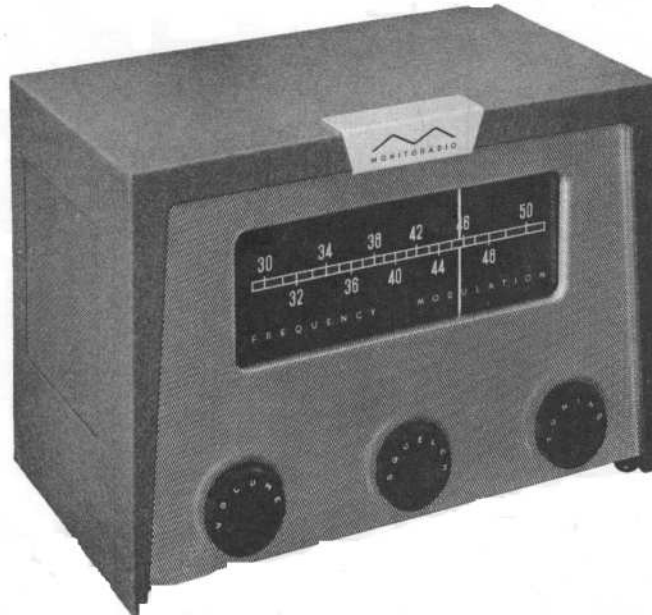


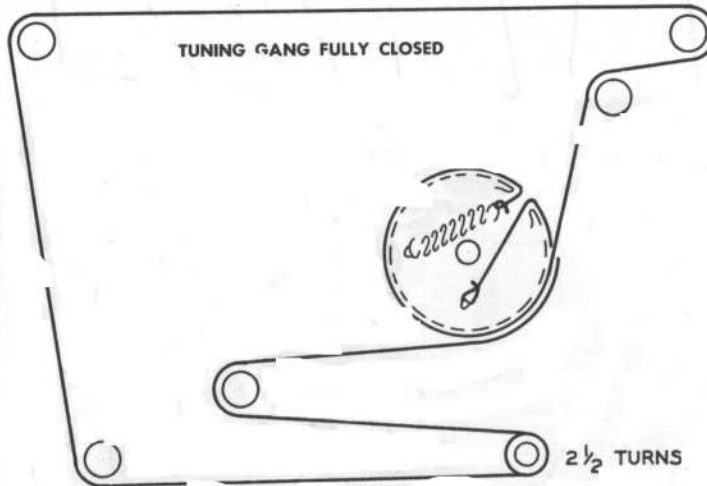


MONITORADIO  
MODEL MR-33



MONITORADIO  
MODEL MR-33

TRADE NAME	Monitoradio Model MR-33	
MANUFACTURER	Monitoradio Div., I. D. E. A., Inc., 7900 Pendleton Pike, Indianapolis 26, Indiana	
TYPE SET	AC Operated FM Receiver	
TUBES (Eight)	Types 6BJ6 RF Amplifier, 6U8 Mixer-Osc., 6BJ6 1st IF Amplifier, 6BJ6 2nd IF Amplifier, 6AL5 Ratio Detector, 12AX7 Squelch-AF Amp., 6AK6 Output, 6X4 Rectifier	
POWER SUPPLY	105-125 Volts AC-60 Cycles	RATING .35 Amp. @ 117 Volts AC (36 Watts)
TUNING RANGE - FREQ. MOD.	30MC-50MC	

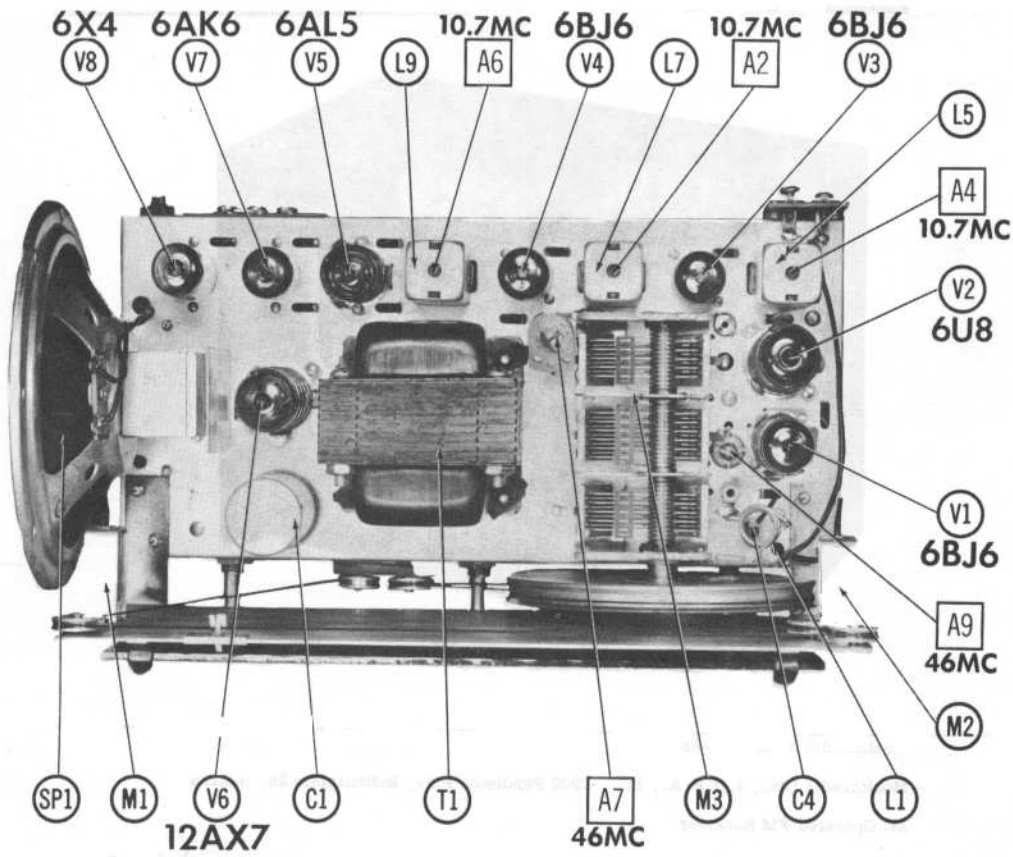


DIAL CORD STRINGING

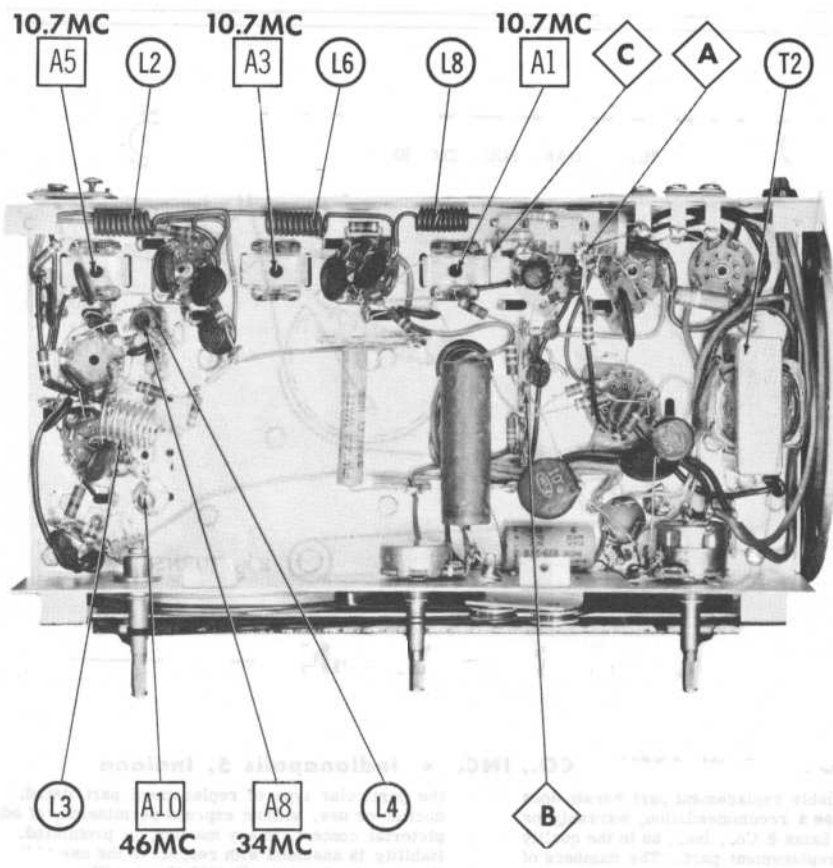
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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 H24

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. © 1957 Howard W. Sams & Co., Inc., Indianapolis 5, Indiana. Printed in U.S. of America

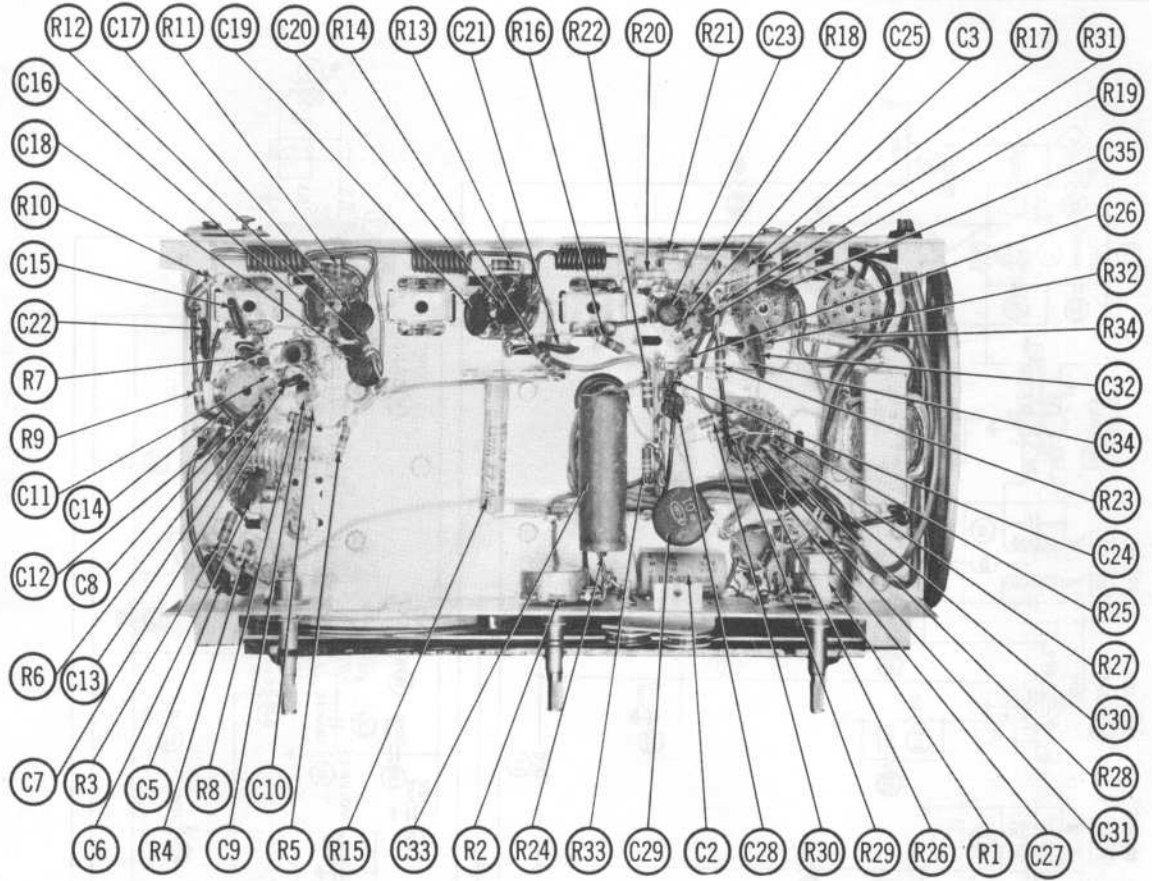


**CHASSIS-TOP VIEW**



**CHASSIS BOTTOM VIEW INDUCTOR AND ALIGNMENT IDENTIFICATION**

# CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS TUBES ( GENERAL ELECTRIC, SYLVANIA )

ITEM No.	USE	TYPE	NOTES	ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6B46		V5	Ratio Detector	6AL5	
V2	Mixer-Oscillator	6U8		V6	Squelch-AF Amp.	12AX7	
V3	1st. IF Amplifier	6B46		V7	Output	6AK6	
V4	2nd. IF Amplifier	6B46		V8	Rectifier	6X4	

## ELECTROLYTIC CAPACITORS

ITEM No.	CAP.	VOLT.	REPLACEMENT DATA						
			Monitorradio PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	40	250	300-082-8	AFH3-20	XCO732	FP321	TMT-20	T-080	TVL-3540
C2	20	250	300-109-1	PRS50V2	BBR2-50	TC302	TD-2-50	MT-0502	TVA-1301
C3	2	50	300-109-1	PRS50V2	BBR2-50	TC302	TD-2-50	MT-0502	TVA-1301

## 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 CAP.	VOLT	REPLACEMENT DATA						NOTES
			Monitorradio PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	
C4	56	5000		SI 56	DD-560	LI0Q56	ED-56	UC-5456	5GA-Q56
C5	5000			BFD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C6	5000			BFD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C7	1000			BFD-001	DD-102	BYA6D1	ED-1000	DCS21	5HK-D1
C8	56	500		SI 56	DD-560	LI0Q56	ED-56	UC-5456	5GA-Q56
C9	82	500		1469-000082	TCZ-82	22R5Q82	TCO-82		MS-482
C10	68	500		N750-SI 68	TCN-68	L79Q68	TC7-68		5TCC-Q68
C11	27	5000		BPD-005	DD-502	CTABQ27U	TC7-27	DCS25	5HK-D5
C12	1000			BPD-001	DD-102	BYA10D5	ED-1000	DCS21	5HK-D1
C13	1000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C14	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C15	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C16	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C17	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C18	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C19	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C20	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C21	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C22	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C23	1000			BPD-001	DD-102	BYA6D1	ED-1000	DCS21	5HK-D1
C24	330			BPD-00033	DD-331	LI0T33	ED-330	UC-5333	5GA-T33
C25	330			BPD-00033	DD-331	LI0T33	ED-330	UC-5333	5GA-T33
C26	330			BPD-00033	DD-331	LI0T33	ED-330	UC-5333	5GA-T33
C27	10000			BPD-01	DD-103	BYA6S1	ED-01	DC811	9HK-S1
C28	1000			BPD-01	DD-103	BYA6S1	ED-1000	DC821	9HK-D1
C29	10000			BPD-01	DD-103	BYA6S1	ED-01	DC811	9HK-S1
C30	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C31	1000			BPD-01	DD-102	BYA6D1	ED-1000	DC821	9HK-D1
C32	10000			BPD-01	DD-103	BYA6S1	ED-01	DC811	9HK-S1
C33	25	400		P488N-25	DD-271	CU94P25	GEM-4025	UC-5327	4TM-P25
C34	270			BPD-0027	DD-271	LI0T27	ED-270	UC-5327	5GA-T27
C35	5000			BPD-005	DD-502	BYA10D5	ED-005	DCS25	5HK-D5
C36	1.5-10				828-10				
C37	1-7.5				828-7				
C38	5-20				828-7		532-B		

## CONTROLS

ITEM No.	RESIST-ANCE	WATTS	REPLACEMENT DATA				INSTALLATION NOTES	
			Monitorradio PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.		MALLORY PART No.
R1A	1Meg	1/2	100-093-8	B-70	A47-1Meg-Z	Q13-137	U53	Volume
B	Shaft			Not req.	KSS-3	Not req.	US-26	
C	Switch			KB-1	SWE-12	76-1	U28	Squelch
R2A	25K	1/2	100-093-9	B-27	A47-25K-Y			
B	Shaft			Not req.	KSS-3			

## PARTS LIST AND DESCRIPTIONS (Continued)

### RESISTORS

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

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Monitorradio PART No.	IRC PART No.	
R3	1Meg			BTS-1Meg	
R4	470K			BTS-470K	
R5	1000Ω			BTS-1000	
R6	100K			BTS-100K	
R7	10K			BTS-10K	
R8	470Ω			BTS-470	
R9	100Ω			BTS-100Ω	
R10	470Ω			BTS-470	
R11	82Ω			BTS-82	
R12	470Ω			BTS-470	
R13	82Ω			BTS-82	
R14	470Ω			BTS-470	
R15	2700Ω	4		BTS-470	
R16	68Ω			BTS-68	
R17	8.2Ω 5%	1		BTS-1000	
R18	1000Ω			BTS-1000	

### TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA			
	PRI.	SEC.	Monitorradio PART No.	Merit PART No.	Stancor PART No.	Triad PART No.
T1	117VCT ② .35A	375VCT ③ .052A ④ 2.5A	500-160-3			22R28 ①

① Use Universal Mtg. Brackets

### TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC.	Monitorradio PART No.	Merit PART No.	Stancor PART No.	Triad PART No.	
T2	8500Ω	3-4Ω	300-240-1	Z1116	A-8114	24S52	S-7X ① Drill new mounting hole.

## PARTS LIST AND DESCRIPTIONS (Continued)

### SPEAKER

ITEM No.	SIZE	TYPE	REPLACEMENT DATA		NOTES
			Monitorradio PART No.	QUAM PART No.	
SP1	5"	PM	750B21 ①	5A1	① Alternate Part #500-071-3

### COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		Monitorradio PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Antenna Coil	300-276-2				
L2	FL Choke	100-710-3				
L3	RF Coil	300-278-1	19-1000	BC-561	4602	L.1 Microhenry
L4	Osc. Coil	300-530				
L5	Input IF	300-077-2				
L6	FL Choke	100-710-2	16-3487	FM-254	1463	L.1 Microhenry
L7	Output IF	300-077-2	19-1000	BC-561	4602	L.1 Microhenry
L8	FL Choke	100-710-1	19-1000	BC-561	4602	L.1 Microhenry
L9	Ratio Del.	500-314	17-3498	FM-255	6205	

### MISCELLANEOUS

ITEM No.	PART NAME	Monitorradio PART No.	REPLACEMENT DATA		NOTES
			Monitorradio PART No.	Merit PART No.	
M1	Dial Light		#47		
M2	Dial Light		#47		
M3	Tuning Knob	500-150-4	3 Gang		
	Knob	300-531-1	Tuning		
	Knob	300-531-2	ON-OFF-Volume		
	Knob	300-531-3	Squeech		
	Dial Scale	500-168-1	Glass		
	Pointer	300-285-1			

# ALIGNMENT INSTRUCTIONS

## ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Turn volume and squelch controls fully clockwise.  
Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. To set pointer, turn tuning capacitor fully closed and set pointer to the extreme end of the low frequency end of dial.

### IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1. .001MFD	High side to pin 2 (grid) of 6U8 (V2). Low side to chassis.	10.7MC	Point of non-interference	DC probe to point $\text{A}$ . Common to chassis.	A1, A2, A3, A4, A5	Adjust for maximum deflection.
2. "	"	"	"	DC probe to point $\text{B}$ . Common to point $\text{C}$ .	A6	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

### IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
3. .001MFD	High side to pin 2 (grid) of 6U8 (V2). Low side to chassis.	10.7MC ( $\pm 200\text{KC}$ Swp)	Point of non-interference	Vert. Amp. to point $\text{A}$ . Low side to chassis.	A1, A2, A3, A4, A5	Disconnect stabilizing capacitor C3. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
4. "	"	"	"	Vert. Amp. to point $\text{B}$ . Low side to chassis.	A6	Reconnect capacitor C3. Adjust A6 for maximum straightness of diagonal line with 10.7MC marker appearing midway between peaks, similar to Fig. 2.

### RF ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5. 22 $\Omega$ Carbon Resistor	High side to antenna terminal #1. Low side to terminal #2.	46	46	DC probe to point $\text{A}$ . Common to chassis.	A7	Adjust for maximum deflection.
6. "	"	34	34	"	A8	Adjust for maximum deflection. Repeat steps 5 and 6.
7. "	"	46	46	"	A9, A10	Adjust for maximum deflection.
8. "	"	34	34	"	L1, L3	Compress or expand coils for maximum deflection. Repeat steps 7 and 8.

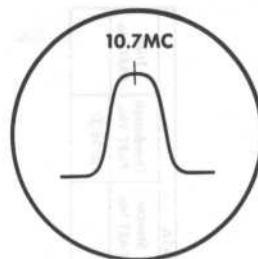


FIG. 1

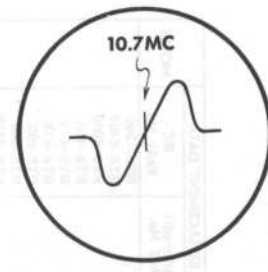


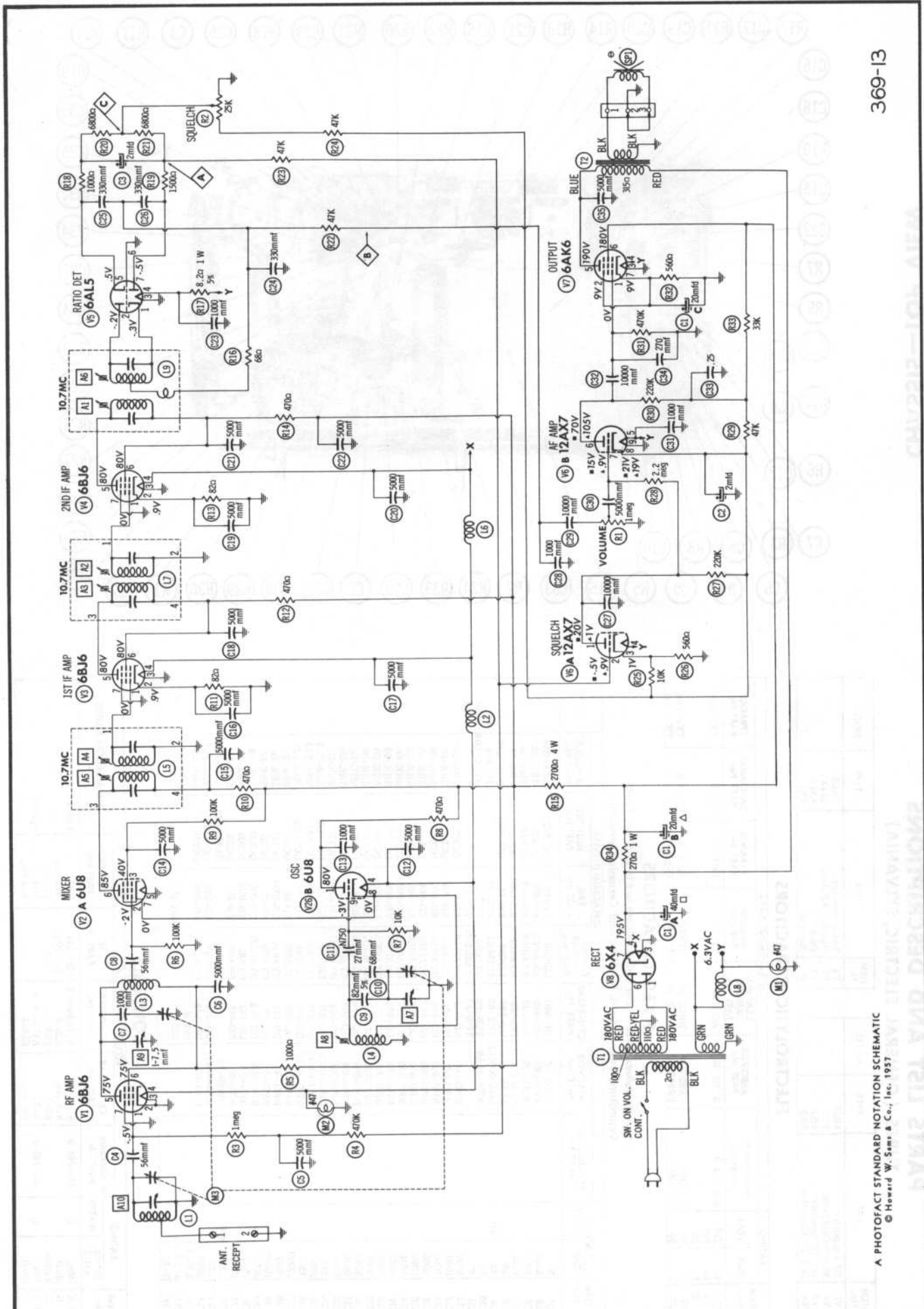
FIG. 2

### RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BJ6	1.5meg	0 $\Omega$	0 $\Omega$	.1 $\Omega$	*3.9K	*3.9K	0 $\Omega$		
V2	6U8	*3.4K	100K	*100K	.1 $\Omega$	0 $\Omega$	*3.4K	0 $\Omega$	0 $\Omega$	10K
V3	6BJ6	.6 $\Omega$	82 $\Omega$	0 $\Omega$	.1 $\Omega$	*3.4K	*3.4K	0 $\Omega$		
V4	6BJ6	.6 $\Omega$	82 $\Omega$	0 $\Omega$	.1 $\Omega$	*3.4K	*3.4K	0 $\Omega$		
V5	6AL5	INF.	INF.	0 $\Omega$	3 $\Omega$	■ 7.8K ▲ 26K	0 $\Omega$	■ 8.2K ▲ 26K		
V6	12AX7	*330K	■ 54K ▲ 70K	560 $\Omega$	.1 $\Omega$	.1 $\Omega$	*220K	2.4meg	10K	0 $\Omega$
V7	6AK6	470K	560 $\Omega$	0 $\Omega$	.1 $\Omega$	* 315 $\Omega$	*270 $\Omega$	560 $\Omega$		
V8	6X4	110 $\Omega$	INF.	0 $\Omega$	.1 $\Omega$	INF.	100 $\Omega$	9K		

- MEASURED FROM PIN 7 OF V8.
- SQUELCH CONTROL IN FULLY CLOCKWISE POSITION.
- ▲ SQUELCH CONTROL IN FULLY COUNTER-CLOCKWISE POSITION.





A PHOTOFACT STANDARD NOTATION SCHEMATIC  
 © Howard W. Sams & Co., Inc. 1957