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PHOTOFACT®

TRADE NAME : Poly-Comm Model SENIOR 23
 SUPPLIER : Polytronics Lab. Inc.,
 388 Getty Ave., Clifton, N. J.
 TYPE SET : 14 Tube Transceiver
 POWER SUPPLY : 110 - 120 Volts AC, 60 Cycles
 (or) 12 Volt Storage Battery
 RATING : 73 Watts , .73 Amp. @ 117VAC
 5.4 Amp. @12.6VDC
 TUNING RANGE: All 23 CB Channels



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A12, A15, A16..... GENERAL CEMENT #8271, 8722..... WALSCO #2519
 A13, A14, A17 thru A23.... GENERAL CEMENT #8282, 8606, 8606-L..... WALSCO #2526, 2543, 2544

RECEIVER ALIGNMENT

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .001mfd to pin 7 of V4, low side to chassis. (Tune to 455KC, Unmod.)	Any	A1, A2, A3, A4, A5, A6, A7, A8	Connect DC probe of VTVM to point Δ , common to chassis, adjust for maximum deflection.
High side thru .001mfd to pin 4 of V2 (1st mixer), low side to chassis. (Tune to 6MC Mod.)	Any	A9, A10, A11, A12	"
High side to antenna terminal, low side to chassis. (Tune to desired channel.)	Near Mid-range	A13, A14, A15, A16	"

TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 19, Subpart D, Section 19.71).

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

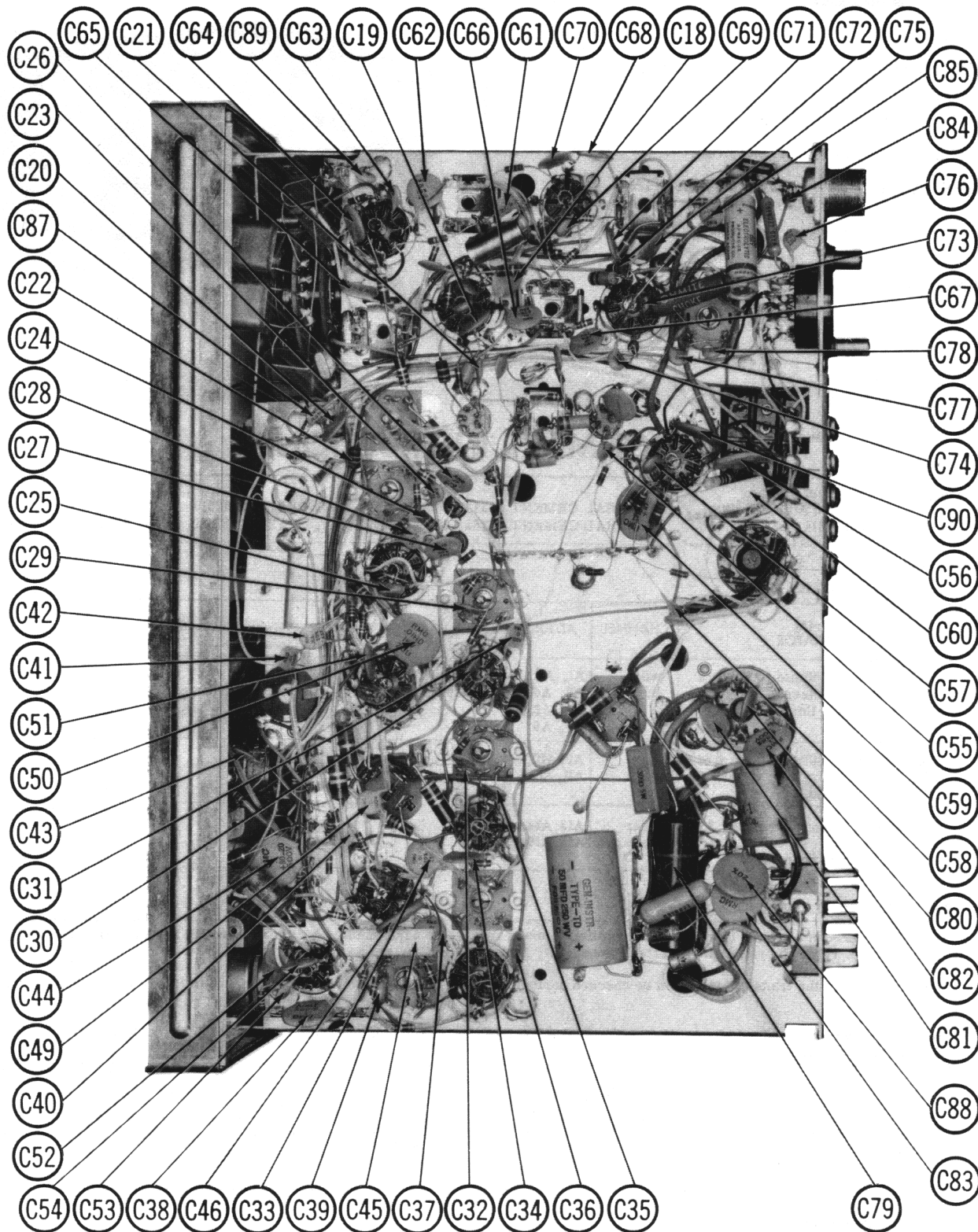
	CHANNEL	ADJUST	REMARKS
Use front panel meter. Meter switch to S-RF.	Any	A17, A18, A19, A20, A21, A22, A23	Adjust for maximum. Meter should indicate a MINIMUM of 3.5 Watts.

RELAY SENSITIVITY

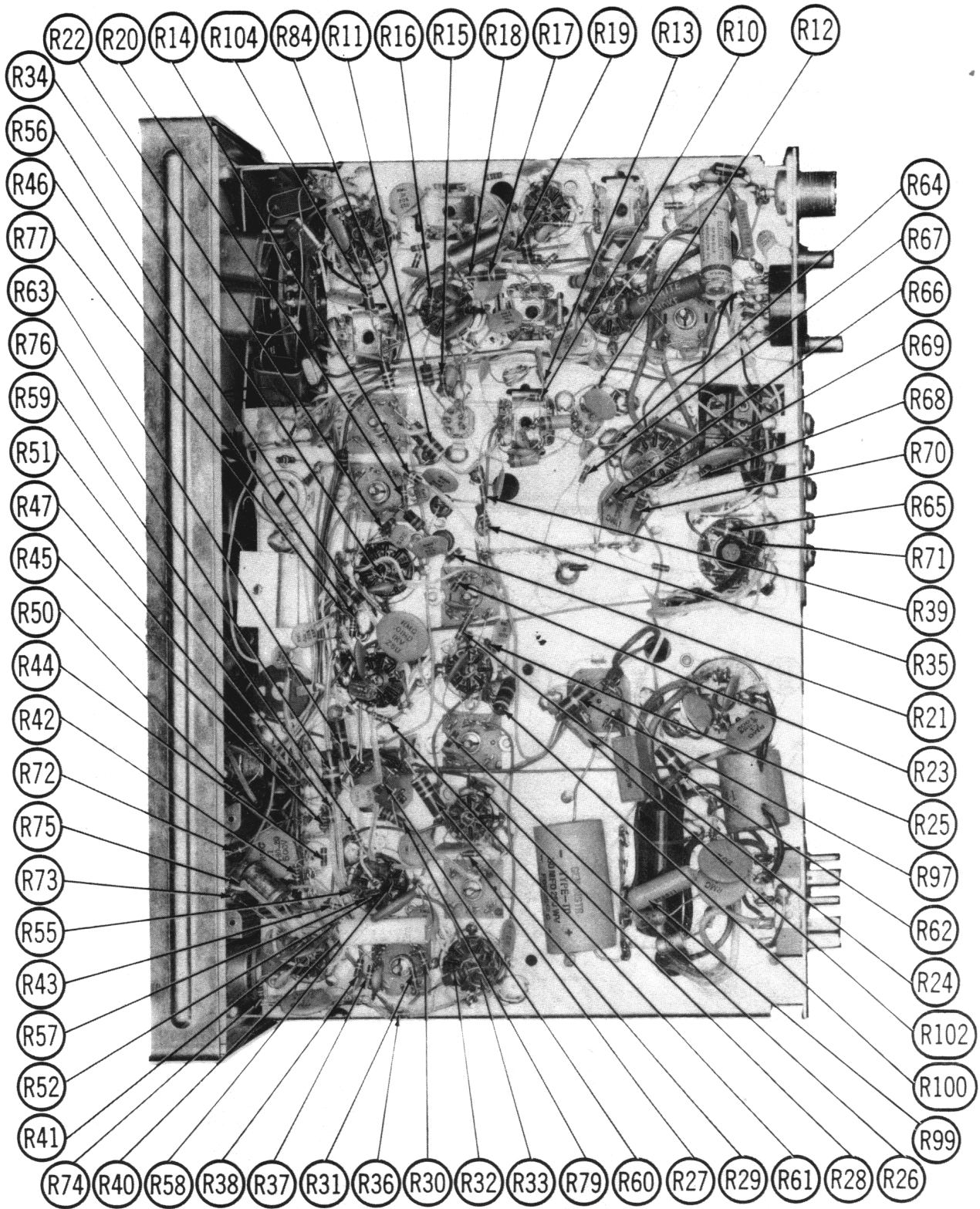
		ADJUST	REMARKS
Connect DC probe of VTVM to TP8, (335V), common to TP4 (Pin 1, V11)		R4	Adjust R4 to close relay. With relay closed, turn channel selector to a point between channels and adjust R4 for a reading of 34 volts.

POLY-COMM MODEL SENIOR 23

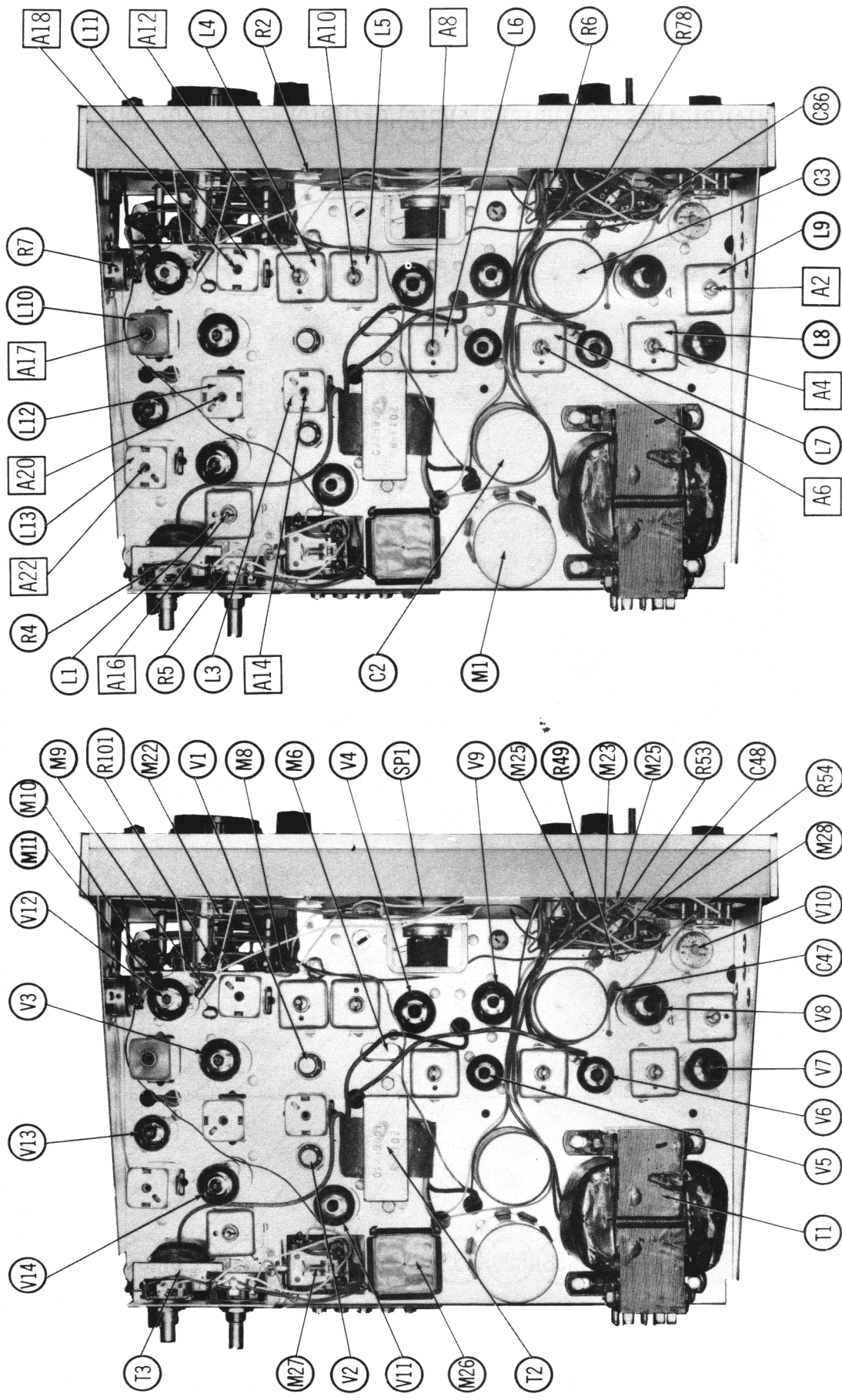
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



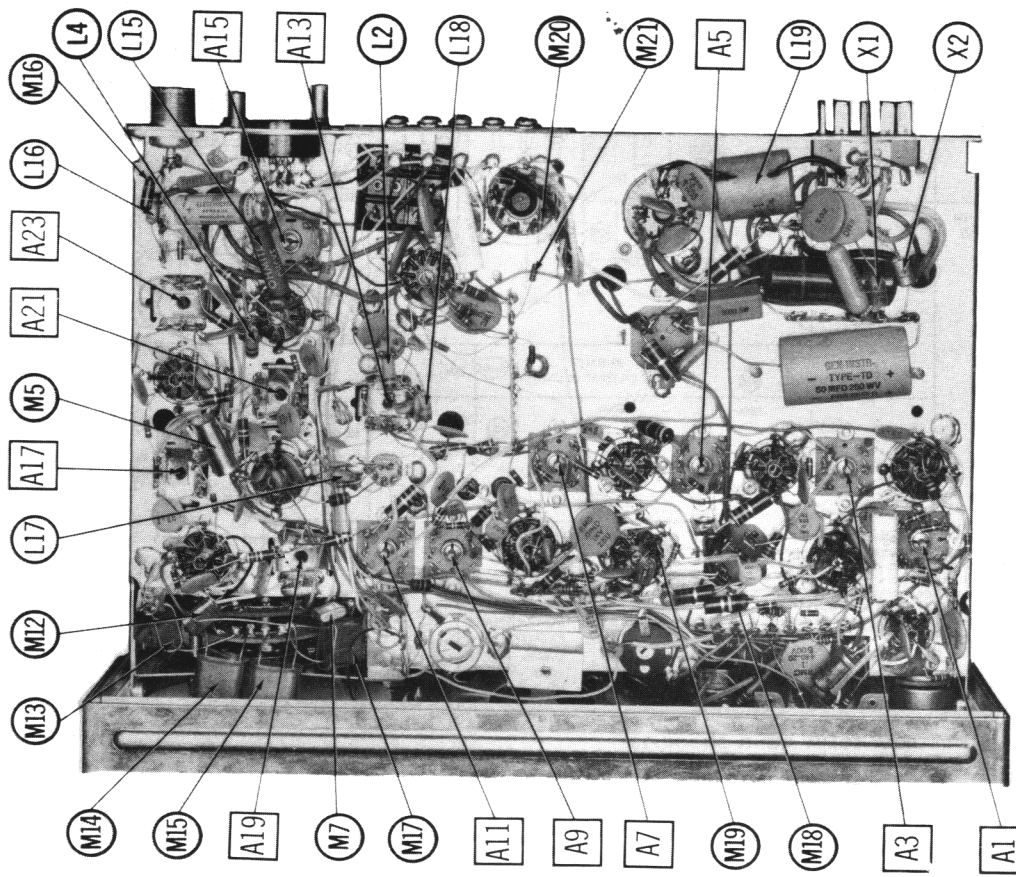
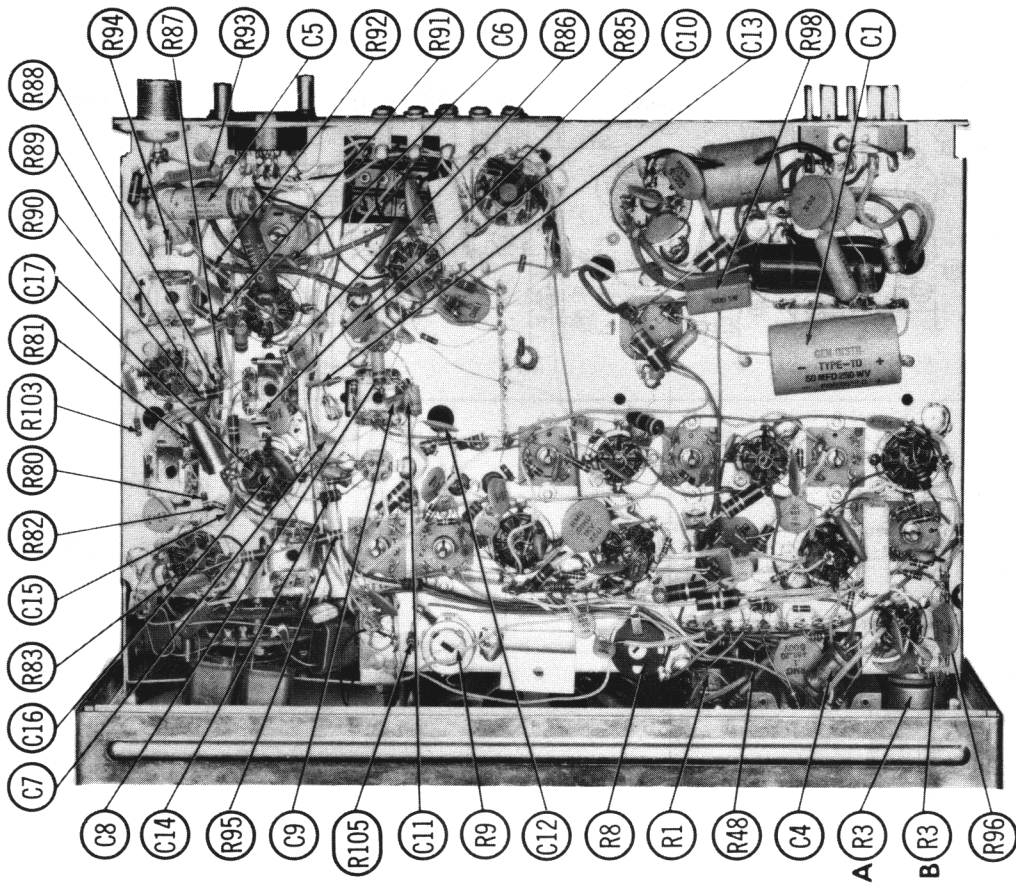
CHASSIS BOTTOM VIEW CAPACITOR IDENT
(ALSO SEE PAGE 143)



CHASSIS BOTTOM VIEW RESISTOR IDENT
(ALSO SEE PAGE 143)



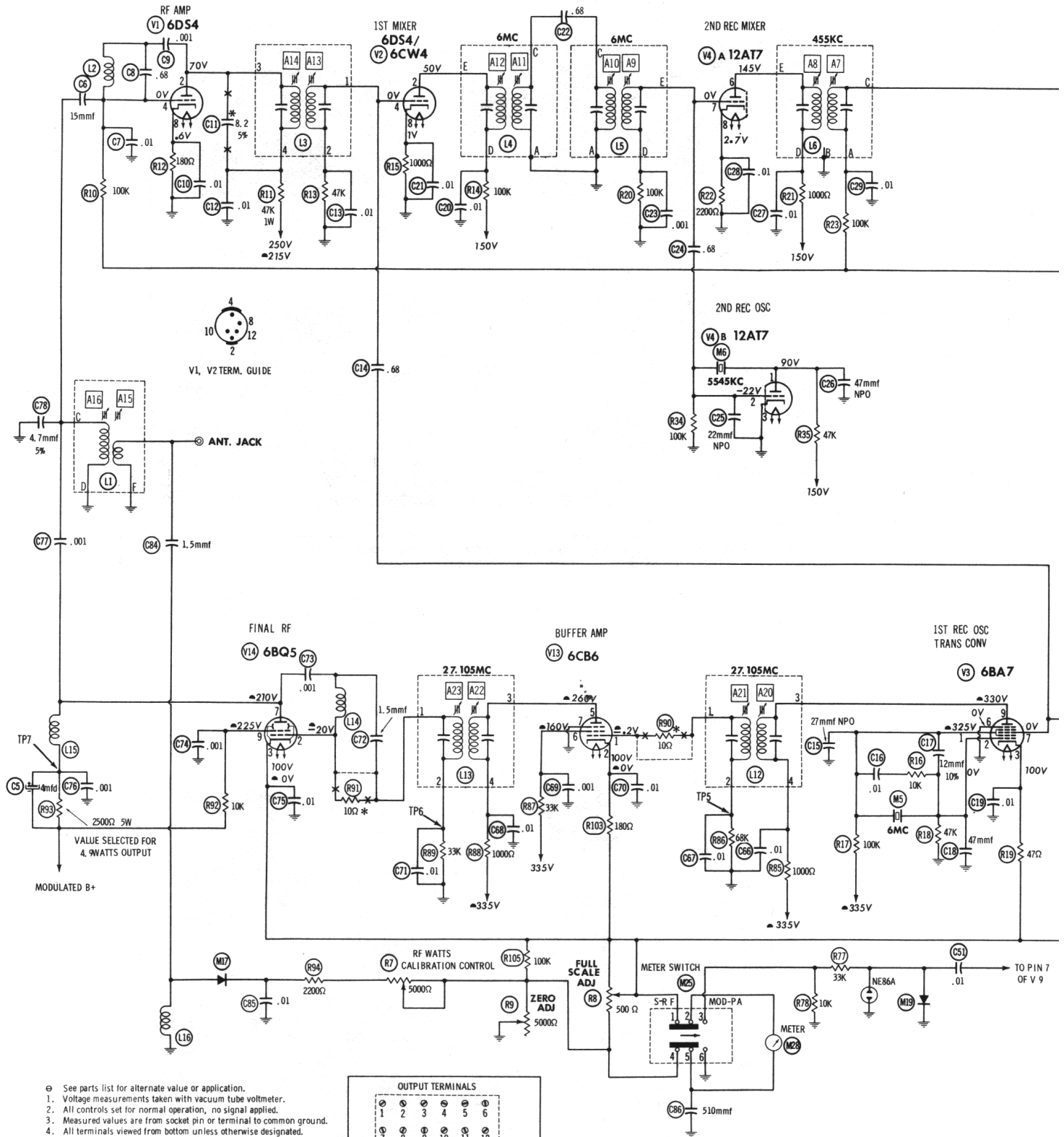
CHASSIS TOP VIEW



ALIGNMENT INDUCTOR AND MISC

CHASSIS BOTTOM VIEW

CAPACITOR AND RESISTOR



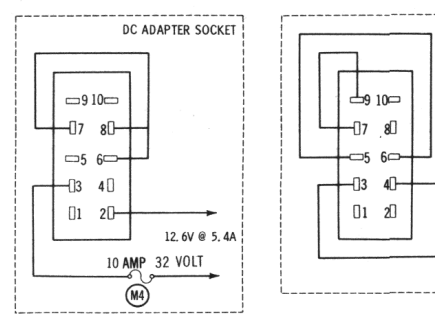
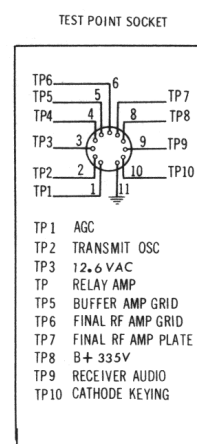
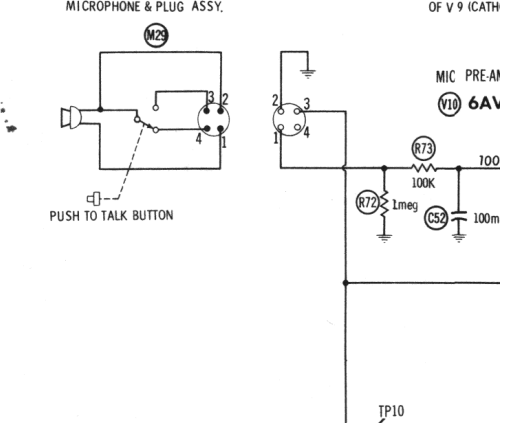
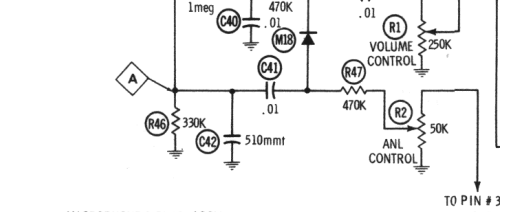
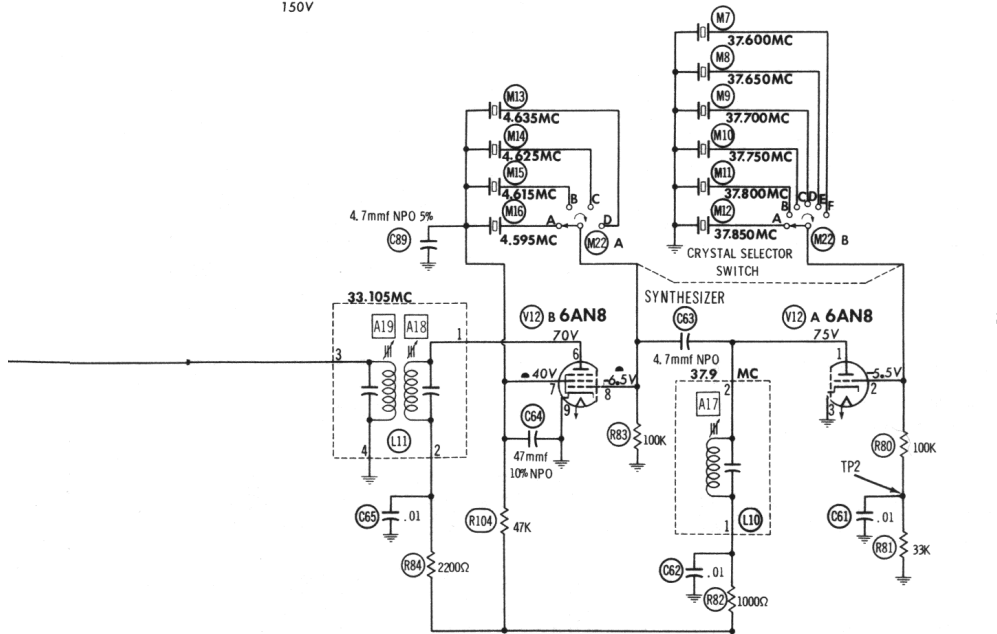
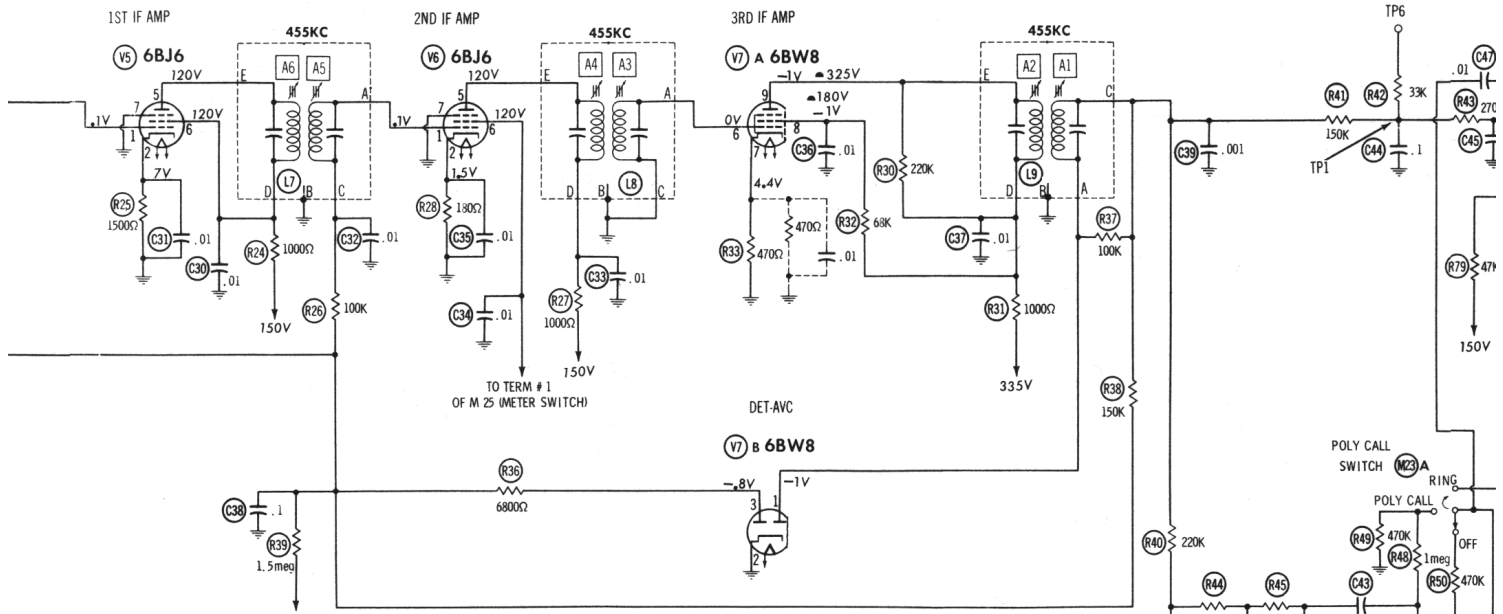
- ⊖ See parts list for alternate value or application.
 - 1. Voltage measurements taken with vacuum tube voltmeter.
 - 2. All controls set for normal operation, no signal applied.
 - 3. Measured values are from socket pin or terminal to common ground.
 - 4. All terminals viewed from bottom unless otherwise designated.
 - 5. Numbers assigned to terminals may not be found on the unit.
 - 6. Supply voltage maintained at rated value for voltage readings.
- * NOT USED IN SOME VERSIONS

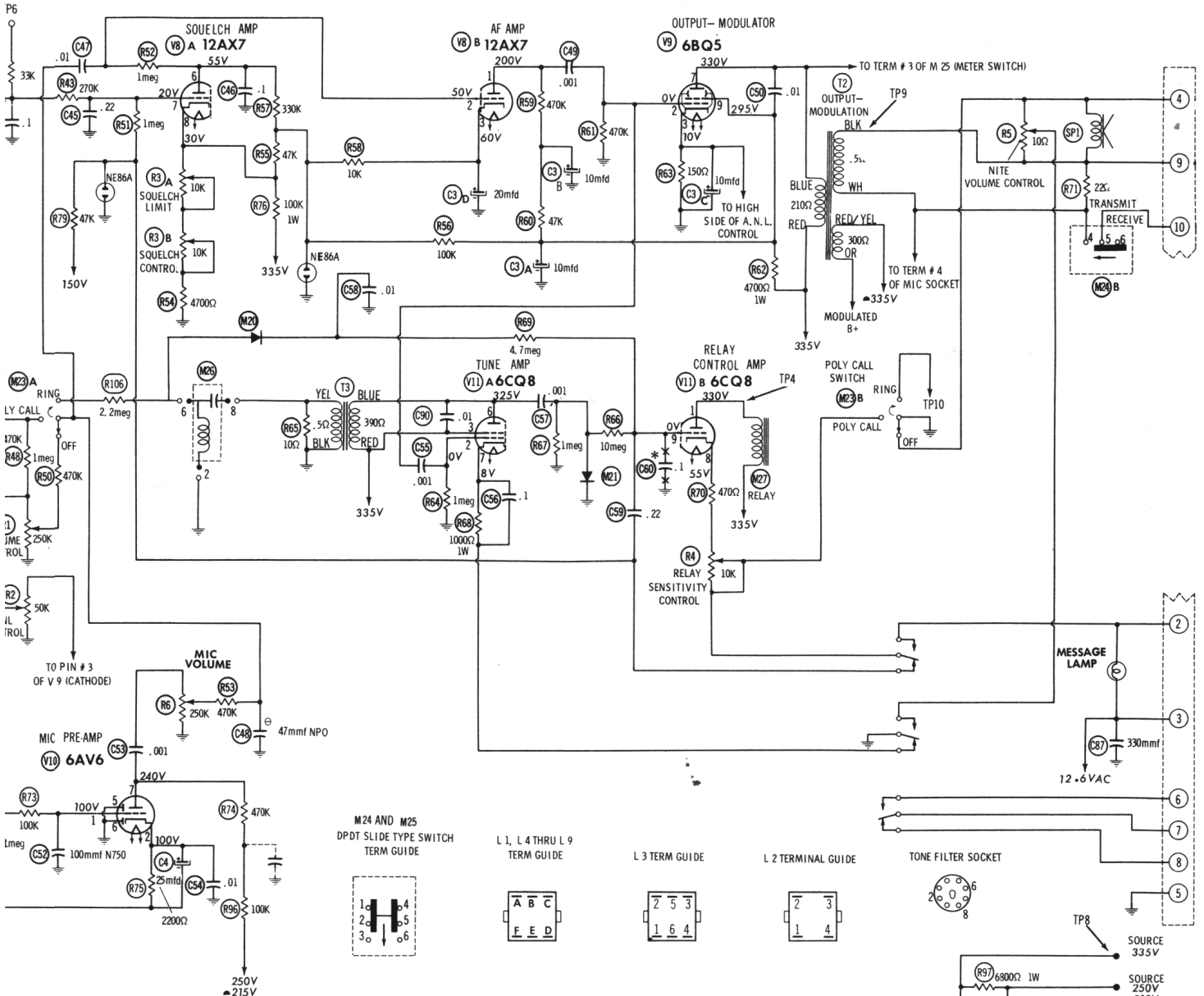
OUTPUT TERMINALS					
1	2	3	4	5	6
7	8	9	10	11	12
TERMINALS 4 & 9		MONITOR SPEAKER			
TERMINALS 9 & 10		PA SPEAKER			
TERMINALS 2 & 3		12.6VAC			
TERMINALS 6, 7, & 8		RELAY			
TERMINAL 5		COMMON			

CRYSTAL SELECTOR M22A	
POSITION A	CHANNELS 4, 8, 12, 16, 20, & 23
POSITION B	CHANNELS 3, 7, 11, 15, 19 & 22A
POSITION C	CHANNELS 2, 6, 10, 14, 18, & 22
POSITION D	CHANNELS 1, 5, 9, 13, 17, & 21

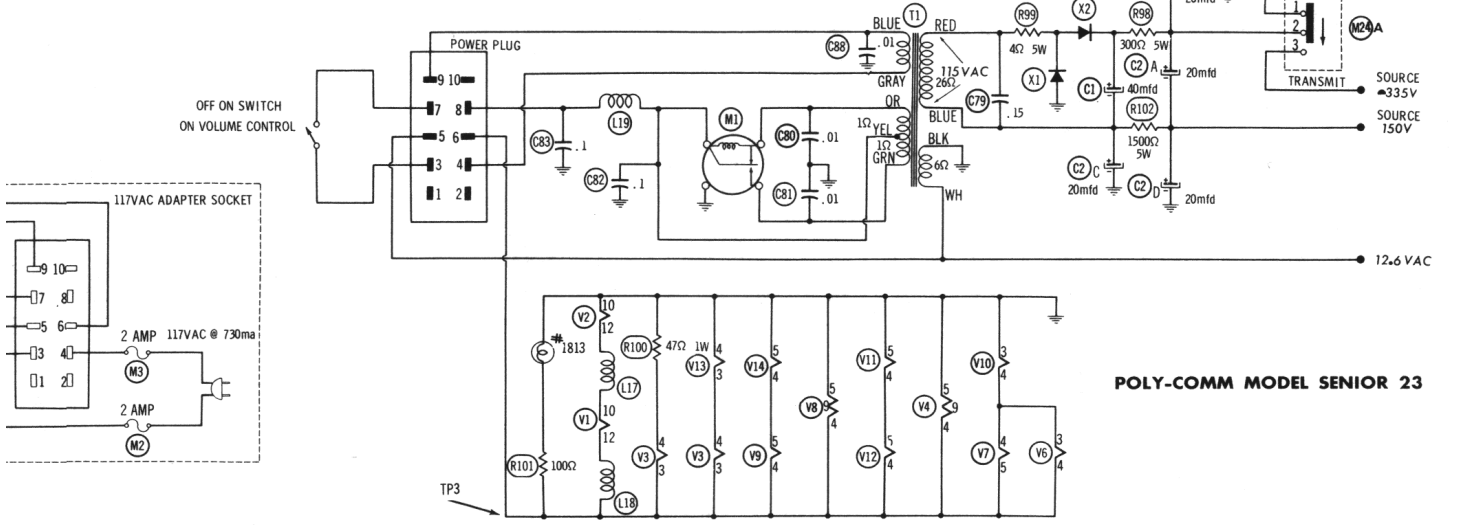
CRYSTAL SELECTOR M22B	
POSITION A	CHANNELS 21 THRU 23
POSITION B	CHANNEL 17 THRU 20
POSITION C	CHANNELS 13 THRU 16
POSITION D	CHANNELS 9 THRU 12
POSITION E	CHANNELS 5 THRU 8
POSITION F	CHANNELS 1 THRU 4

POLY-COMM MODEL SENIOR 23





10



POLY-COMM MODEL SENIOR 23



RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6DS4		†55K		400K				180Ω	
V2	6CW4		‡ 100K		47K				1000Ω	
V3	6BA7	†100K	47K	▲47Ω	FIL	FIL	0Ω	.2Ω	0Ω	†1K
V4	12AT7	‡ 47K	100K	0Ω	FIL	FIL	‡ 1000Ω	100K	2200Ω	FIL
V5	6BJ6	300K	1500Ω	FIL	FIL	‡1000Ω	‡1000Ω	0Ω		
V6	6BJ6	300K	180Ω	FIL	FIL	‡1000Ω	†55K	0Ω		
V7	6BW8	125K	0Ω	240K	FIL	FIL	.1Ω	180Ω	▲†68K	▲†1000Ω
V8	12AX7	†500K	†1.5meg	†115K	FIL	FIL	†450K	240K	8K	
V9	6BQ5	NC	470K	150Ω	FIL	FIL	NC	†210Ω	NC▲	†4700Ω
V10	6AV6	1.1meg	▲2200Ω †56K	FIL	FIL	0Ω	0Ω	†575K		
V11	6CQ8	†5000Ω	1meg	†300Ω	FIL	FIL	†700Ω	1000Ω	‡50K	11meg
V12	6AN8	†40K	133K	0Ω	FIL	FIL	†42K	†87K	100K	0Ω
V13	6CB6	68K	▲180Ω	FIL	FIL	▲1300Ω	▲33K	0Ω		
V14	6BQ5	NC	33K	▲0Ω	FIL	FIL	NC	▲†3100Ω	NC	▲†10.6K

† MEASURED FROM CATHODE OF X 2. ‡ MEASURED FROM JUNCTION OF C2D AND R 102.
 ▲ MEASURED IN TRANSMIT POSITION.

POLY-COMM MODEL SENIOR 23

PARTS LIST AND DESCRIPTION

TUBES

ITEM No.	USE	GENERAL ELECTRIC		RCA	RAYTHEON	SYLVANIA	TYPE
		TYPE	ITEM No.	USE	TYPE		
V1	RF Amplifier	6DS4	V8	Squelch - AF Amplifier	12AX7		
V2	1st Receiver Mixer	6CW4/ 6DS4	V9	Output-Modulator	6BQ5		
V3	1st Transmitter Oscillator- Transmitter Converter	6BA7	V10	Mic. Preamplifier	6AV6		
V4	2nd Receiver Mixer- 2nd Receiver Oscillator	12A T7	V11	Tune Amplifier- Relay Control	6CQ8		
V5	1st IF Amplifier	6BJ6	V12	Trans. Osc. -Mixer	6AN8		
V6	2nd IF Amplifier	6BQ6	V13	Buffer	6CB6		
V7	3rd IF Amplifier- Detector-AGC	6BW8	V14	Final RF Output	8927/ 6BQ5		

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		NOTES
			MALLORY PART No.	SARKES TARZIAN PART No.	
X1	.085A *		IN2070	F6	* .125A Transmit
X2	.085A *		IN2070	F6	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	VOLTS.	REPLACEMENT DATA						
			POLY-COMM PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	40	250		PRS-1580	BR4025	QTI-14	TD-40-250	TC58	TVL-1511
C2A	20	400		AFH4-14	D0130	XC4-14	TMQ-4616	FP444	TVL-4763
C3	10	450		AFH4-59	D0480		TMQ-4505	FP434.5	TVL-4723
C4	25	25		PRS260	BBR25-25	QTI-15	TD-50-25	TC26	TVL-1205
C5	4	150		PRS1400	BBR4-150	QTI-2	TD-4-150	TTJ50X4	TVL-1402

PARTS LIST AND DESCRIPTION (CONTINUED)

RESISTORS (Power and Special)

ITEM No.	RATING		REPLACEMENT DATA		REPLACEMENT DATA	
	PRI.	SEC.	IRC PART No.	WORKMAN PART No.	IRC PART No.	WORKMAN PART No.
R93	2500Ω 5W		PW5-2500	5W-SQ-2500		
R98	300Ω 5W		PW5-300	5W-SQ-300		

Note 1. Value selected for 4.9 Watts output.

TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC.	POLY-COMM PART No.	STANCOR PART No.	THORDARSON PART No.	
T1	117VAC @ 115VAC .6A or @ .85A 12.6VDC DC @ 2.4A (1.125ADC)*	SEC. 2 12.6VAC @ 4.9A				* Transmit

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	POLY-COMM PART No.	STANCOR PART No.	THORDARSON PART No.	
T2			2013-B			

TRANSFORMER (COUP)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	POLY-COMM PART No.	STANCOR PART No.	THORDARSON PART No.	
T3	3-4Ω	14K	715-W-1A			

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
	PRI.	SEC.	POLY-COMM PART No.	QUAM PART No.	
SPI	4" PM	3-4Ω		4A07	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA		NOTES
				POLY-COMM PART No.	CORNELL-DUBILIER PART No.	
M1	Interrupter	12.6	115v		G1601	

FUSES

ITEM No.	TYPE	RATING	POLY-COMM PART No.		LITTELFUSE PART No.		BUSS PART No.
			FUSE	HOLDER	FUSE	HOLDER	
M2	3AG	2A 250V			313002 (3AG 2A 250V)		
M3	3AG	2A 250V			313002 (3AG 2A 250V)		
M4	AGC	10A 32V			307010 (3AG 10A 32V)	342001	HKP

MISCELLANEOUS

ITEM No.	PART NAME	POLY-COMM PART No.	NOTES
M5	Crystal		6MC
M6	Crystal		5545KC
M7	Crystal		37.600MC (Channels 1 thru 4)
M8	Crystal		37.650MC (Channels 5 thru 8)
M9	Crystal		37.700MC (Channels 9 thru 12)
M10	Crystal		37.750MC (Channels 13 thru 16)
M11	Crystal		37.800MC (Channels 17 thru 20)
M12	Crystal		37.850MC (Channels 21 thru 23)
M13	Crystal		4.825MC (Channels 1, 5, 9, 13, 17, & 21)
M14	Crystal		4.85MC (Channels 2, 6, 10, 14, 18, & 22)
M15	Crystal		4.86MC (Channels 3, 7, 11, 15, 19, & 22A)
M16	Crystal		4.95MC (Channels 4, 8, 12, 16, 20 & 23)
M17	Diode		ANL Rectifier (IN60)
M18	Diode		Meter Rectifier (HD6226)
M19	Diode		Relay Amp. Grid Coupling (HD6226)
M20	Diode		Relay Amp. Grid Coupling (HD6226)
M21	Diode		Channel Selector (Rotary Water Type)
M22	Switch		Poly-Call (3 Position Water, Spring Return from "ring" Position.
M23	Switch		Transmit-PA (DPDT Slide Type)
M24	Switch		Meter, S/RF-Mod/PA (DPDT Slide Type)
M25	Switch		G (2625CPS)
M26	Tone Filter		A (1725CPS)
	Tone Filter		B (1875CPS)
	Tone Filter		C (2025CPS)
	Tone Filter		D (2175CPS)
	Tone Filter		E (2325CPS)
	Tone Filter		F (2475CPS)
	Tone Filter		H (2775CPS)
	Tone Filter		I (2925CPS)
M27	Relay		Poly-Call and Controlling Circuit
M28	Meter		S/RF-Mod/PA
M29	Microphone Ass'y.		Includes Push-to-talk Switch, Cable, and Plug

WIRING DATA

General-use Hook-up Wire	8530 (Solid) Available in 12 Colors
Shielded Antenna Lead	8524 (Stranded) Available in 12 Colors
	8214 Lowest Loss (RG-8/U Type)
	8237 Low Loss (RG-8/U)
	8240 (Solid) Miniature (RG-58/U)
	8259 (Stranded) Miniature (RG-58A/U)
	8497 3 Conductor - 1 Shielded for Press-to-Talk (Neoprene)
	8496 3 Conductor - 1 Shielded for Press-to-Talk (Vinyl)
	7300-Series Spark-Plug Sets
	Use BELDEN No. 8661 (3/8 In.)
	Use BELDEN No. 8661 (3/8 In.)