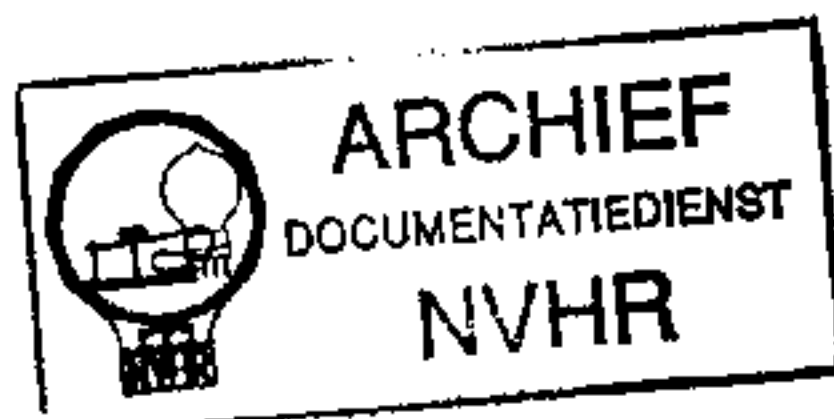


**PHOTOFACT® Folder**

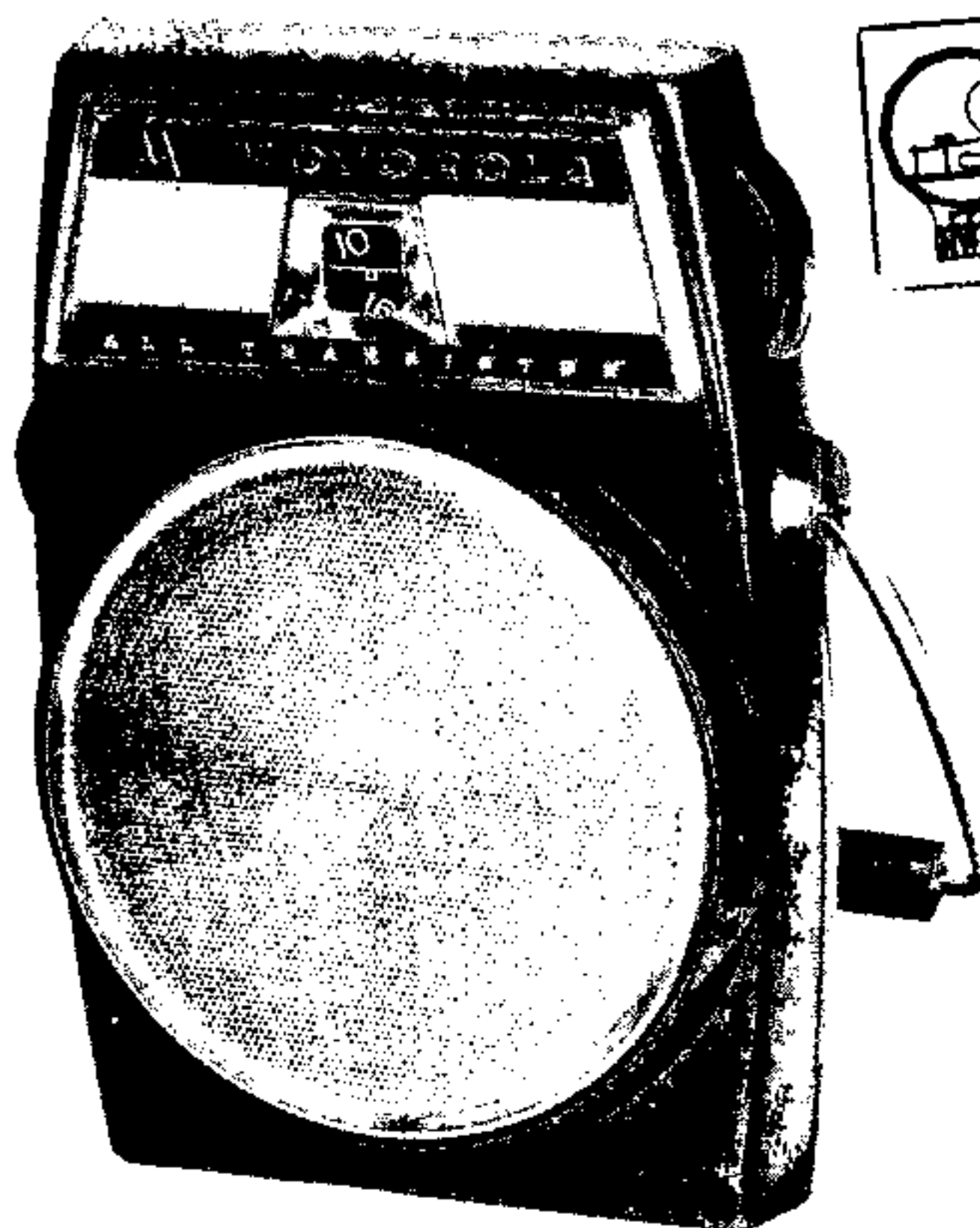
with **CIRCUITRACE®**

**MOTOROLA MODELS X17B,  
X17N, X17R (Ch. HS-798)**

Ned. Ver. v. Historie v/d Rad



Met dank aan Jef Bos



<b>TRADE NAME</b>	Motorola Models X17B, X17N, X17R (Ch. HS-798)		
<b>MANUFACTURER</b>	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois		
<b>TYPE SET</b>	Battery Operated Transistorized Portable AM Receiver		
<b>POWER SUPPLY</b>	6 Volts DC		
<b>TUNING RANGE—BROADCAST</b>	535 — 1620KC	<b>RATING</b>	7MA @ 6 Volts DC (No Signal, Min. Volume) 20MA @ 6 Volts DC (Signal, Normal Volume)

## ALIGNMENT INSTRUCTIONS

### 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.

Suggested Alignment Tools: A1 thru A4.... GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291  
WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538  
A5..... GENERAL CEMENT #9296, 9297  
WALSCO #2546, 2547  
A6, A7..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089  
WALSCO #2512, 2525, 2528

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400% Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	532KC	Tuning gang fully closed.	Across voice coil.	A5	"
3.	"	1620KC	Tuning gang fully open.	Across voice coil.	A6	"
4.	"	1400KC	1400KC Signal	Across voice coil.	A7	"
5.	"	600KC	600KC Signal	Across voice coil.	A8	Adjust for maximum output. Repeat Steps 2 thru 5.

#### DISASSEMBLY

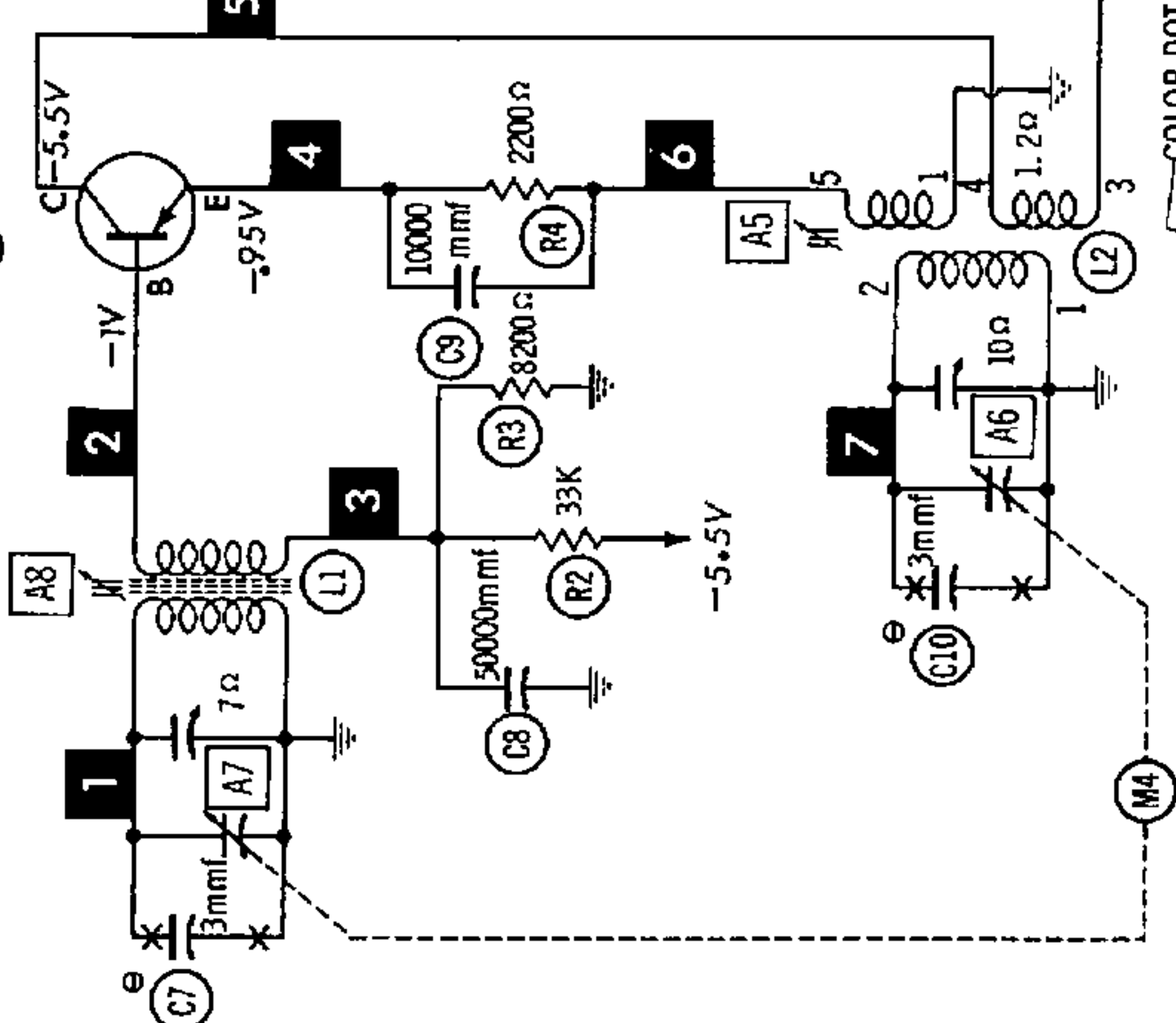
1. Loosen screw on cabinet back (Screw is captive). Remove back.
2. Remove 2 chassis mounting screws.
3. Slide chassis to right side and remove.

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

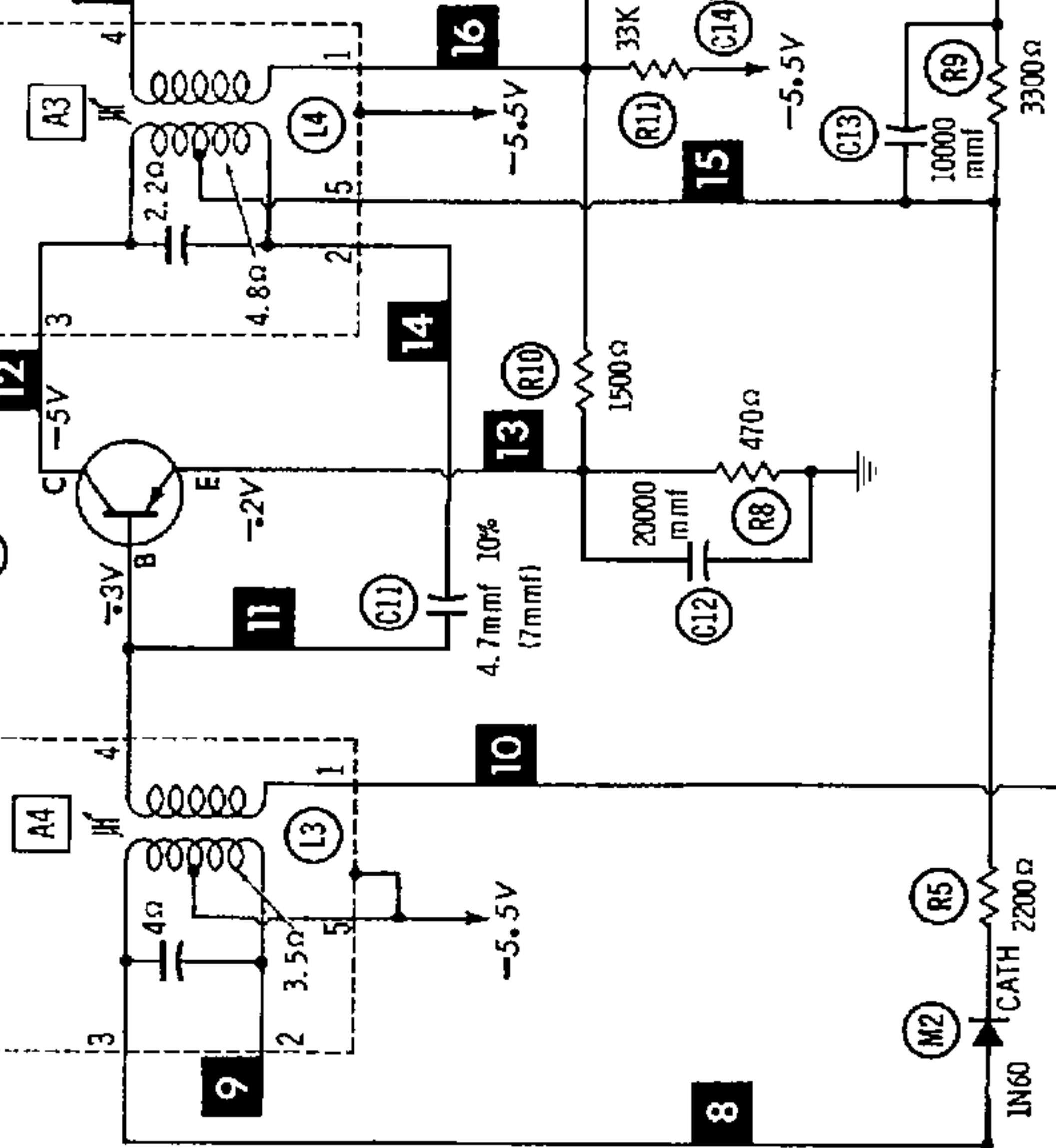
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of KF311

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. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

e CONV  
(X1) 2S52



e 1ST IF AMP  
(X2) 2S53

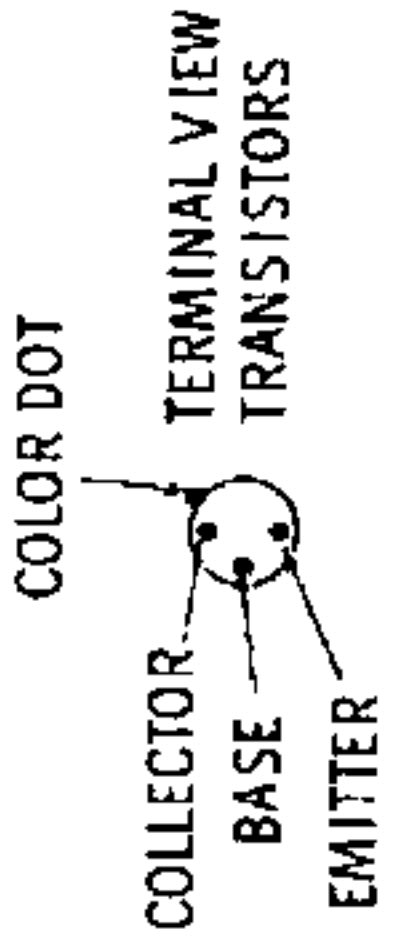


e 455KC  
(X2) 2S53

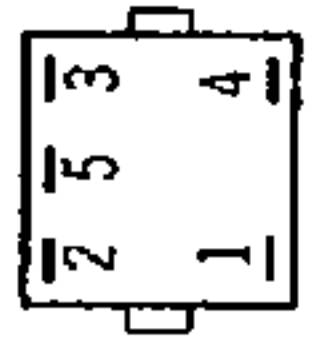


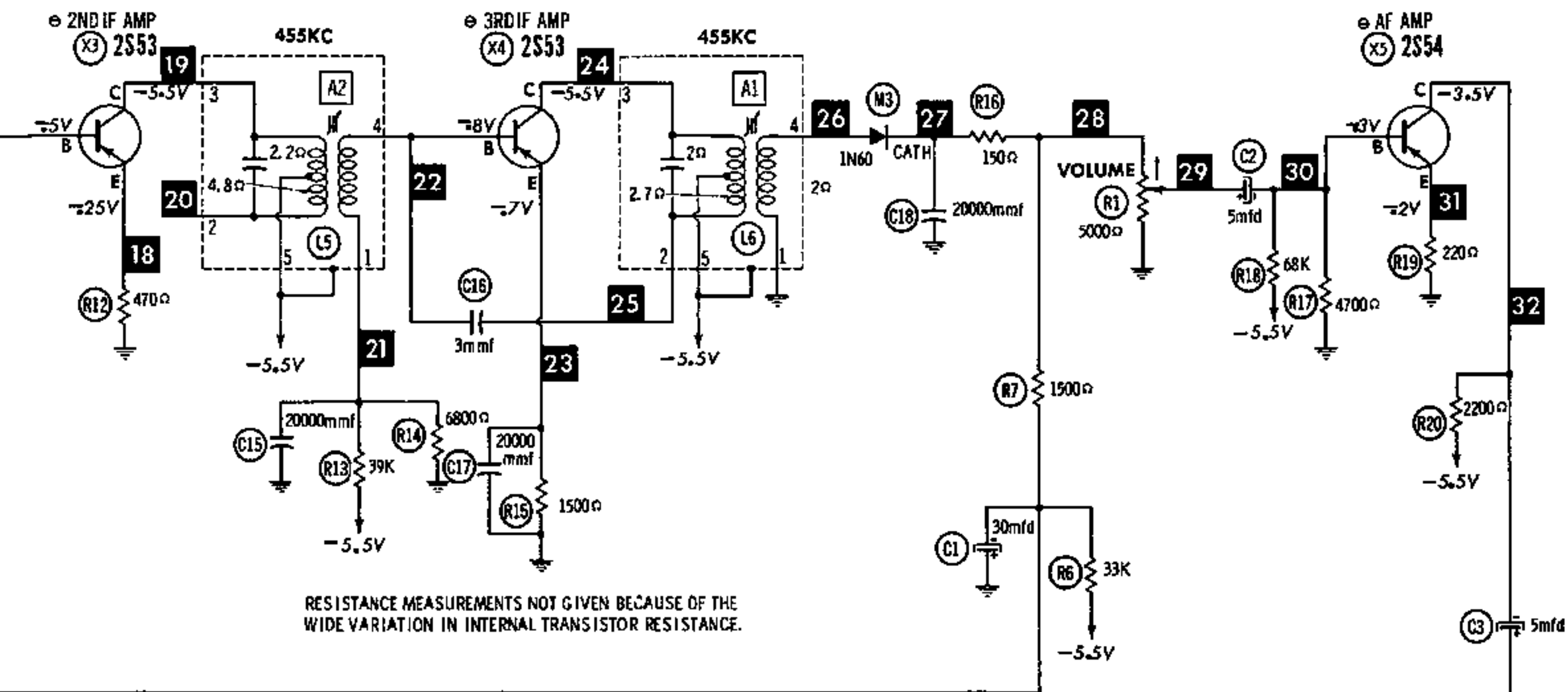
TERMINAL VIEW L2

A PHOTOFACT STANDARD NOTATION SCHEMATIC  
with **CIRCUITRACE**



TERMINAL VIEW  
L3 THRU L6





**MOTOROLA MODELS X17B,  
X17N, X17R (Ch. HS-798)**

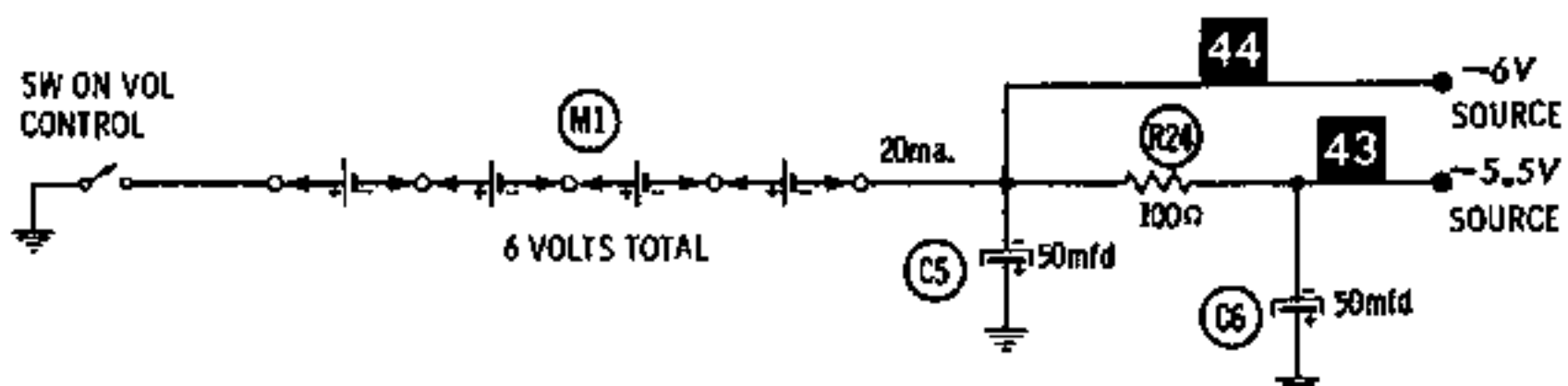
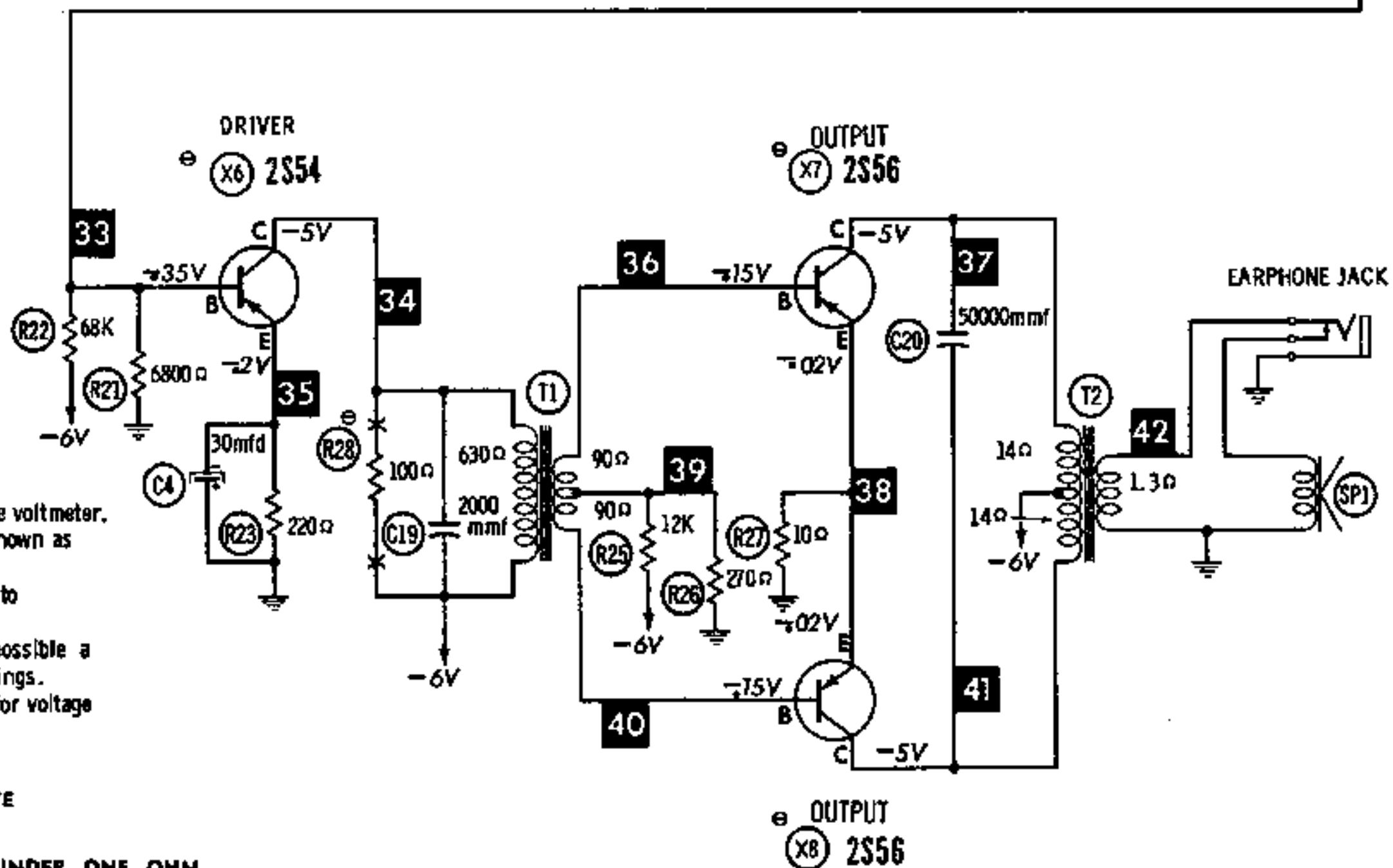
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

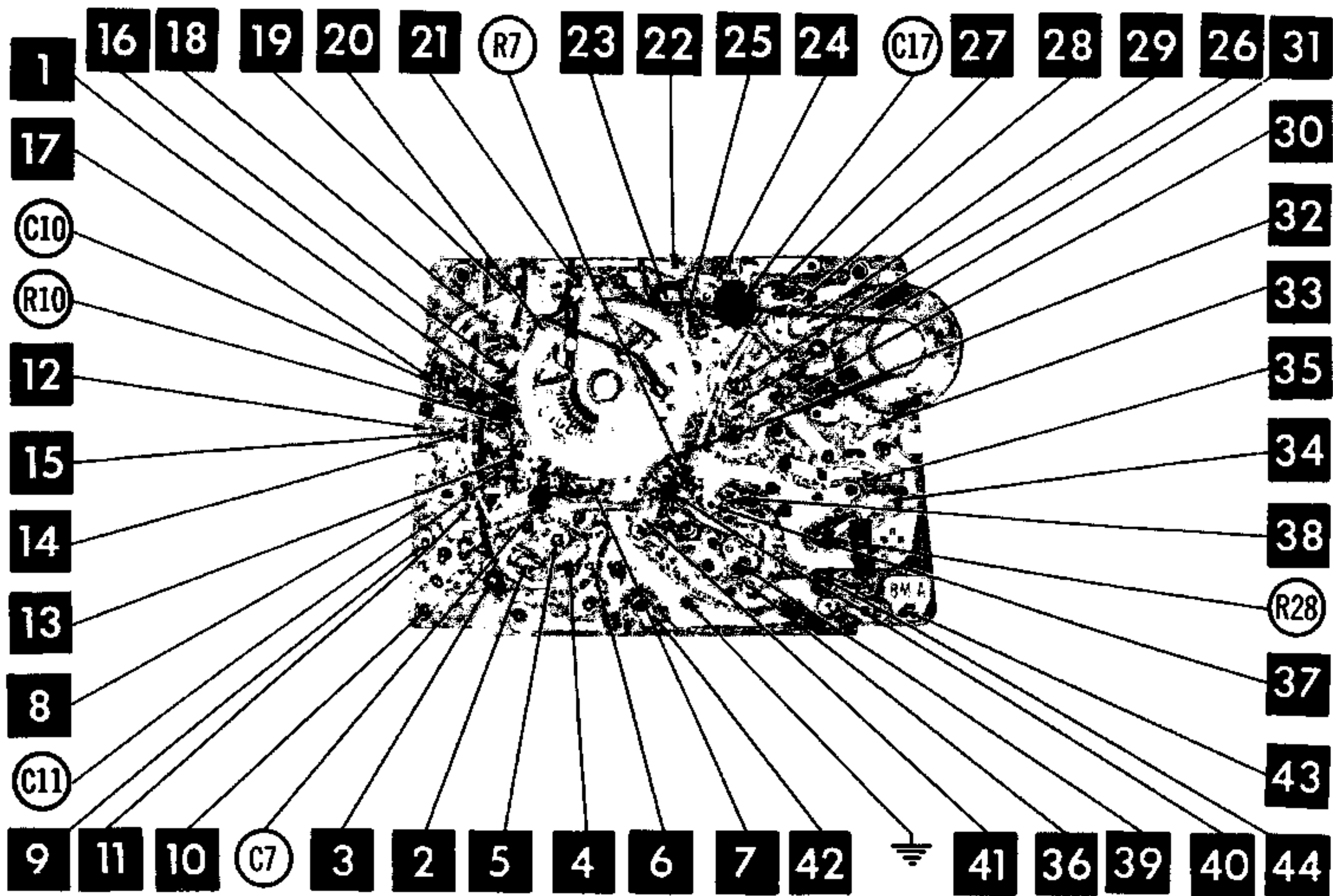
1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of  $\pm 15\%$  in voltage and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

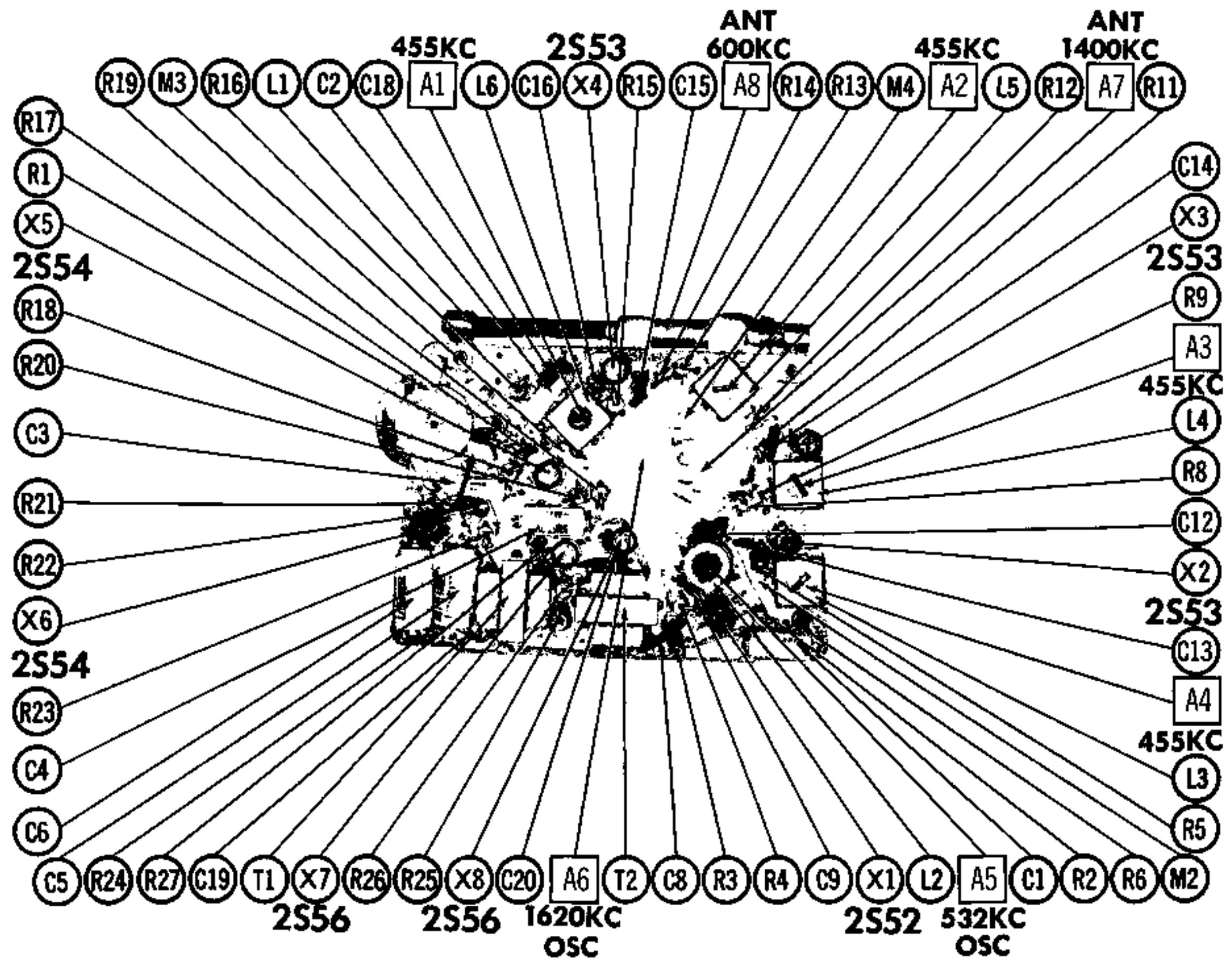
⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)







CHASSIS TOP VIEW

# PARTS LIST AND DESCRIPTIONS

## TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2S52①	Converter	2N412	2N486	2N411	PNP
X2	2S53②	1st IF Amplifier	2N410	2N483	2N410	PNP
X3	2S53②	2nd IF Amplifier	2N410	2N483	2N410	PNP
X4	2S53②	3rd IF Amplifier	2N410	2N483	2N410	PNP
X5	2S54③	AF Amplifier	2N408	2N362	2N408	PNP
X6	2S54③	Driver	2N408	2N362	2N408	PNP
X7	2S56④	Output	2N408	2N632	2N408	PNP
X8	2S56④	Output	2N408	2N632	2N408	PNP

① Alternate Type 2SA52    ② Alternate Type 2SA53    ③ Alternate Type 2SB54    ④ Alternate Type 2SB56.

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	30	3	23K644668	PTT-3030	NLW30-6	TT6X30	ML30-3	TE-1092	
C2	5	3	23K644669	XPP-3005	NLW5-6	TT6X5	ML5-3	TE-1052.2	
C3	5	3	23K644669	XPP-3005	NLW5-6	TT6X5	ML5-3	TE-1052.2	
C4	30	3	23K644668	PTT-3030	NLW30-6	TT6X30	ML30-3	TE-1092	
C5	50	10	23K644671	PTT-10050	NLW50-10	TT10X50	ML50-12	TE-1119	
C6	50	10	23K644671	PTT-10050	NLW50-10	TT10X50	ML50-12	TE-1119	

## FIXED CAPACITORS

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

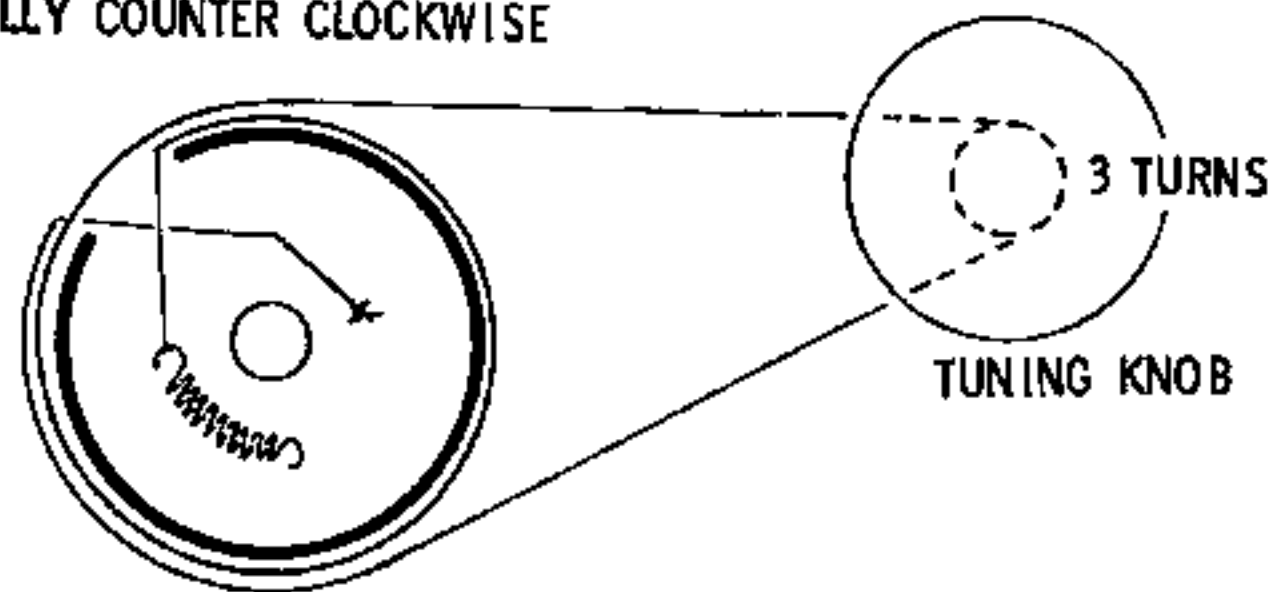
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					SPRAGUE PART No.
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	
C7	3	Note 1	NPO-DI 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C8	50000		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C9	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C10	3	Note 1	NPO-DI 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C11	4.7 10%	(7) †	NPO-SI 4.7	TCZ-4R7	C10V47C	CCTO-4R7	CNO-547	10TCC-V47
C12	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C13	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C14	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C15	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C16	3		NPO-DI 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C17	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C18	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C19	2000		DI-2000	DM-202	BYA10D2	CCD-202	GP220	10TS-D20
C20	50000		C80V503AM	DA-503	H-05S5		TA-150	TG-S50

Note 1. Not used in some versions.

† Alternate Value.

# TUNING DRIVE CORD STRINGING

TUNING GANG FULLY COUNTER CLOCKWISE



FRONT VIEW

# PARTS LIST AND DE

## CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES	
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.		MALLORY PART No.
R1	5000Ω	1/10	18B646634	B16-214				Volume & Switch

## RESISTORS (IRC or EQUIVALENT)

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

ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS
R2	39K		R11	39K		R20	2200Ω	
R3	8200Ω		R12	470Ω		R21	6800Ω	
R4	2200Ω		R13	39K		R22	68K	
R5	2200Ω		R14	6800Ω		R23	220Ω	
R6	39K		R15	1500Ω		R24	100Ω	
R7	1500Ω		R16	150Ω		R25	12K	
R8	470Ω		R17	4700Ω		R26	270Ω	
R9	3300Ω		R18	68K		R27	10Ω	
R10	1500Ω		R19	220Ω		R28	100Ω	Note 1

Note 1. Not used in some versions.

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick	24B646697				
L2	Osc. Coil	24K646679				
L3	1st IF Trans.	24C646136				
L4	2nd IF Trans.	24K646566				
L5	3rd IF Trans.	24K646566				
L6	4th IF Trans.	24K646138				

## TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1, 8	1	25B646174					

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	350Ω CT	6-8Ω	25B646133					

## SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	
SP1	3 1/2"	PM	6-8Ω	50C646308		

## BATTERIES

ITEM No.	VOLTAGE	MOTOROLA PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1.6V			930 *		1016 *		M-16R*	* 4 Required



# DESCRIPTIONS (Continued)

## CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		MOTOROLA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N60	48K644681	1N60	1N60	AVC (Pigtail) Detector (Pigtail)
M3	1N60	48K644681	1N60	1N60	

## MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M4	Tuning Cap. Printed Board	19B646309 84C646380	2 Gang Less All Components

## CABINETS & CABINET PARTS

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

NAME	PART NO.	DESCRIPTION
Scale	34C646332	Dial
Knob	36B646312	Tuning
Knob	36B646327	Volume
Cabinet	1V60030A42	Back, Blue, Model X17B
Cabinet	1V60030A43	Back, Brown, Model X17N
Cabinet	1V60030A44	Back, Red, Model X17R
Cabinet	16K646297	Front, Blue, Model X17B
Cabinet	16E646131	Front, Brown, Model X17N
Cabinet	16K646299	Front, Red, Model X17R
Handle	55K646389	Blue, Model X17B
Handle	55C646388	Brown, Model X17N
Handle	55K646390	Red, Model X17R

## WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors  
8524 (Stranded) Available in Ten Colors