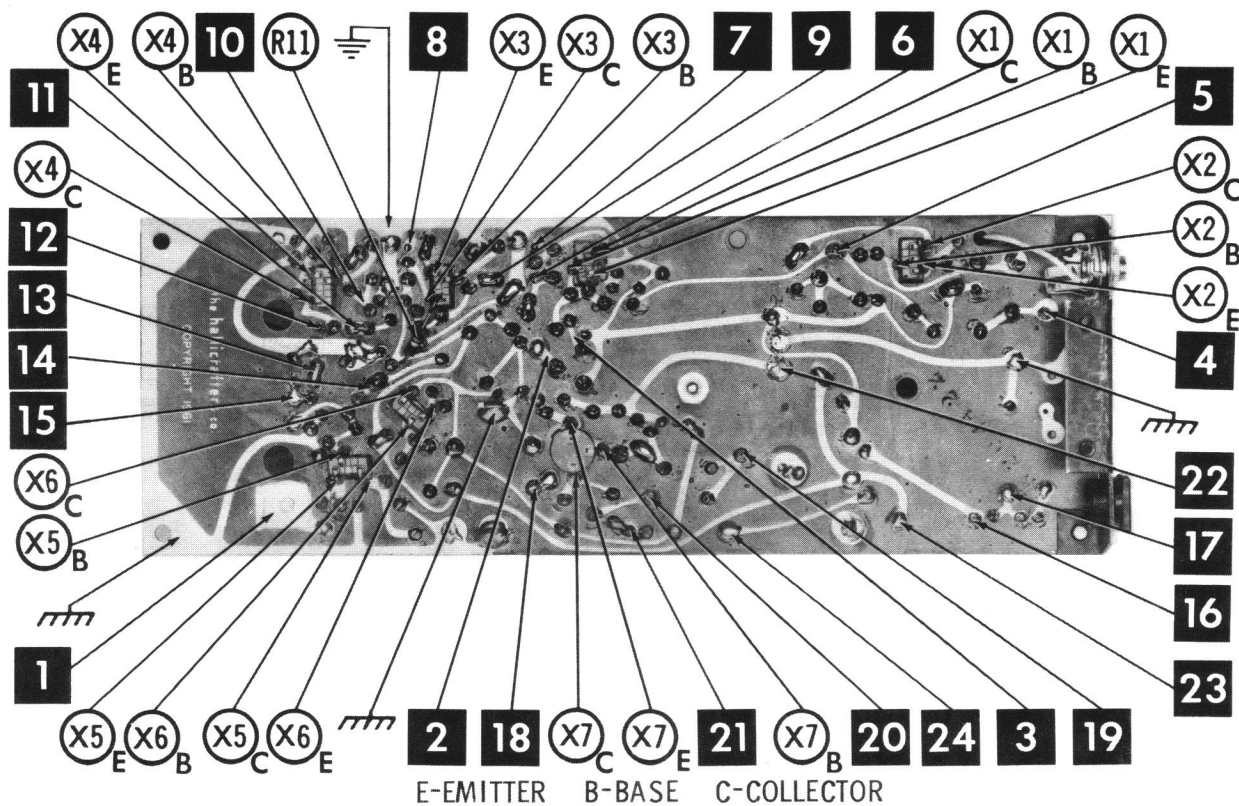
ALL MEASUREMENTS TAKEN IN "RECEIVE" POSITION UNLESS OTHERWISE DESIGNATED.
 • TAKEN IN "TRANSMIT" POSITION.
 † MEASURED FROM JUNCTION OF C7 AND SWITCH.
 TRANSISTORS REMOVED FOR RESISTANCE MEASUREMENTS.



**HALLICRAFTERS MODEL
LITTLEPHONE CB-4**



PRINTED BOARD - RESISTOR & INDUCTOR IDENT.



PRINTED BOARD - BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	
X1	TA213	Receive Mixer	GE-1	2N486	PNP	
X2	TA214	Receive Oscillator	GE-1	2N481	PNP	
X3	2N1525	1st IF Amplifier	GE-1	2N484	PNP	
X4	2N1525	2nd IF Amplifier	GE-2	2N484	PNP	
X5	2N405	AF Amp. -Speech Amp.	GE-2	2N362	PNP	
X6	2N270	Output-Modulator	GE-2	2N270	PNP	
X7	2N142	Trans. Osc. -Final Amp.	GE-1	2N631	PNP	

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		NOTES
			SARKES TARZIAN PART No.	RAYTHEON PART No.	
X8		019-301980		1N295	Detector (1N295)

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	VOLT.	Hallicrafters PART No.	AEROVOX PART No.	REPLACEMENT DATA			SPRAGUE PART No.
					CORNELL-DUBILIER PART No.	MALLOY PART No.	PYRAMID PART No.	
C1	20	10	045-000885	PTT41	ECFB40	MTL-10	TT15X20	MLV20-12
C2	5	10	045-000884	PTT37	ECFB40	MTL-3	TT12X5	MLV5-12
C3	5	10	045-000884	PTT37	ECFB40	MTL-3	TT12X5	MLV5-12
C4	20	10	045-000885	PTT41	ECFB40	MTL-10	TT15X20	MLV20-12
C5	5	10	045-000885	PTT37	NLW5-15	MTL-3	TT12X5	MLV5-12
C6	20	6	045-000881	BCD620	NLW20-15	MTL-13	TT15X20	TE-1090
C7	125	15	045-000886		NLW25-15	MTL-23	TT15X150	TE-1163

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					SPRAGUE PART No.
			AEROVOX PART No.	CORNELL-DUBILIER PART No.	CENTRALAB PART No.	ELMENDO PART No.	MALLOY PART No.	
C8	05		C80V503AM	DDA-503	DDA-503	CM-15E-330G	TA-150	TG-S50
C9	33 2%		1489-33	22R5Q33	H-05S5	CM-15E-360G	MS-433	MS-433
C10	36 2%		1489-36	22R5Q36	H-05S5	CM-15E-360G	MS-436	MS-436
C11	12 2%		1489-12	22R5Q12	H-05S5	CM-15C-120J	MS-412	MS-412
C12	5		1489-5	22R5V5	H-05S5	CM-15C-050J	MS-55	MS-55
C13	36 2%		1489-36	22R5Q36	H-05S5	CM-15E-360G	MS-436	MS-436
C14	.05		C80V503AM	DDA-503	H-05S5		TA-150	TG-S50
C15	.05		C80V503AM	DDA-503	H-05S5		TA-150	TG-S50
C16	.05		C80V503AM	DDA-503	H-05S5		TA-150	TG-S50
C17	.05		C80V503AM	DDA-503	H-05S5		TA-150	TG-S50
C18	.05		C80V503AM	DDA-503	H-05S5		TA-150	TG-S50
C19	.05		C80V503AM	DDA-503	H-05S5		TA-150	TG-S50

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					SPRAGUE PART No.
			AEROVOX PART No.	CORNELL-DUBILIER PART No.	CENTRALAB PART No.	ELMENDO PART No.	MALLOY PART No.	
C20	.05		C80V503AM	H-05S5	DDA-503	TA-150	TG-S50	
C21	.05		C80V503AM	H-05S5	DDA-503	TA-150	TG-S50	
C22	.05		C80V503AM	H-05S5	DDA-503	TA-150	TG-S50	
C23	.05		C80V503AM	H-05S5	DDA-503	TA-150	TG-S50	
C24	.005		C80V502AM	H-05D5	DM-502	CCD-502	TG-D50	
C25	.01	Note 1	C80V103AM	H-05S5	DM-103	CCD-103	TG-S10	
C26	.05		C80V503AM	H-05S5	DDA-503	TA-150	TG-S50	
C27	120 2%		1489-120	22R5T12	DTZ-120	CM-15E-12IG	MS-312	
C28	.005		C80V502AM	H-05D5	DM-502	CCD-502	TG-S50	
C29	.05		C80V503AM	H-05S5	DDA-503	TA-150	TG-S50	
C30	62 2%		1489-62	22R5Q62	DD-503	CM-15E-620G	MS-462	
C31	330 2%		C80V503AM	H-05S5	DDA-503	CM-15E-33IG	MS-333	
C32	.05		C80V503AM	H-05S5	DDA-503	TA-150	TG-S50	
C33	.05		C80V503AM	H-05S5	DDA-503	TA-150	TG-S50	

CONTROLS

Note 1. Not used in some versions.
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA			MALLORY PART No.
			Hallicrafters PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	
RL	Volume & Switch	5000Ω	025-002081			

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA			REMARKS
			IRC PART No.	WORKMAN PART No.	ITEM No.	
R2	4700Ω				R16	4700Ω
R3	47K				R17	56000Ω
R4	10000Ω				R18	56K
R5	10000Ω				R19	30000Ω
R6	39K				R20	56000Ω
R7	39000Ω				R21	4700Ω
R8	27000Ω				R22	33000Ω
R9	10000Ω				R23	18K
R10	56K				R24	15K
R11	12K				R25	100Ω
R12	10000Ω				R26	47K
R13	12000Ω				R27	47000Ω
R14	10000Ω				R28	22000Ω
R15	5600Ω				R29	150Ω

Note 1. When R24 is 33K, R23 is not used.

Note 2. Not used in early versions.

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		Halicrafters PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	Ant. Receiver	051-003411				
L2	Osc. Receiver	051-003412				
L3	RF Choke (Iuh)	051-000854	4602			
L4	1st IF	050-000805-01				
L5	2nd IF	050-000805-01				
L6	3rd IF	050-000805-02				
L7	RF Choke (Iuh)	051-000654	4602			
L8	Osc. Transmitt	051-003410				
L9	Ant. Loading	051-003424				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA				NOTES
		Halicrafters PART No.	Merit PART No.	Stancor PART No.	Thoradson PART No.	
T1	2000Ω	055-000470				

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Halicrafters PART No.	QUAM PART No.	
SPL	3" PM 10-12Ω	085-000220		

BATTERIES

ITEM No.	VOLTAGE	REPLACEMENT DATA				NOTES
		Halicrafters PART No.	EVEREADY	MALLORY		
M1	12V	"A"	"B"	"A"	"B"	TR289

MISCELLANEOUS

ITEM No.	PART NAME	Halicrafters PART No.	NOTES
M2	Crystal	019-002887-	Receive (* Insert Channel Desired)
M3	Crystal	019-002820-	Transmit (* Insert Channel Desired)
M4	Switch	080-002462	Receive-Transmit (4 PPT Spring Loaded, Slide Type)
	Antenna	057-000421	Telescoping

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Bar	073-004352	"Push-to-Talk"
Knob	015-001750	
Cover Assembly	150-004819	Riveting Assembly
Case	150-004193	

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Shielded Antenna Lead	8524 (Stranded) Available in 12 Colors
	8214 Low Loss (RG-8/U Type)
	8337 Low Loss (RG-8/U)
	8240 (Solid) Miniature (RG-58/U)
	8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No. 8489 Single Conductor Shielded (Neoprene)
Ignition Noise Suppression	Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No. 8661 (3/8 In.)

PRINTED BOARD—TOP VIEW

