

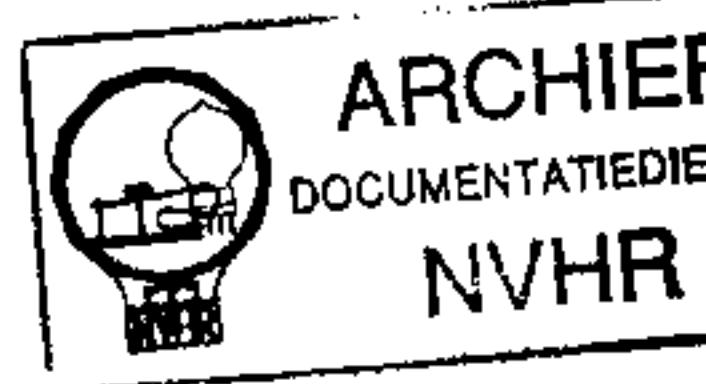
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with CIRCUITRACE<sup>®</sup>

TOSHIBA MODELS  
10TL-429F, 10TL-429FY

Met dank aan Jef Bos

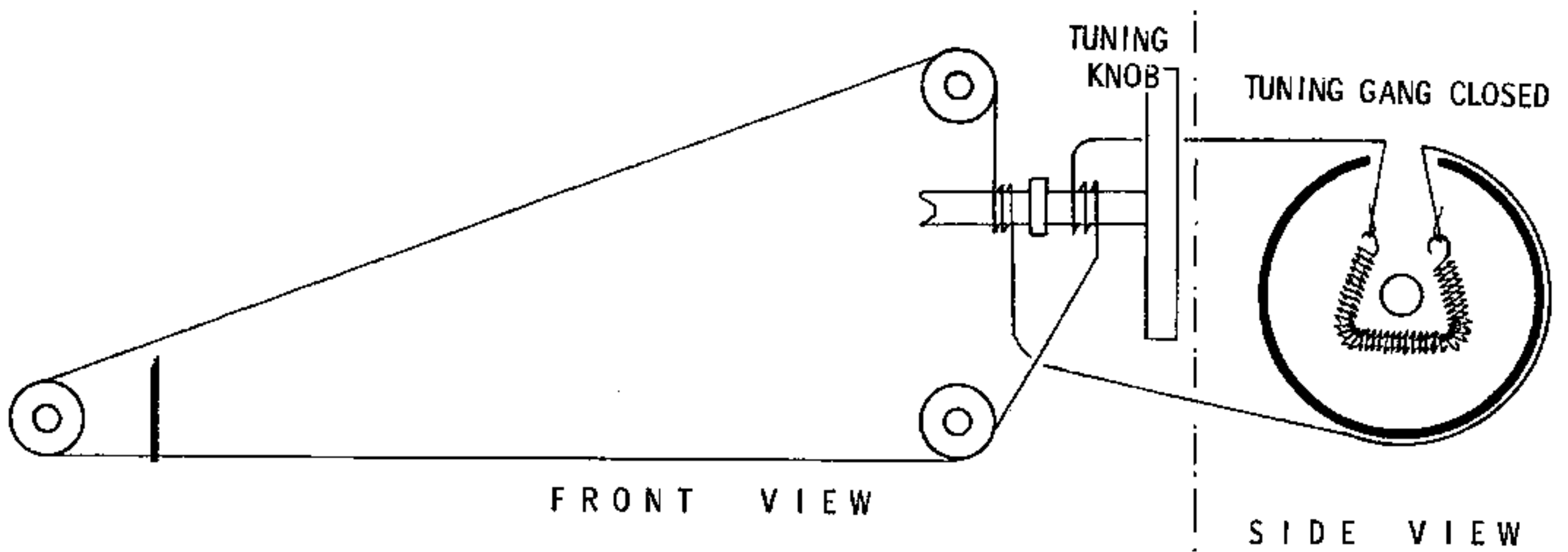
Ned. Ver. v. Histori



MODEL 10TL429F

TRADE NAME	Toshiba Models 10TL-429F, 10TL-429FY		
IMPORTER	Transistor World Corp., 52 Broadway, New York 4, N. Y.		
TYPE SET	Battery Operated Transistorized FM-AM Portable Receiver		
POWER SUPPLY	6 Volts DC	RATING	23MA @ 6 Volts DC (AM No Signal, Min. Volume) 30MA @ 6 Volts DC (AM Signal, Normal Volume) 25MA @ 6 Volts DC (FM No Signal, Min. Volume) 40MA @ 6 Volts DC (FM Signal, Normal Volume)
TUNING RANGE—BROADCAST 540-1600KC		FREQ. MOD. 88 -- 108MC	

## DIAL CORD STRINGING



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

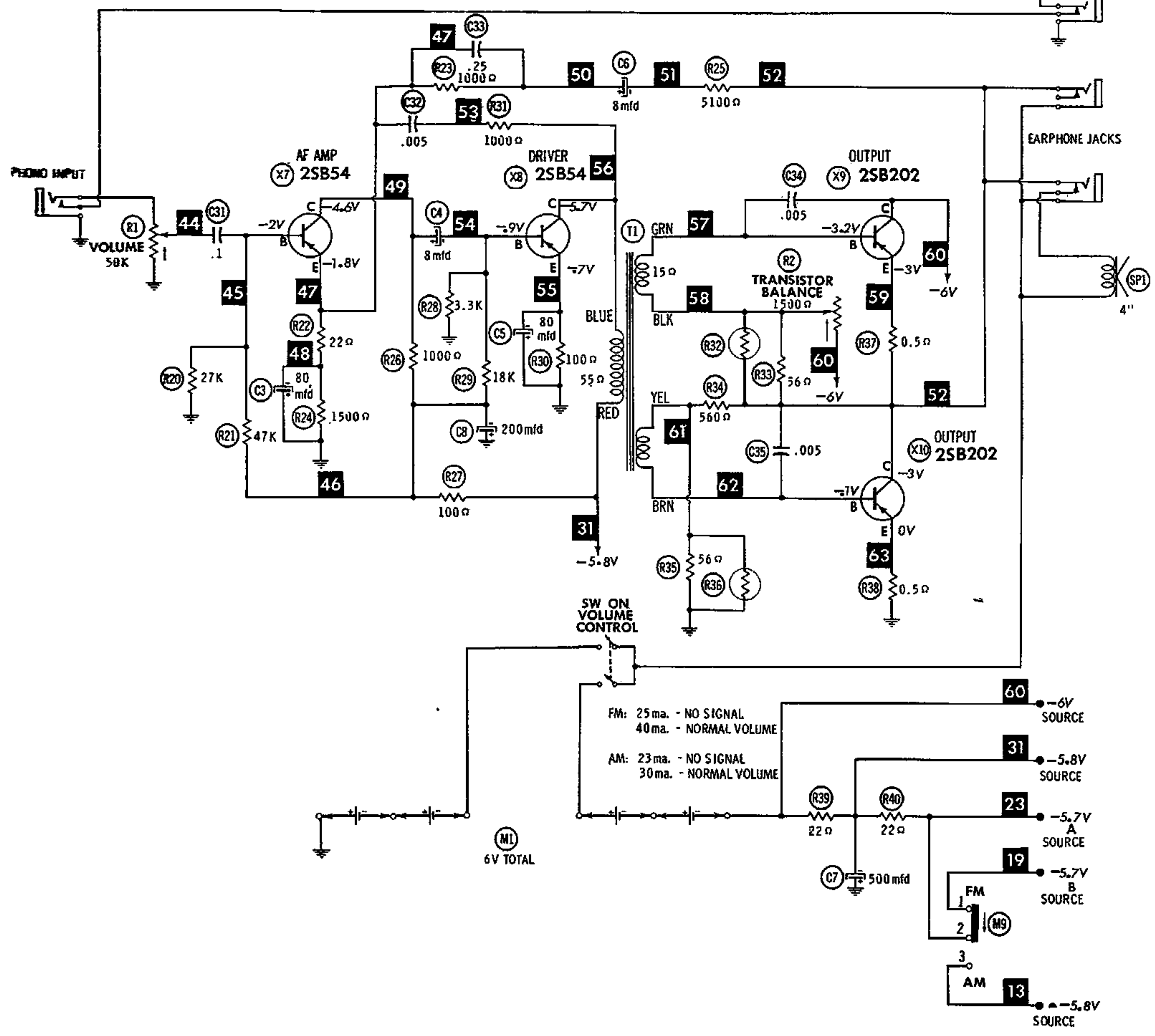
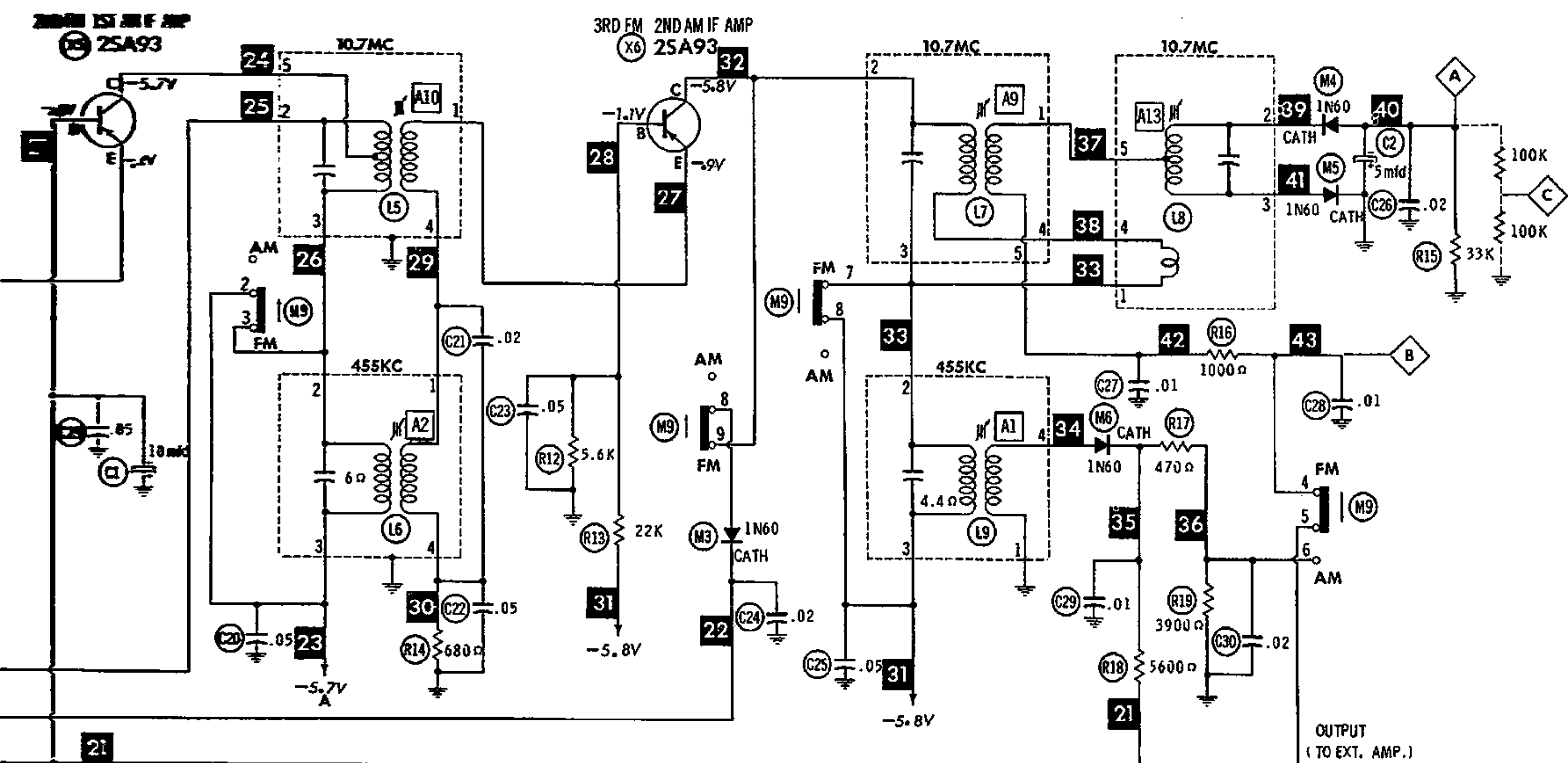
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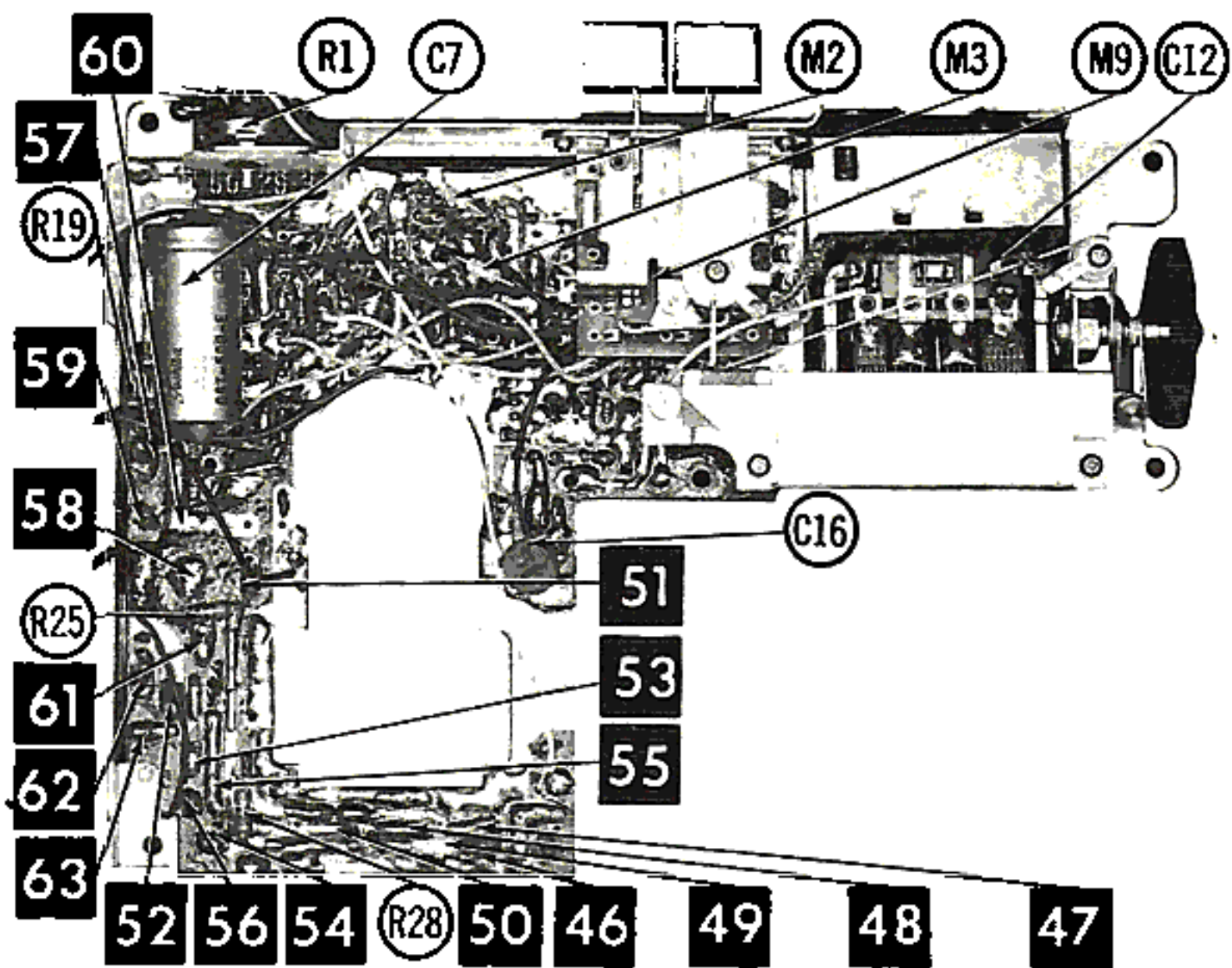






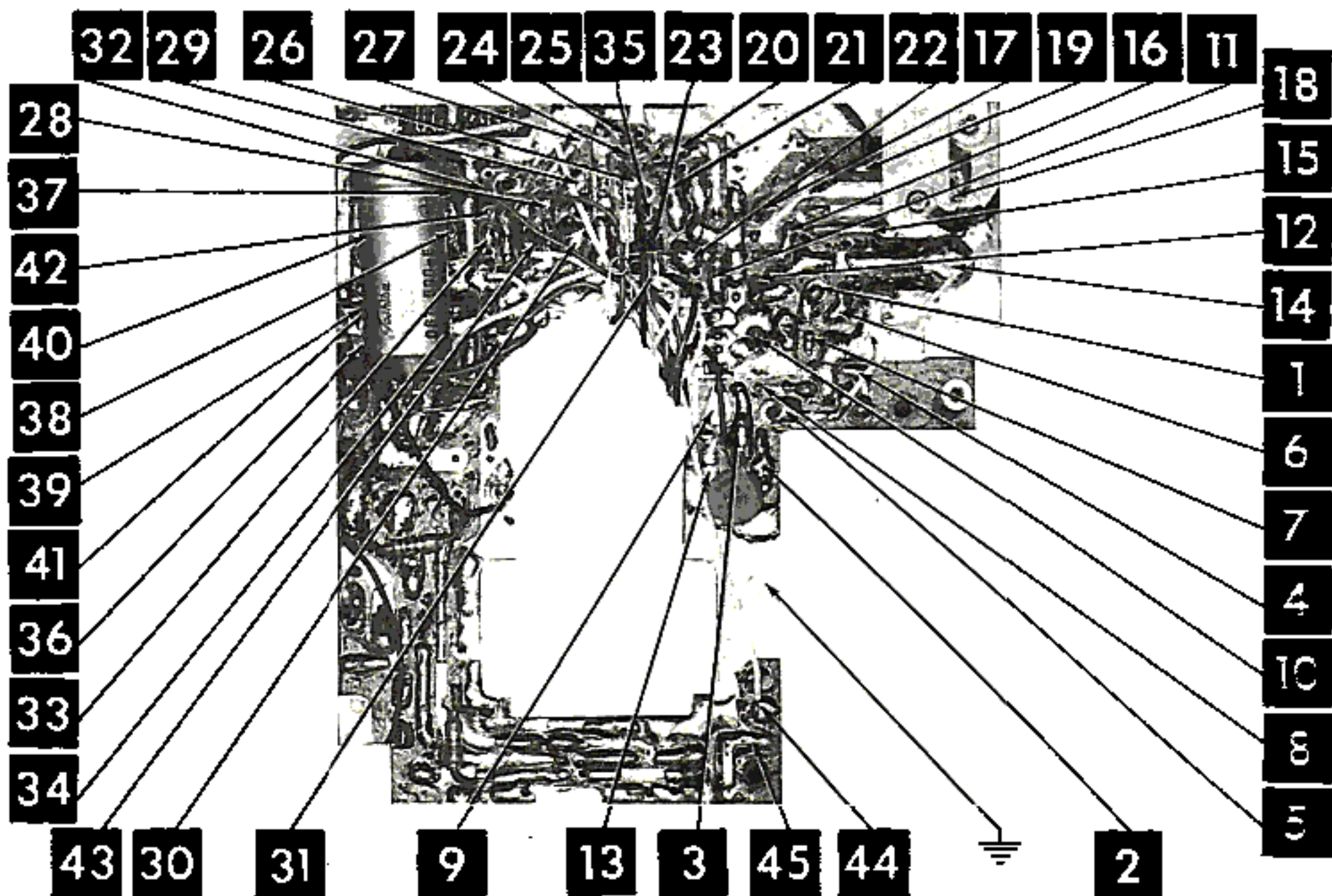






A Howard W. Sams CIRCUITRACE Photo

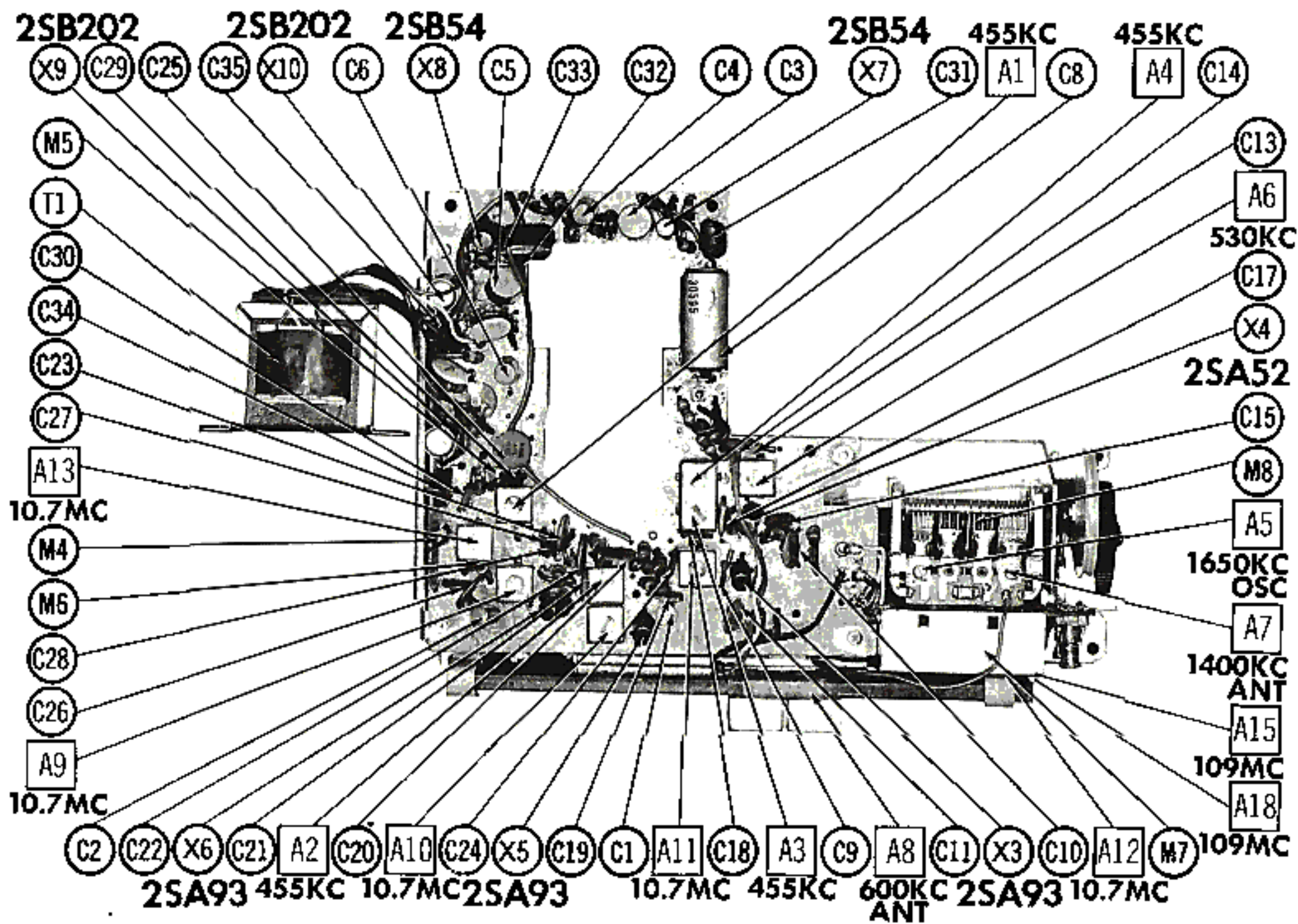
CHASSIS-BOTTOM VIEW



A Howard W. Sams CIRCUITRACE Photo

CHASSIS-BOTTOM VIEW





CHASSIS TOP VIEW-ALIGNMENT, CAPACITOR, TRANSISTOR & MISC. IDENT.

# ALIGNMENT INSTRUCTIONS

## ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools: A1 thru A4, A9 thru A13. . . . GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291  
 A5, A7. . . . . WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538  
 GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089  
 WALSCO #2512, 2525, 2528  
 A8. . . . . GENERAL CEMENT #8282, 8606, 8606-L, 9091  
 WALSCO #2526, 2541, 2542, 2543, 2544

### AM ALIGNMENT — SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.	455KC (400% 30% AM)	(AM) Tuning gang fully open.	Across voice coll.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	1650KC	"	"	A5	"
3.	"	530KC	"	"	A6	"
4.	"	1400KC	1400KC Signal.	"	A7	"
5.	"	600KC	600KC Signal.	"	A8	Adjust for maximum output by sliding coil along ferrite core. Repeat Steps 2 thru 5.

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

Connect two matched 100K ( $\pm 1\%$ ) resistors in series from point  $\diamond A$  to chassis. The junction of these two resistors is alignment point  $\diamond C$  as shown on the schematic.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	High side thru .02mfd to FM RF stator lug of tuning gang. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point $\diamond A$ . Common to chassis.	A9, A10, A11, A12	Adjust for maximum deflection.
7.	"	"	"	DC probe to point $\diamond B$ . Common to point $\diamond C$ .	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

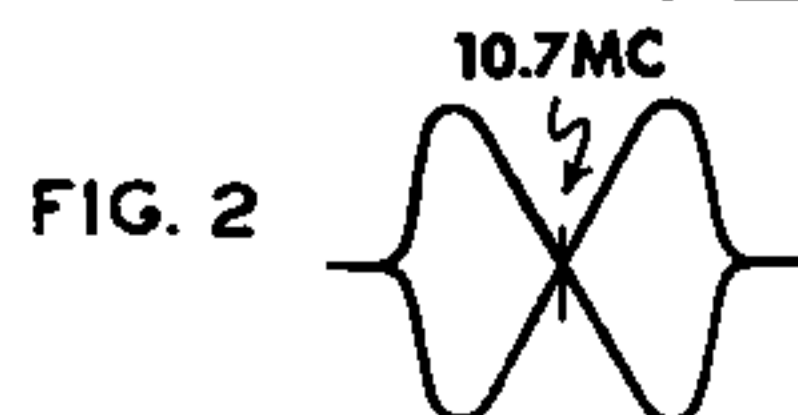
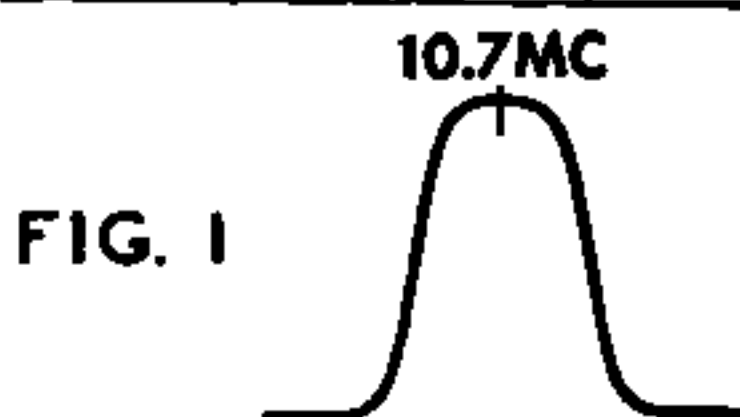
### FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE — SELECTOR IN FM POSITION

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
6.	High side thru .02mfd to FM RF stator lug of tuning gang. Low side to chassis.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp to point $\diamond A$ . Low side to chassis.	A9, A10, A11, A12	Disconnect stabilizing capacitor C2. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C2.
7.	"	"	"	Vert. amp to point $\diamond B$ . Low side to chassis.	A13	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

### FM RF ALIGNMENT — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	High side thru 270 $\Omega$ to FM antenna terminal. Low side to chassis.	87MC (Unmod.)	(FM) Tuning gang fully closed.	DC probe to point $\diamond A$ . Common to chassis.	A14	Adjust by expanding or compressing coil turns for maximum deflection.
9.	"	109MC	Tuning gang fully open.	"	A15	Adjust for maximum deflection.
10.	"	87MC	Tuning gang fully closed.	"	A16, A17	Adjust by expanding or compressing coil turns for maximum deflection.
11.	"	109MC	Tuning gang fully open.	"	A18	Adjust for maximum deflection. Repeat Steps 8 thru 11.



# PARTS LIST AND DESCRIPTIONS

## TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA		NOTES
			RCA PART No.	RAYTHEON PART No.	
X1	2SA76	FM RF Amplifier	2N1177		PNP
X2	2SA76	FM Converter	2N1178		PNP
X3	2SA93	1st FM IF Amp.	2N1180		PNP
X4	2SA52	AM Converter	2N412	2N486	PNP
X5	2SA93	2nd FM-1st AM IF Amp.	2N410		PNP
X6	2SA93	3rd FM-2nd AM IF Amp.	2N410		PNP
X7	2SB54	AF Amplifier	2N406	2N362	PNP
X8	2SB54	Driver	2N406	2N362	PNP
X9	2SB202	Output	2N408	2N633	PNP
X10	2SB202	Output	2N408	2N633	PNP

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	TOSHIBA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1	10	10		BCD10010	ECPB408	MT1-5	PET1340	MLV10-10	VL-1127
C2	5	10		BCD12005	ECPB405	MT1-3	PET1535	MLV5-12	VL-1124
C3	80	3		BCD10080	ECPB16	MT1-21	TT6X80	MLV100-3	VL-1048
C4	8	6		BCD6008	ECPB107	MT1-5	PET1340	MLV10-6	VL-1086
C5	80	3		BCD10080	ECPB16	MT1-21	TT6X80	MLV100-3	VL-1048
C6	8	6		BCD6008	ECPB107	MT1-5	PET1340	MLV10-6	VL-1086
C7	500	6	06T-500	PRS1120			TC605	TD-500-6	
C8	200	6	06T-200	PTT31	NLW200-12	MT1-23		MLV200-6	TE-1104

## FIXED CAPACITORS

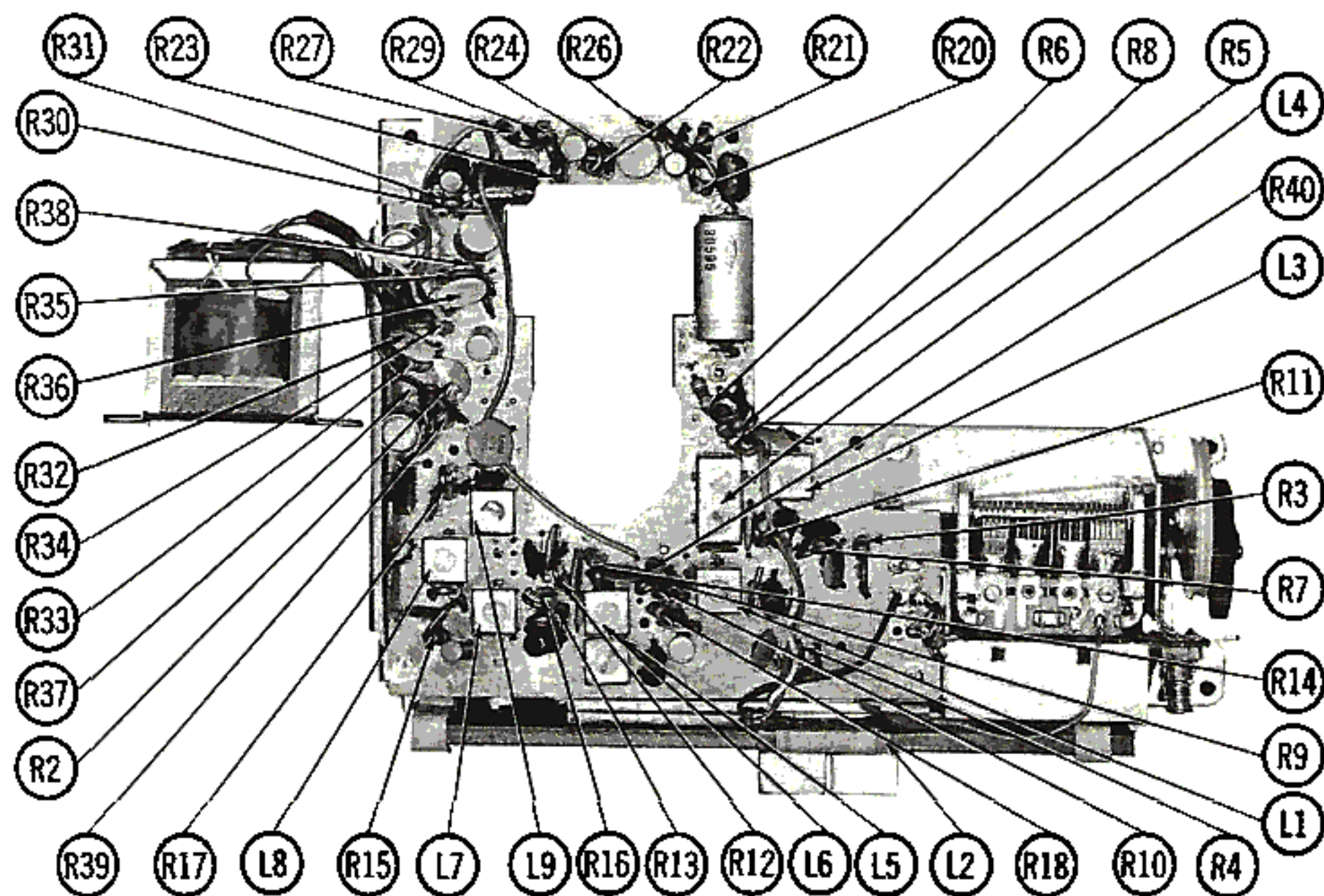
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C9	4.7		NPO-DI 4.7	DTZ-4R7	C10V47C	CCTO-4R7	CNO-547	10TCC-V47
C10	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C11	.02		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C12	6.8		NPO-DI 6.8	DTZ-6R8	C10V68C	CCTO-6R8	CNO-568	10TCC-V68
C13	.02		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C14	5.6							10TCC-V56
C15	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C16	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C17	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C18	.02		C80V203AM	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C19	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C20	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C21	.02		C80V203AM	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C22	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C23	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C24	.02		C80V203AM	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C25	.05		C80V503AM	DA-503	H-05S5		TA-150	TG-S50
C26	.02		C80V203AM	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C27	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C28	.001		C80V102AM	DM-102	H-05D1	CCD-102	B-210	TG-D10
C29	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C30	.02		C80V203AM	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C31	.1		C80V104AM	DA-104	H-05P1		TA-010	TG-P10
C32	.005		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C33	.25							
C34	.005		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C35	.005		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50

## CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	TOSHIBA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	50K	1/4	16T50KΩA					Volume & Switch Transistor Balance
R2	1500Ω	1/4	11B1.5KΩ					



**CHASSIS—TOP VIEW**





# PARTS LIST AND DESC

## 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 TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R3	820Ω				R22	22Ω			
R4	47Ω				R23	1000Ω			
R5	27K				R24	1500Ω			
R6	6800Ω				R25	5100Ω			
R7	2200Ω				R26	1000Ω			
R8	47Ω				R27	100Ω			
R9	45K				R28	3300Ω			
R10	10K				R29	18K			
R11	680Ω				R30	100Ω			
R12	5600Ω				R31	1000Ω			
R13	22K				R32	Temp. Comp.			Pt. #M-8607
R14	680Ω				R33	56Ω			
R15	33K				R34	560Ω			
R16	1000Ω				R35	56Ω			
R17	470Ω				R36	Temp. Comp.			Pt. #M-8607
R18	5600Ω				R37	0.5Ω			
R19	3900Ω				R38	0.5Ω			
R20	27K				R39	22Ω			
R21	47K				R40	22Ω			

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		TOSHIBA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	2nd FM IF	IT-1077					
L2	Loopstick	LH-242					
L3	AM Osc.	LH-179					
L4	1st AM IF	IT-1081					
L5	3rd FM IF	IT-1078					
L6	2nd AM IF	IT-1082					
L7	Ratio Det. Prim.	IT-1078					
L8	Ratio Det. Sec.	IT-1080					
L9	3rd AM IF	IT-1083					

## TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			TOSHIBA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	PRI.	SEC1						
T1	2.8	1	DT-1245					
		SEC. 2						
		1						

## SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				TOSHIBA PART No.	QUAM PART No.	
	SIZE	FIELD	V. C. IMP.			
SP1	4"	PM	6-8Ω	SP-4005C	4A052B	

## BATTERIES

ITEM No.	VOLTAGE	TOSHIBA PART No.	REPLACEMENT DATA				NOTES		
			MURCHESON		EVEREADY			MALLORY	
			A	B	A	B	A	B	
M1	1.5V	UM 1		800		A100		M 100	4 Required

# DESCRIPTIONS (Continued)

## SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		TOSHIBA PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	
M2	1N60			1N80	AVC (Pigtail)
M3	1N80			1N80	Limiter (Pigtail)
M4	1N60			1N80	FM Det. (Pigtail)
M5	1N60			1N80	
M6	1N80			1N80	AM Det. (Pigtail)

## MISCELLANEOUS

ITEM No.	PART NAME	TOSHIBA PART No.	NOTES
M7 M8 M9	FM Tuner Tuning Cap. Switch		Complete 4 Gang FM-AM (Pushbutton Type)

## WIRING DATA

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