

PHOTOFACT® Folder

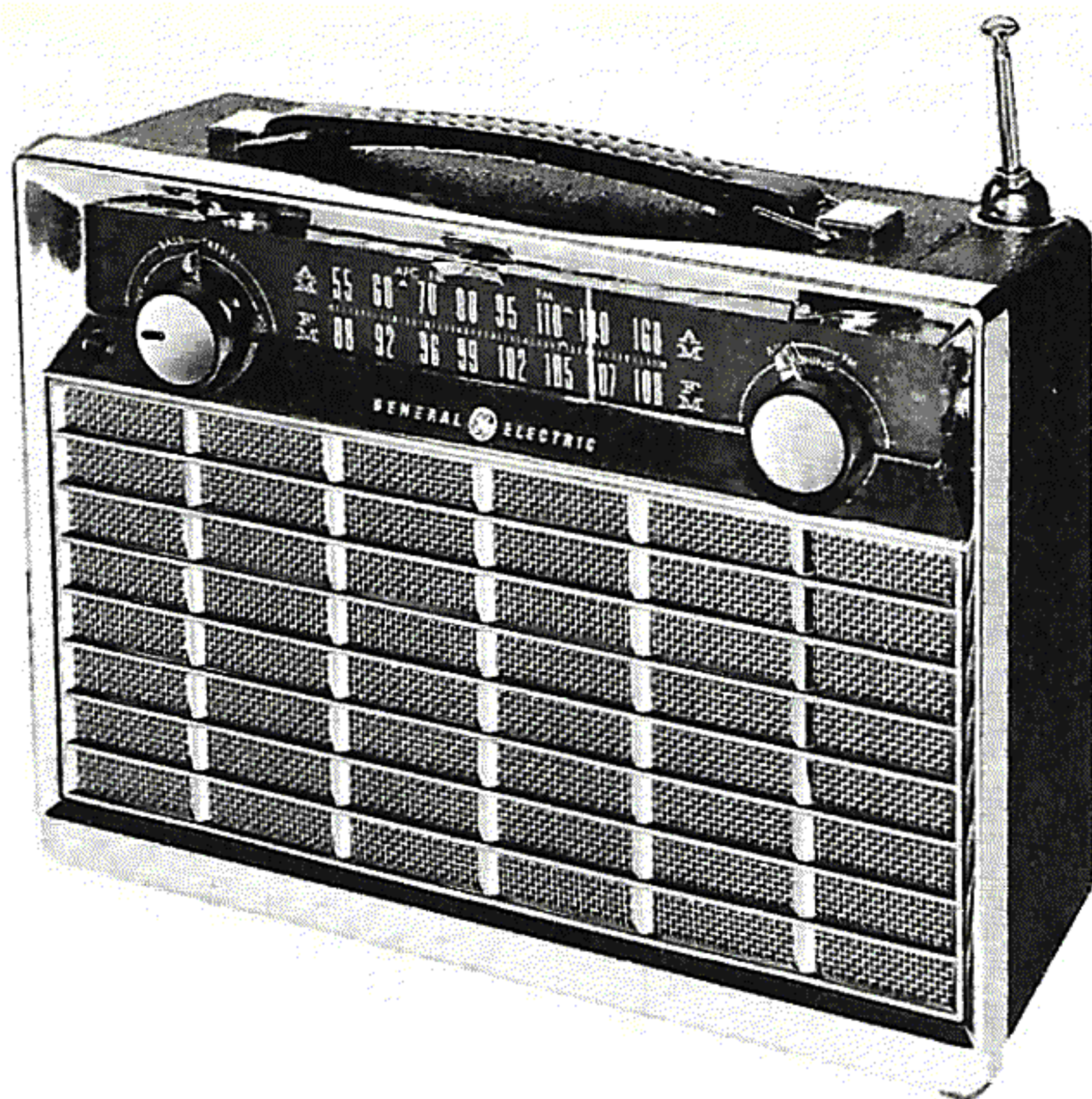
with CIRCUITRACE™

GENERAL ELECTRIC  
MODEL P-865A

Ned. Ver. v. Historie v/d Radio

ARCHIEF  
DOCUMENTATIEDIENST  
NVHR

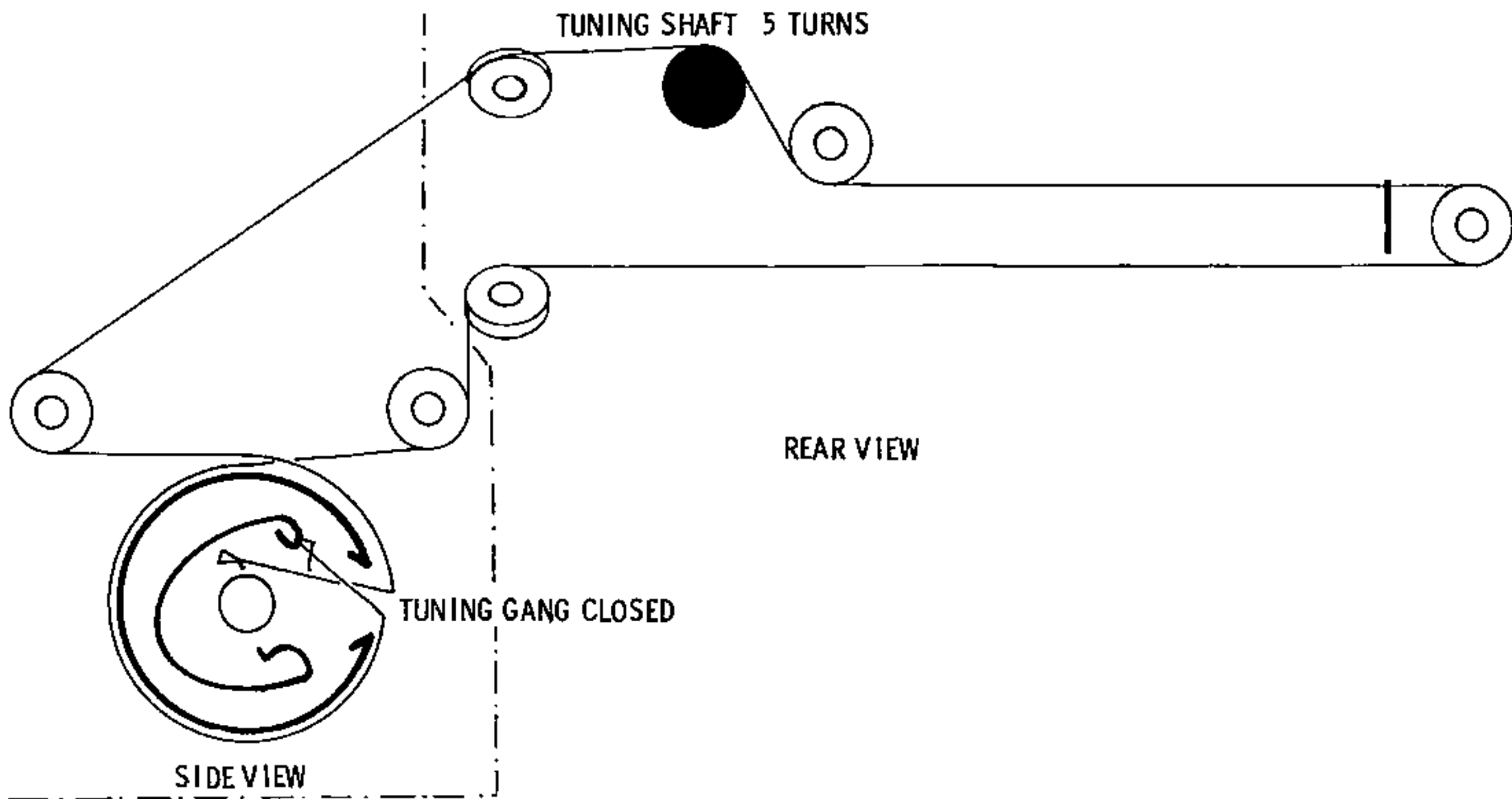
Met dank aan Jef Bos



TRADE NAME	General Electric Model P-865A		
MANUFACTURER	General Electric Co., Product Service, Radio Receiver Dept., 1001 Broad Street, Utica, N. Y.		
TYPE SET	Battery Operated II Transistor Portable FM-AM Receiver		
POWER SUPPLY	9 Volts DC	RATING	24MA @ 9 Volts DC (No Signal, Min. Volume) 26MA @ 9 Volts DC (Signal, Normal Volume)
TUNING RANGE—BROADCAST	530 — 1630KC	FREQ. MOD.	87.75—108.25MC

### DIAL CORD STRINGING

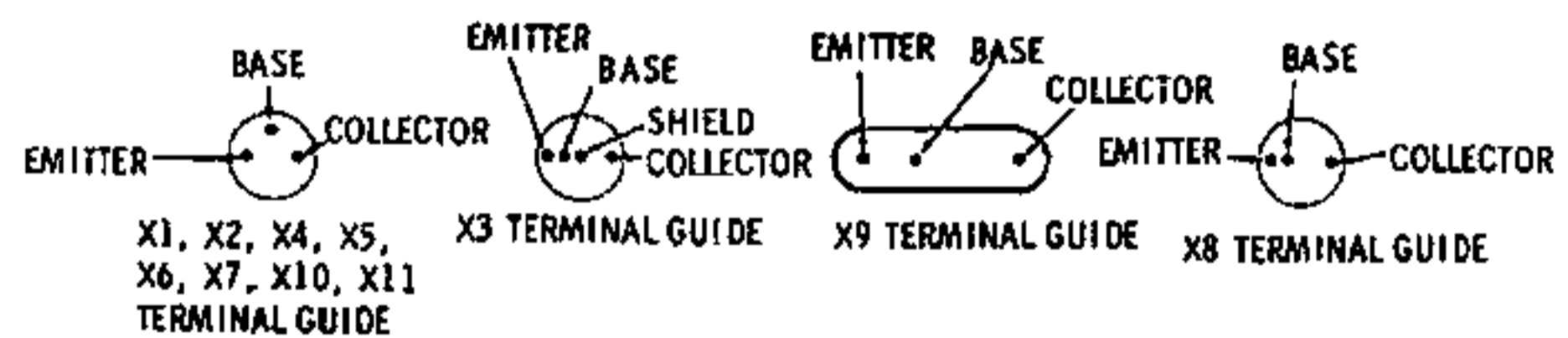
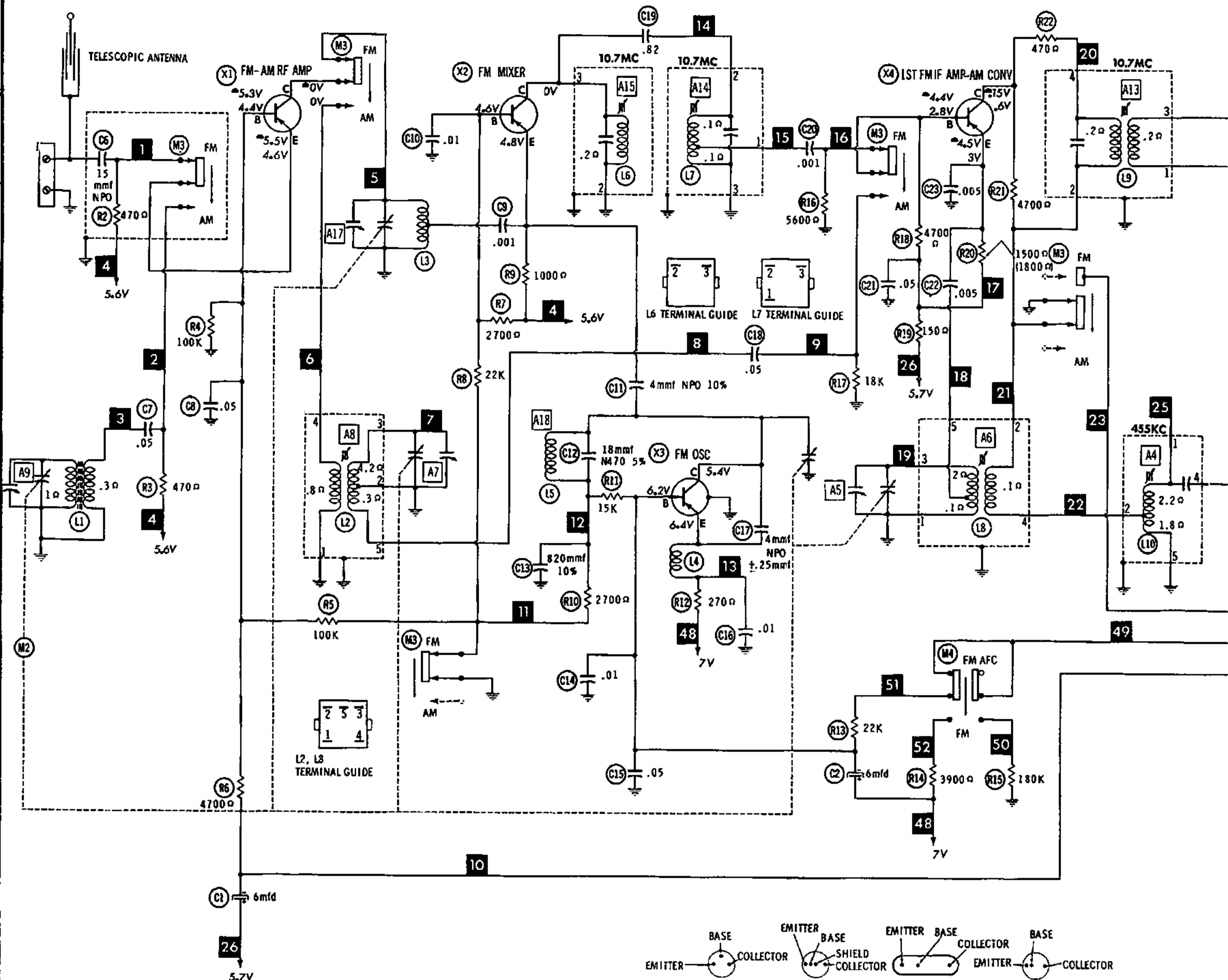
TUNING SHAFT 5 TURNS



**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 LF329

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RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

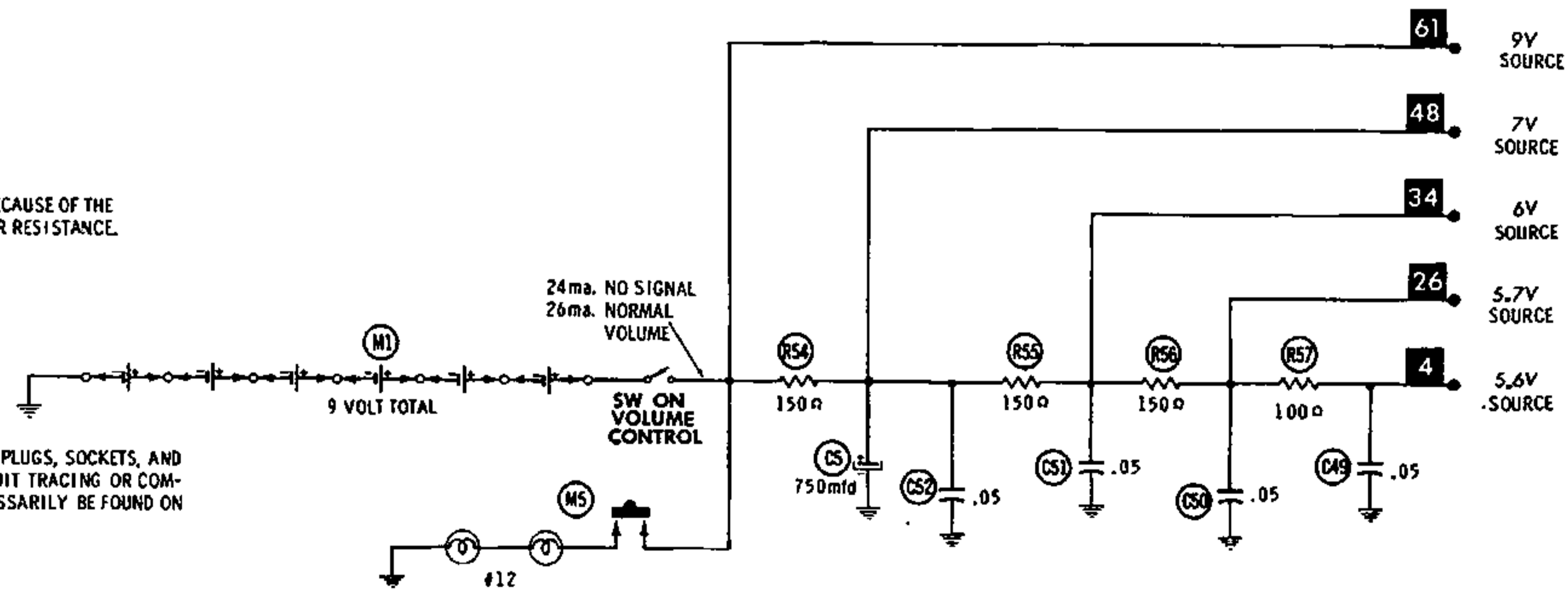
MEASURED IN AM POSITION

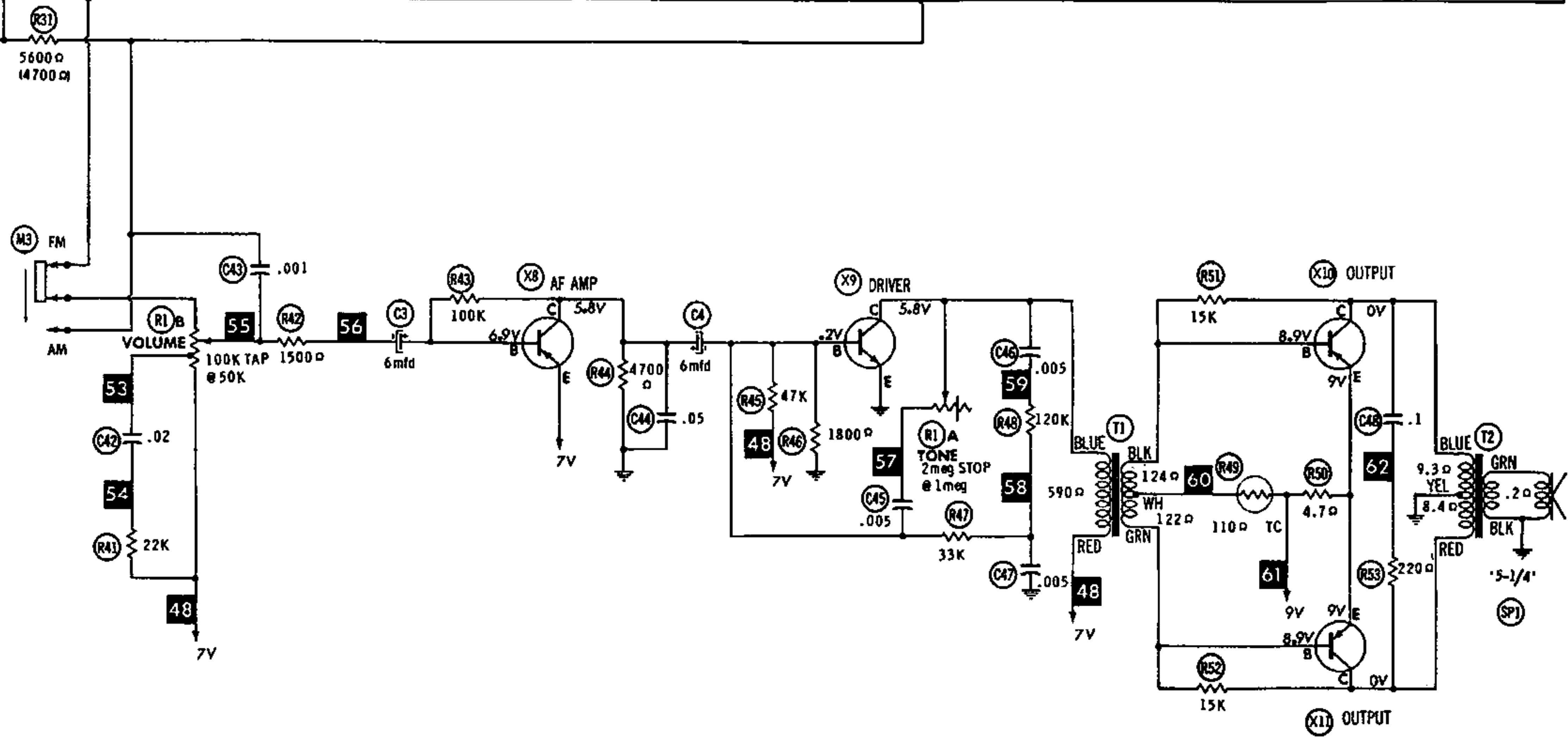
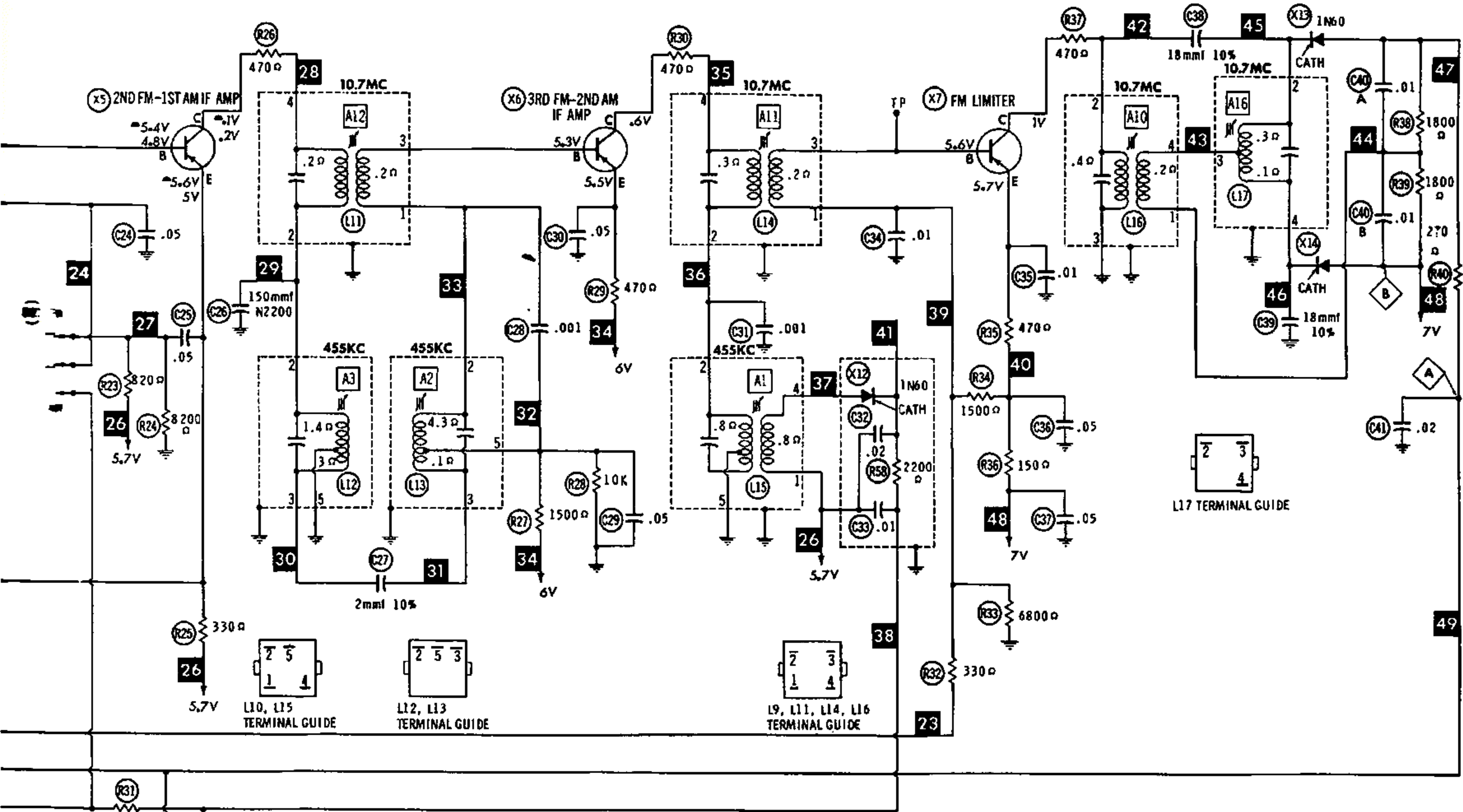
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

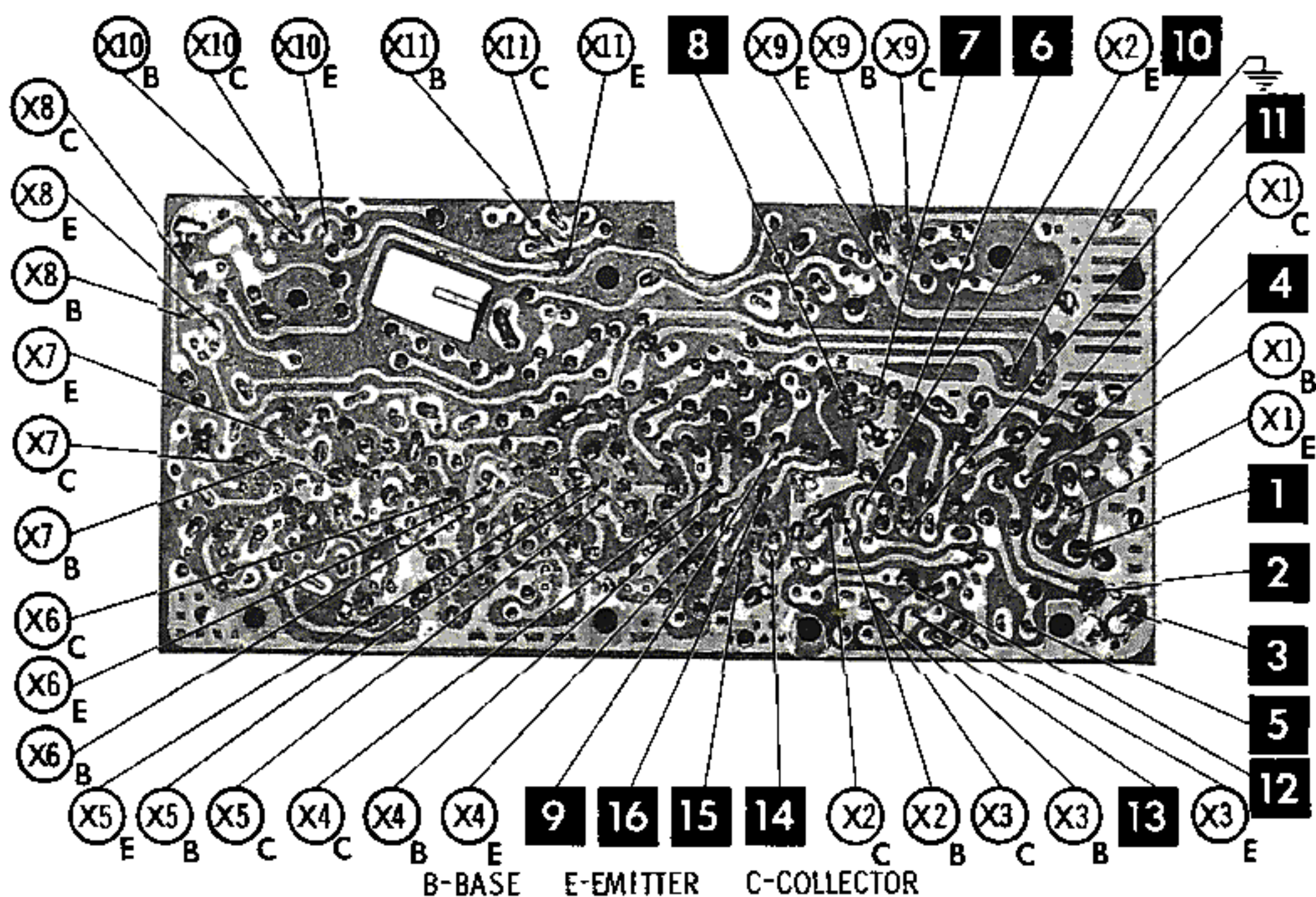
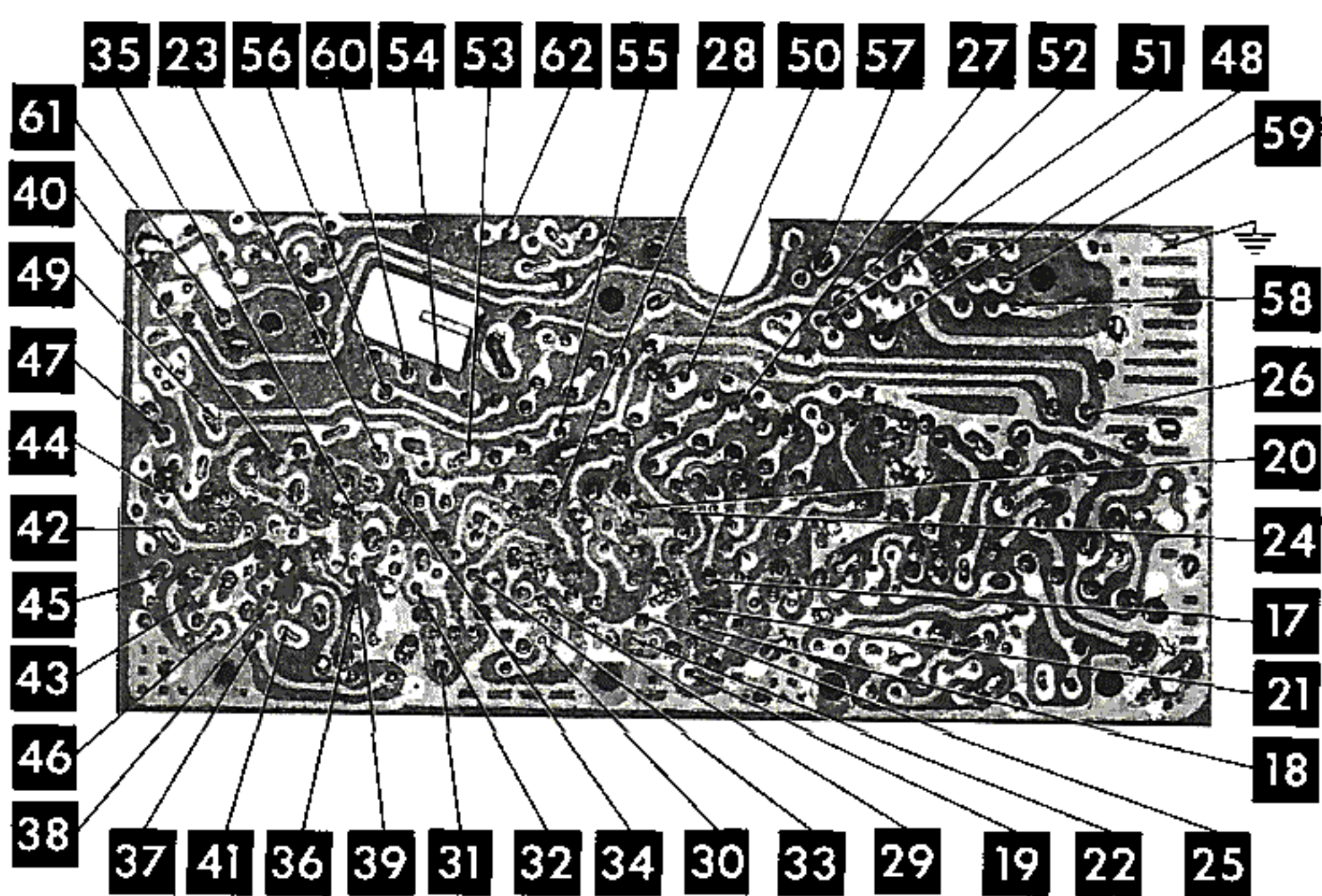
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

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.

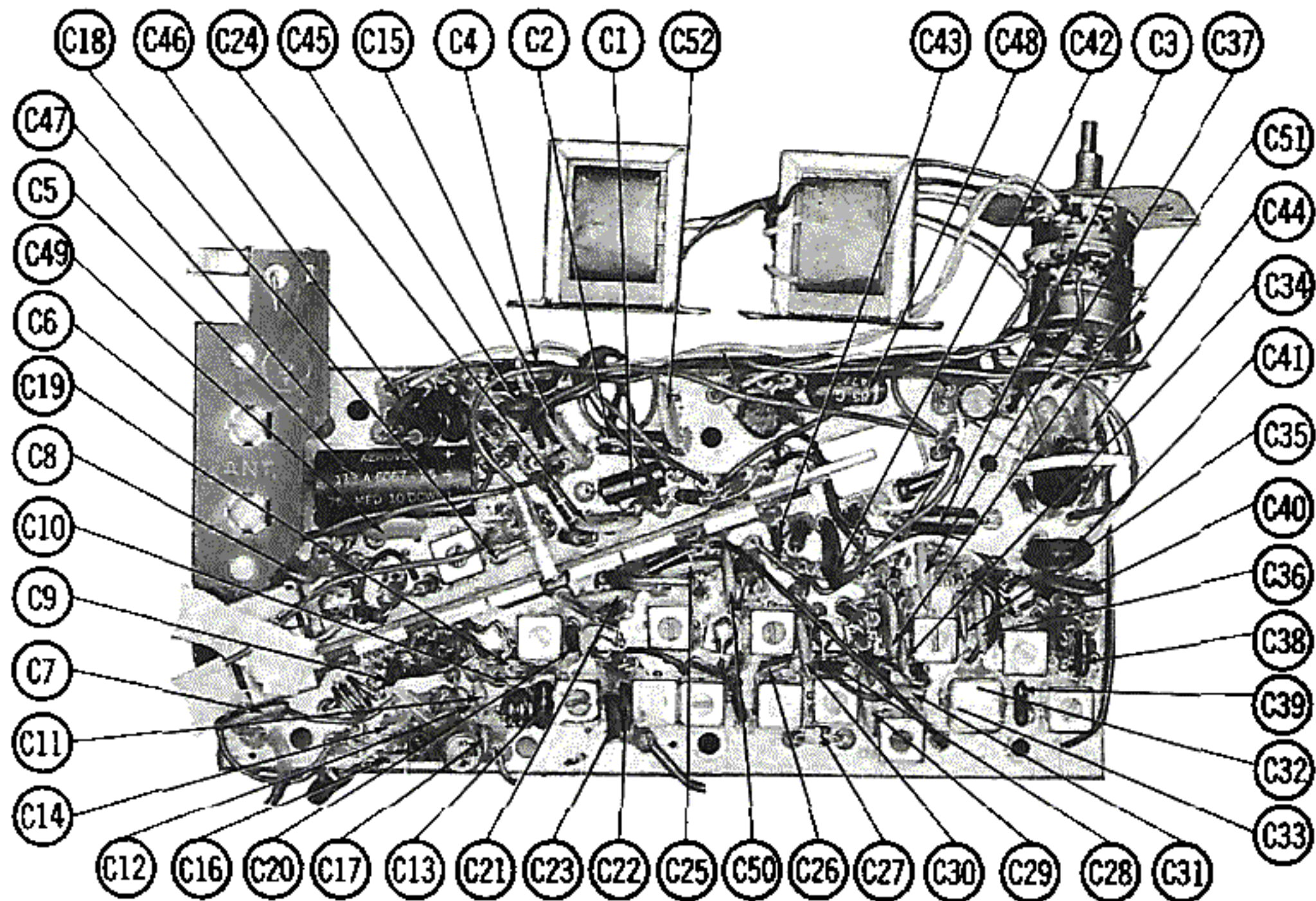
A PHOTOFACIT STANDARD NOTATION SCHEMATIC with CIRCUITRACE



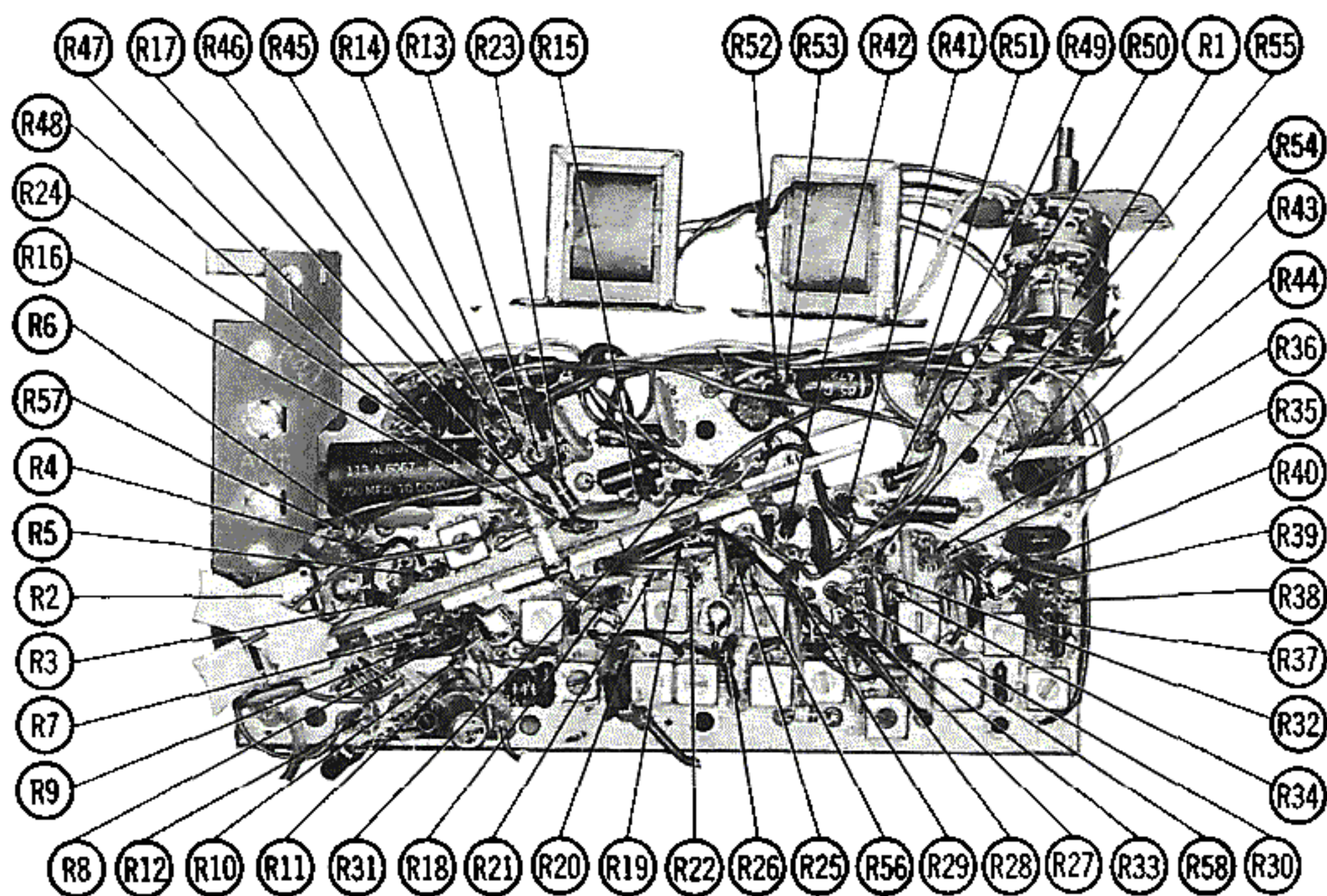




PRINTED BOARD



CHASSIS TOP VIEW - CAPACITOR IDENT.



CHASSIS TOP VIEW - RESISTOR IDENT.

# 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, A4, A6, A8, A10, A11,

A12, A13, A14, A15, A16, A18, A19..... GENERAL CEMENT #8607, 9291, 9294

WALSCO #2520, 2522, 2523, 2524, 2534, 2537, 2538

A5, A7, A9, A17..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089  
WALSCO #2512, 2525, 2528

### AM ALIGNMENT — SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	Fashion Loop of several turns of wire and radiate signal into loop of receiver.	455KC (Unmod.)	(AM) Tuning gang fully open.	Across Volume Control.	A1, A2, A3, A4	Adjust for maximum deflection.
2.	"	1630KC	"	"	A5	"
3.	"	530KC	Tuning gang fully closed.	"	A6	Adjust for maximum deflection. Repeat Steps 2 & 3.
4.	"	1400KC	1400KC Signal.	"	A7	Adjust for maximum deflection.
5.	"	580KC	580KC Signal.	"	A8	Adjust for maximum deflection while rocking tuning gang.
6.	"	600KC	600KC Signal.	"	A9	Adjust for maximum deflection.

### FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	Fashion loop of several turns of wire and radiate signal into loop of receiver.	10.7MC (Unmod.)	(FM) Tuning gang fully open.	Across Volume Control.	A10, A11, A12, A13, A14, A15	AFC Switch Off. Adjust for maximum deflection.
8.	"	10.7MC	"	DC probe to point $\triangle A$ , common to point $\triangle B$ .	A16	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

### FM RF ALIGNMENT — SELECTOR IN FM POSITION

Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	Fashion loop of several turns of wire and radiate signal into loop of receiver.	108.25MC (Unmod.)	(FM) 108.25MC Signal.	Across Volume Control.	A17	Adjust for maximum deflection.
10.	"	87.75MC	87.75MC Signal.	"	A18	"
11.	"	98MC	98MC	"	L3	Adjust for maximum deflection by expanding or compressing coil turns. Repeat Steps 9 to 11.

# PARTS LIST AND DESCRIPTIONS

## WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid 22AWG) Available in 12 Colors  
 8524 (Stranded 22AWG)  
 8570 (Stranded 26AWG)

### TRANSISTORS

ITEM No.	MFGR. PART No.	USE	REPLACEMENT DATA		NOTES
			RCA PART No.	RAYTHEON PART No.	
X1	RS-3290	FM-AM RF Amp.			PNP
X2	RS-3291	FM Mixer			PNP
X3	RS-3292	FM Osc.			PNP
X4	RS-3294	1st FM IF Amp. -AM Conv			PNP
X5	RS-3295	2nd FM-1st AM IF Amp.			PNP
X6	RS-3303	3rd FM-2nd AM IF Amp.			PNP
X7	RS-3303	FM Limiter			PNP
X8	RS-2677	AF Amplifier	2N406	2N362	PNP
X9	RS-3293	Driver	2N648		NPN
X10	RS-3284	Output	2N408	2N360	PNP
X11	RS-3284	Output	2N408	2N360	PNP

### POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING ( Measured )	ORIGINAL Part or Type No.	RECTIFIERS		DIODES	NOTES
			RCA PART No.	SARKES TARZIAN PART No.	RAYTHEON PART No.	
X12		RS-1811			1N60	AM Detector (1N60) Discriminator (1N60)
X13		RS-1811			1N60	
X14		RS-1811			1N60	

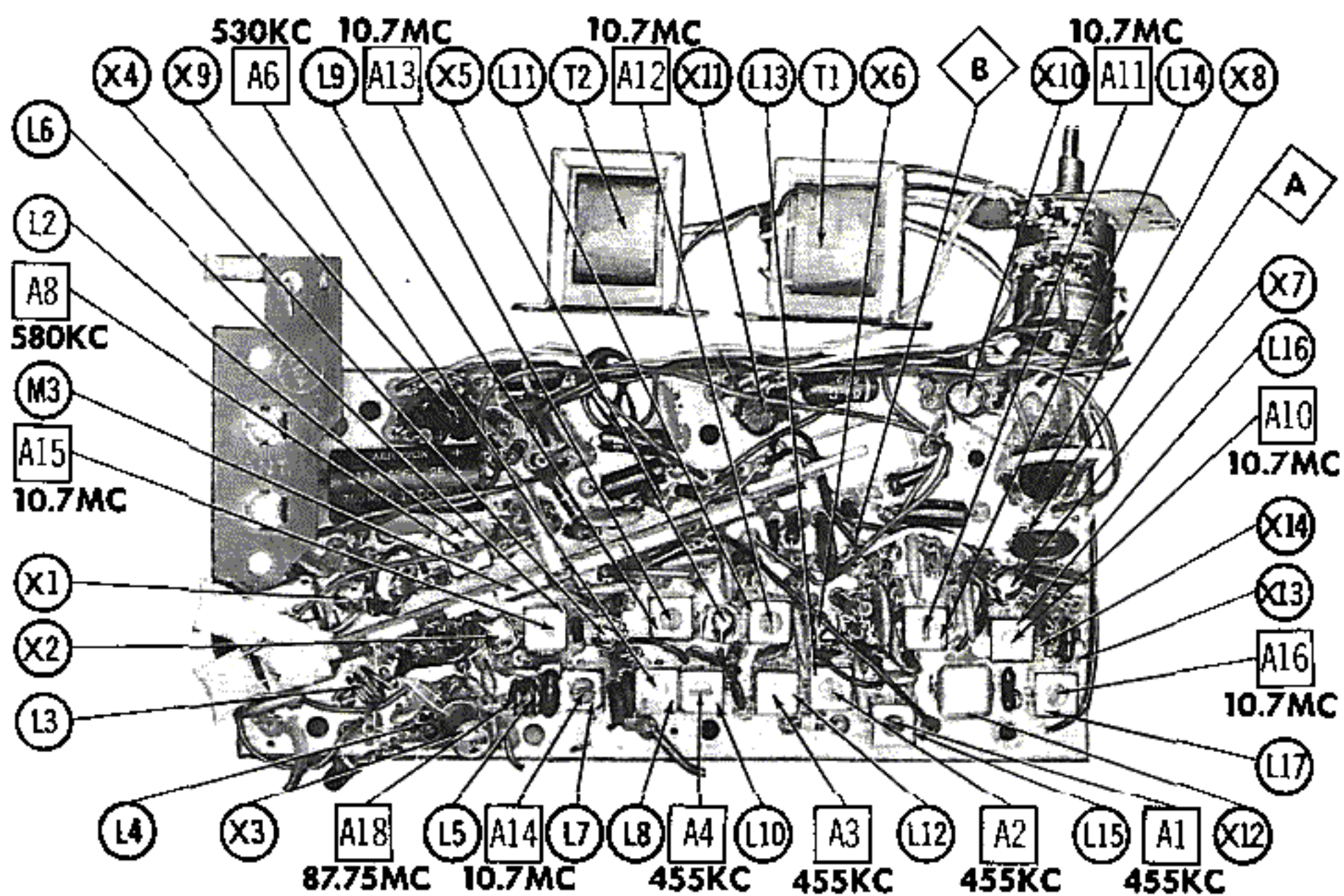
### ELECTROLYTIC CAPACITORS

ITEM No.	RATING		G. E. PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1	6	15	RS-2614	PTT65	NLW6-15	MT1-5	TT25X6	MLV5-15	TE-1153
C2	6	15	RS-2614	PTT65	NLW6-15	MT1-5	TT25X6	MLV5-15	TE-1153
C3	6	15	RS-2614	PTT65	NLW6-15	MT1-5	TT25X6	MLV5-15	TE-1153
C4	6	15	RS-2614	PTT65	NLW6-15	MT1-5	TT25X6	MLV5-15	TE-1153
C5	750	10	RS-3530		BR1000-10				

### FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	15 NPO		NPO-DI 15	DTZ-15	C10Q15C	CCTO-150	CNO-415	10TCC-Q15
C7	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C8	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C9	.001		DI-1000	DM-102	H-05D1	CCD-102	GP210	10TS-D10
C10	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C11	4 NPO 10%				C10V4C			10TCC-V39
C12	18 N470 5%							
C13	820 10%		1469-00082		5R5T82	CM-19B-821K		MS-382
C14	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C15	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C16	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG S10
C17	4 NPO ±.25mmf				C10V4C			10TCC-V39
C18	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C19	.82							
C20	.001		DI-1000	DM-102	H-05D1	CCD-102	GP210	10TS-D10
C21	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C22	.005		DI-5000	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C23	.005		DI-5000	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C24	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C25	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C26	150 N2200	#RS-3529						
C27	2 10%		NPO-SI 2.0	TCZ-2R2	C10V2C		CNO-522	10TCC-V22
C28	.001		DI-1000	DM-102	H-05D1	CCD-102	GP210	10TS-D10
C29	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50

**CHASSIS—TOP VIEW**





# PARTS LIST AND DES

## FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C30	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C31	.001		DI-1000	DM-102	H-05D1	CCD-102	GP210	10TS-D10
C32	.02		C80V203AM	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C33	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C34	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C35	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C36	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C37	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C38	18 10%		1469-000018	TCZ-18	22R5Q18	CM-19B-180K	CNO-418	MS-418
C39	18 10%		1469-000018	TCZ-18	22R5Q18	CM-19B-180K	CNO-418	MS-418
C40A	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
B	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C41	.02		C80V203AM	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C42	.02		C80V203AM	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C43	.001		DI-1000	DM-102	H-05D1	CCD-102	GP210	10TS-D10
C44	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C45	.005		DI-5000	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C46	.005		DI-5000	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C47	.005		DI-5000	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C48	.1 50V		P288N-1	DDA-104	H-05P1		TA-010	TG-P10
C49	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C50	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C51	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C52	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50

# G. E. Part Number.

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

## CONTROLS

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

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			G. E. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
RIA	Tone	2meg	RS-3516				
B	Volume & Switch	1meg Stop 100K 50K Tap	(867B542-2)				

## RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R2	470Ω				R31	5600Ω			(4700Ω)*
R3	470Ω				R32	330Ω			
R4	100K				R33	6800Ω			
R5	100K				R34	1500Ω			
R6	4700Ω				R35	470Ω			
R7	2700Ω				R36	150Ω			
R8	22K				R37	470Ω			
R9	1000Ω				R38	1800Ω			
R10	2700Ω				R39	1800Ω			
R11	15K				R40	270Ω			
R12	270Ω				R41	22K			
R13	22K				R42	1500Ω			
R14	3900Ω				R43	100K			
R15	180K				R44	4700Ω			
R16	5600Ω				R45	47K			
R17	18K				R46	1800Ω			
R18	4700Ω				R47	33K			
R19	150Ω				R48	120K			
R20	1500Ω			(1800Ω)*	R49	110Ω (TC)			
R21	4700Ω				R50	4.7Ω			
R22	470Ω				R51	15K			
R23	620Ω				R52	15K			
R24	6200Ω				R53	220Ω			
R25	330Ω				R54	150Ω			
R26	470Ω				R55	150Ω			
R27	1500Ω				R56	150Ω			
R28	10K				R57	100Ω			
R29	470Ω				R58	2200Ω			
R30	470Ω								

\* Alternate Value.

# REPLACEMENTS (Continued)

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		G. E. PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	Loopstick	RS-3513					
L2	AM RF	RS-3333					
L3	FM RF	RS-3532					
L4	FM Osc. Feedback	RS-3533					
L5	FM Osc.	RS-3534					
L6	1st FM IF Pri.	RS-3538					
L7	1st FM IF Sec.	RS-3539					
L8	AM Osc.	RS-3535					
L9	2nd FM IF	RS-3540					
L10	1st AM IF	RS-2977					
L11	3rd FM IF	RS-3540					
L12	2nd AM IF Pri.	RS-3541					
L13	2nd AM IF Sec.	RS-3250					
L14	4th FM IF	RS-3542					
L15	3rd AM IF	RS-3543					
L16	Discriminator Pri.	RS-3544					
L17	Discriminator Sec.	RS-3545					

## TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			G. E. PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	PRI.	SEC.						
T1	1	1	RS-3517					

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	G. E. PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	1900Ω CT	3-4Ω	RS-3518					

## SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	G. E. PART No.	QUAM PART No.	
SP1	5 1/4"	PM	3-4Ω	RB-1128	52A21	

## BATTERIES

ITEM No.	VOLTAGE	G. E. PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1 1/2V			230		A100		M-13R	6 Required

## MISCELLANEOUS

ITEM No.	PART NAME	G. E. PART No.	NOTES
M2	Tuning Cap.	RS-3511	4 Gang Band Selector (2 Position Slide Type) AFC-FM (Slide Type DPST) Pilot Lamp
M3	Switch	RS-3537	
M4	Switch	RS-1519	
M5	Switch Contract	RS-2215	
	Whip Antenna	RS-3512	

## CABINETS & CABINET PARTS

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

NAME	PART NO.	DESCRIPTION
Dial Pointer	RS-2208	Volume Tone Tuning AFC Front Back Carrying Battery Compartment
Dial Glass	RS-3501	
Knob	RS-2203	
Knob	RS-2205	
Knob	RS-3502	
Knob	RS-3504	
Cabinet	RB-1249	
Cabinet	RB-1250	
Handle	RS-3536	
Door	RS-3505	