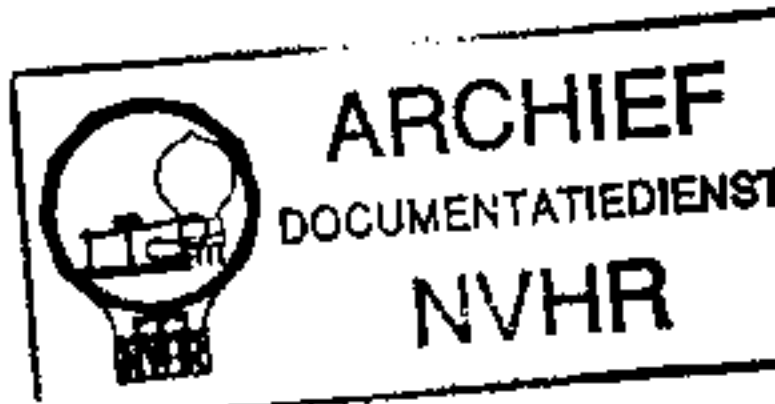
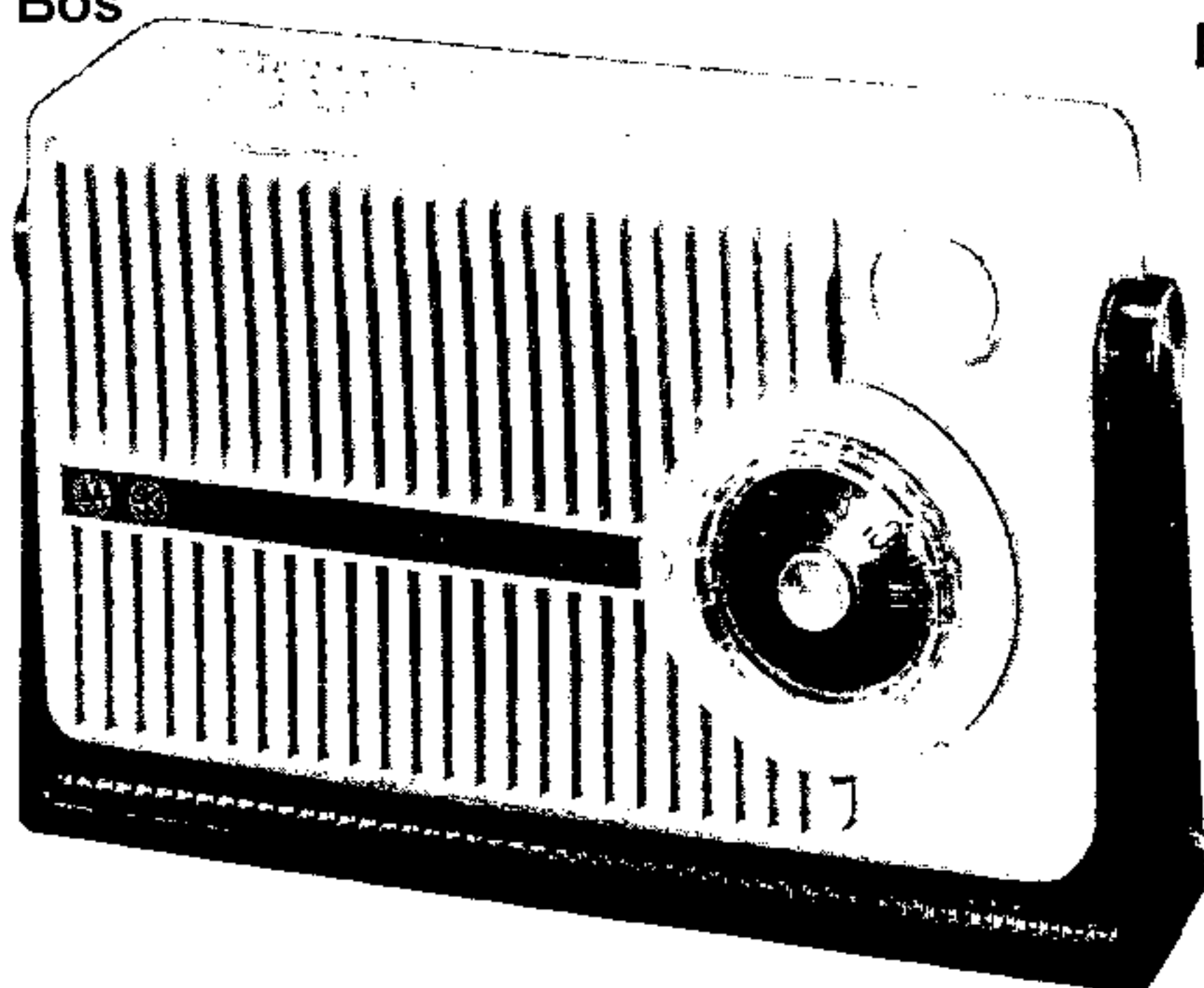




Met dank aan Jef Bos

Ned. Ver. v. Historie



TRADE NAME	Motorola Models 6X31C, 6X31N, 6X31R (Ch. HS-564), 6X32E (Ch. HS-563)	
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Ill.	
TYPE SET	Battery Operated Portable AM Transistorized Receiver	
POWER SUPPLY	6 Volts DC	RATING 8.5 MA @ 6 Volts DC
TUNING RANGE—BROADCAST	530-1620KC	

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

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	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1MFD	High side to ant. stator lug on tuning gang. Low side to chassis.	465KC (400% mod.)	Tuning gang fully open	Across earphone jack	A1, A2, A3	Adjust for maximum output.
2		Loop	1620KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3		"	1400KC	Tune to 1400KC signal	"	A5	"

The following steps are not necessary unless oscillator coil core (A6) has been tampered with or associated components have been replaced. Set osc. trimmer (A4) 1/4 turn from tight position.

4		Loop	535KC	Tuning gang fully closed	Across earphone jack	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
5		"	1620KC	Tuning gang fully open	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Repeat steps 4 & 5 until required range is covered, making step 5 the last adjustment.
6		"	1400KC	Tune to 1400KC signal	"	A5	Adjust for maximum output.

DISASSEMBLY INSTRUCTIONS

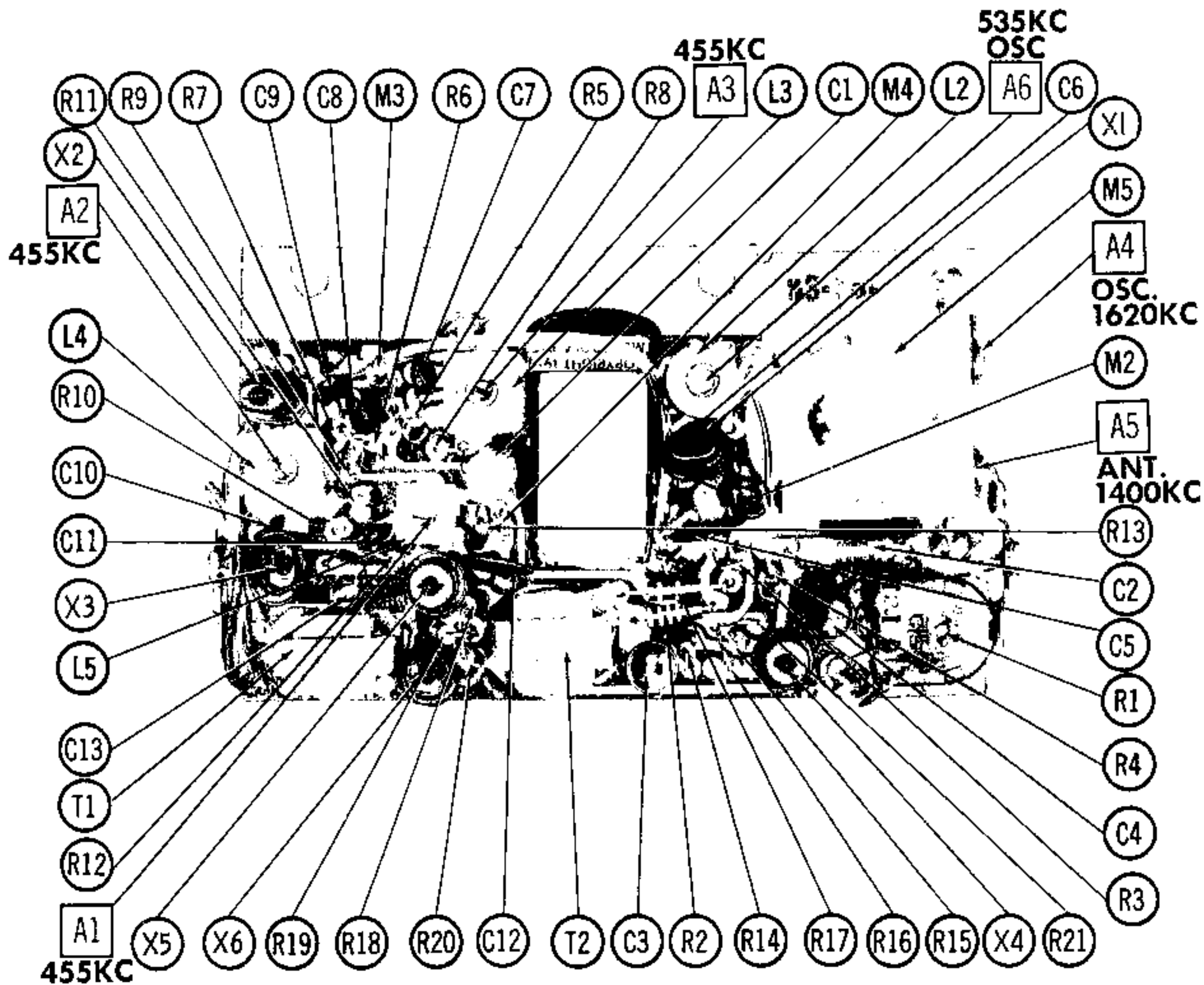
1. Remove volume control knob by pulling.
2. Remove screw in center of tuning knob. Remove knob.
3. Remove screw located behind tuning knob.
4. With rear cover open, turn handle at right angle to plated chassis.
5. Grasp handle close to one mounting bushing and pull out until bushing clears hole in cabinet side. Lift this side of handle and chassis slightly from cabinet.
6. Repeat step 5 for other side of handle.
7. Remove handle, chassis and speaker plate from cabinet.

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

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H89



CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	USE	Motorola Part No.	NOTES
X1	Conv. (2N188A)	48C125233	
X2	1st. IF Amp. (2N293)	48K125236	
X3	2nd. IF Amp. (2N292)	48C125235	Note 1

ITEM No.	USE	Motorola Part No.	NOTES
X4	Driver (2N189)	48C125237	Note 2
X5	Output (2N187)	48K125230	Note 3
X6	Output (2N187)	48K125230	Note 3

Note 1. Type 2N189 may be used as an alternate (Part #48C125234).

Note 2. Type 2N190 (Part #48K125238) may also be used in Ch. HS-564. Chassis HS-563 may use type 2N191 (Part #48K125239) or type 2N192 (Part #48K125240).

Note 3. Type 2N186 (Part #48C125229) may also be used in Ch. HS-564. Chassis HS-563 may use type 2N188 (Part #48K125231) or type 2N141 (Part #48C125232). X5 and X6 must be the same type.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	25	3	23K637758	PWE3V25	NL25-3	TT3X25			TE-1055
C2	6	10	23K636769	PWE10V5	NL8-25	TT12X5	ML6-15		TE-1202
C3	50	10	23B637402	XPP10V50	NL50-10	TT10X50			R2305 *
C4	50	10	23B637402	XPP10V50	NL50-10	TT10X50			R2305 *

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	40000		21B635399							
C6	10000		21K635404							
C7	10000		21K635404							
C8	10000		21K635404							
C9	10000		21K635404							
C10	10000		21K635404							
C11	10000		21K635404							
C12	40000		21B635399							
C13	200000		21B637403							

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	10000Ω	1/4	18B637419					Volume & Switch

RESISTORS

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

ITEM No.	RATING		REPLACEMENT DATA		NOTES	ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.			OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R2	33K		6R6410	BTS-33K		R12	470Ω		6R6090	BTS-470	
R3	100K		6R6031	BTS-100K		R13	1500Ω		6R6038	BTS-1500	
R4	3300Ω		6R5581	BTS-3300		R14	68K		6R6074	BTS-68K	
R5	1000Ω		6R6229	BTS-1000		R15	10K		6R6320	BTS-10K	
R6	27K		6R6434	BTS-27K		R16	220Ω		6R6270	BTS-220	
R7	2200Ω		6R6069	BTS-2200		R17	2700Ω		6R5577	BTS-2700	
R8	220Ω		6R6270	BTS-220		R18	68Ω		6R2039	BTS-68	
R9	10K		6R6320	BTS-10K		R19	10Ω		6R5621	BTS-10	
R10	2200Ω		6R6069	BTS-2200		R20	10Ω		6R5621	BTS-10	
R11	100Ω		6R6326	BTS-100		R21	100Ω		6R6326	BTS-100	

TRANSFORMER (DRIVER)

ITEM No.	Turns Ratio		REPLACEMENT DATA					NOTES	
	PRI.	SEC.	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.		Triad PART No.
T1	1.5:	1	25B636770	GH13 ①②			TR-3 ①②		① Tape center tap on primary winding. ② Use original terminal board.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MOTOROLA PART No.	Halderson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	
T2	325Ω CT	13Ω	25K637642	GHL19 ①			TR-16 ①	① Use original terminal board.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	
SP1	2 3/4"	PM	13Ω	50B637439		

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Stick Loop Stick Loop Stick	1V637463 1V637447 1V638158				Includes Handle, Model 6X31N Includes Handle, Model 6X32E Includes Handle, Models 6X31C & 6X31R
L2	Osc. Coil	24K637442				
L3	1st. IF	24C637482	16-9003			
L4	2nd. IF	24K637709	16-9003			
L5	3rd. IF	24K637483				

BATTERIES

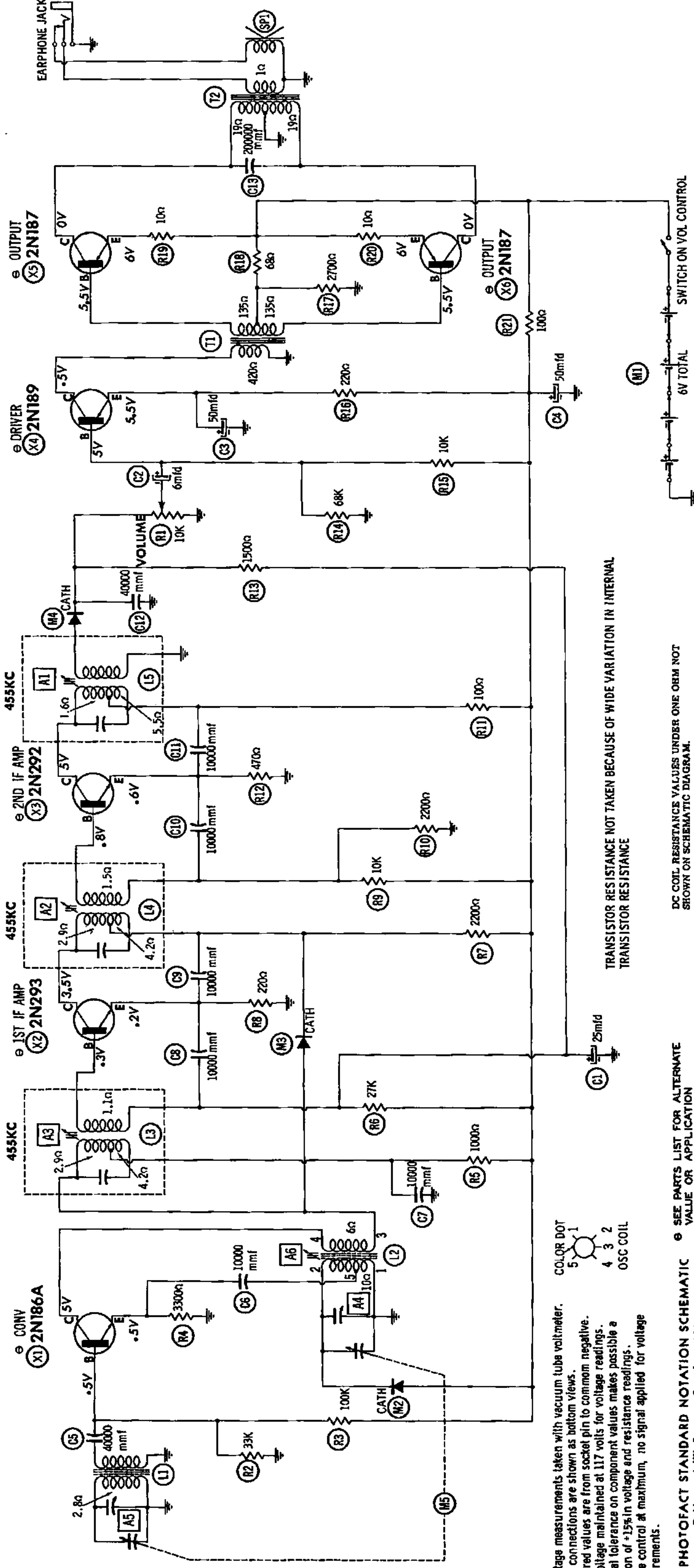
ITEM No.	VOLTAGE	MOTOROLA PART No.	REPLACEMENT DATA								NOTES
			BURGESS		EVEREADY		MALLORY		RAY-O-VAC		
			"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"	
M1	6V		Z		915		M-15 or Mercury Type ZM-9		7-R		Use 4 in series

CRYSTAL DIODES

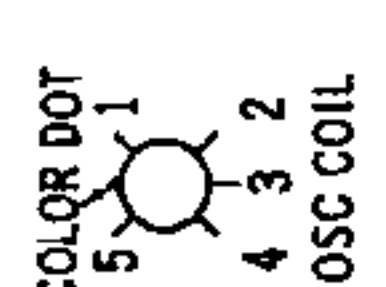
ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		MOTOROLA PART No.	SYLVANIA PART No.	
M2	648	48K636691	1N60	Limiter (Pigtail)
M3	705	48K636691	1N60	Limiter (Pigtail)
M4	1N295	48K636778	1N60	Audio Det. (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M5	Tuning Cap.	19B635410	2 Gang (Ant. 9-135MMF, Osc. 5-93MMF) (Include letter following part number) Tuning, Beige, Models 6X31C, 6X31N, 6X31R Tuning, Silver, Model 6X32E Volume, Beige, Models 6X31C, 6X31N, 6X31R Volume, Silver, Model 6X32E Cerulean Blue & Beige, Model 6X31C Beige, Model 6X31N Red & Beige, Model 6X31R Navy Blue, Model 6X32E Beige, Models 6X31C, 6X31R (Includes L1) Brown, Model 6X31N (Includes L1) Blue, Model 6X32E (Includes L1)
	Printed Panel	84B637775	
	Knob	36K637416	
	Knob	36C637415	
	Knob	36B637425	
	Knob	1V638226	
	Cabinet	16K638121	
	Cabinet	16K637375	
	Cabinet	16K638120	
	Cabinet	16D637373	
	Handle Assy.	1V638158	
	Handle Assy.	1V637463	
	Handle Assy.	1V637447	
	Earphone Jack	9B633266	



1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of +15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



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