

Met dank aan Jef Bos



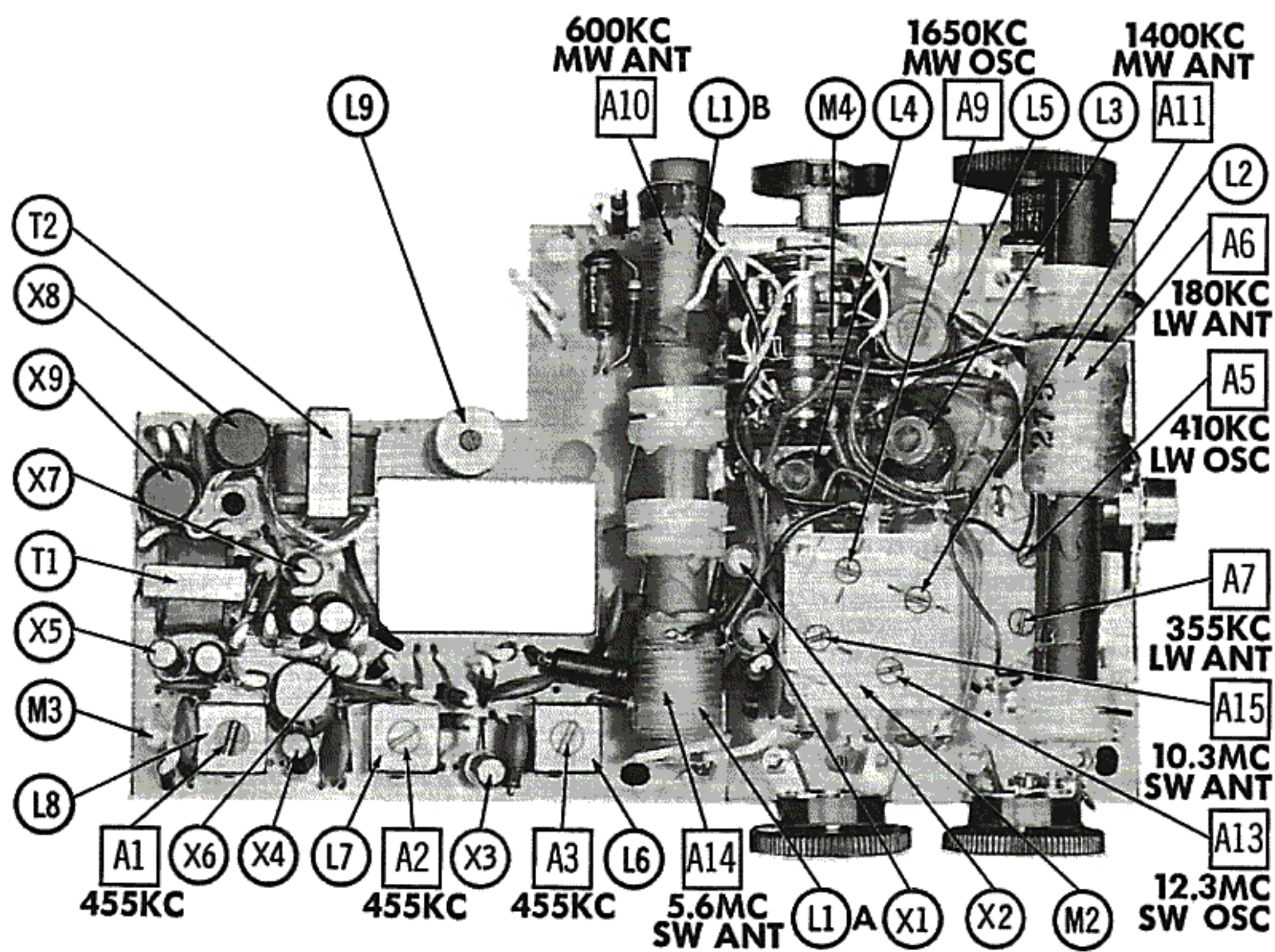
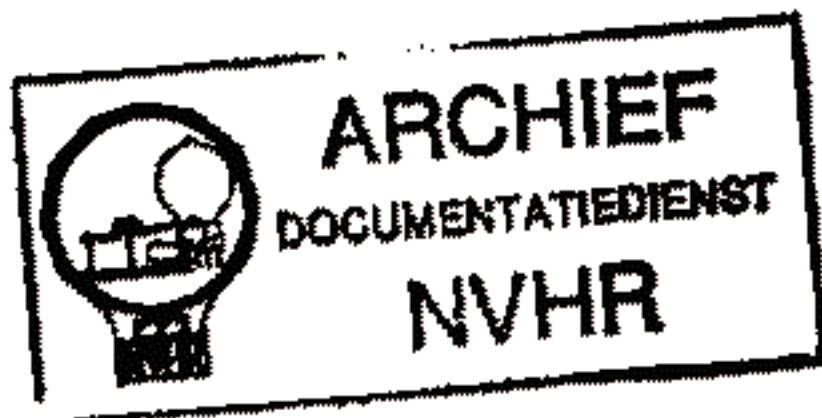
PHOTOFACT[®] with

CIRCUITRACE[®]



TRADE NAME: Realtone Model TR-970 (Revised)
 SUPPLIER: Realtone Electronics, 71 Fifth Ave.,
 New York 3, N. Y.
 TYPE SET: 9 Transistor, 3 Band Receiver
 POWER SUPPLY: 6 Volts DC
 RATING: 15MA @ 6VDC (No Signal)
 20MA @ 6VDC (Normal Signal)
 TUNING RANGE: LW 127-325KC
 MW 525-1620KC
 SW 3.9-12.3MC

Ned. Ver. v. Historie v/d Radio



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

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.

Use an insulated alignment tool when adjusting.

Suggested Alignment Tools: A1, A2, A3 GENERAL CEMENT #8282, 8606
 WALSCO #2526, 2543
 A4, A8, A12 GENERAL CEMENT #9440
 WALSCO #2501
 A5, A7, A9, GENERAL CEMENT #5000, 5066, 8290,
 A11, A13, A15 WALSCO #2512, 2525, 2528

IF Alignment

Selector Switch in Any Position

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .02mfd to point Δ (antenna lug of tuning gang), low side to chassis.	455KC (400% Mod.)	Tuning gang fully open.	Output meter across voice coil.	A1, A2, A3	Adjust for maximum output.

LW RF Alignment

Selector Switch in LW Position

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
2.	Fashion loop of several turns of wire and radiate signal into the LW loop (L2) of the receiver.	127KC (400% Mod.)	Tuning gang fully closed.	Output meter across voice coil.	A4	Adjust for maximum output while rocking tuning gang.
3.	"	410KC (400% Mod.)	Tuning gang fully open.	"	A5	Adjust for maximum output. Repeat Steps 2 and 3.
4.	"	180KC (400% Mod.)	180KC	"	A6	Adjust for maximum output.
5.	"	355KC (400% Mod.)	355KC	"	A7	"

MW RF Alignment

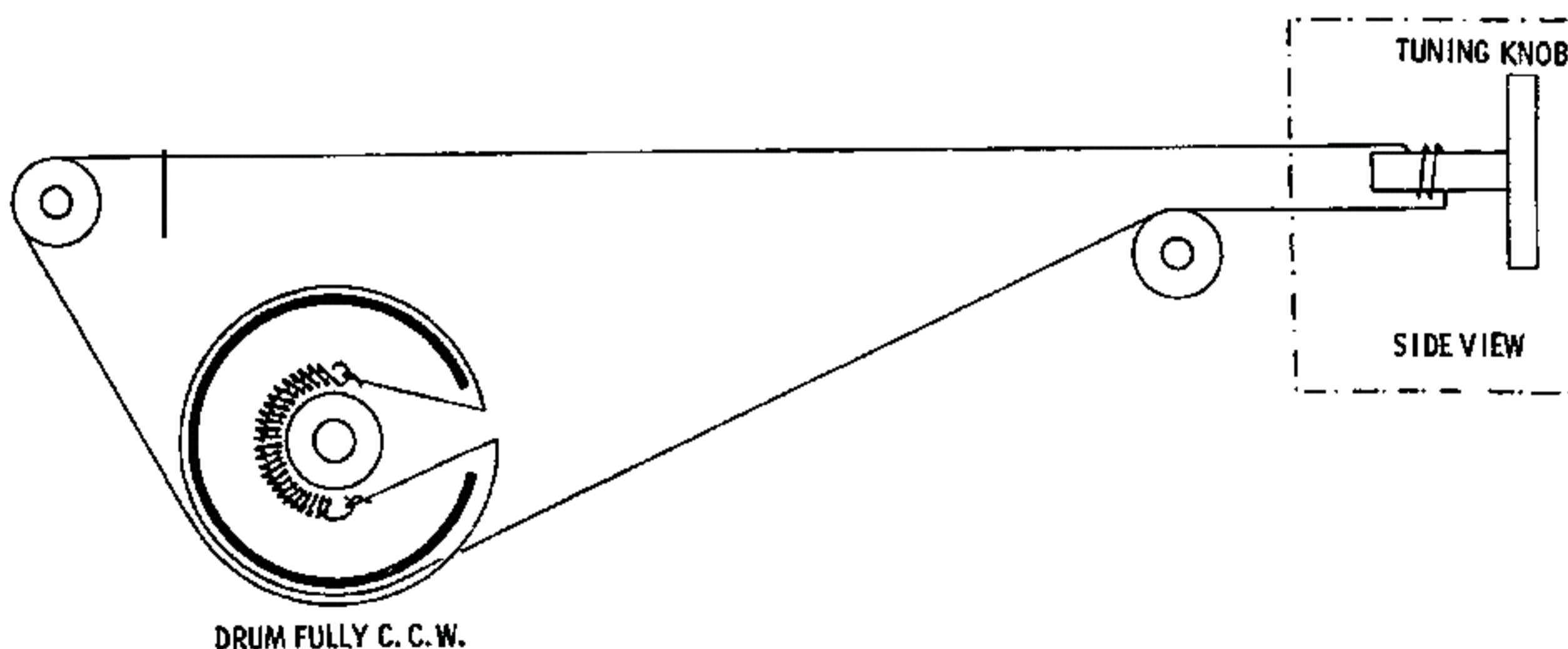
Selector Switch in MW Position

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
2.	Fashion loop of several turns of wire and radiate signal into the MW loop (L1B) of the receiver.	525KC (400% Mod.)	Tuning gang fully closed.	Output meter across voice coil.	A8	Adjust for maximum output.
3.	"	1650KC (400% Mod.)	Tuning gang fully open.	"	A9	Adjust for maximum output. Repeat Steps 2 and 3.
4.	"	600KC (400% Mod.)	600KC	"	A10	Adjust for maximum output.
5.	"	1400KC (400% Mod.)	1400KC	"	A11	"

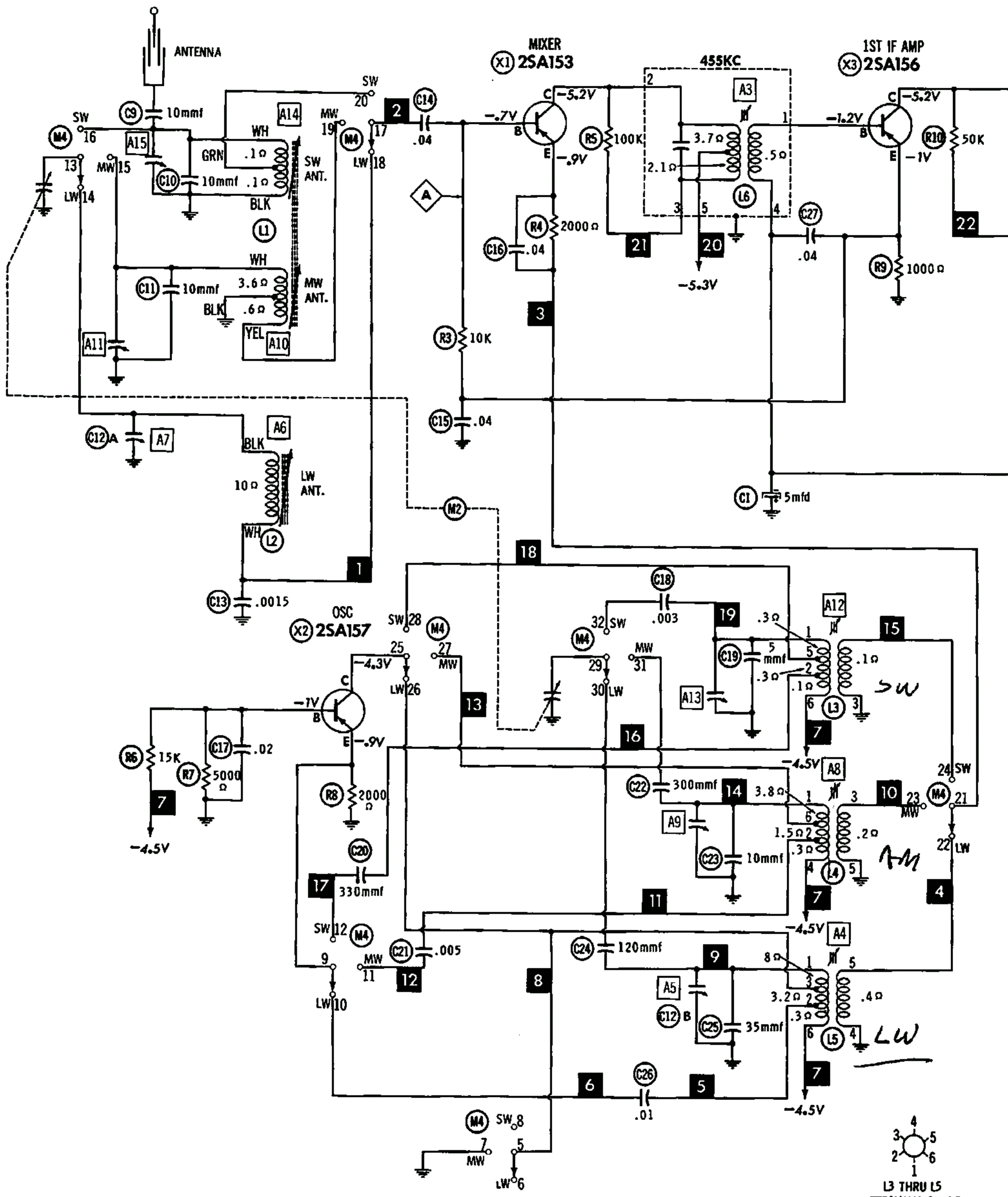
SW RF Alignment

Selector Switch in SW Position

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
2.	Fashion loop of several turns of wire and radiate signal into the SW loop (L1A) of the receiver.	3.9MC (400% Mod.)	Tuning gang fully closed.	Output meter across voice coil.	A12	Adjust for maximum output while rocking tuning gang.
3.	"	12.3MC (400% Mod.)	Tuning gang fully open.	"	A13	Adjust for maximum output. Repeat Steps 2 and 3.
4.	"	5.6MC (400% Mod.)	5.6MC	"	A14	Adjust for maximum output.
5.	"	10.3MC (400% Mod.)	10.3MC	"	A15	"



DIAL CORD STRINGING



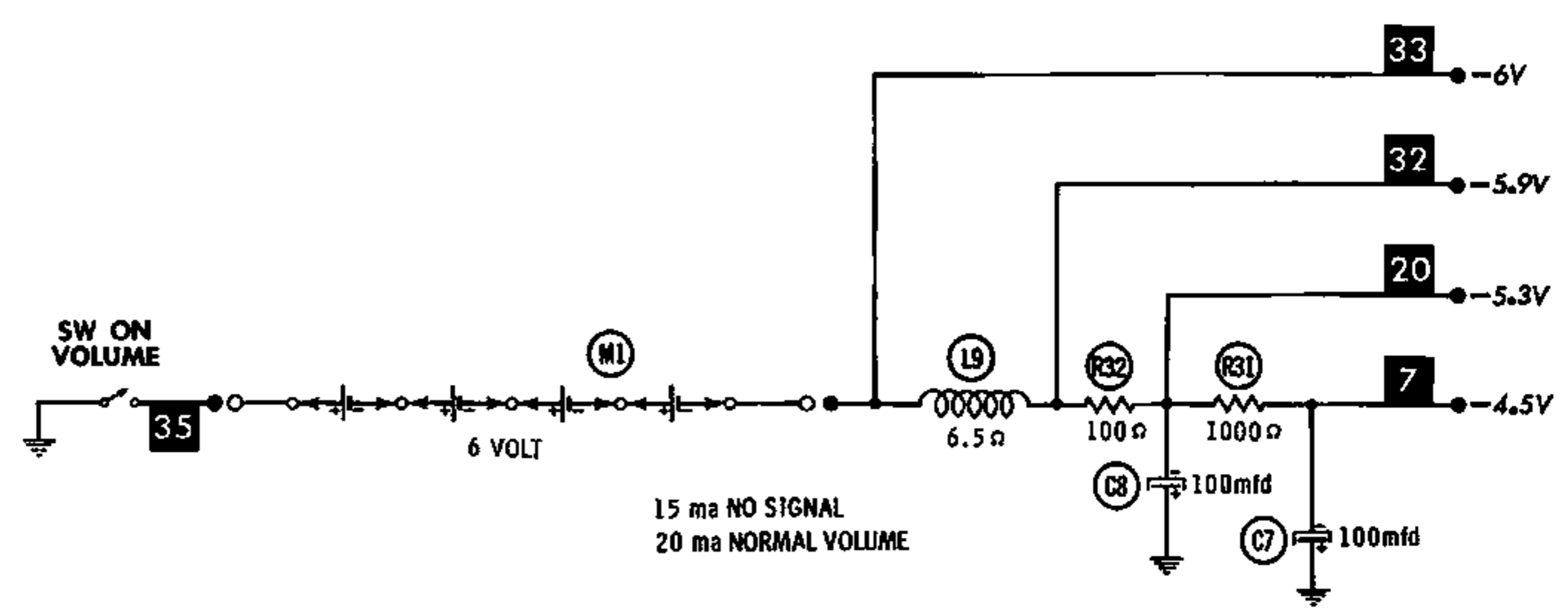
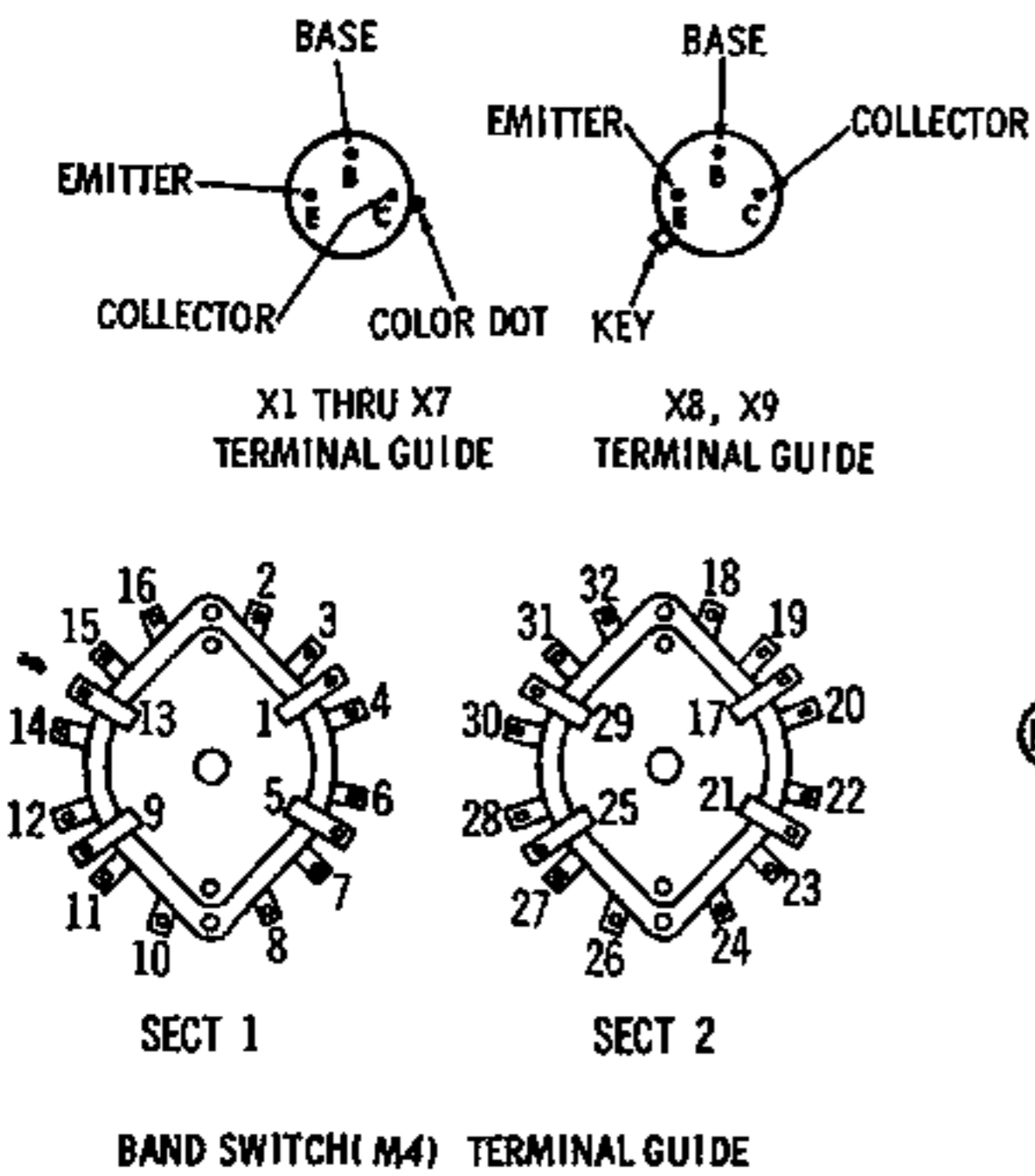
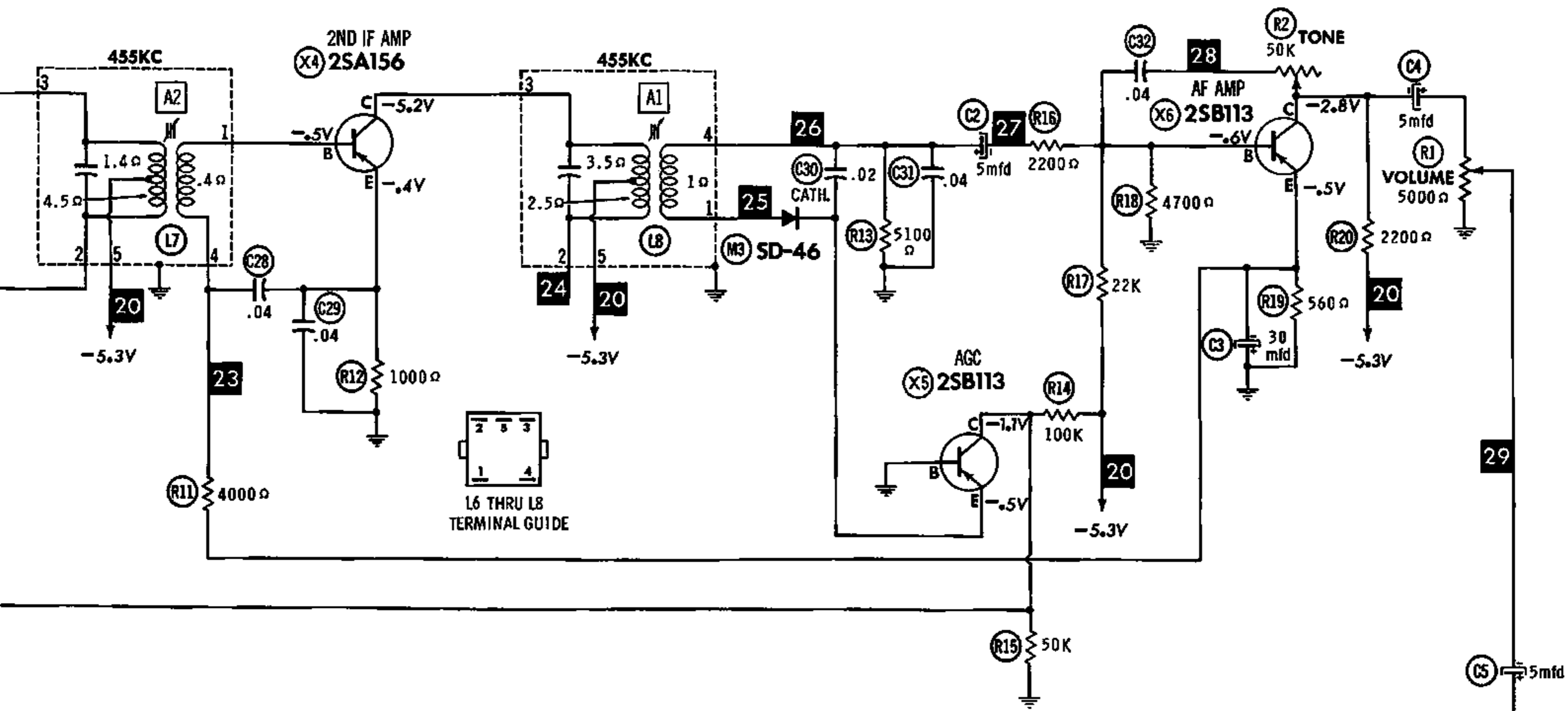
1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage readings.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

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

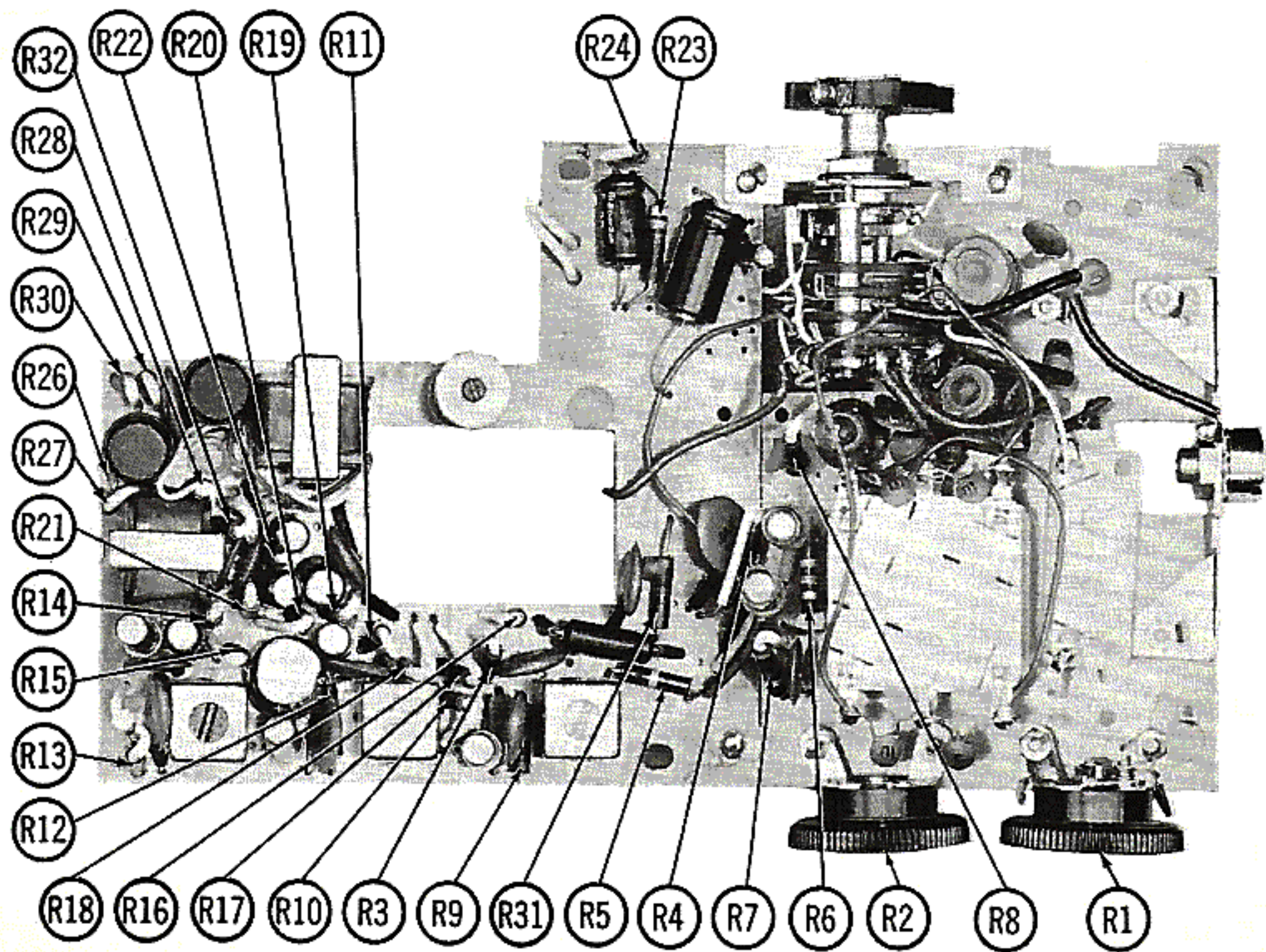
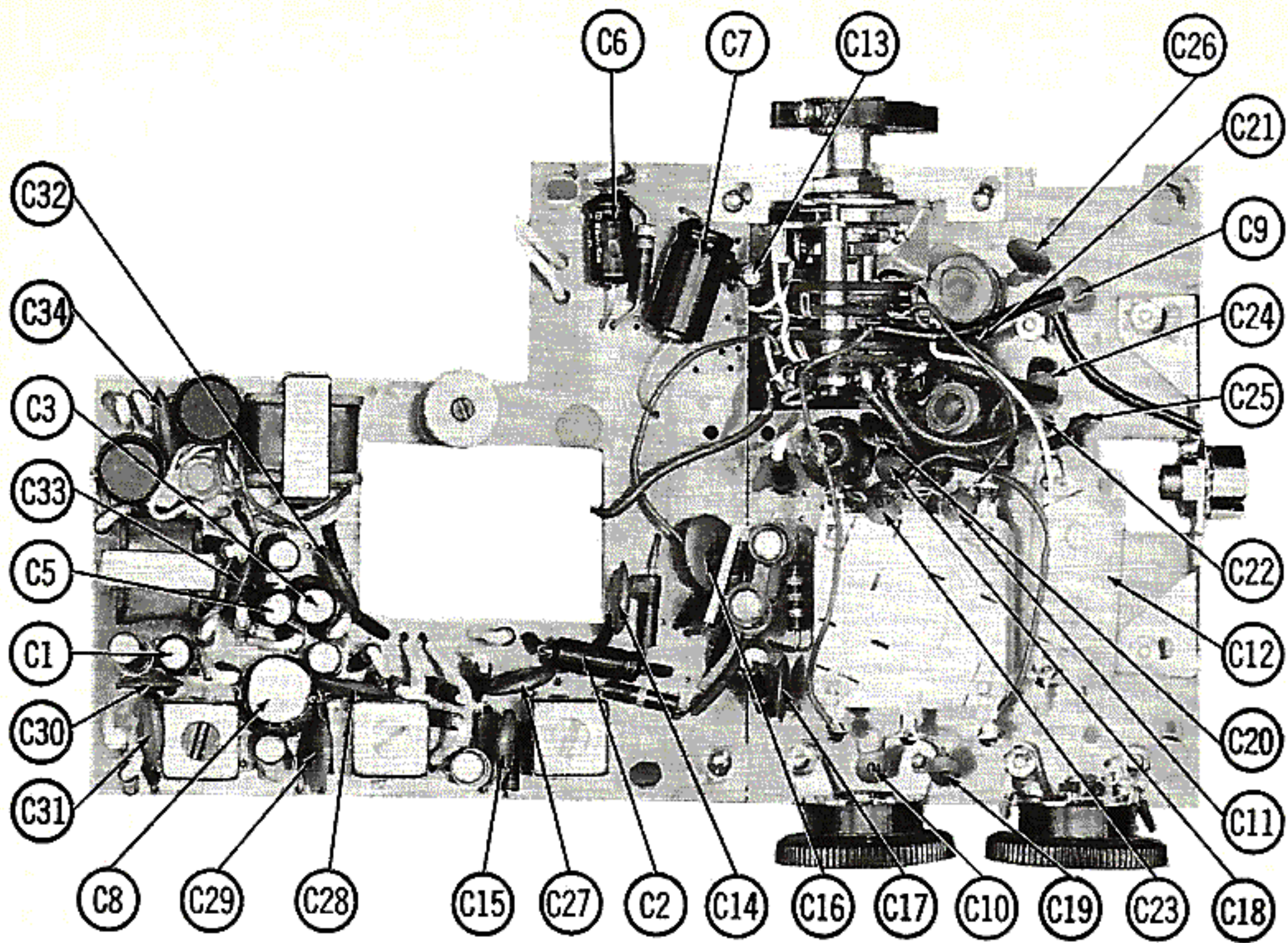
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

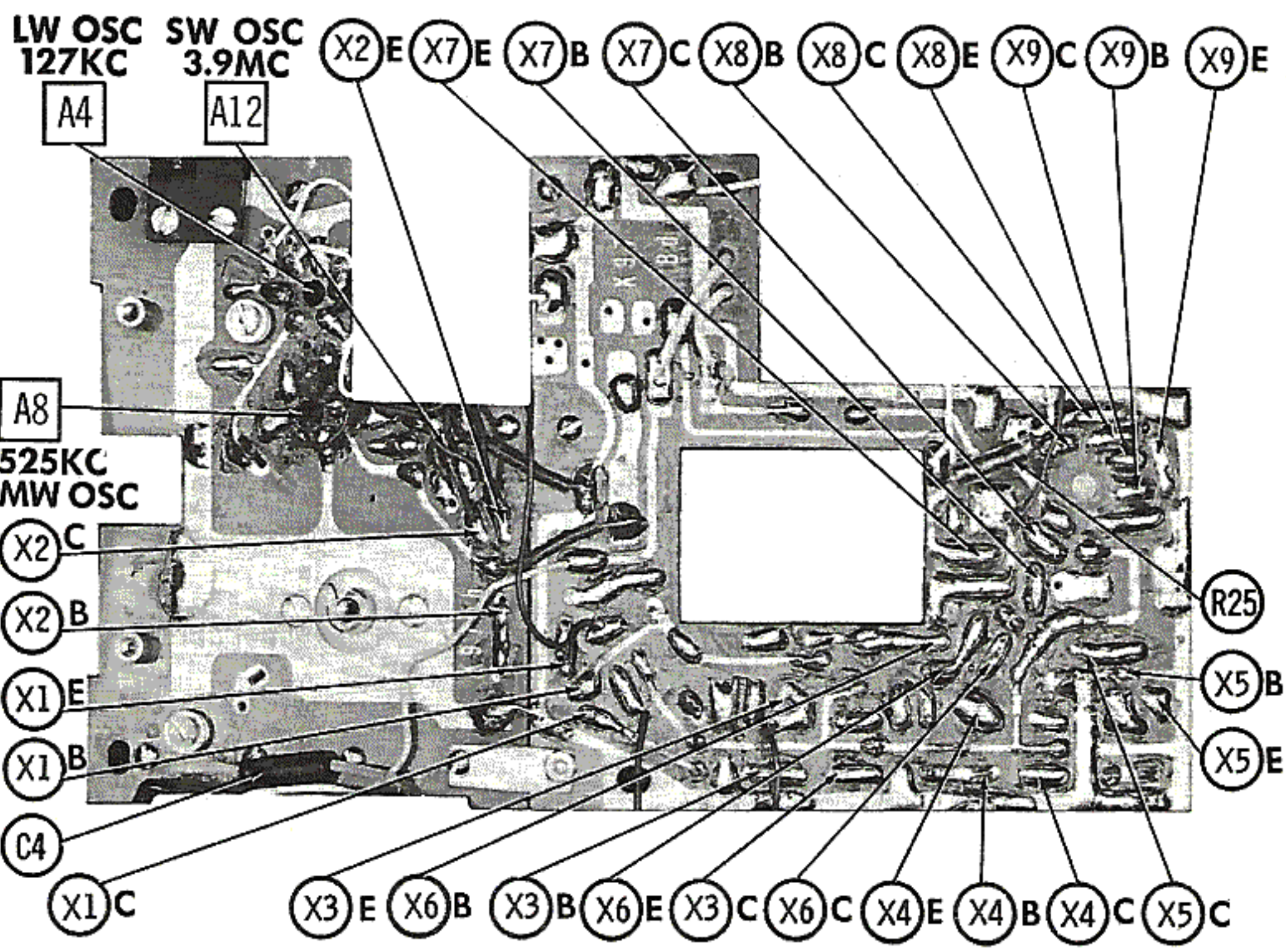
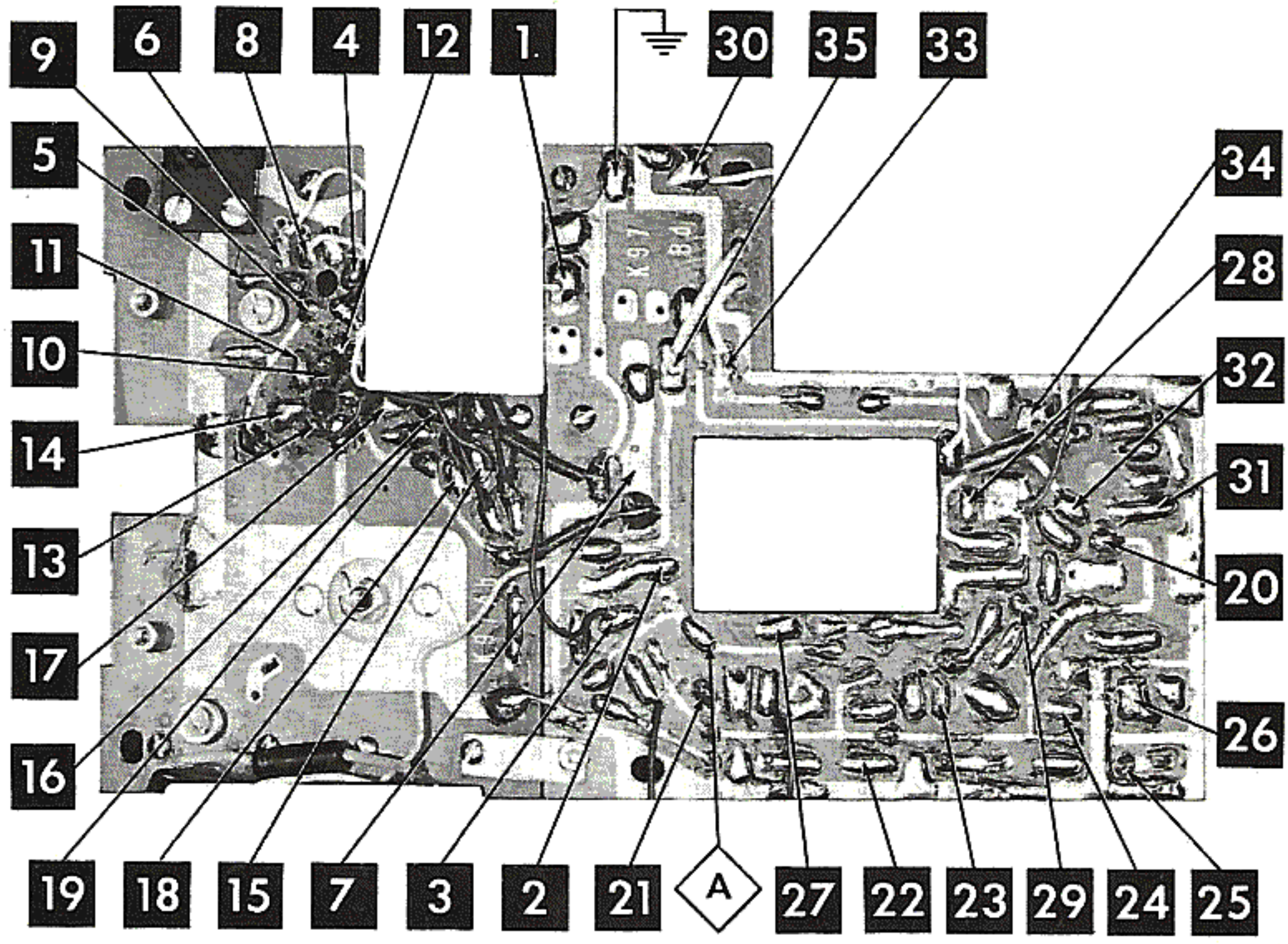
A PHOTOFACIT STANDARD NOTATION SCHEMATIC
with **CIRCUITRACE**





REALTONE MODEL TR-970 (Revised)





TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2SA153	Mixer	DS-25	GE-1		PNP
X2	2SA157	Oscillator	DS-25	GE-1		PNP
X3	2SA156	1st IF Amplifier	DS-25	GE-1		PNP
X4	2SA156	2nd IF Amplifier	DS-25	GE-1		PNP
X5	2SB113	AGC	DS-26	GE-2	2N406	PNP
X6	2SB113	AF Amplifier	DS-26	GE-2	2N406	PNP
X7	2SB113	Driver	DS-26	GE-2	2N408	PNP
X8	2SB165	Output	DS-26	GE-2	2N270	PNP
X9	2SB165	Output	DS-26	GE-2	2N270	PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	REALTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	5	6	V-5-6	BCD8005	ECSP5-15	MT1-3	MLV5-6	TT6X5	VL-1084
C2	5	6	V-5-6	CRE304A	NLW5-15	MT1-3	MLV5-6	TT6X5	TE-1084
C3	30	6	V-30-6		NLW30-6	MT1-13	MLV30-6	TT6X30	TE-1092
C4	5	6	V-5-6	CRE304A	NLW5-15	MT1-3	MLV5-6	TT6X5	TE-1084
C5	5	6	V-5-6	BCD8005	ECSP5-15	MT1-3	MLV5-6	TT6X5	VL-1084
C6	30	6	V-30-6		NLW30-6	MT1-13	MLV30-6	TT6X30	TE-1092
C7	100	10	V-100-10	CRE423A	NLW100-12	MT1-19	MLV100-10	TT12X100	TE-1119.3
C8	100	10	V-100-10	BCD10100	NLW100-12				

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.
C9	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C10	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C11	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C12A								
C12E								
C13	.0015			DM-202				
C14	.04		TTD-05	CK-503	H5		TA-150	TG-S50
C15	.04		TTD-05	CK-503	H5		TA-150	TG-S50
C16	.04		TTD-05	CK-503	H5		TA-150	TG-S50
C17	.02		TTD-02	CK-203	H3		TA-120	TG-S20
C18	.003			DM-302				
C19	5		NPO-DI 5	DTZ-4R7	C10V47C	CCTO-050	CNO-547	10TCC-V50
C20	330		DI-300	DD-331	LA1033C4	CCD-331	GP333	10TCC-T33
C21	.005		TTD-005	CK-502	H1		TA-250	TG-D50
C22	300			DM-301				
C23	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C24	120		NPO-DI 120	DTZ-120	C10T12C	CCTO-121	CNO-312	10TCC-T12
C25	35		NPO-DI 35	DTZ-33	C10Q33C	CCTO-360	CNO-433	10TCC-Q33
C26	.01		TTD-01	CK-103	H2		TA-110	TG-S10
C27	.04		TTD-05	CK-503	H5		TA-150	TG-S50
C28	.04		TTD-05	CK-503	H5		TA-150	TG-S50
C29	.04		TTD-05	CK-503	H5		TA-150	TG-S50
C30	.02		TTD-02	CK-203	H3		TA-120	TG-S20
C31	.04		TTD-05	CK-503	H5		TA-150	TG-S50
C32	.04		TTD-05	CK-503	H5		TA-150	TG-S50
C33	.005		TTD-005	CK-502	H1		TA-250	TG-D50
C34	.04		TTD-05	CK-503	H5		TA-150	TG-S50

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			REALTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume and Switch	5000Ω	RV-013	B18-214①			
R2	Tone	50K	RV-023				

① Use original knob.

DESCRIPTION

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		REALTONE PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1A	SW Ant.	HA-671					
L1B	BC Ant.	HA-061					
L2	LW Ant.	HA-051					
L3	SW Osc.	HO-070					
L4	BC Osc.	HO-060					
L5	LW Osc.	HO-050					
L6	1st IF	HI-070	BC-574	2086	RTC-9266		
L7	2nd IF	HI-080	BC-575	2087	RTC-9267		
L8	3rd IF	HI-090	BC-576	2088	RTC-9268		
L9	Choke	HC-850					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	REALTONE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	200Ω CT	6-8Ω	LO-020					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	REALTONE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	1.6	1	LI-020					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	DRIVE	IMPEDANCE	REALTONE PART No.	QUAM PART No.	
SP1	3"	PM	8Ω	AS-022	30A05Z8	

BATTERIES

ITEM No.	VOLTAGE	REALTONE PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M1	1½V		930 or (AL-9 or HG-9)	1015 or E91 or E9	M-15R or MN1500 or ZM-9	4 Required

MISCELLANEOUS

ITEM No.	PART NAME	REALTONE PART No.	NOTES
M2	Tuning Cap	CV-022	2 Gang
M3	Det Diode	SD-46	
M4	Switch	SH-031	Band Selector

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Dial Pointer	K-97-1013	Knob, Selector	K-97-001
Clear Dial Face	K-97-0006	Plastic Cabinet (With all metal trim)	C-970
Dial Plate	K-97-0005	Cabinet Handle	K-97-0014
Knob, Tuning	K-97-0008	Whip Antenna	K-97-0015
Knob, Volume and Tone	K-97-0009		

WIRING DATA

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