

SAMS PHOTOFACT[®] CB RADIO SERIES



CB-17
17
SEPTEMBER 1968



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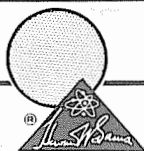
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HOWARD W. SAMS & CO., INC.

Indianapolis, Indiana

Circuit Shop Audio



PHOTOFACT[®] with

CIRCUITRACE[®]

TRADE NAME: Midland Model 13-133C
SUPPLIER: For Current Address, See Annual Index
POWER SUPPLY: 12 Volts DC
RATING: .018 Amp @ 12VDC (Receive)
.120 Amp @ 12VDC (Transmit)
TUNING RANGE: Any 2 CB Channels 1 thru 23



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A10

GENERAL CEMENT: 8868, 8987, 9089

WALSCO: 2531-X, 2541, 2587

RECEIVER ALIGNMENT

Connect an AC VTVM across Speaker Voice Coil. Turn Volume control full clockwise, turn squelch control fully counterclockwise.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to Base of Q2 (Rec. Mixer), low side to chassis. Tune to 455KC (Mod.)	Any	A1, A2, A3, A4	Adjust for maximum.
High side thru .01mfd to Antenna Receptacle. Low side to chassis. Set Frequency to 27.035MC. Channel 7 (Mod.)	7	A5, A6, A7	Adjust for maximum.

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 95, SUBPARTS C & D).

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.

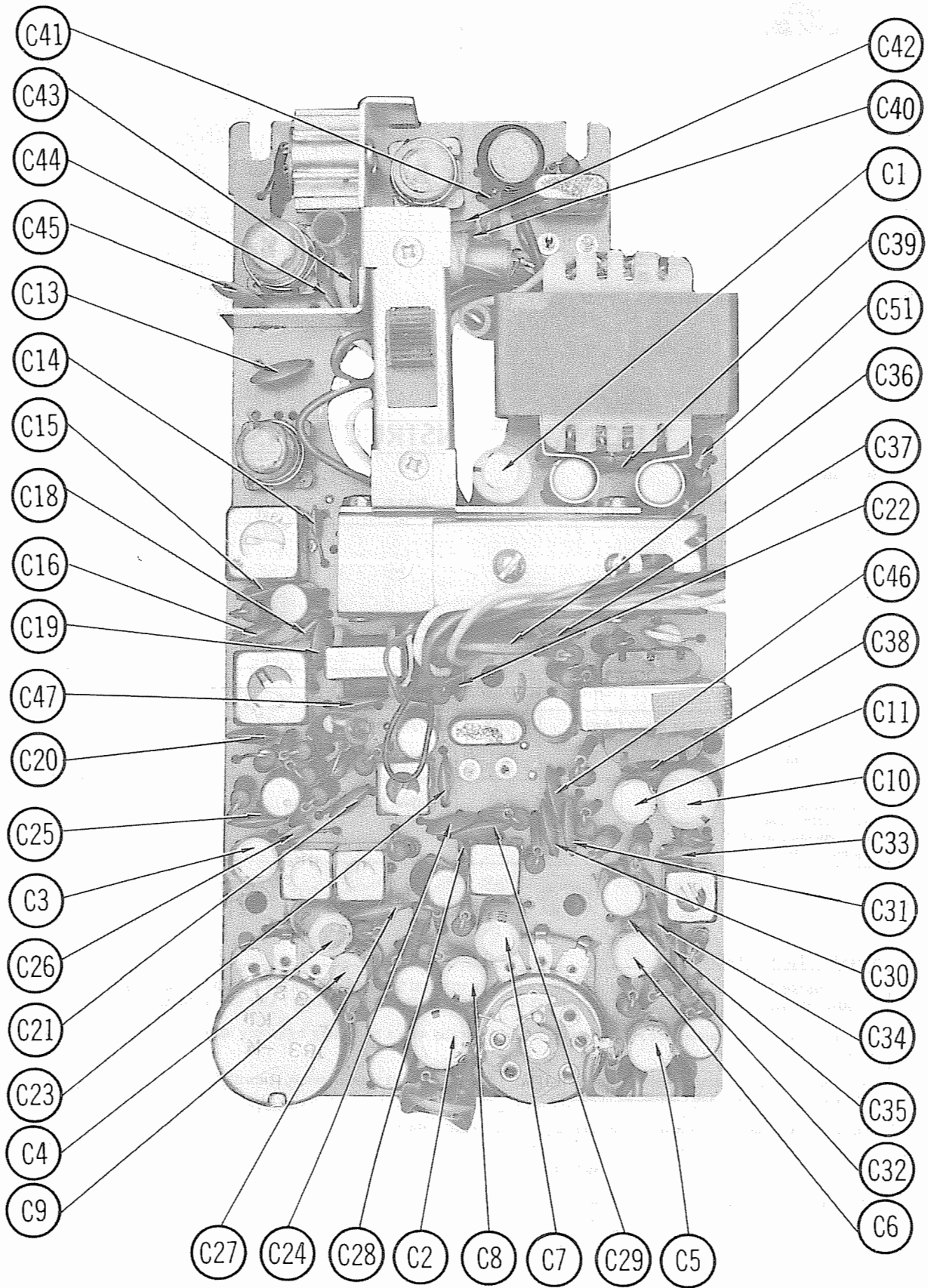
Connect either 500 Ω dummy load or the normally used antenna system.

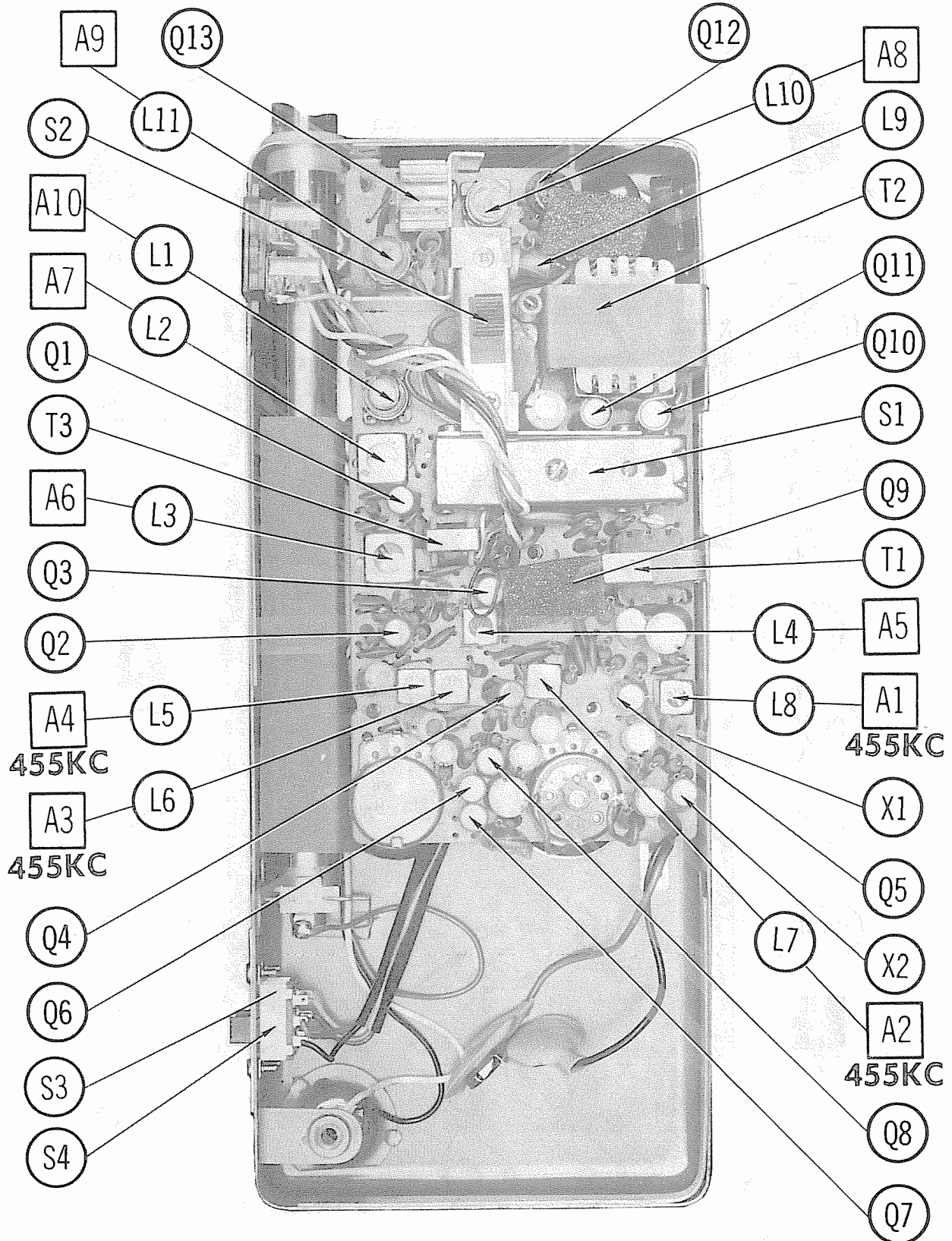
INDICATOR	ADJUST	REMARKS
RF Watt Meter or Field Strength Meter.	A8, A9, A10	Adjust for maximum.

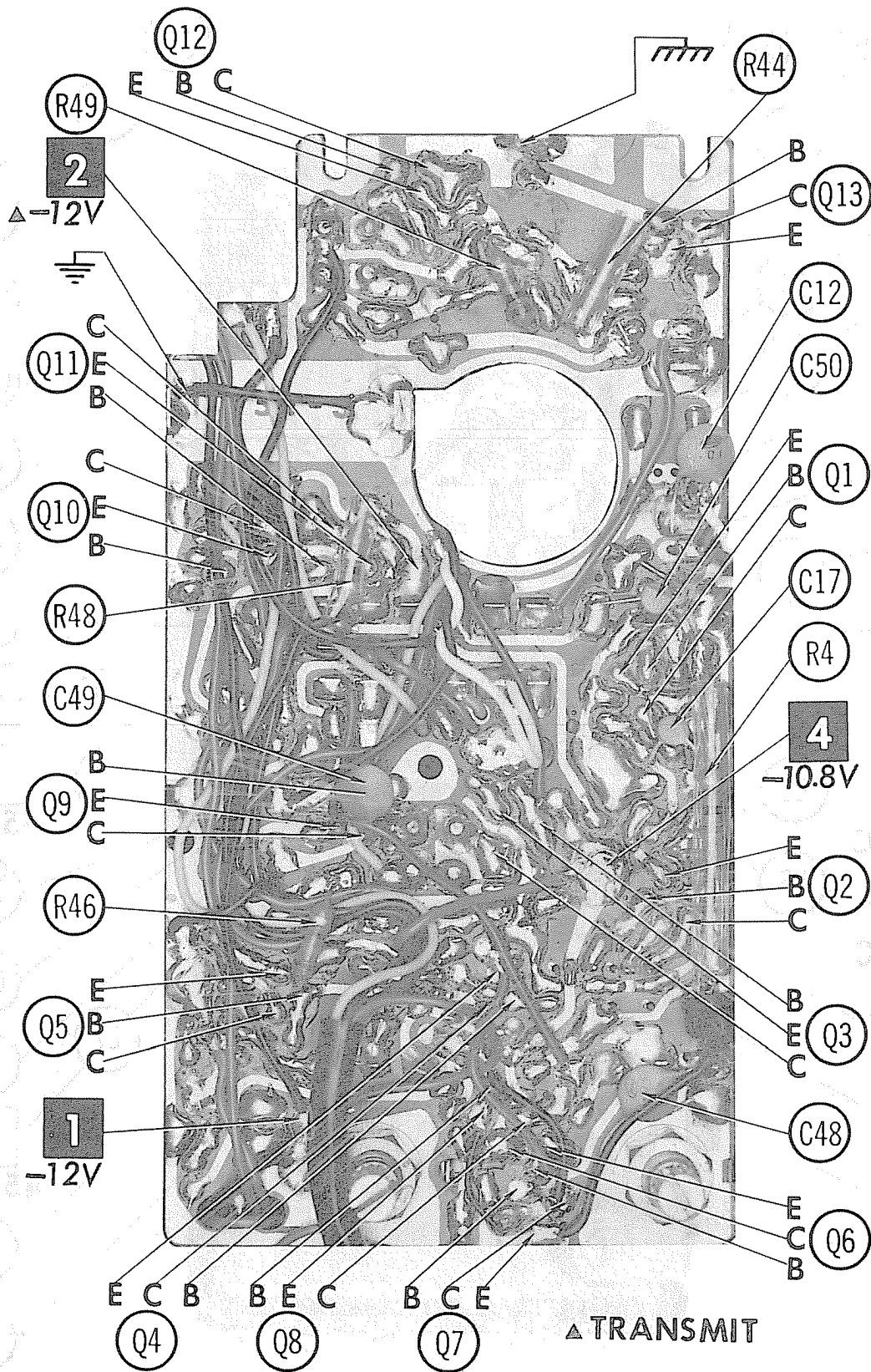
MIDLAND MODEL 13-133C

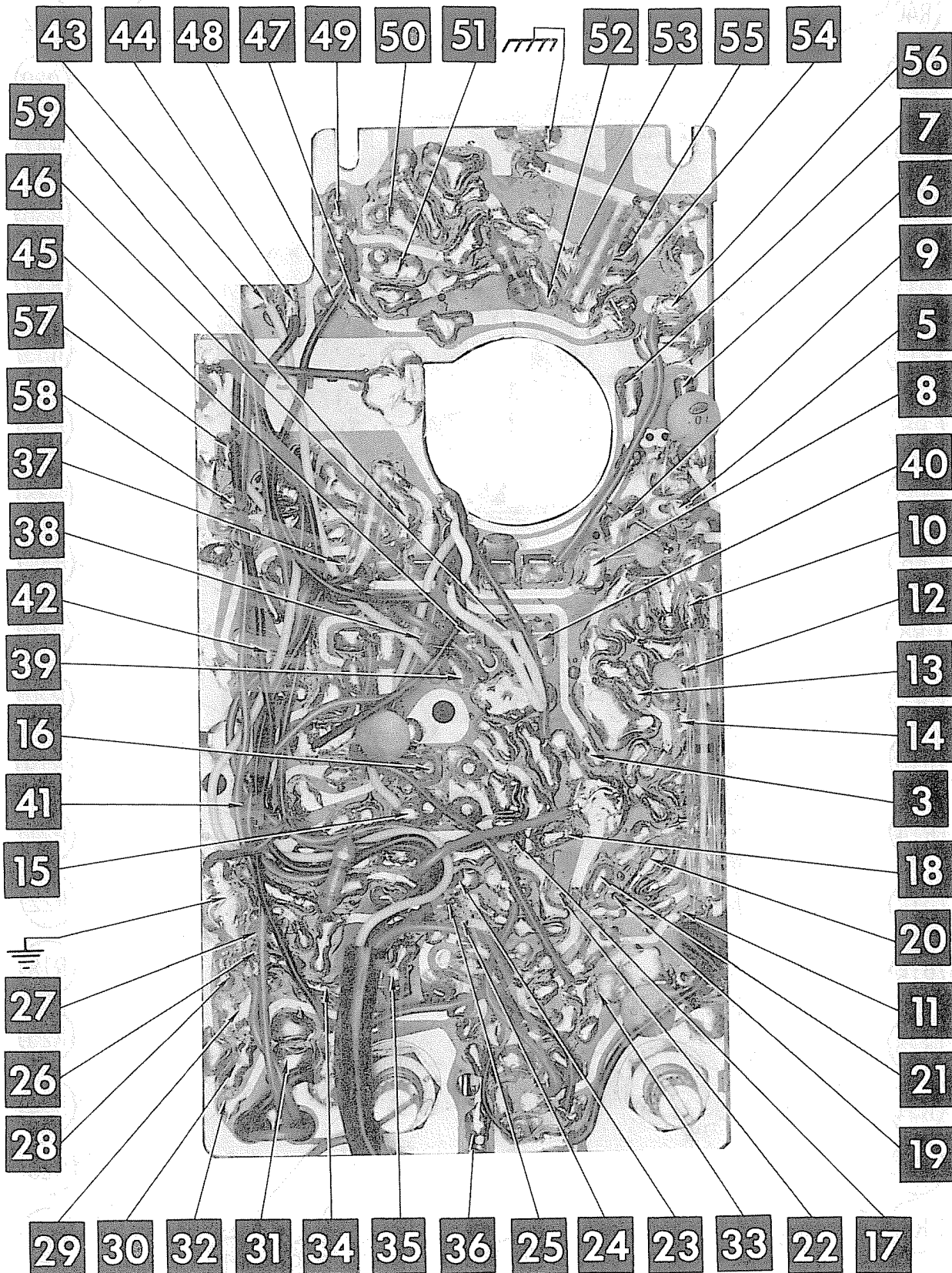
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

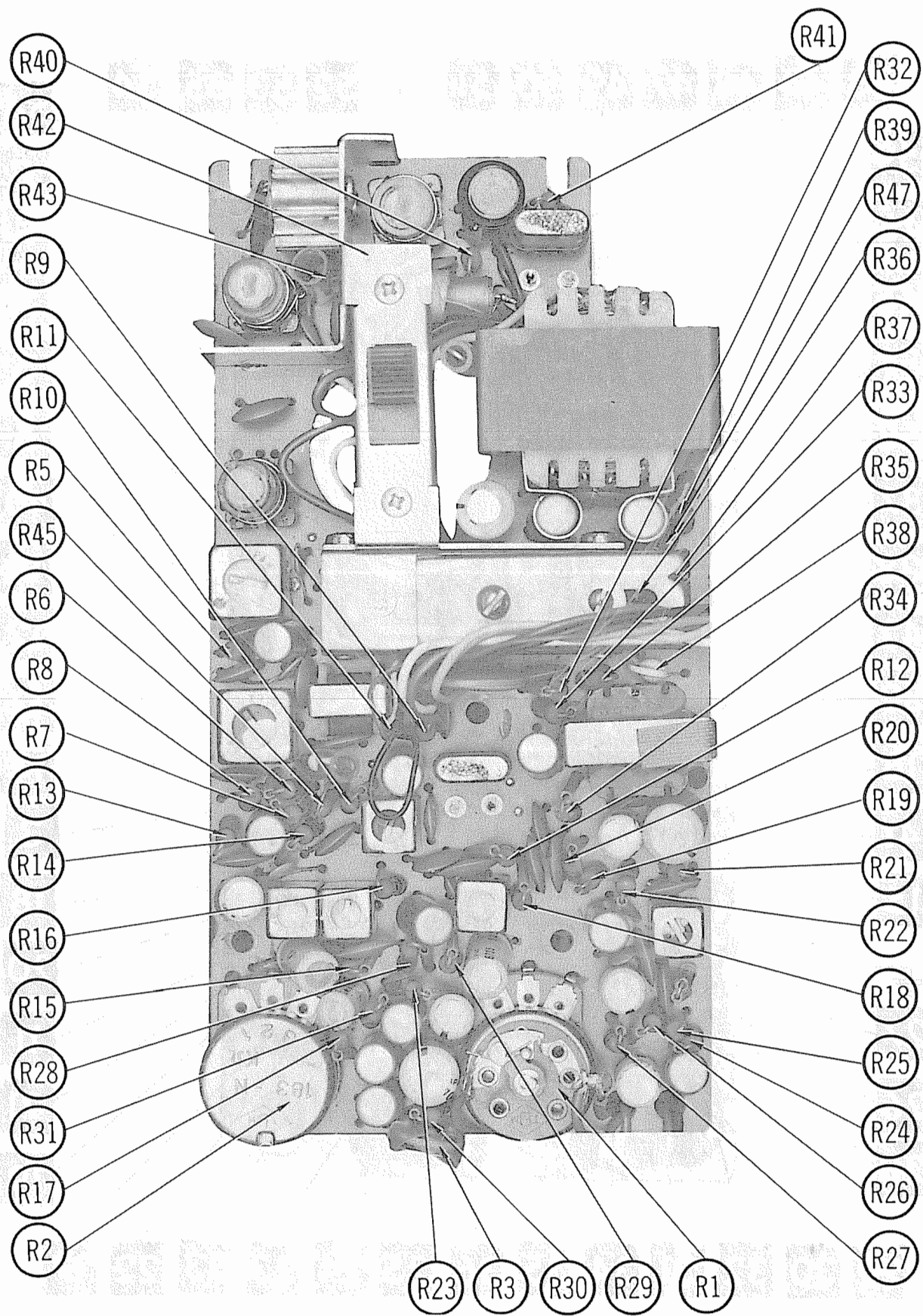
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PARTS LIST AND DESCRIPTION

TRANSISTORS

(When ordering parts, state Model, Part Number, and Description.)

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.
Q1	2SA234	RF Amp.		DS-41	GE-9A	TR-17	SK-3007	ECG 126
Q2	2SA350	Rec. Mixer		DS-41	GE-9A	TR-17	SK-3007	ECG 126
Q3	2SA350	Rec. Mixer		DS-41	GE-9A	TR-17	SK-3007	ECG 126
Q4	2SA12	1st IF Amp.		DS-41	GE-9A	TR-17	SK-3007	ECG 126
Q5	2SA12	2nd IF Amp.		DS-41	GE-9A	TR-17	SK-3007	ECG 126
Q6	2SB75	ANL		DS-26	GE-2	TR-14	SK-3004	ECG 102
Q7	2SB75	Squelch Amp.		DS-26	GE-2	TR-14	SK-3004	ECG 102
Q8	2SB75	AF Amp.		DS-26	GE-2	TR-14	SK-3004	ECG 102
Q9	2SB77	Driver		DS-26	GE-2	TR-14	SK-3004	ECG 102
Q10	2SB370	Output - Modulator		DS-26	GE-2	TR-14	SK-3004	ECG 102
Q11	2SB370	Output - Modulator		DS-26	GE-2	TR-14	SK-3004	ECG 102
Q12	2SC150	Trans. Osc.						
Q13	2SC116T	Final Amp.						

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES			REPLACEMENT RECTIFIERS		NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X1	1N60	1N60	1N60	ECG 109			
X2	HV15	1N34AS	1N34A	ECG 109			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		MIDLAND PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	50 15V		BCD15050	EP15-50	NLW50-15	MT1-16	MTV50CB15	TL-1160
C2	30 6V		BCD6035	EP6-25	NLW30-6	MT1-13	MTV30CB25	TL-1093
C3	5 6V		BCD6005	EP6-10	NLW5-15	MT1-3	MTV5CB50	TL-1084
C4	5 6V		BCD6005	EP6-10	NLW5-15	MT1-3	MTV5CB50	TL-1084
C5	5 6V		BCD6005	EP6-10	NLW5-15	MT1-3	MTV5CB50	TL-1084
C6	5 6V		BCD6005	EP6-10	NLW5-15	MT1-3	MTV5CB50	TL-1084
C7	5 6V		BCD6005	EP6-10	NLW5-15	MT1-3	MTV5CB50	TL-1084
C8	30 6V		BCD6035	EP6-25	NLW30-6	MT1-3	MTV30CB25	TL-1093
C9	5 6V		BCD6005	EP6-10	NLW5-15	MT1-3	MTV5CB50	TL-1084
C10	50 15V		BCD15050	EP15-50	NLW50-15	MT1-16	MTV50CB15	TL-1160
C11	30 6V		BCD6035	EP6-25	NLW30-6	MT1-13	MTV30CB25	TL-1093

CAPACITORS

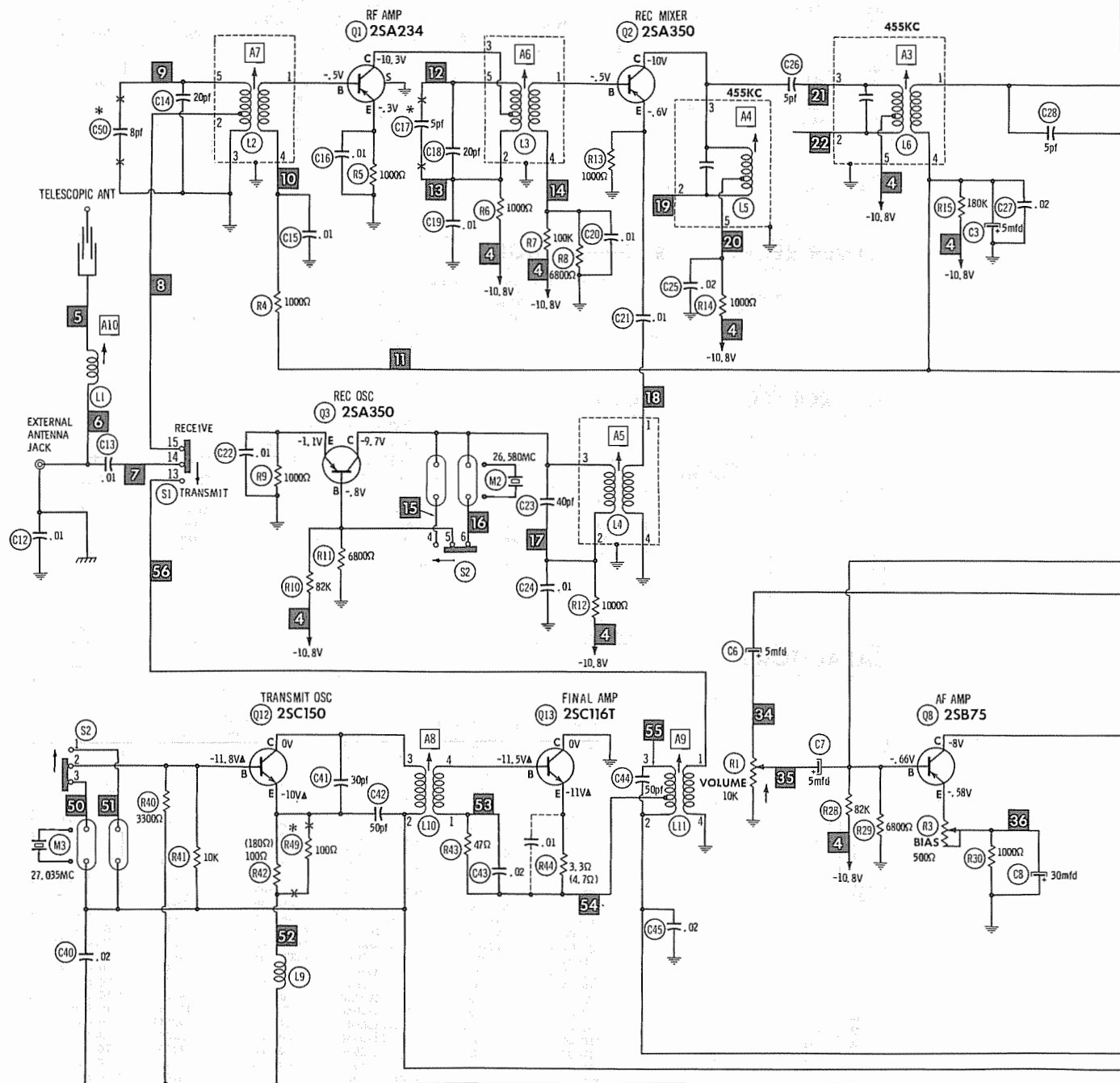
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C12	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C13	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C14	.20		NPO-D1 22	DTZ-22	CY601CG220K	CCTO-220	CNO422	10TCC-Q22
C15	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C16	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C17	.5		NPO-D1 4.7	DTZ-4R7	CZ601CH5R0D	CCTO-4R7	CNO547	10TCC-V47
C18	.20		NPO-D1 22	DTZ-22	CY601CG220K	CCTO-220	CNO422	10TCC-Q22
C19	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C20	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C21	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C22	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C23	.40			DD-390		CCD-330	GP435	10TS-Q33
C24	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C25	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C26	.5		NPO-D1 4.7	DTZ-4R7	CZ601CH5R0D	CCTO-4R7	CNO547	10TCC-V47
C27	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C28	.5		NPO-D1 4.7	DTZ-4R7	CZ601CH5R0D	CCTO-4R7	CNO547	10TCC-V47
C29	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C30	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C31	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C32	.5		NPO-D1 4.7	DTZ-4R7	CZ601CH5R0D	CCTO-4R7	CNO547	10TCC-V47
C33	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C34	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C35	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C36	.1		TTP-1	CK-104	HOY1012V104Z		TA010	TG-P10
C37	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C38	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C39	.05		TTP005	CK-503	HOY1012V503Z		TA150	TG-L-550
C40	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C41	.50		NPO-D1 33	DTZ-33	CS601CG330K	CCTO-330	CNO433	10TCC-Q33
C42	.50		GPD X5F500K	DD-500	JBZ601YP500K	CCD-500	GP450	10TS-Q50
C43	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C44	.50		GPD X5F500K	DD-500	JBZ601YP500K	CCD-500	GP450	10TS-Q50
C45	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C46	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C47	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	TG-S20
C48	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C49	.01		TTP-01	CK-103	HOY1012V103P	CCD-103	TA110	TG-S10
C50	.8		NPO-D1 8.2					
C51	.02		TTP-02	CK-203	HOR1012V203P	CCD-203	TA120	10TCC-V82 TG-S20

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA			
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.
R1	Volume & Switch	10K				
R2	Squelch	1000				
R3	Emitter Bias (Q8)	500				

(CONTINUED ON PAGE 92)

MIDLAND MODEL 13-133C



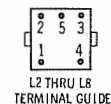
Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

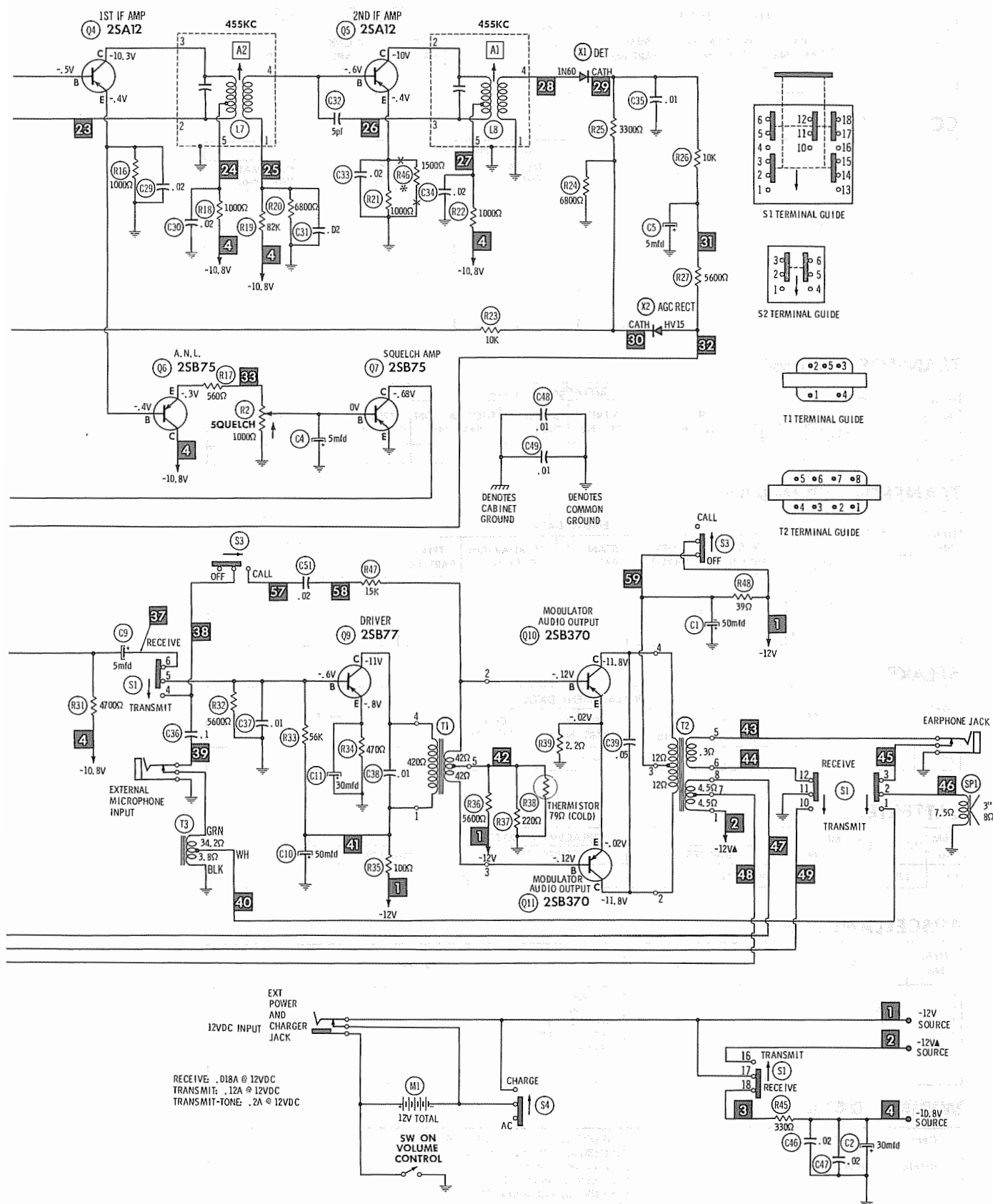
▲ MEASURED IN TRANSMITT POSITION.
* NOT USED IN SOME VERSIONS.

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.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC
with **CIRCUITRACE**

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MIDLAND MODEL 13-133C

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	MFGR. PART No.			IRC PART No.	WORKMAN PART No.	MFGR. PART No.
R38	79 (Cold)		FR191						

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	Antenna Loading				
L2	RF Input				
L3	Receive Mixer				
L4	Receive Oscillator				
L5	IF Filter				
L6	Input IF		16-9033	8810	
L7	Interstage IF		16-9033	8810	
L8	Output IF		16-9034	8811	
L9	RFC (28uh)		16-9035	8812	
L10	Transmit Oscillator			72F275AP	
L11	Final				T984

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	2	1CT							

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	200CT	8						
		SEC. 2						
		9 CT DC Resistance						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA			NOTES
				MFGR. PART No.	JENSEN PART No.	QUAM PART No.	
SP1	3"	PM	8 ohms		T3K78		

BATTERIES

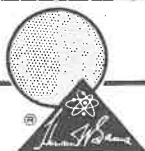
ITEM No.	VOLTAGE	MFGR. PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M1	12V		930 or AL9 or HG9	1015 or E91 or E9	M15R or MN1500 or ZM9	8 Required

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M2	Receive Crystal		26.580MC
M3	Transmit Crystal		27.035MC
S1	Switch		Receive-Transmit (SPDT)
S2	Switch		Selector (DPST)
S3	Switch		Off-Call (DPST)
S4	Switch		AC-Charge (DPST)
	AC Adapter	18-140	

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No. 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)
Coiled Microphone Cable	Use BELDEN No. 8499 Single Conductor Shielded (Neoprene)
	8498 Single Conductor Shielded (Vinyl)
Ignition Noise Suppression	Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No. 8661 (3/8 In.)



PHOTOFACT[®] with

CIRCUITRACE[®]

TRADE NAME : Pace Model 2300

SUPPLIER : For Current Address, See Annual Index

POWER SUPPLY: 12 Volt Storage Battery

RATING : .920 Amp @ 12.6 VDC (Receive)
1.5 Amp @ 12.6 VDC (Transmit)

TUNING RANGE: All 23 CB Channels



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A7, A9, A14.....GENERAL CEMENT #9087.....WALSCO #2528
A8, A10 thru A13, A15 thru A22.....GENERAL CEMENT #9296, 9297, 9300..... WALSCO #2510, 2546, 2547

RECEIVER ALIGNMENT

Connect an AC VTVM across speaker voice coil terminals. Turn Volume Control fully clockwise, turn Squelch Control to approximately midrange position.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to Base of Q4 (2nd Rec. Mixer), low side to chassis. Tune to 455KC (Mod.).	Any	A1 thru A7	Adjust for maximum.
High side thru .01mfd to Antenna Receptacle, low side to chassis. Tune to 27.085MC (Channel 11) (Mod.).	11	A8 thru A12	Adjust for maximum.

TRANSMITTER ALIGNMENT

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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.

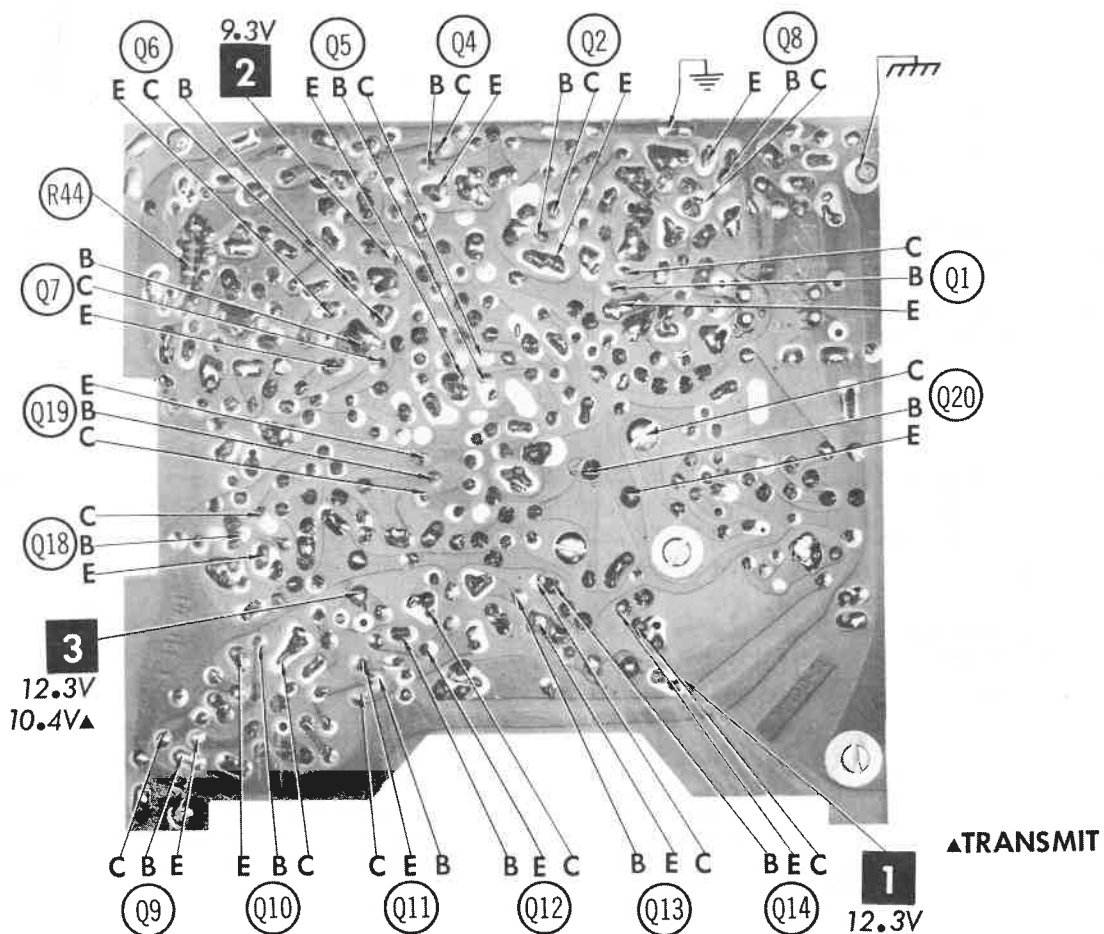
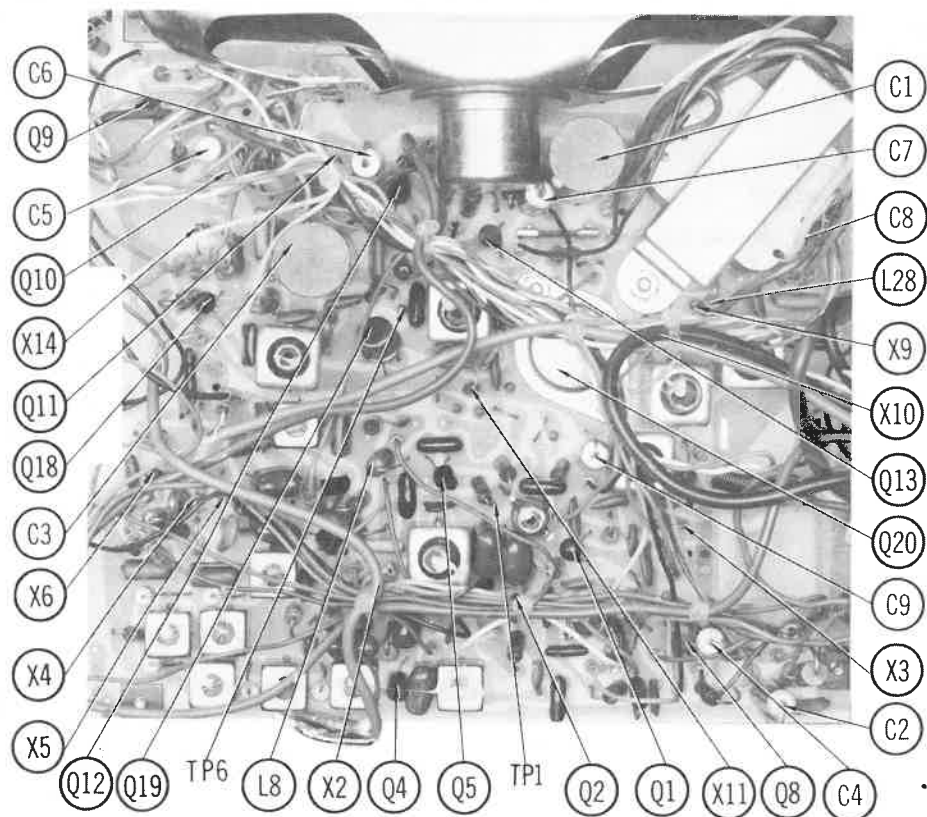
Connect either 50Ω dummy load or the normally used antenna system.

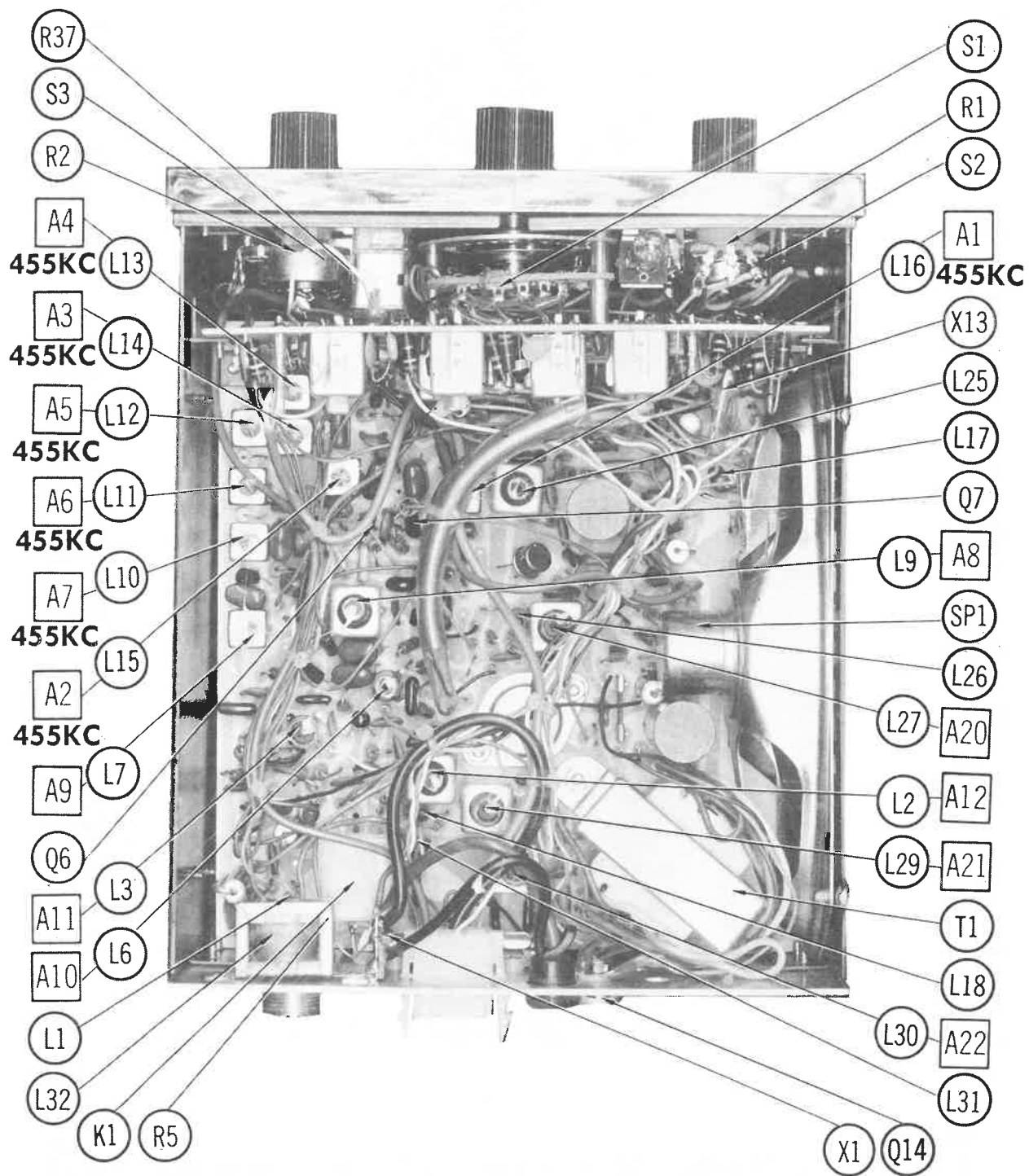
INDICATOR	ADJUST	REMARKS
Field Strength Meter or RF Wattmeter.	A13 thru A22	Key Transmitter several times to ensure oscillator starting. Connect Ammeter in series with Collector of Q20 (Final Amp.). Adjust for maximum output and MINIMUM current.

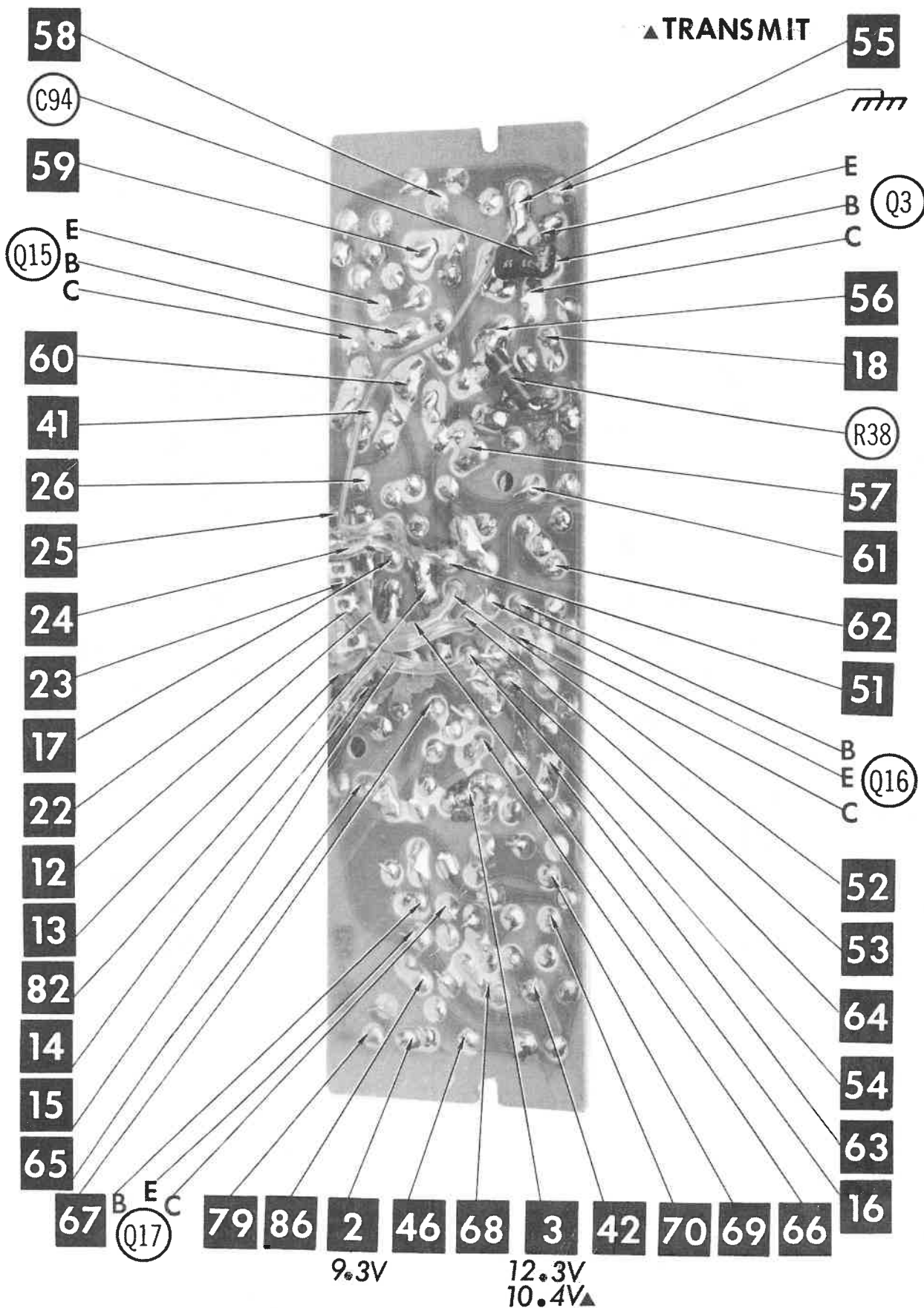
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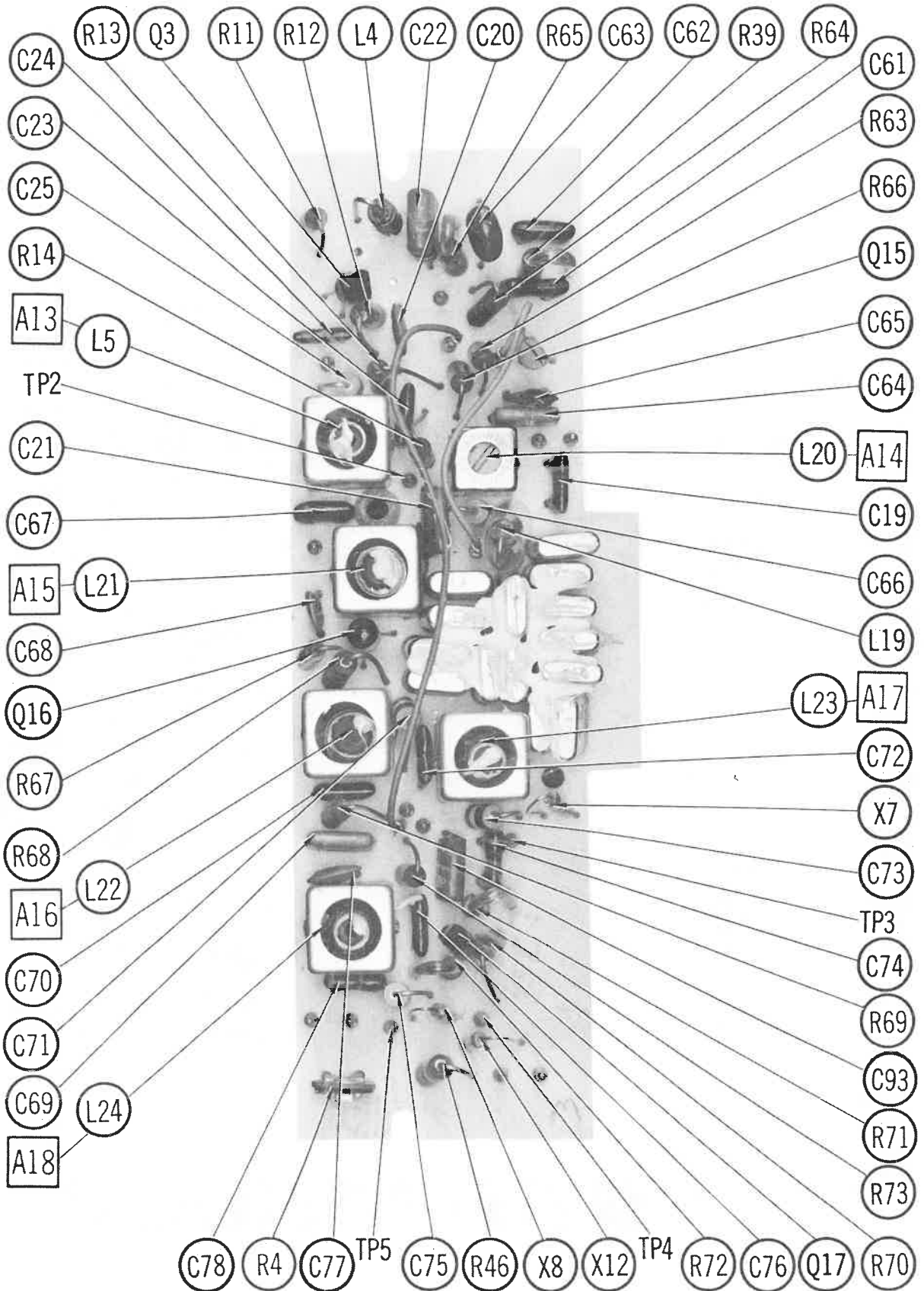
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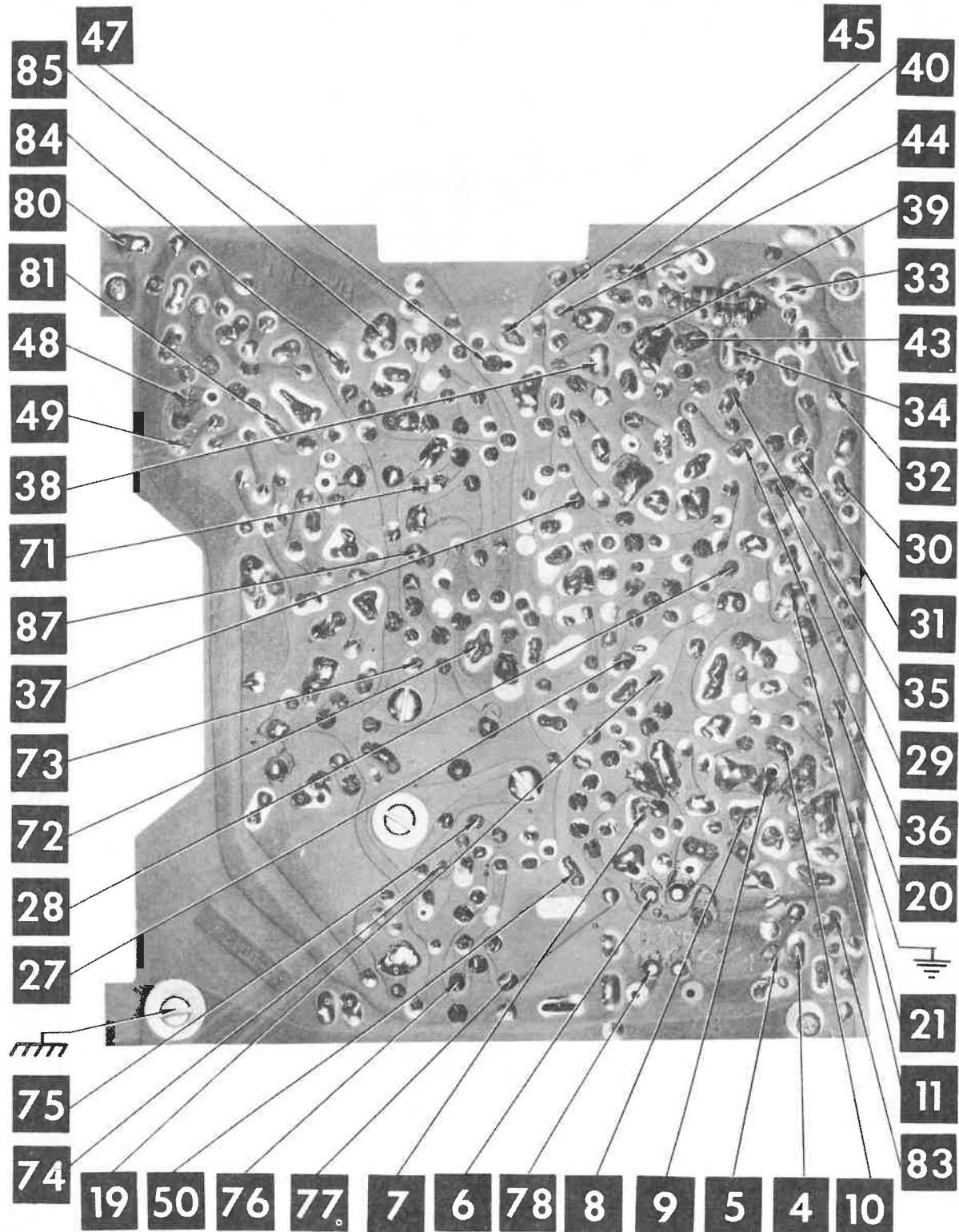
PAGE MODEL 2300

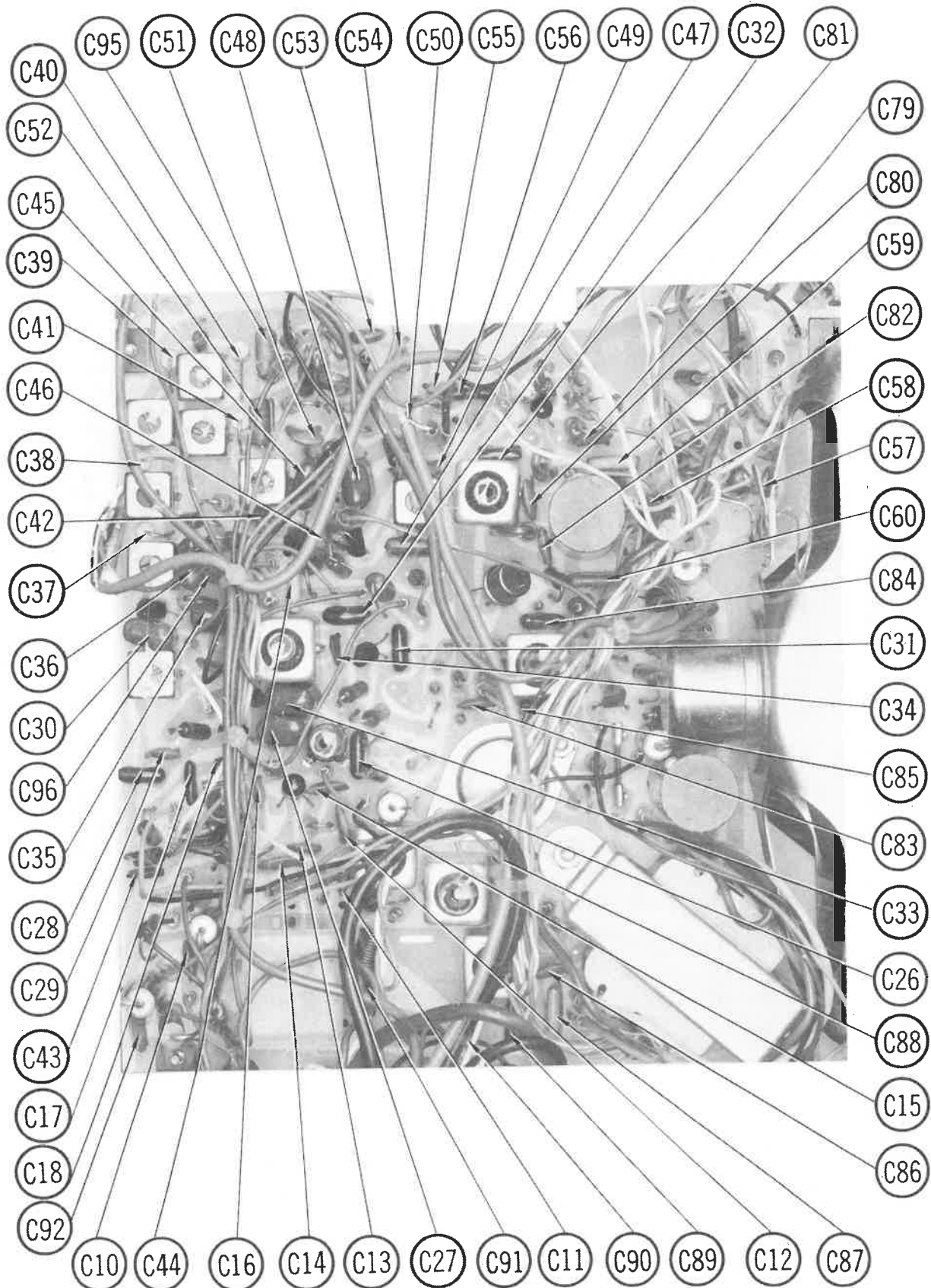


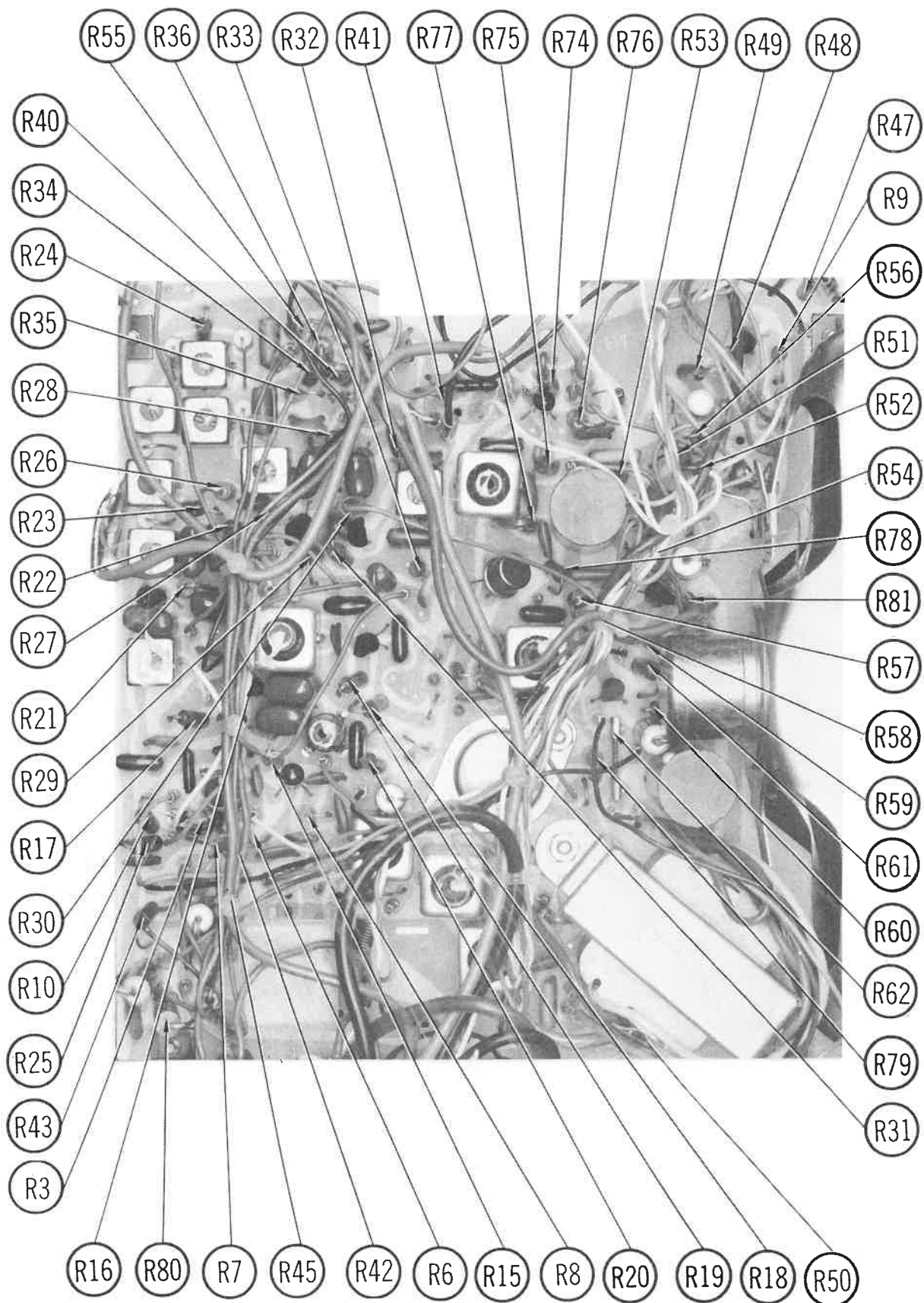












PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

WIRING DATA

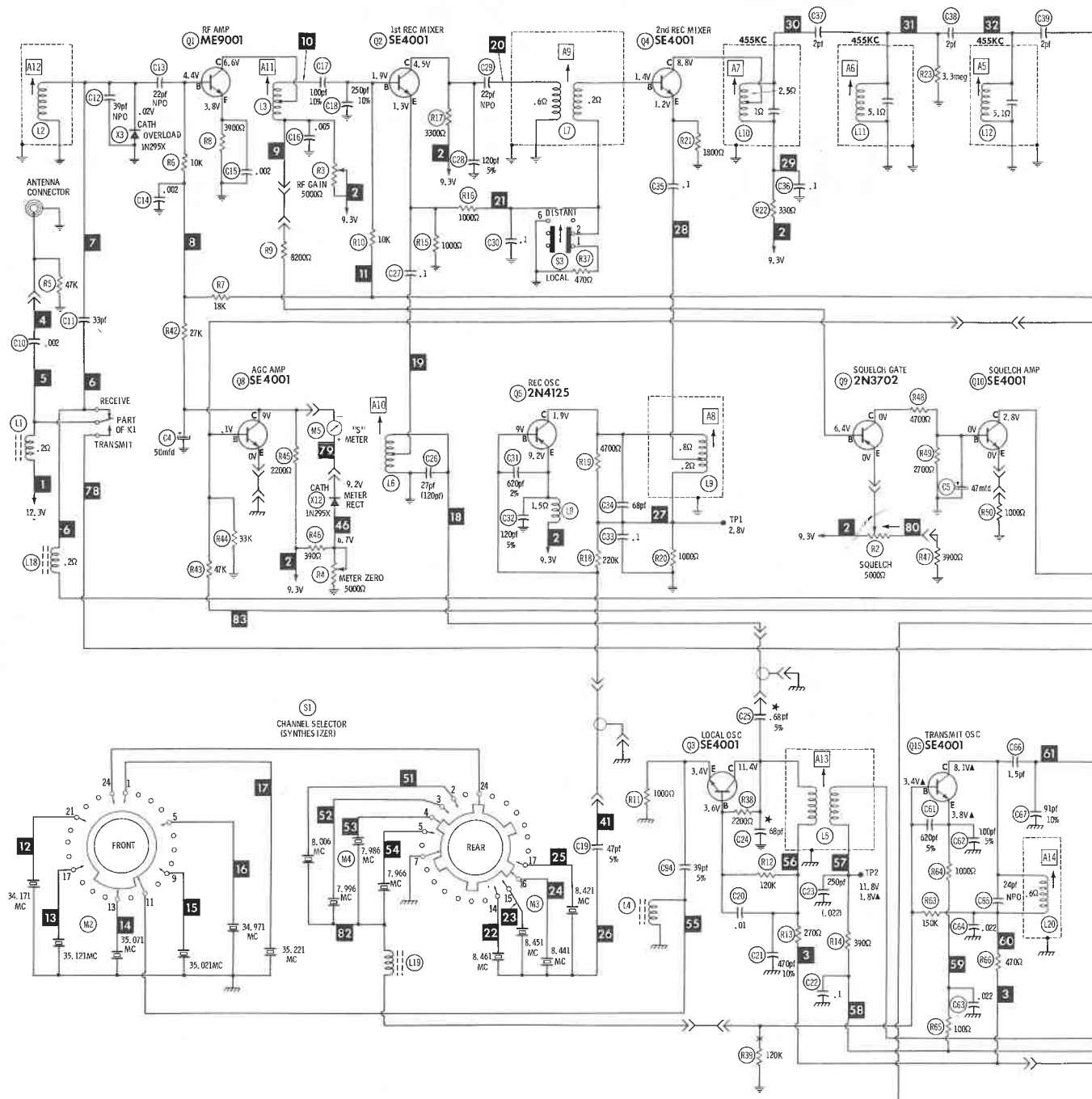
General-use Hook-up Wire Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead Use BELDEN No. 8214 Lowest Loss (RG-8/U Type)
8237 Low Loss (RG-8/U)
8240 (Solid) Miniature (RG-58/U)
8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable Use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

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				PACE PART No.	NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.		
Q1	ME9001 (MPS3563) (2N3563) (T1408) (MPS6507) (2N3564) SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (SE4001)	RF Amp	DS-81	GE-20	TR-21	SK-3018	13-0020 13-0020 13-0020 13-0020 13-0040 13-0040 13-0009 13-0009 13-0009 13-0010 13-0010	NPN
Q2	SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (SE4001)	1st Receiver Mixer	DS-81	GE-20	TR-21	SK-3018	13-0009 13-0009 13-0009 13-0010 13-0010	NPN
Q3	SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (2N3827) SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (SE4001)	Local Oscillator	DS-81	GE-20	TR-21	SK-3018	13-0009 13-0009 13-0009 13-0010 13-0010	NPN
Q4	SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (SE4001)	2nd Receiver Mixer	DS-81	GE-20	TR-21	SK-3018	13-0009 13-0009 13-0009 13-0010 13-0010	NPN
Q5	2N4125 (2N4121) (T1S38)	Receiver Oscillator	DS-41	GE-9	TR-17	SK-3007	13-0043 13-0043 13-0043	PNP
Q6	SE4001 (MPS6513) (2N3827) (SE1001)	1st IF Amp	DS-72	GE-10	TR-21	SK-3018	13-0010 13-0010 13-0009 13-0009	NPN
Q7	SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (SE4001)	2nd IF Amp	DS-72	GE-10	TR-21	SK-3018	13-0009 13-0009 13-0009 13-0010 13-0010	NPN
Q8	SE4001 (MPS6514) (2N3827) (SE4002) 2N3702 (MPS3638) (2N3638) (MPS3638A) (2N3702) (2N3638A) SE4001 (MPS6512) (2N3827) (SE1001)	AGC Amp	DS-72	GE-10	TR-21	SK-3018	13-0022 13-0022 13-0022 13-0006 13-0006 13-0044 13-0044	NPN
Q9	SE4001 (MPS3638) (2N3638) (MPS3638A) (2N3702) (2N3638A) SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (SE4001)	Squelch Gate		GE-22	TR-19	SK-3025	13-0006 13-0006 13-0006 13-0044 13-0044	PNP
Q10	SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (SE4001)	Squelch Amp	DS-66	GE-10	TR-21	SK-3020	13-0009 13-0009 13-0009 13-0009 13-0058 13-0058 13-0058	NPN
Q11	MPS6553 (2N3707) (2N3565) SE4001 (MPS6513) (2N3827) (MPS6514) (SE4002)	AF Amp	DS-66	GE-18	TR-21	SK-3020	13-0010 13-0010 13-0010 13-0022 13-0022	NPN
Q12	SE4001 (MPS6513) (2N3827) (MPS6514) (SE4002)	AF Amp	DS-66	GE-18	TR-21	SK-3020	13-0010 13-0010 13-0010 13-0022 13-0022	NPN
Q13	2N3702 (MPS3638A) (2N3638A) 40250 (MJE521) SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (2N3827)	AF Amp		GE-22	TR-19	SK-3025	13-0044 13-0044 13-0044 13-0014 13-0049 13-0009 13-0009 13-0010 13-0010	PNP
Q14	40250 (MJE521) SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (2N3827)	Output-Modulator		GE-12	TR-23	SK-3026	13-0014 13-0049 13-0009 13-0009 13-0010 13-0040 13-0040 13-0040 13-0009 13-0009 13-0010 13-0010 13-0021 13-0021 13-0021 13-0035 13-0028	NPN
Q15	SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (2N3827)	Transmit Oscillator	DS-81	GE-20	TR-24	SK-3018	13-0009 13-0009 13-0010 13-0010 13-0040 13-0040 13-0040 13-0009 13-0009 13-0010 13-0010 13-0021 13-0021 13-0021 13-0035 13-0028	NPN
Q16	ME9001 (MPS6507) (T1S28) (2N3564) SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (2N3827)	Transmit Mixer	DS-81	GE-20	TR-24	SK-3018	13-0040 13-0040 13-0040 13-0009 13-0009 13-0010 13-0010 13-0021 13-0021 13-0021 13-0035 13-0028	NPN
Q17	SE4001 (MPS6512) (2N3827) (SE1001) (MPS6513) (2N3827)	Transmit Amp			TR-21		13-0040 13-0040 13-0009 13-0009 13-0010 13-0010 13-0021 13-0021 13-0021 13-0035 13-0028	NPN
Q18	PET9002 (MPS3646) (T1S55) (2N3646) FS1978 FS2523	Transmit Amp					13-0021 13-0021 13-0021 13-0035 13-0028	NPN
Q19	FS1978	Buffer					13-0035	NPN
Q20	FS2523	Final Amp					13-0028	NPN

(CONTINUED ON PAGE 104)

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★ VALUES VARY; REPLACE WITH ORIGINAL VALUE

Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

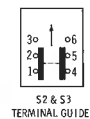
All measurements taken in RECEIVE position unless otherwise designated.

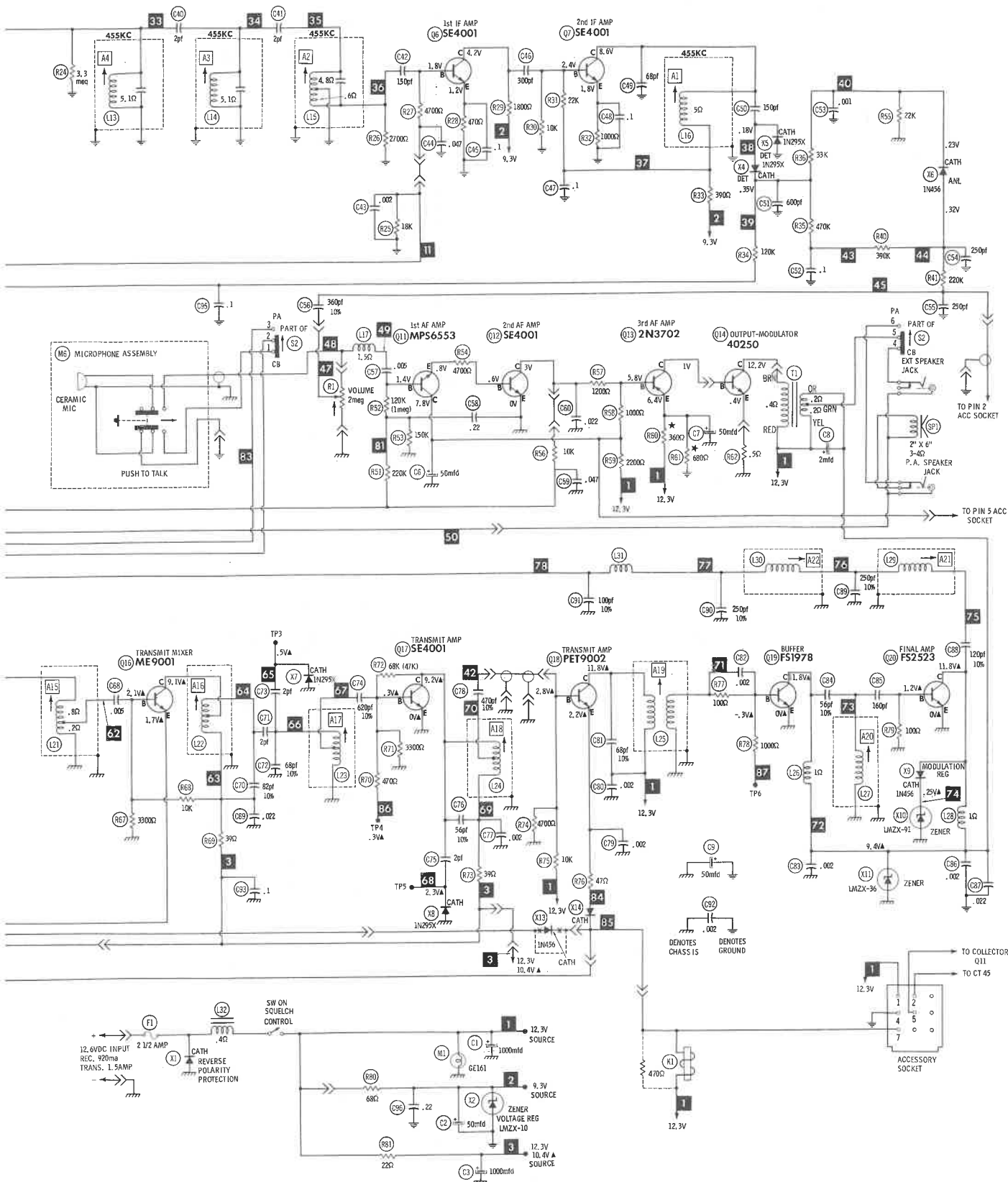
▲ Measured in TRANSMIT position

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.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC with **CIRCUITRACE**

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PAGE MODEL 2300

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS	
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1 X2		13-0015 13-0002 (10V Zener)				2VR10
X3 X4 X5 X6		1N295X 1N295X 1N295X 13-0003 (1N456)	1N295 1N295 1N295	1N295 1N295 1N295		
X7 X8 X9		1N295X 1N295X 13-0003 (1N456)	1N295 1N295	1N295 1N295		
X10		13-0029 (LMZX-91)				2VR90
X11		13-0017 (LMZX-36)				
X12 X13 X14		1N295X 13-0003 (1N456)	1N295	1N295 8D4-SD500		F4 or 40C

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		PACE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	1000 15V		PRS1230		BR1000-15		TC1501A	
C2	50 15V		CRE467A	EA15-5	NLW50-15	MT1-16	TT15X50	TE-1160
C3	1000 15V		PRS1230		BR1000-15		TC1501A	
C4	50 15V		CRE467A	EA15-5	NLW50-15	MT1-16	TT15X50	TE-1160
C5	47 3V		BCD3050		NLW50-3	MT1-15	MTV50CB15	TE-1058
C6	50 15V		CRE467A	EA15-5	NLW50-15	MT1-16	TT15X50	TE-1160
C7	50 15V		CRE467A	EA15-5	NLW50-15	MT1-16	TT15X50	TE-1160
C8	2 25V		BCD25002		NLW2-50	MT1-1	PET1930	TL-1201
C9	50 15V		CRE467A	EA15-5	NLW50-15	MT1-16	TT15X50	

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.	
C10	.002	(.022) (1) (1.5) (1) (120) (1)	GPD X5F202K	DD-202	BYE601ZU202P	CCD-202	GP220	5GA-D20	
C11	33 10%		NPO-DI 33	DTZ-33	CS601CG330K	CCTO-330	CNO433	10TCC-Q33	
C12	39 NPO 10%		NPO-DI 39	TCZ-39		CCTO-390	CNO439	10TCC-Q39	
C13	22 NPO 10%		NPO-DI 22	DTZ-22	CY601CG220K	CCTO-220	CNO422	10TCC-Q22	
C14	.002		GPD X5F202K	DD-202	BYE601ZU202P	CCD-202	GP220	5GA-D20	
C15	.002		GPD X5F202K	DD-202	BYE601ZU202P	CCD-202	GP220	5GA-D20	
C16	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	GP250	10TS-D50	
C17	100 10%		ADM-15-101	CPR-100J	CD15F101J500	DM-15-101K	SX310	MS-310	
C18	250 10%		ADM-15-251		CD10E251J500	DM-15-251K		MS-325	
C19	47 5%		ADM-15-470	CPR-47J	CD15E470J500	DM-15-470J	SX447	MS-447	
C20	.01		TTP-01	CK-102	HOY101ZV103P	CCD-103	TA110	TG-S10	
C21	250			DD-251		CCD-251	GP325	5GA-T25	
C22	.1		TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10	
C23	250 10%		(.022) (1)	ADM-15-251		CD10E251J500	DM-15-251K	MS-325	
C24	68 10%		(120) (1)	ADM-15-680	CPR-68J	CD15E680J500	DM-15-680K	SX468	MS-468
C25	.68pf 5%		(1.5) (1)		TCZ-R68				
C26	27 5%		(120) (1)	ADM-15-270	CPR-27J	CD15E270J500	DM-15-270J	SX427	MS-427
C27	.1			TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10
C28	120 5%			ADM-15-121	CPR-120J	CD15F121J500	DM-15-121J	SX312	MS-312
C29	22 NPO 10%			NPO-DI 22	DTZ-22	CY601CG220K	CCTO-220	CNO422	10TCC-Q22
C30	.1			TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10
C31	620 5%			ADM-19-621	CPR-620J	CD19F621J500	DM-16-621J	SX362	MS-362
C32	120 5%			ADM-15-121	CPR-120J	CD15F121J500	DM-15-121J	SX312	MS-312
C33	.1			TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10
C34	68 10%				DD-680	JBZ601YP680K	CCD-680	GP468	10TS-Q68
C35	.1			TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10
C36	.1			TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10
C37	2				DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C38	2				DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C39	2				DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C40	2				DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C41	2				DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C42	150 10%			GPD X5F151K	DD-151	BYE601ZU202P	CCD-151	GP315	10TS-T15
C43	.002		GPD X5F202K	DD-202	BYE601ZU202P	CCD-202	GP220	5GA-D20	
C44	.047			CK-503	HOV101ZV503Z	CCD-503	TA150	TG-S50	
C45	.1		TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10	
C46	300			DD-301		CCD-301	GP330	5GA-T30	
C47	.1		TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10	
C48	.1		TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10	
C49	68 10%		GPD X5F680K	DD-680	JBZ601YP680K	CCD-680	GP468	10TS-Q68	
C50	150 10%		GPD X5F151K	DD-151		CCD-151	GP315	10TS-T15	
C51	600			DD-601			GP360	10TS-T60	
C52	.1		TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10	
C53	.001		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10	
C54	250 10%		GPD X5F251K	DD-251		CCD-251	GP325	10TS-T25	
C55	250 10%		GPD X5F251K	DD-251		CCD-251	GP325	10TS-T25	
C56	360 10%		ADM-15-361	CPR-360J	CD15F361J500	DM-15-361K	SX336	MS-336	
C57	.005		TTP-005	CK-502	HOY101ZV502P	CCD-502	TA250	TG-D50	
C58	.22			CK-503	HOV101ZV503Z		TA150	TG-S50	
C59	.047			CK-203	HOR101ZV203P	CCD-203	TA120	TG-S20	
C60	.022			CPR-620J	CD19F621J500	DM-16-621J	SX362	MS-362	
C61	620 5%		ADM-19-621						

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS (cont)

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.
C62	100	5%	ADM-15-101	CPR-100J	CD15F101J500	DM-15-101J	SX310	MS-310
C63	.022			CK-203	HOR101ZV203P	CCD-203	TA120	TG-S20
C64	.022			CK-203	HOR101ZV203P	CCD-203	TA120	TG-S20
C65	24	5%		TCZ-24				
C66	1.5			DTZ-1R5			CN0515	10TCC-V15
C67	91	10%	ADM-15-910	CPR-91J	CD15F910J500	DM-15-910K	SX491	MS-491
C68	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	GP250	10TS-D50
C69	.022			CK-203	HOR101ZV203P	CCD-203	TA120	TG-S20
C70	82	10%	ADM-15-820	CPR-82J	CD15F820J500	DM-15-820K	SX482	MS-482
C71	2			DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CN0522	10TCC-V22
C72	68	10%	ADM-15-820	CPR-82J	CD15F820J500	DM-15-820K	SX482	MS-482
C73	2			DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CN0522	10TCC-V22
C74	620	10%	ADM-15-621	CPR-260J	CD19F621J500	DM-16-621K	SX362	MS-362
C75	2			DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CN0522	10TCC-V22
C76	56	5%	ADM-15-560	CPR-56J	CD15E560J500	DM-15-560J	SX456	MS-456
C77	.002	10%	GPD X5F202K	DD-202	BY601ZU202P	CCD-202	GP220	10TS-D22
C78	470	10%	ADM-15-471	CPR-470J	CD15F471J500	DM-15-471K	SX347	MS-347
C79	.002		GPD X5F202K	DD-202	BY601ZU202P	CCD-202	GP220	5GA-D20
C80	.002		GPD X5F202K	DD-202	BY601ZU202P	CCD-202	GP220	5GA-D20
C81	68	10%	ADM-15-680	CPR-68J	CD15E680J500	DM-15-680K	SX468	MS-468
C82	.002		GPD X5F202K	DD-202	BY601ZU202P	CCD-202	GP220	5GA-D20
C83	.002		GPD X5F202K	DD-202	BY601ZU202P	CCD-202	GP220	5GA-D20
C84	56	5%	ADM-15-560	CPR-56J	CD15E560J500	DM-15-560J	SX456	MS-456
C85	160	10%	ADM-15-161	CPR-160J	CD15F161J500	DM-15-161K	SX316	MS-316
C86	.002		GPD X5F202K	DD-202	BY601ZU202P	CCD-202	GP220	5GA-D20
C87	.022			CK-203	HOR101ZV203P	CCD-203	TA120	TG-S20
C88	120	5%	ADM-15-121	CPR-120J	CD15F121J500	DM-15-121J	SX312	MS-312
C89	250	10%	ADM-15-251		CD10E251J500	DM-15-251K		MS-325
C90	250	10%	ADM-15-251		CD10E251J500	DM-15-251K		MS-325
C91	100	5%	ADM-15-101	CPR-100J	CD15F101J500	DM-15-101J	SX310	MS-310
C92	.002		GPD X5F202K	DD-202	BY601ZU202P	CCD-202	GP220	5GA-D20
C93	.1			CK-104	HOV101ZV104Z		TA010	TG-P10
C94	.39	5%	ADM-15-390	CPR-39J	CD15E390J500	DM-15-390J	SX439	MS-439
C95	.1			CK-104	HOV101ZV104Z		TA010	TG-P10
C96	.22							

(1) Alternate Value.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			PACE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume	2meg	15-0033	F2-2meg (1), SF010	A47-2meg-Z (1), FS-3 or (NP-2meg-Z (1), UP-B-400)	Q13-139 (1) or (BU1,CF27,SS1,DC1)*	UA26A (1), SF1000 or (RU26A (1), SF1000) or (U55) (1)
R2	Squelch & Switch	5000	15-0034	F5-5000 (1), SF010, KR-1		Q17-114 (1), 76-1 or (BU1,CF34,SS1,GC)*	RU53R (1), SF1000, JS41
R3	RF Gain	5000					
R4	"S" Meter Adjust	5000					

* "SNAPTROL"

(1) Use original nylon bushing.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	PACE PART No.			IRC PART No.	WORKMAN PART No.	PART No.
R62	.5 2W	BWH-.51							

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	RFC (2.2uh)	17-0026	19-1002	4606	T857
L2	Receive Antenna Input	17-0019			
L3	RF Amp	17-0018			
L4	RFC (1.8uh)	17-0040		74F186AP	
L5	35MC Injection	17-0028 (1)			
L6	Receive Mixer	17-0025			
L7	7MC IF	16-0007			
L8	RFC (22uh)	(2)		74F225AP	
L9	Receive Oscillator	17-0017			
L10	Input IF	16-0005			
L11	Interstage IF	16-0003			
L12	Interstage IF	16-0003			
L13	Interstage IF	16-0003			
L14	Interstage IF	16-0003			
L15	Interstage IF	16-0006			
L16	Output IF	16-0013			
L17	RFC (22uh)	(2)		74F225A1	
L18	RFC (2.2uh)	17-0026	19-1-02	4606	T857
L19	RFC (4.7uh)	17-0041 (3)		74F476AP	

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

COILS (RF-IF) (cont)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L20	Transmit Oscillator	16-0007			
L21	Transmit 9MC IF	17-0017			
L22	Transmit Mixer Coil	17-0032			
L23	1st Transmit Amp	17-0025			
L24	2nd Transmit Amp	17-0025			
L25	3rd Transmit Amp	17-0028			
L26	RFC (4.7uh)	17-0041 (3)		74F476AP	
L27	Buffer	17-0021			
L28	RFC (4.7uh)	17-0041 (3)		74F476AP	
L29	PI Network	17-0020			
L30	PI Network	17-0021			
L31	TVI Filter	17-0015			

(1) "X" cut crystal versions use # 17-0037

(2) Some versions may use 33uh #17-0016

(3) "X" cut crystal versions use 3uh #17-0026

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	PACE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L32	.920A	.4	1.9mh	16-0021					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			PACE PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T1	3.5	4	16-0016					

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA			NOTES
			PACE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	2" X 6"	4 ohms	22-0007		26A07	

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	AGC 2 1/2 Amp 250V			AGC 2 1/2	HHJ	31202.5	155020	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
K1	Relay	21-0005A	Transmit & Receive
M1	Lamp, Pilot		
M2	Crystal, Local Oscillator (Receive-Transmit)		34.971MC ("Y" Cut) 18.513MC ("X" Cut)
			35.021MC ("Y" Cut) 18.563MC ("X" Cut)
			35.071MC ("Y" Cut) 18.613MC ("X" Cut)
			35.121MC ("Y" Cut) 18.663MC ("X" Cut)
			35.171MC ("Y" Cut) 18.713MC ("X" Cut)
			35.221MC ("Y" Cut) 18.763MC ("X" Cut)
M4	Crystal, Receive ("X" Cut)		8.461MC 8.907MC
			8.451MC 8.917MC
			8.441MC 8.927MC
			8.421MC 8.947MC
M3	Crystal, Transmit ("Y" Cut)		8.006MC 8.452MC
			7.996MC 8.462MC
			7.986MC 8.472MC
			7.966MC 8.492MC
M5	"S" Meter	36-0017	
M6	Microphone Assembly	22-0005	Ceramic
	Microphone Assembly	22-0012	Ceramic
S1	Switch Selector		Rotary
S2	Switch, CB-PA	15-0010-2	DPDT
S3	Switch, Local-Distance	15-0010-2	DPDT

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	ITEM	PART No.
Knob, Volume	24-0027	Upper Cover	25-0115
Knob, Squelch	24-0027	Lower Cover	25-0116
Knob, Selector	24-0043		



PHOTOFACT®

TRADE NAME: Eico Model 779A (Sentinel Pro)
 SUPPLIER: For Current Address, See Annual Index
 POWER SUPPLY: 110 - 120 Volts AC, 60 Cycles (or)
 12-Volt Storage Battery
 RATING: 56 Watts, .53 Amp. @ 117VAC (Receive)
 63 Watts, .60 Amp. @ 117VAC (Transmit)
 TUNING RANGE: All 23 CB Channels 1 thru 23



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A8, A11, A12, A18..... GENERAL CEMENT #8606, 8606L, 8869
 WALSCO #2543, 2544, 2588
 A9, A10, A13 thru A17..... GENERAL CEMENT #8868, 9087, 9089
 WALSCO #2528, 2541, 2587

RECEIVER ALIGNMENT

Connect DC VTVM from Point Δ to chassis. Set to indicate Negative Voltage. Set Bandspread to Mid-Range.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 7 (grid) of V3 (Rec. Conv.), low side to chassis. Tune to 455KC (unmod.).	Any	A1 thru A6	Adjust for maximum.
High side thru .01mfd to pin 9 (grid) of V1B (Rec. Mixer), low side to chassis. Tune to 6MC (unmod.).	Any	A7, A8	Adjust for maximum.
High side to antenna receptacle, low side to chassis. Tune to 27.085MC (unmod.).	11	A9 thru A12	Adjust for maximum.

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 95, SUBPARTS C & D).

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

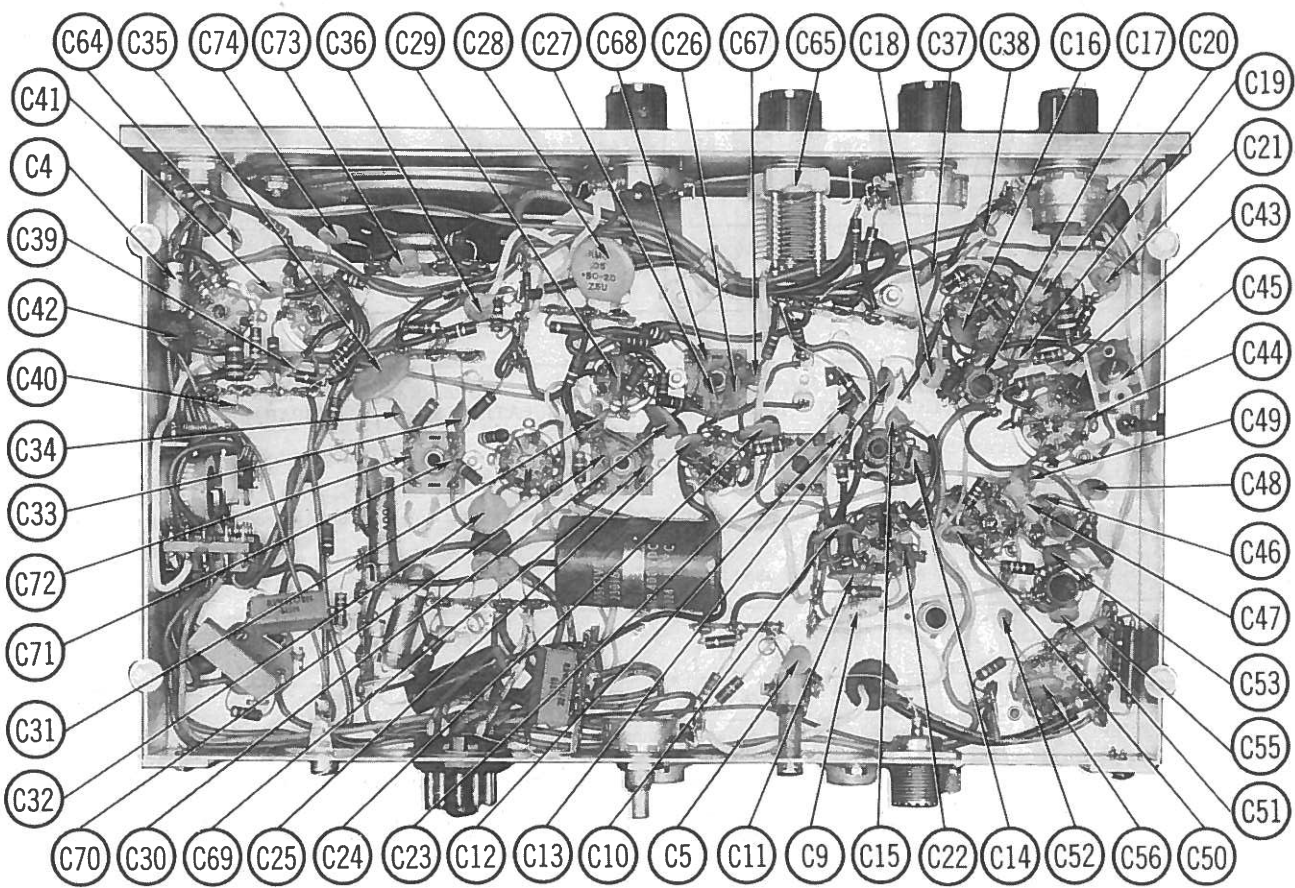
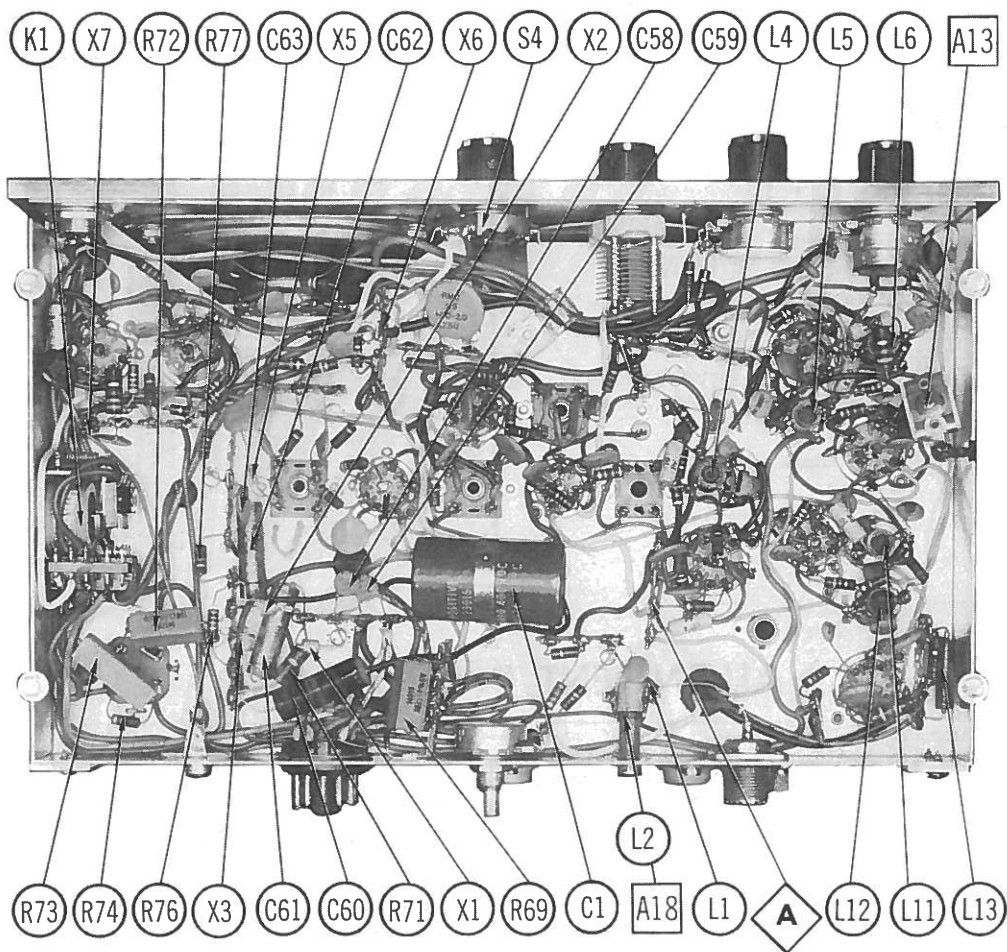
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

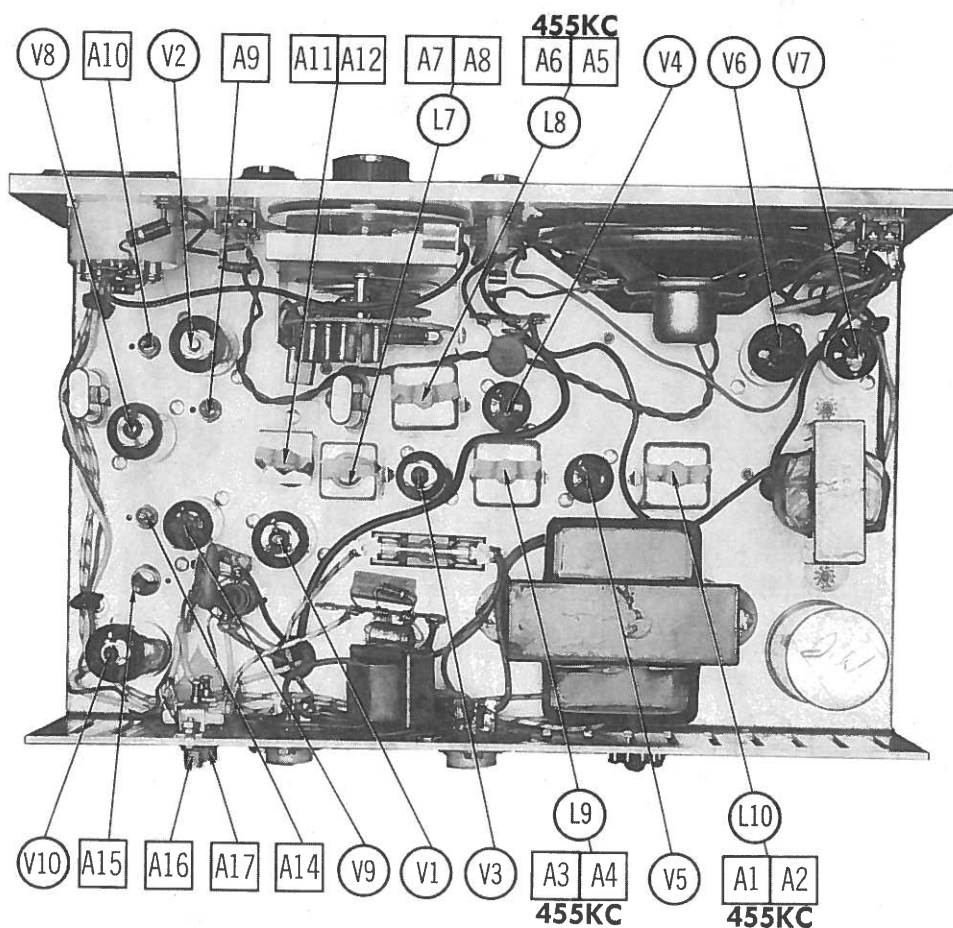
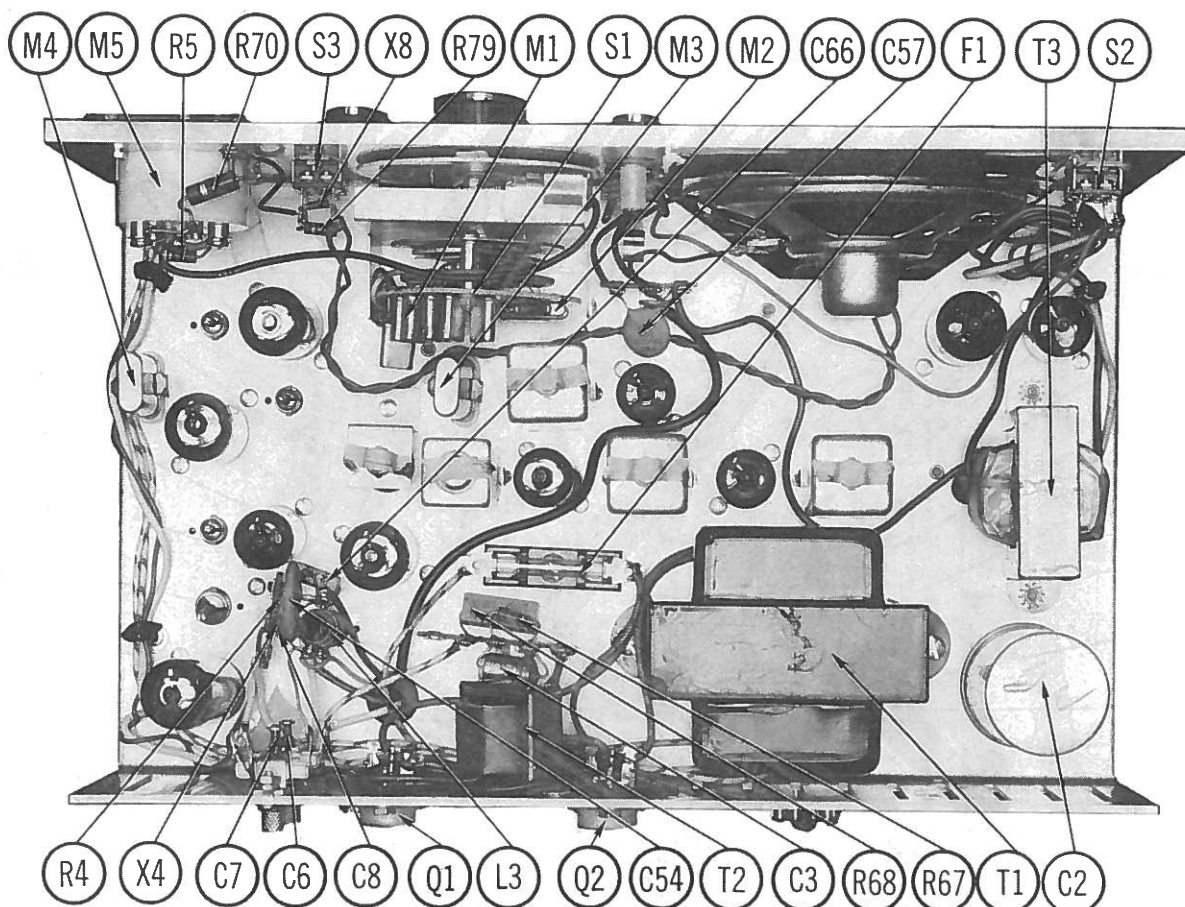
Connect either 50 Ω dummy load or the normally used antenna system.

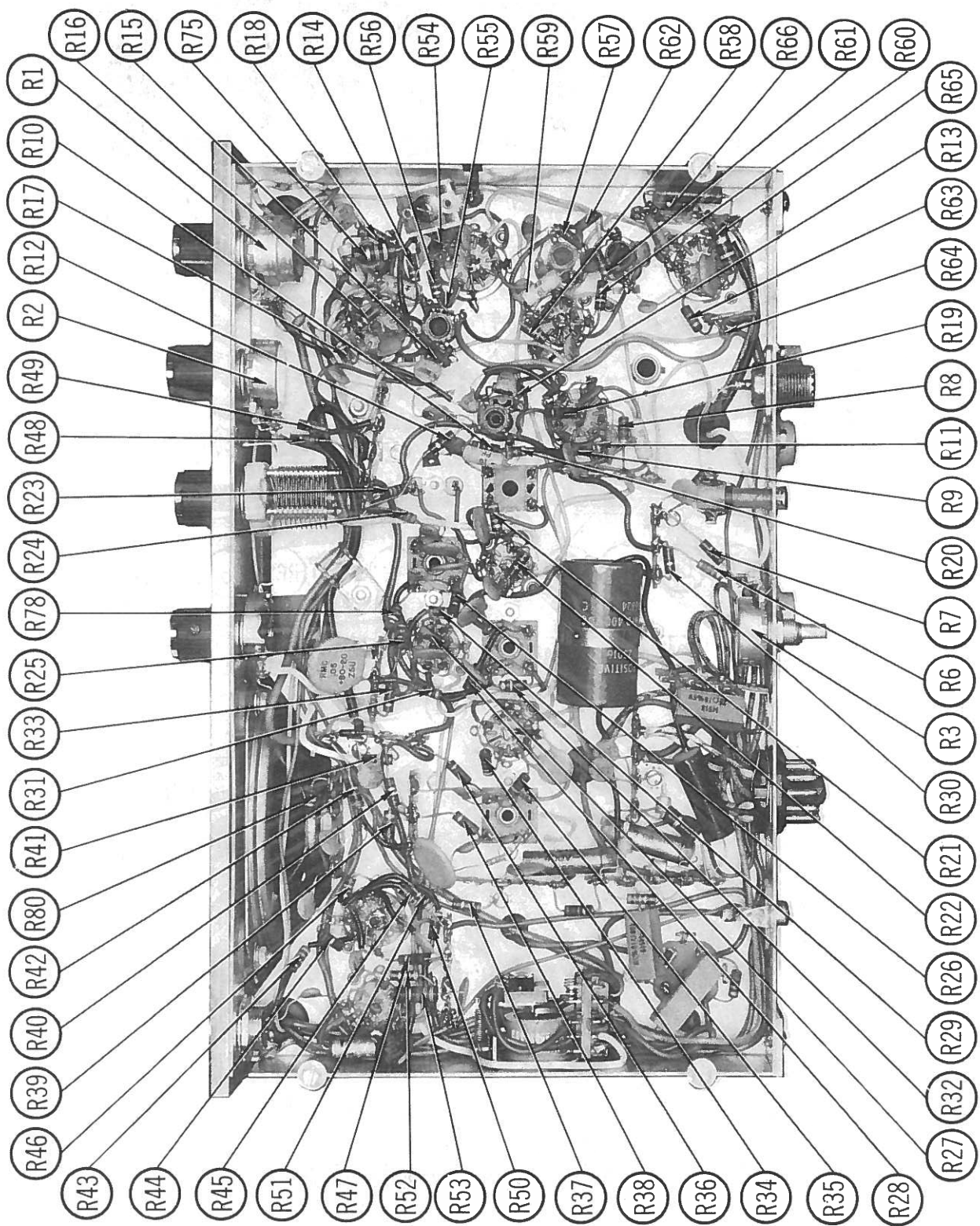
INDICATOR	ADJUST	REMARKS
Accurate Frequency Meter	A13	Adjust for proper Frequency.
Field Strength Meter	A14 thru A17	Adjust for maximum. Repeat adjustment of A16 & A17 several times. Check each channel for approximately the same output. Readjustment of A9 and A10 for maximum output may be required.
Near-by TV Receiver	A18	Set TV to a low channel. Key Transmitter and adjust for "MINIMUM" interference.

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

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PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	Use BELDEN No. 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)
Coiled Microphone Cable	Use BELDEN No. 8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene) 8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No. 8661 (3/8 In.)

TUBES

◆ AMPEREX ◆			◆ GENERAL ELECTRIC ◆			◆ RCA ◆			◆ SYLVANIA ◆		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp.-Mixer	6GH8	V6	1st - 2nd Speech Amp.-	6EU7	V7	AF Amp.		V8	Output - Modulator	6AQ5A
V2	Synthesizer Conv.-Osc.	6GH8	V8	Transmit Mixer - 6MC Osc.	6GH8	V9	Buffer Amp.	6BH6	V10	Final Amp.	6BQ5
V3	2nd Conv.	12BE6									
V4	1st IF Amp.	6BA6									
V5	2nd IF Amp.	6BA6									

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.
Q1	2N1536	Power Osc.	94032	DS-520	GE-3	TR-01	SK-3009	ECG 104
Q2	2N1536	Power Osc.	94032	DS-520	GE-3	TR-01	SK-3009	ECG 104

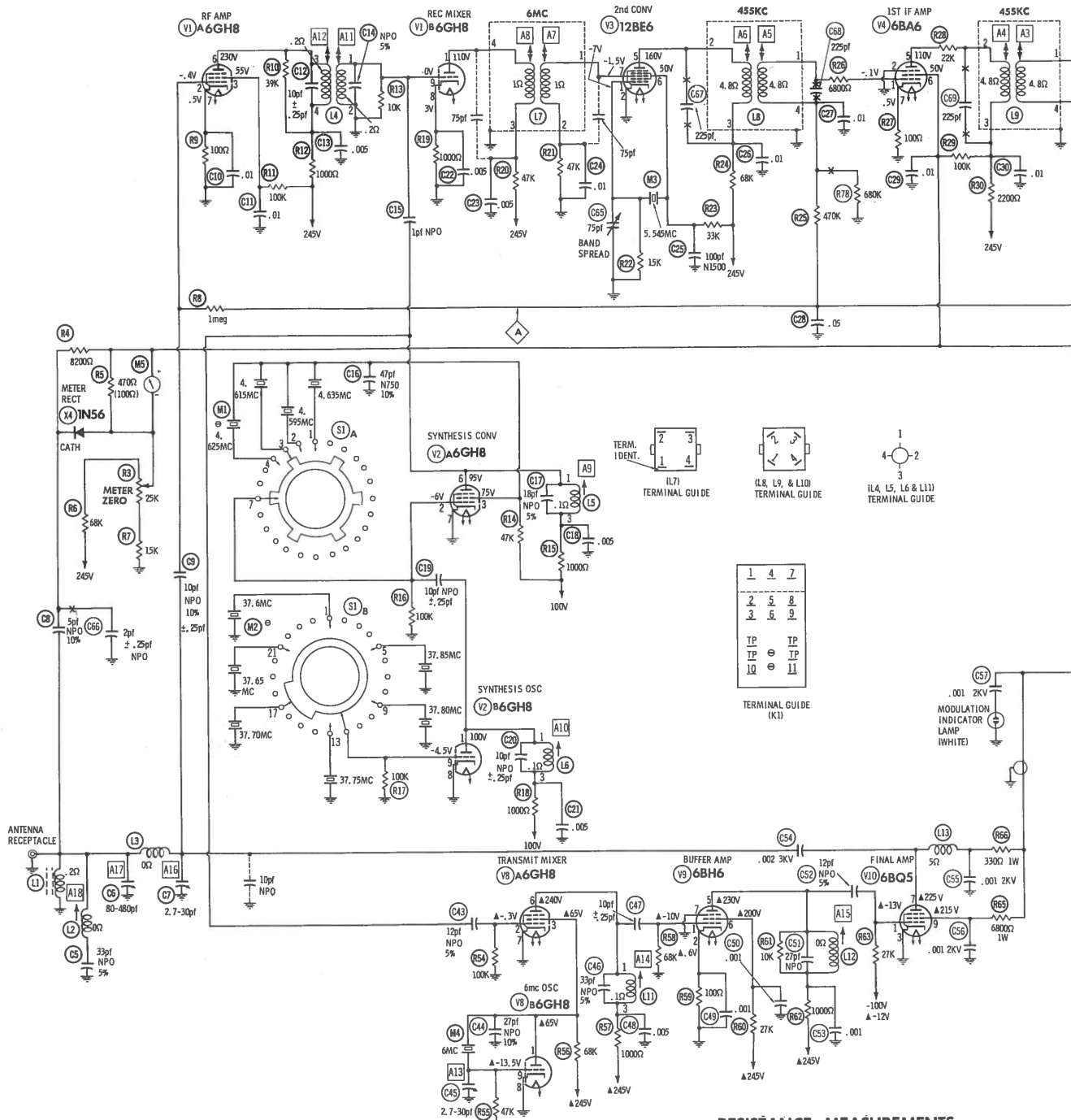
POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES			REPLACEMENT RECTIFIERS		NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X1	93022	GE-504A	8D6	ECG 116 or ECG 117	SK-3017A or SK-3032	60C	
X2	93022	GE-504A	8D6	ECG 116 or ECG 117	SK-3017A or SK-3032	60C	
X3	93023	GE-504A	8D4 or 5A4-D	ECG 116 or ECG 117	SK-3031 or SK-3017A	40C or F-4	
X4	1N56	1N34AS	1N34A	ECG 109			
X5	1N56	1N34AS	1N34A	ECG 109			
X6	95015						
X7	95015						
X8	93032 (1N702)						

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		EICO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	40 450V		PRS1750		BR40-450	QT1-14	TC78A	TVA-1712
C2A	30	24037	AFH4-15-30		DD0174	XC4-55	FP444.8	TVL-4769.4
B	30							
C	20							
D	20							
C3	10 50V	23065	PRS1320	EA50-10	BBR10-50	QT1-5	TC32A	TVA-1304
C4	10 50V	23065	PRS1320	EA50-10	BBR10-50	QT1-5	TC32A	TVA-1304

(CONTINUED ON PAGE 28)



Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

* Not used in some versions.

⊙ See parts list

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.

A PHOTOFAC STANDARD NOTATION SCHEMATIC

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RESISTANCE MEASUREMENTS.

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6GH8	49K ⊕	2.2meg	101K ⊕	FIL	FIL	2100Ω ⊕	1000Ω	1000Ω	0Ω
V2	6GH8	29K ⊕	100K	73K ⊕	FIL	FIL	29K ⊕	0Ω	0Ω	100K
V3	12BE6	15K	0Ω	FIL	FIL	69K ⊕	34K ⊕	47K		
V4	6BA6	600K	0Ω	FIL	FIL	25K ⊕	30K 1#	1000Ω		
V5	6BA6	840K	0Ω	FIL	FIL	3300Ω ⊕	103K ⊕	470Ω		
V6	6E7	FIL	FIL	NC	0Ω	45K	70K 1#	480K ⊕	6.5meg	0Ω
V7	6AQ5	470K	330Ω	FIL	FIL	340Ω ⊕	1100Ω ⊕	NC		
V8	6GH8	69K 1A	100K	69K 1A	FIL	FIL	2100Ω 1A	0Ω	0Ω	47K
V9	6BH6	68K	100Ω	FIL	FIL	2100Ω 1A	28K 1A	0Ω		
V10	6BQ5	NC	2.4MEG	0Ω	FIL	FIL	NC	771Ω ⊕	NC	7200Ω ⊕
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

ALL MEASUREMENTS TAKEN IN "RECEIVE" POSITION UNLESS OTHERWISE INDICATED

⊕ MEASURED FROM OUTPUT OF X2 ⊕ MEASURED IN "TRANSMIT" POSITION

NC NO CONNECTION

⊕ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.



PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

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.
C5	33 NPO 5%	#29524 #29523	NPO-DI 33	DTZ-33	CS601CG330K	CCTO-330	CN0433	10TCC-Q33
C6	60-460							
C7	2.7 - 30							
C8	5 NPO 5%		NPO-DI 5.0	DTZ-4R7	CZ601CH5R0D	CCTO-D50	CN1547	10TCC-V50
C9	10 NPO 10%			DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C10	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C11	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C12	10 + .25			DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C13	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C14	5 NPO 10%		NPO-DI 5.0	DTZ-4R7	CZ601CH5R0D	CCTO-050	CN0547	10TCC-V50
C15	1 NPO + .25		NPO-DI 1.0	TCZ-1			CN0510	10TCC-V10
C16	47 N750 10%		N750-DI 47	DTN-47	CY601YJ470K	CCTN-470	CN7447	10TCU-Q47
C17	18 NPO 5%			TCZ-18	CY601CG180J	CCTO-180	CN0418	10TCC-Q18
C18	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C19	10 NPO + .25			DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C20	10 NPO + .25			DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C21	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C22	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C23	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C24	.01	#22509	GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C25	100 N1500			TCL-100		*	*	10TCW-T10
C26	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C27	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C28	.05		GPD Z5V503P	DD-503		CCD-503	GP150	5HK-S50
C29	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C30	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C31	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C32	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C33	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C34	100 N1500			TCL-100		*	*	10TCW-T10
C35	.05		GPD Z5V503P	DD-503		CCD-503	GP150	5HK-S50
C36	100 N1500			TCL-100		*	*	10TCW-T10
C37	.001		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C38	470		GPD X5F470K	DD-471	JBZ601YP471K	CCD-471	GP347	10TS-T47
C39	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C40	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C41	.001	#29503	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C42	.001 2KV		HVD-301000	DD30-102	HVX302ZY102P	3CCD-102	3HV210	30GA-D10
C43	12 NPO 5%			TCZ-12	CZ601CG120J	CCTO-120	CN0412	10TCC-Q12
C44	27 NPO 10%		NPO-DI 25	TCZ-27		CCTO-270	CN0427	10TCC-Q27
C45	2.7 - 30							
C46	33 NPO 5%		NPO-DI 33	DTZ-33	CS601CG330K	CCTO-330	CN0433	10TCC-Q33
C47	10 NPO + .25			DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C48	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C49	.001		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C50	.001		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C51	27 NPO		NPO-DI 25	TCZ-27		CCTO-270	CN0427	10TCC-Q27
C52	12 NPO 5%			TCZ-12	CZ601CG120J	CCTO-120	CN0412	10TCC-Q12
C53	.001		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C54	.002 3KV		HVD30-2200	DD30-202	HVV302Z202P	3CCD-202	3HV222	30GA-D20
C55	.001 2KV		HVD-30-1000	DD30-102	HVX302ZY102P	3CCD-102	3HV210	30GA-D10
C56	.001 2KV		HVD-30-1000	DD30-102	HVX302ZY102P	3CCD-102	3HV210	30GA-D10
C57	.001 2KV		HVD-30-1000	DD30-102	HVX302ZY102P	3CCD-102	3HV210	30GA-D10
C58	.001 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C59	.001 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C60	.047	#29525	GPD Z5V503P	DD-503		CCD-503	GP150	5HK-S50
C61	.1 400V		DBE4P1		DMF4P1	4DP-3-104	PVC601	4PS-P10
C62	.1 400V		DBE4P1		DMF4P1	4DP-3-104	PVC601	4PS-P10
C63	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JF110	10TS-S10
C64	470		GPD X5F471K	DD-471	JBZ601YP471K	CCD-471	GP347	10TS-T47
C65	75							
C66	2 NPO + .25			DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CN0522	10TCC-V22
C67	225 10%			DD-221	TBZ601YP221K	CCD-221	GP322	10TS-T22
C68	225 10%			DD-221	TBZ601YP221K	CCD-221	GP322	10TS-T22
C69	225 10%			DD-221	TBZ601YP221K	CCD-221	GP322	10TS-T22
C70	225 10%			DD-221	TBZ601YP221K	CCD-221	GP322	10TS-T22
C71	225 10%			DD-221	TBZ601YP221K	CCD-221	GP322	10TS-T22
C72	225 10%			DD-221	TBZ601YP221K	CCD-221	GP322	10TS-T22
C73	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C74	.005		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50

Eico Part Number

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

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	500K	18002	F1-500K, SRS014, KR-1	A47-500K-S, RS-2, SWE-12 or (NP-500K-S UP-A-400,NWE-12)	Q11-133,76-1 or (BU1, CF16, SS5, GC) *	UA55L, SL2500, US41, or (RU55L, SL2500, US41) or (U50), US26)
R2	Squelch	3meg	18168	F1-3meg, SRS014	A47-3meg-S,RS-2 or (NP-3meg-S, UP-A-400)	Q11-140 or (BU1, CF21, SS5, DC1)*	UA36L, SL2500 or (RU36L, SL38, SL2500) or (U59)
	Meter Zero	25K	18158	F1-25K, SRS014	A47-25K-S, RS-2 or (NP-25K-S, UP-A-400)	Q11-120 or (BU2, CF11,SS5, DC1) *	UA253L, SL2500 or (RU253L,SL38, SL2500) or (U29)

* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	MFGR. PART No.			IRC PART No.	WORKMAN PART No.	MFGR. PART No.
R68	50 ohms 5W	PW5-50	5W-SQ-50	14507	R72	100 ohms 5W	PW5-100	5W-SQ-100	14519
R69	22 ohms 5W	PW5-20	5W-SQ-22.5	14518	R73	1000 ohms 5W	PW5-1000	5W-SQ-1000	14501

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	Ant. Filter (5.6uh)	35078		4609	
L2	TVI Trap	36059		20A227RB1	
L3	Ant. Pi Network	35080			
L4	RF Amp.	36060-2			
L5	Synthesizer Plate	36057	19-6816	4202	
L6	Synthesizer Osc. Plate	36057	19-6816	4202	
L7	6MC IF	34652			
L8	Input IF	34653			
L9	Interstage IF	34653			
L10	Output IF	34653			
L11	Transmit Mixer	36057	19-6816	4202	
L12	Buffer Amp.	36058		4202	
L13	RF Choke (30uh)	35079		72F335AP	

TRANSFORMER (Power)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
				MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI. 1	SEC. 1	SEC. 2						
T1	117VAC @ .62A *	114VAC @ .098A *	12VAC @ 2.1A *	30079					* Transmit
	PRI. 2	SEC. 4	SEC. 5						
	16.5VCT @ 3.6A*								

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA					NOTES
				MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC. 1	SEC. 2						
T2	1.5 CT	1		30080					

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	9000 ohms Tap @ 6500 ohms	4 ohms	32043					

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA			NOTES
			MFGR. PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4" PM	4 ohms	55005	P4W3	4A05	

FUSE DEVICES

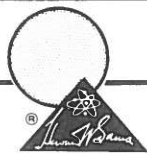
ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	AGC 3A 250V	91017	97802	AGC 3	4405	312003	357001	
F2	SFE 14 Amp.	91016	97808	SFE14	4HI-B	307014	155014	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
K1	Relay	39007	Transmit & Receive
M1	Low Freq. Osc.	49101	4.595MC
	Crystals	49102	4.615MC
		49103	4.625MC
		49104	4.635MC
M2	High Freq. Osc.	49095	37.60MC
	Crystals	49096	37.65MC
		49097	37.70MC
		49098	37.75MC
		49099	37.80MC
		49100	37.85MC
M3	Crystal	49106	5.545MC 2nd Osc.
M4	Crystal	49105	6MC Trans. Osc.
M5	Meter	71008	"S" & RF Power Indicator
M6	Microphone Ass'y.	51504	
	Dial Lamp	92000	#47 CHICAGO MINIATURE Replacement CM-47
	Meter Lamps		
	Neon Lamp	92715	Modulation Indicator CHICAGO MINIATURE Replacement CM-NE-2
S1	Switch, Selector	86709	Synthesizer Assembly
S2	Switch, PA-CB	62029	
S3	Switch, Range	62029	
S4	Switch, ANL	60180	

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

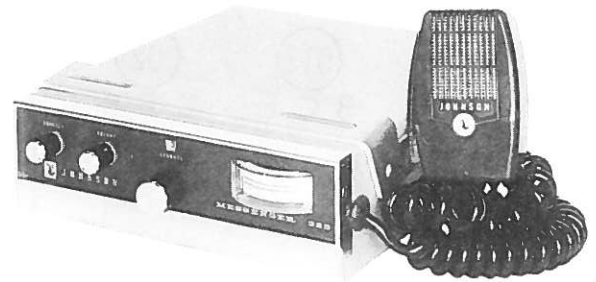
ITEM	PART No.	ITEM	PART No.
Cabinet	88135	Mobile Mounting Bracket (Left)	81449
Knob, Control	53099	Mobile Mounting Bracket (Right)	81450
Knob, Selector	53100	Mobile Mounting Bracket (Cabinet)	81451
Pilot Lamp Assembly	97730	Speaker Grill	55400



PHOTOFACT[®] with

CIRCUITRACE[®]

TRADE NAME : Johnson Model Messenger 323
(242-0153-002)
SUPPLIER : For Current Address, See Annual Index
POWER SUPPLY : 12 Volt Storage Battery (or)
117 Volts AC
RATING : .320 Amp @ 12.6 VDC (Receive)
.830 Amp @ 12.6 VDC (Transmit)
TUNING RANGE : All 23 CB Channels



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A6, A10, A11.
A7, A8, A9, A12 thru A18.

GENERAL CEMENT: 8606, 8869, 9302
GENERAL CEMENT: 9302, 9300, 9296

WALSCO: 2544, 2543, 2588
WALSCO: 2511, 2543, 2583

RECEIVER ALIGNMENT

Connect an AC VTVM across Speaker Voice Coil. Turn Volume Control fully clockwise, turn Squelch Control fully counterclockwise.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to Base of Q7 (2nd Rec. Mixer), low side to chassis. Tune to 455KC (Mod.).	Any	A1 thru A6	Connect a .01mfd or 100Ω resistor from base of Q14 to ground. Adjust for maximum. Remove .01 or 100Ω Resistor.
	High	A7	Connect RF Probe of AC VTVM from center tap of L8 to ground. Adjust 1/4 turn beyond Oscillator starting point.
	11	A8, A9	Adjust for maximum (approximately 50MV Min.) Recheck all Channels for approximately same output. Compromise adjustments if necessary.
High side thru .01mfd to Antenna Receptacle. Low side to chassis. Set Frequency 59 28.085MC (Channel 11).	11	A10, A11	Adjust for maximum. Check Channels for uniform gain and make compromise adjustments if necessary.

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 95, SUBPARTS C & D).

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.

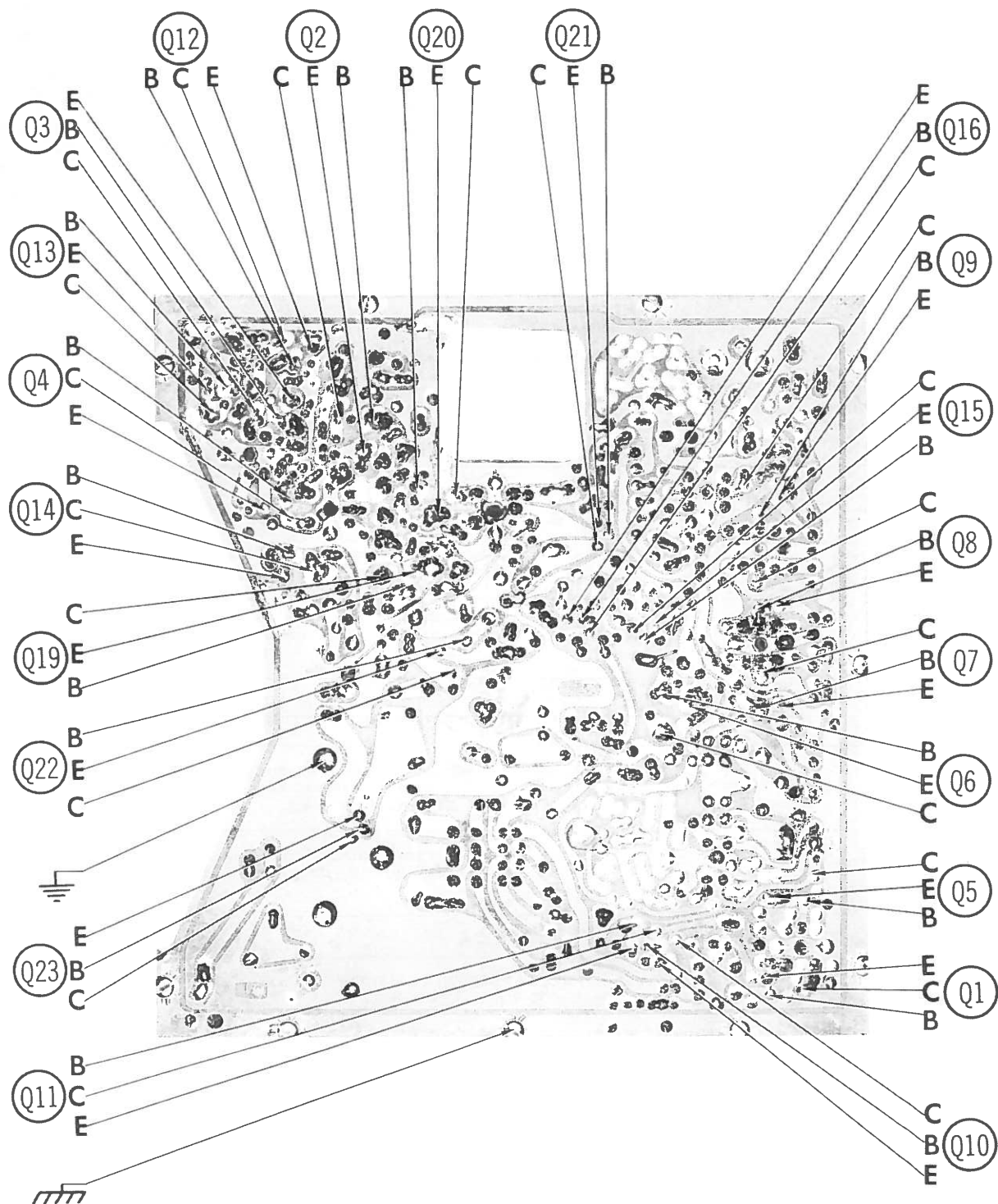
Connect either 50Ω dummy load or the normally used antenna system.

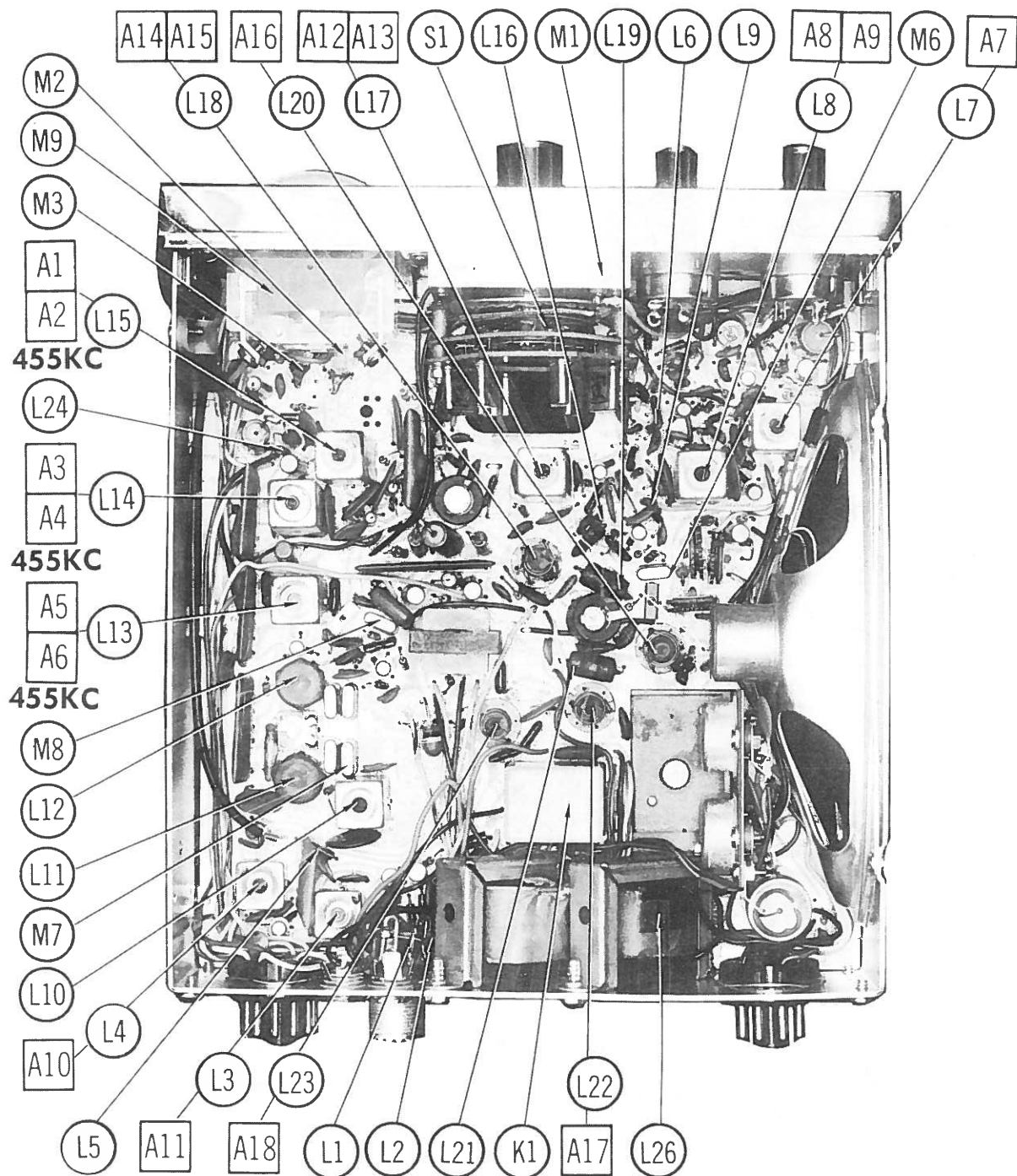
INDICATOR	ADJUST	REMARKS
RF Watt Meter or RF Field Strength Meter.	A12 thru A18	Adjust for maximum. Check all Channels for same output and make compromise adjustments if necessary.
Heterodyne or Digital Frequency Meter.		Check Channels for proper Frequency.

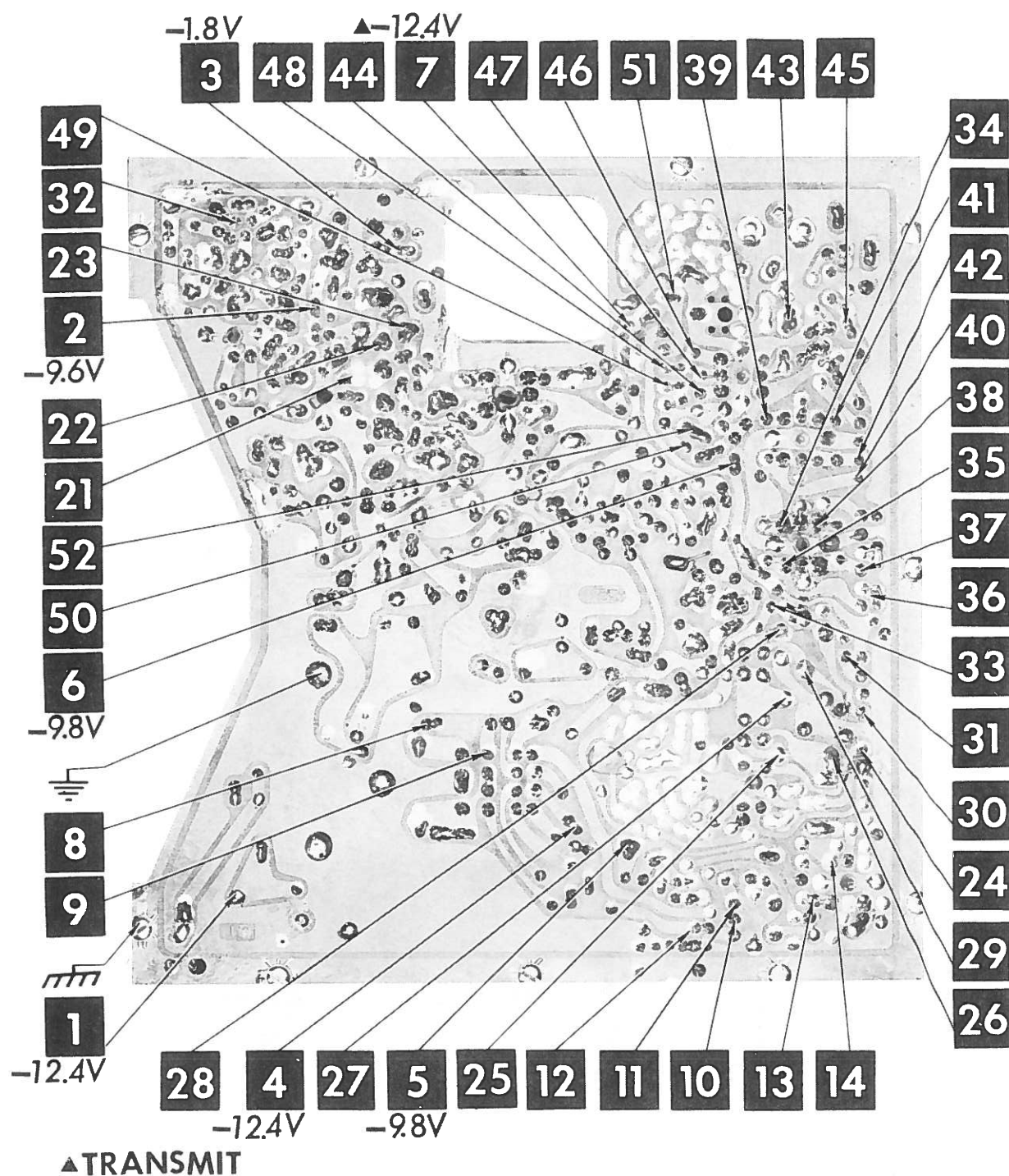
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

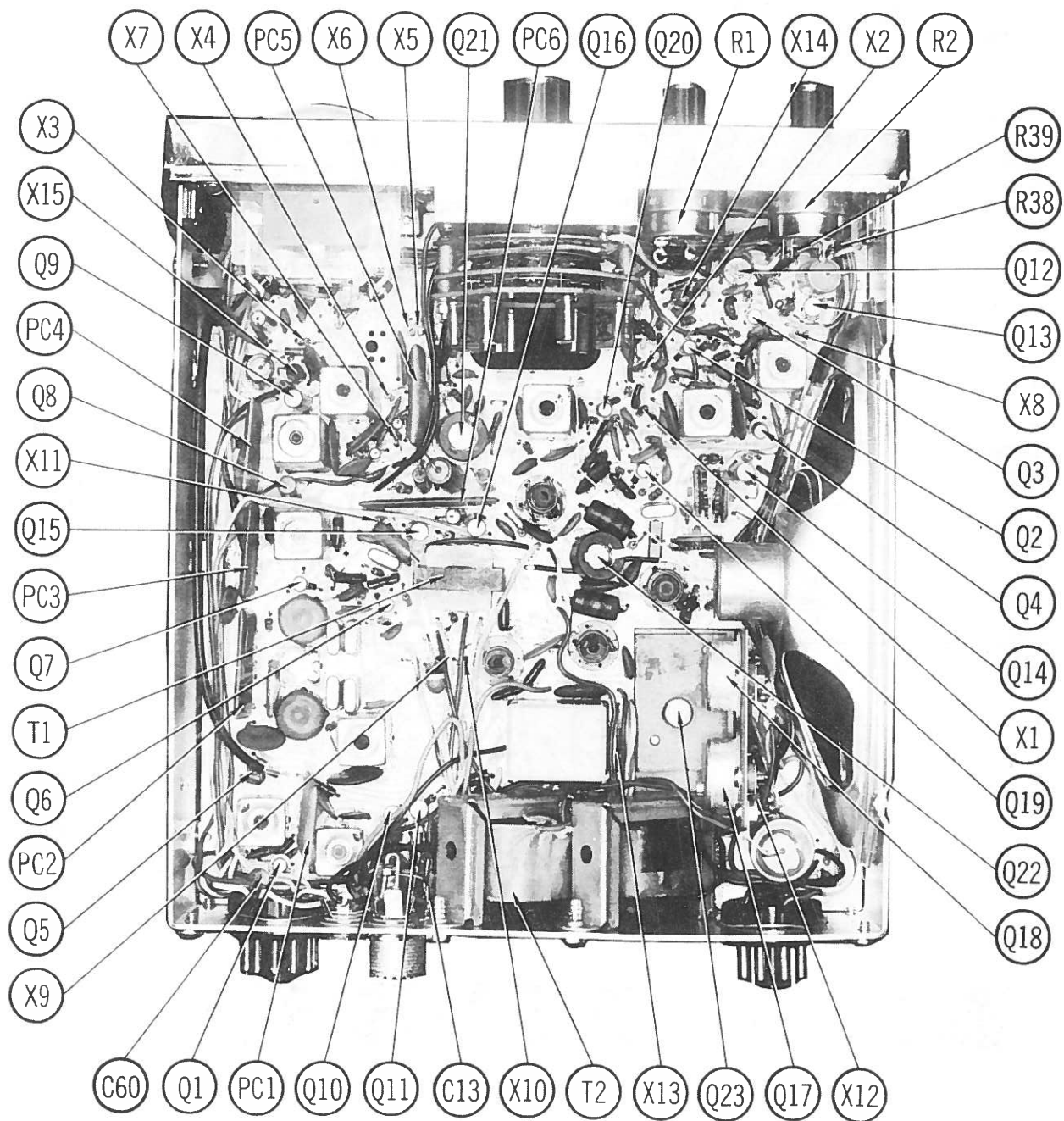
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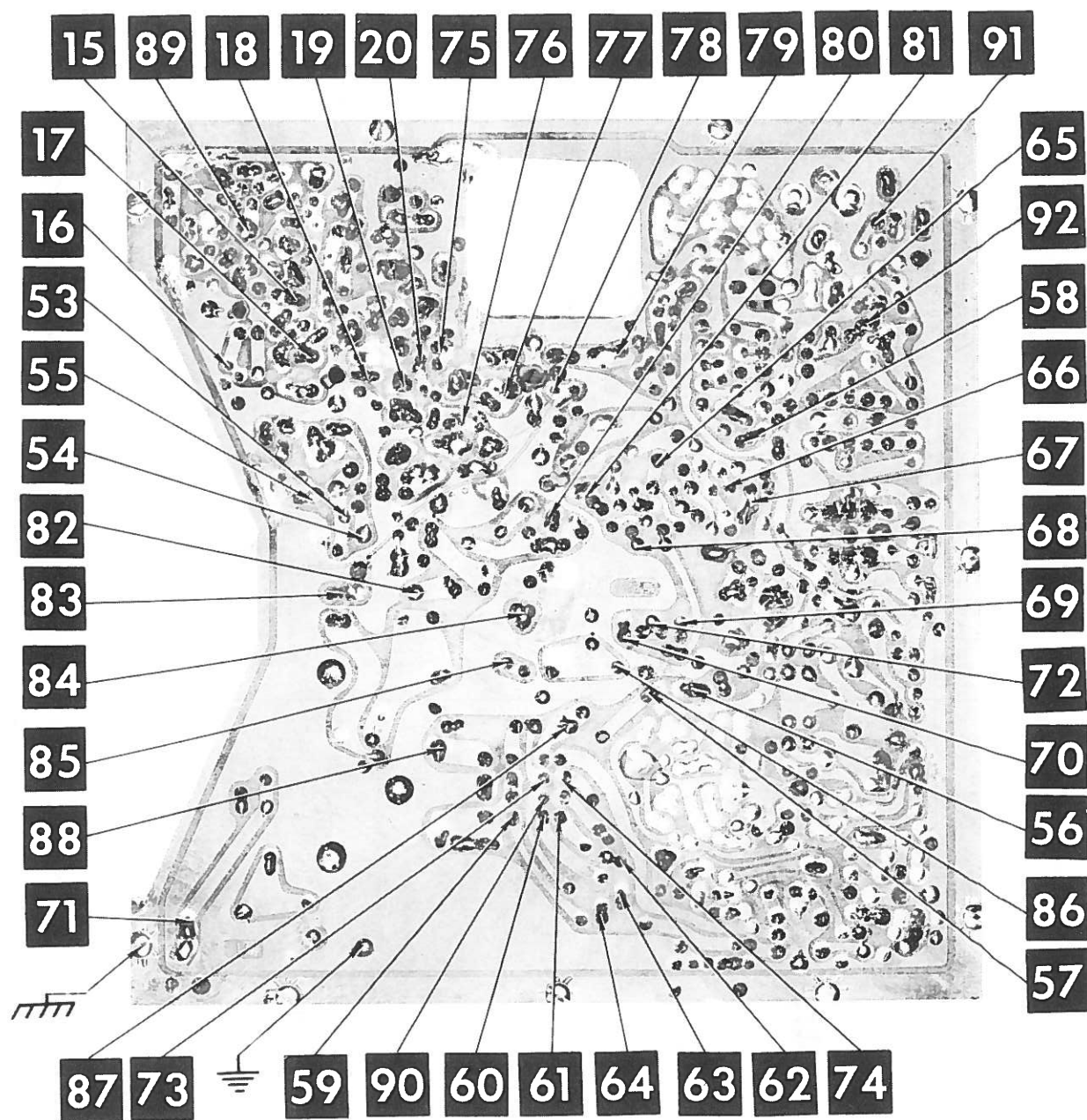
JOHNSON MODEL Messenger 323 (242-0153-002)

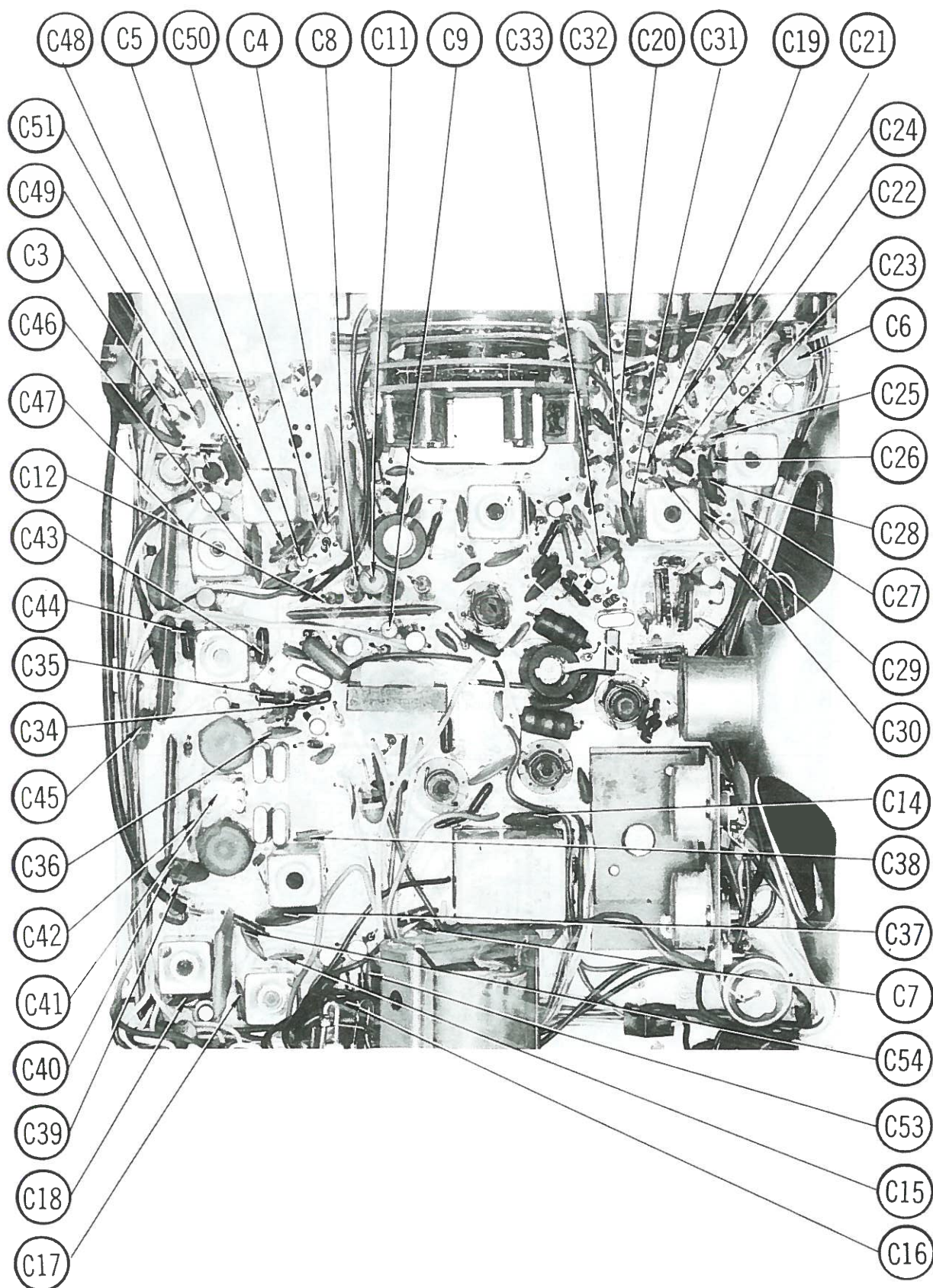


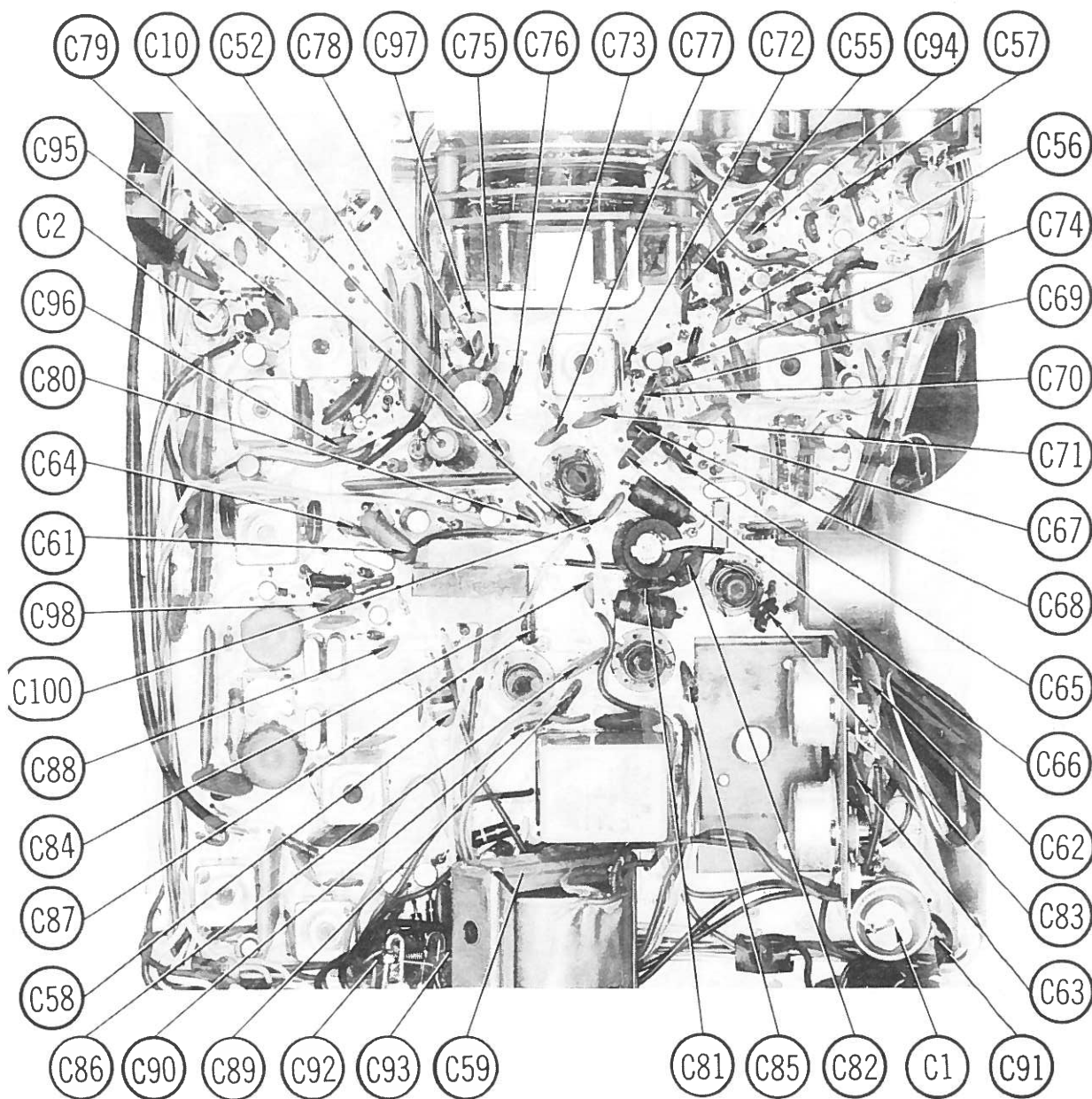


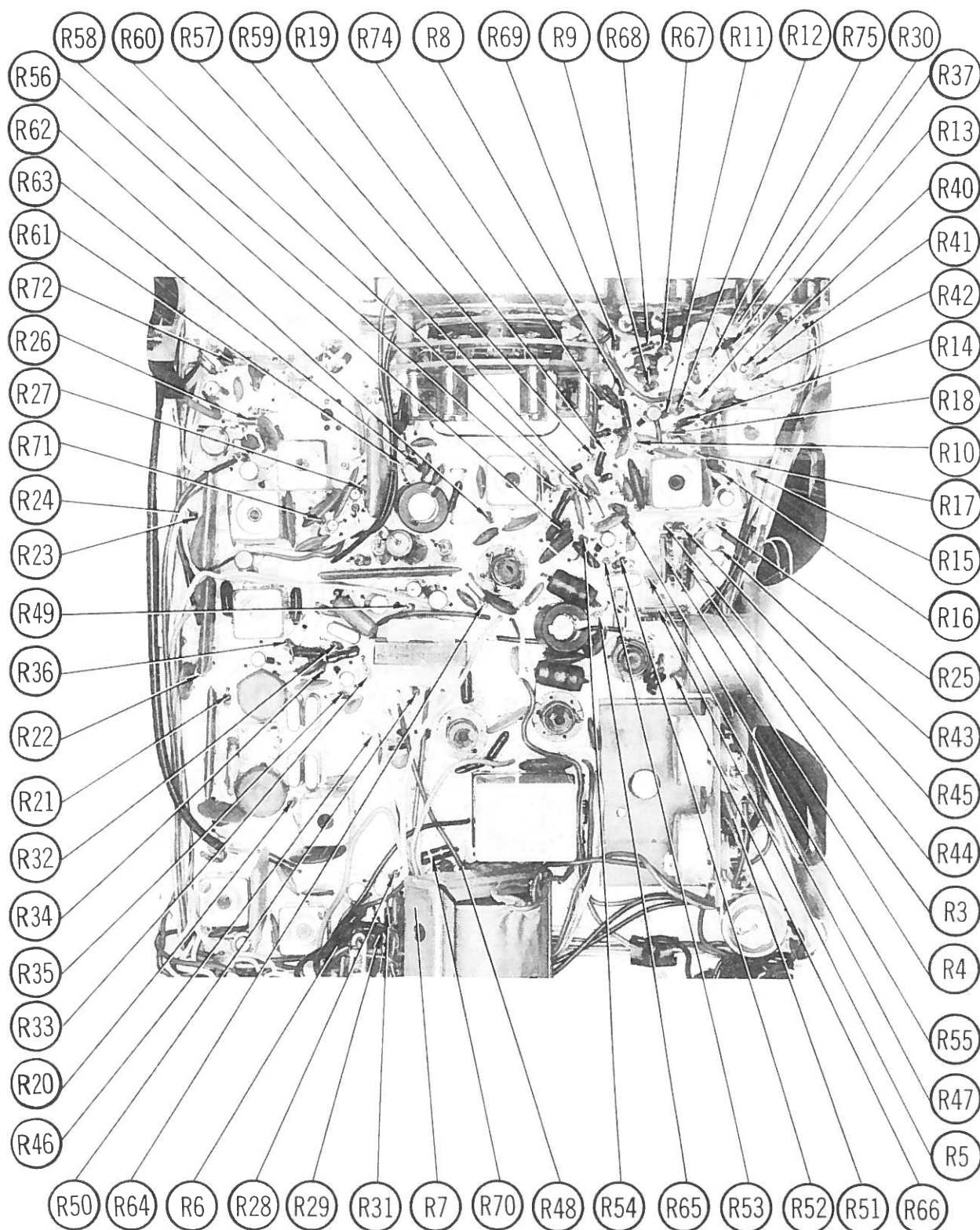


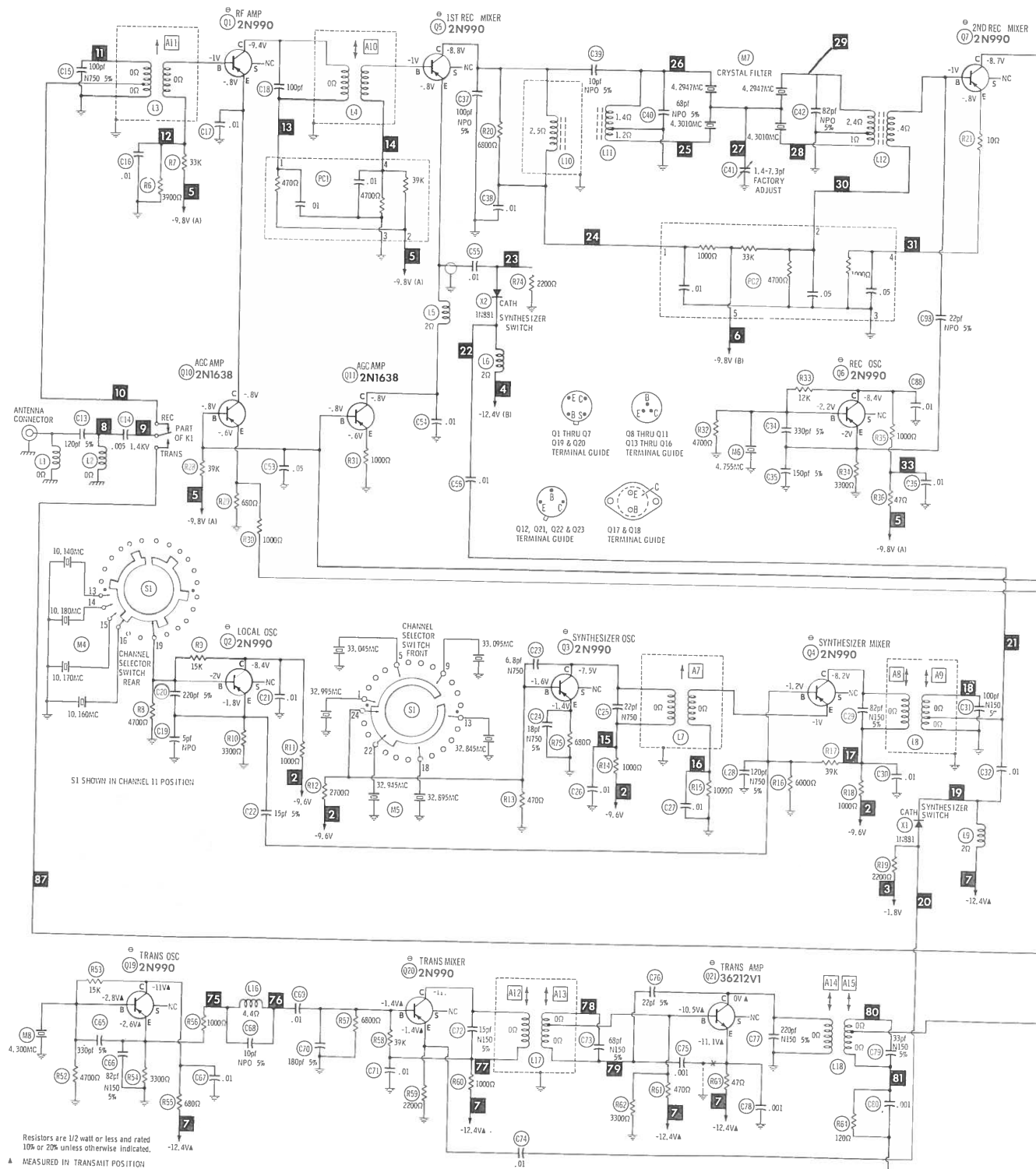


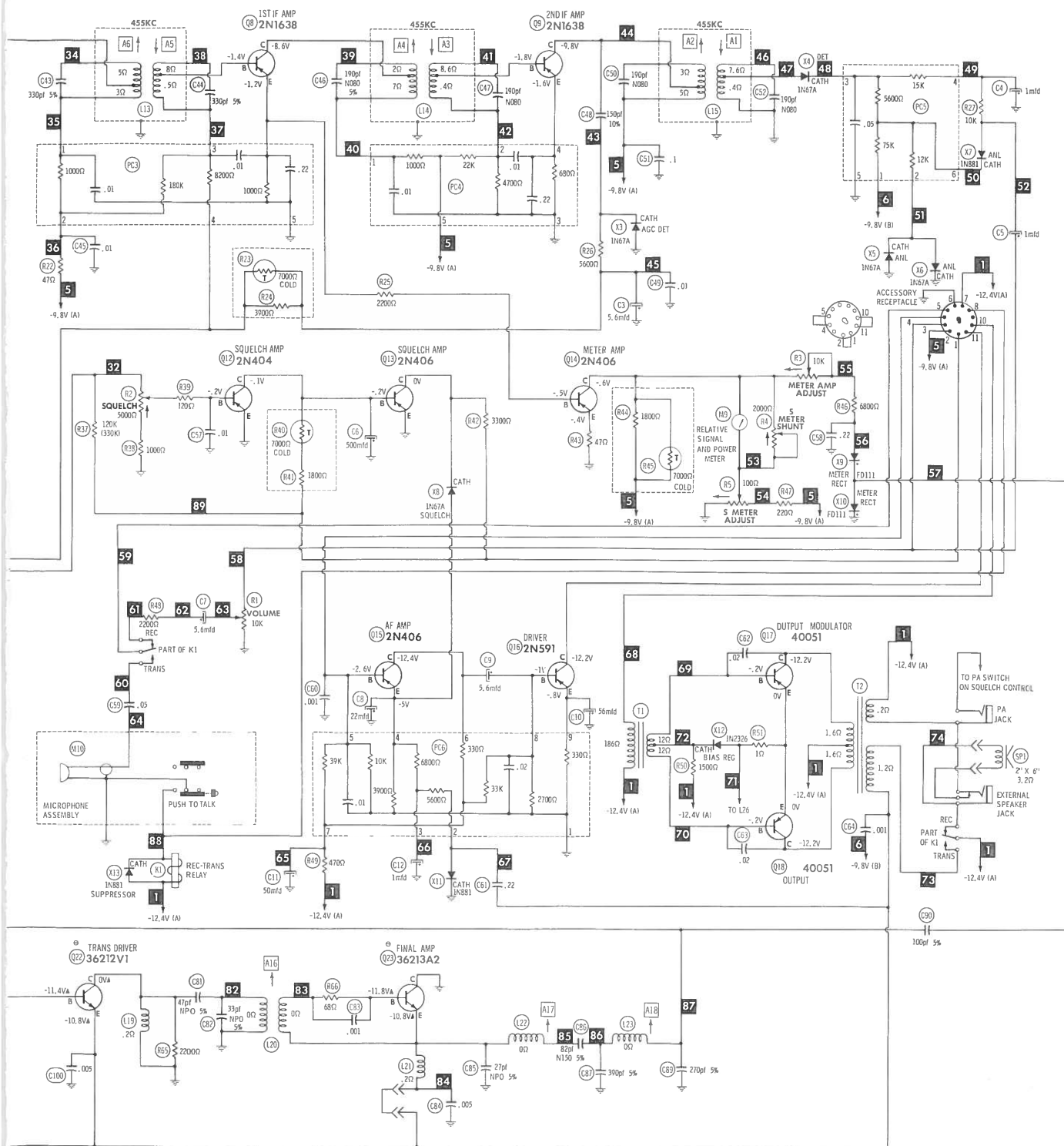


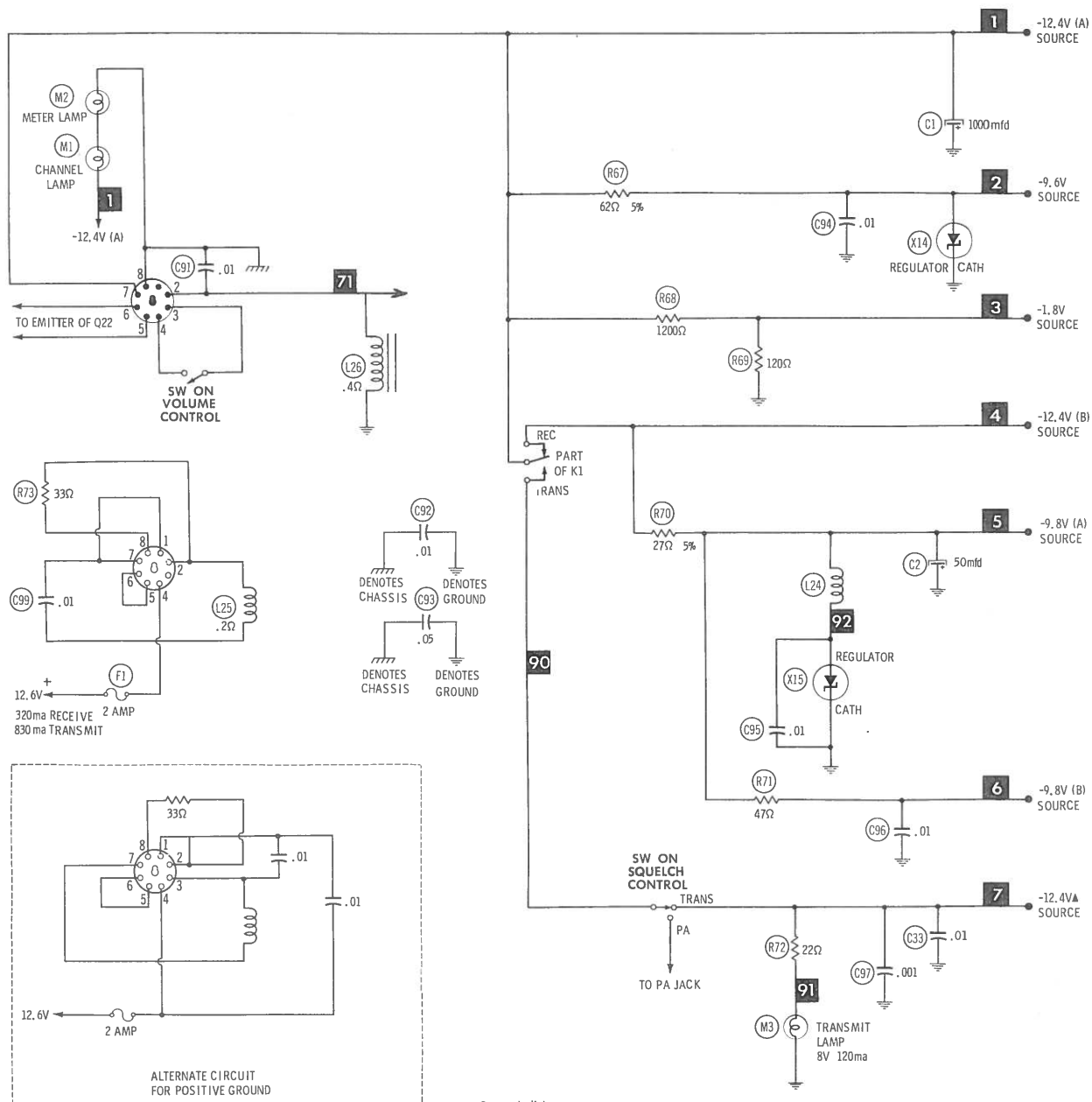












Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

A PHOTOFAC STANDARD NOTATION SCHEMATIC

with **CIRCUITRACE**

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See parts list

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.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

JOHNSON MODEL Messenger 323 (242-0153-002)

PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.
Q1	2N990 (2N1177)	RF Amp	576-0003-008 (576-0003-013)	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q2	2N990 (2N1178)	Local Oscillator	576-0003-008 (576-0003-014)	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q3	2N990 (2N1178)	Synthesizer Osc.	576-0003-008 (576-0003-014)	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q4	2N990 (2N1179)	Synthesizer Mixer	576-0003-008 (576-0003-015)	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q5	2N990 (2N1179)	1st Mixer	576-0003-008 (576-0003-015)	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q6	2N990 (2N1178)	Receive Oscillator	576-0003-008 (576-0003-014)	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q7	2N990 (2N1179)	2nd Mixer	576-0003-008 (576-0003-015)	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q8	2N1638	1st IF Amp	576-0003-010	DS-25	GE-1	TR-11	SK-3008	ECG 126
Q9	2N1638	2nd IF Amp	576-0003-010	DS-25	GE-1	TR-11	SK-3008	ECG 126
Q10	2N1638	AGC Amp	576-0003-010	DS-25	GE-1	TR-11	SK-3008	ECG 126
Q11	2N1638	AGC Amp	576-0003-010	DS-25	GE-1	TR-11	SK-3008	ECG 126
Q12	2N404	Squelch	576-0001-002	DS-26	GE-2	TR-14	SK-3004	ECG 102
Q13	2N406	Squelch	576-0001-003	DS-26	GE-2	TR-14	SK-3004	ECG 102
Q14	2N406	Meter Amp	576-0001-003	DS-26	GE-2	TR-14	SK-3004	ECG 102
Q15	2N406	AF Amp	576-0001-003	DS-26	GE-2	TR-14	SK-3004	ECG 102
Q16	2N591	Driver	576-0001-009	DS-26	GE-2	TR-14	SK-3004	ECG 102
Q17	40051	Output/Modulator	576-0040-051	DS-520	GE-3	TR-01	SK-3009	ECG 104
Q18	40051	Output/Modulator	576-0040-051	DS-520	GE-3	TR-01	SK-3009	ECG 104
Q19	2N990 (2N1178)	Transmit Oscillator	576-0003-008 (576-0003-014)	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q20	2N990 (2N1179)	Transmit Mixer	576-0003-008 (576-0003-015)	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q21	36212V1 (40081V1)	Transmit Amp	576-0004-004 (576-0004-004)					
Q22	36212V1 (40081V1)	Transmit Driver	576-0004-004 (576-0004-004)					
Q23	36213A2 (40082A2)	RF Final Amp	576-0004-005 (576-0004-005)					

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES			REPLACEMENT RECTIFIERS		NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X1	1N881	504A	8D4 or 5A4-D	ECG 116 or ECG 117	SK-3016	40C or F-4	
X2	1N881	504A	8D4 or 5A4-D	ECG 116 or ECG 117	SK-3016	40C or F-4	
X3	1N67A	1N34A	1N67A	ECG 109			
X4	1N67A	1N34A	1N67A	ECG 109			
X5	1N67A	1N34A	1N67A	ECG 109			
X6	1N67A	1N34A	1N67A	ECG 109			
X7	1N881	504A	8D4 or 5A4-D	ECG 116 or ECG 117	SK-3016	40C or F-4	
X8	1N67A	1N34A	1N67A	ECG 109			
X9	FD111	1N34AS	1N34A	ECG 109			
X10	FD111	1N34AS	1N34A	ECG 109			
X11	1N881	504A	8D4 or 5A4-D	SK-3030 or SK-3031	SK-3016		
X12	1N2326 (523-1000-326)						
X13	1N881	504A	8D4 or 5A4-D	ECG 116 or ECG 117	SK-3016	40C or F-4	
X14	523-2003-100		1ZM9.0T5				10V Zener
X15	523-2004-100		1ZM10			VR10A	10V Zener

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		JOHNSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	1000 16V	510-4006-005			BR1000-15		TC2510	TL-1166.5
C2	50 25V	510-4008-006	PTT85	EA30-50	NLW50-25	NT1-17	TT25X50	TL-1209
C3	5.6 35V	510-2005-569			TYR13BF565K		TAS565K035POC	150D565X9035 B2
C4	1 35V	510-2005-109			TYR13BF010K		TAS105035POA	150D105X0035 A2
C5	1 35V	510-2005-109			TYR13BF010K		TAS105035POA	150D105X0035 A2
C6	500 2.5V	510-4001-006	PTT17	EA6-500	BR500-6	NT1-26	TT3X500	TL-1068
C7	5.6 35V	510-2005-569			TYR13BF565K		TAS565K035POC	150D565X9035 B2
C8	22 15V	510-2003-220		EA15-25	TYR13BF220K		TAS226K015POC	150D226X0015 B2
C9	5.6 35V	510-2005-569			TYR13BF565K		TAS565K035POC	150D565X9035 B2
C10	56 6V	510-2001-560			TYR13BB560K		TAS566K006POC	150D566X9006 B2
C11	50 25V	510-4008-006	PTT85	EA30-50	NLW50-25	NT1-17	TT25X50	TL-1209
C12	1 35V	510-2005-109			TYR13BF010K		TAS105035POA	150D105X0035 A2

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

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.
C13	120 5%		ADM-15-121	CPR-120J	CD15F121J500	DM-15-121	SX312	MS-312
C14	.005 1.4KV		DD16-502		HV1622U472P	3CCD-502	2HV247	30GA-D50
C15	100 N750 5%		N750-D1 100	DTN-100	CX601UJ101K	CCTN-101	CN7310	10TCU-T10
C16	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C17	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C18	100		GPD X5F101K	DD-101	JBZ601YP101K	CCD-101	GP310	10TS-T10
C19	5 NPO		NPO-D1 5.0	DTZ-4R7	CZ601CH5R0D	CCTO-050	CN0547	10TCC-V50
C20	220 5%		ADM-15-221	CPR-220J	CD15F221J500	DM-15-220J	SX322	MS-322
C21	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C22	15 5%		DTZ-15		CZ601CG150J	CCTO-150	CN0415	10TCC-Q15
C23	6.8 N750				CZ601UJ6R8P		CN7568	10TCU-V68
C24	18 N750 5%			TCN-18	CZ601UJ180J		CN7418	10TCU-Q18
C25	22 N750		N750-D1 22	DTN-22	CZ601UJ220K	CCTN-220	CN7422	10TCU-Q22
C26	.01 16V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C27	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C28	120 N750 5%			TCN-120		CCTN-121	CN7312	10TCU-T12
C29	82 N150 5%	#510-3016-820				*	*	10TCP-Q82
C30	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C31	100 N150 5%	#510-3016-101				*	*	10TCP-T10
C32	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C33	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C34	330 5%		ADM-15-331	CPR-330J	CD15F331J500	DM-15-331J	SX333	MS-333
C35	150 5%		ADM-15-151	CPR-150J	CD15F151J500	DM-15-151J	SX315	MS-315
C36	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C37	100 NPO 5%		NPO-D1 100	DTZ-100	CJ601CG101K	CCTO-101	CN0510	10TCC-T10
C38	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C39	10 NPO 5%		NPO-D1 10	DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C40	68 NPO 5%		NPO-D1 68	DTZ-68	CX601CG680K	CCTO-680	CN0468	10TCC-Q68
C41	1.4 - 7.3	#189-0003-005						
C42	82 NPO 5%			DTZ-82		CCTO-820	CN0482	10TCC-Q82
C43	330 5%		ADM-15-331	CPR-330J	CD15F331J500	DM-15-331J	SX333	MS-333
C44	330 5%		ADM-15-331	CPR-330J	CD15F331J500	DM-15-331J	SX333	MS-333
C45	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C46	190 N080 5%	#510-3015-191				*	*	10TCN-T18
C47	190 N080	#510-3015-191				*	*	10TCN-T18
C48	150 10%		GPD X5F151K	DD-151	HOY101ZV103P	CCD-151	GP315	10TS-T15
C49	.01 16V		TTP-01	CK-103		CCD-103	TA110	TG-S10
C50	190 N080	#510-3015-191				*	*	10TCN-T18
C51	.1 16V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C52	190 N080	#510-3015-191						10TCN-T18
C53	.05 16V		TTP-05	CK-503	HOV101ZV503Z	CCD-503	TA150	TGL-S50
C54	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C55	.01 15V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C56	.01 16V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C57	.01 16V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C58	.22 250V		DBE6P22		DMF4P22	4DP-5-224	PVC4022	4PS-P22
C59	.05 16V		TTP-05	CK-503	HOV101ZV503Z	CCD-503	TA150	TGL-S50
C60	.001		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C61	.22 250V		DBE6P22		DMF4P22	4DP-5-224	PVC4022	4PS-P22
C62	.02 50V		TTP-02	CK-203	HOR101ZV203P	CCD-203	TA120	TG-S20
C63	.02 50V		TTP-02	CK-203	HOR101ZV203P	CCD-203	TA120	TG-S20
C64	.001 50V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C65	330 5%		ADM-15-331	CPR-331J	CD15F331J500	DM-15-331J	SX333	MS-333
C66	82 N150 5%					*	*	10TCP-Q82
C67	.01 16V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C68	10 NPO 5%		NPO-D1 10	DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C69	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C70	180 5%		ADM-15-181	CPR-181J	CD10E181J500	DM-15-181J	SX318	MS-318
C71	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C72	15 N150 5%	#510-3016-15				*	*	10TCP-Q15
C73	68 N150 5%	#510-3016-680				*	*	10TCP-Q68
C74	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C75	.001 50V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C76	22 5%		ADM-15-220	CPR-22J	CD15E220J500	DM-15-220J	SX422	MS-422
C77	220 N150 5%	#510-3016-220				*	*	10TCP-Q220
C78	.001		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C79	33 N150 5%	#510-3016-330				*	*	10TCP-Q33
C80	.001		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C81	47 NPO 5%		NPO-D1 47	DTZ-47	CX601CG470K	CCTO-470	CN0447	10TCC-Q47
C82	33 NPO 5%		NPO-D1 33	DTZ-33	CS601CG330K	CCTO-330	CN0433	10TCC-Q33
C83	.001 50V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C84	.005 50V		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C85	27 NPO 5%			TCZ-27		CCTO-270	CN0427	10TCC-Q27
C86	82 N150 5%	#510-3016-820				*	*	10TCP-Q82
C87	390 5%		ADM-15-391	CPR-390J	CD10E391J500	DM-15-391J	SX339	MS-339
C88	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C89	270 5%		ADM-15-271	CPR-270J	CD10E271J500	DM-15-271J	SX327	MS-327
C90	100 5%		ADM-15-101	CPR-100J	CD10E101J500	DM-15-101J	SX310	MS-310
C91	.01 16V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C92	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C93	.05 16V		TTP-05	CK-503	HOV101ZV503Z	CCD-503	TA150	TGL-S50
C94	.01 16V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C95	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C96	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C97	.001 50V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C98	22 NPO 5%		NPO-D1 22	DTZ-22	CY601CG220K	CCTO-220	CN0422	10TCC-Q22
C99	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C100	.005 50V		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50

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

Johnson Part Number

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Power Switch	10K	562-0001-005	F2-10K, SRS200 (1), BA006, CA005, KR-1	A47-10K-Z, RS-2 (1), SWE-12 or (NP-10K-Z, UP-A-400 (1), NWE-12)	QCB1 (2), B13-116, SK1 (1), 76-1 or (BU2, CF61, SS1(1), GC)*	UA14, SL2500 (1), US41 or (RU14A, SL39, SL2500 (1), US41) or (U18, US26)
R2	Squelch & PA-Transmit Switch	5000	562-0001-004	F5-5000, SRS200(1), BA006, CA005, KR-3	NP-5000-V, UP-A-400 (1), NWE-21	QCB1 (2), B17-114, SK1(1), 76-4 or (BU2, CF34, SS1(1), VF)*	RUS3R, SL39, SL2500 (1), US43
R3	Meter Amp Adjust	10K	562-0004-103	T-10K		X201R103B	MTC14L1
R4	"S" Meter Adjust	2000	562-0004-202	TH-2500 (2)		X201R252B	MTC23L1
R5	"S" Meter Adjust	100	562-0004-101	T-100		X201R101B	MTC12L1

- * "SNAPTROL" (1) File Flat.
 (2) Use QCB1 instead of bushing in SK1 kit.
 (3) Cut off studs & bend terminals to fit "PC" board.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	MFGR. PART No.			IRC PART No.	WORKMAN PART No.	MFGR. PART No.
R23	2000 (Cold) Includes R24		GM6800	023-2042-003	R45	2000 (Cold) Includes R44		GM6800	023-2042-004
R40	2000 (Cold) Includes R41		GM6800	023-2042-001					

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	Hi Pass Filter	542-0001-135			
L2	Hi Pass Filter	542-0001-135			
L3	RF Input	592-5016-001			
L4	RF Interstage	592-5016-002			
L5	RFC (20uh)	542-3002-002	19-6022	6152	
L6	RFC (20uh)	542-3002-002	19-6022	6152	
L7	Synthesizer Oscillator	592-5010-001			
L8	Synthesizer Mixer	592-5008-001			
L9	RFC (20uh)	542-3002-002	19-6022	6152	
L10	RFC (13uh)	542-1002-001			
L11	Crystal Filter Input	592-9002-010			
L12	Crystal Filter Output	592-9002-015			
L13	Input IF	592-5016-005			
L14	Interstage IF	592-5016-006			
L15	Output IF	592-5016-007			
L16	8.6MC Filter (30uh)	542-3002-004	19-6033	72F335A1	T972
L17	Transmit Mixer	592-5008-002			
L18	Transmit Amp	592-5021-001			
L19	RFC (13uh)	542-3003-001		9310-38	
L20	Driver	592-5014-002			
L21	RFC (13uh)	542-3003-001		9310-38	
L22	Pi Network	542-1005-010			
L23	Pi Output	542-1005-004			
L24	RFC (20uh)	542-3002-002		6152	
L25	RFC (13uh)	542-3003-001		9310-38	

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L26		.4	18mh	542-5007-001					

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	2.25	1		592-1007-004					

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			MFR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC. 1						
T2	22	4	592-1013-002					
		SEC. 2						
		1.2DC Resistance						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA			NOTES
				MFR. PART No.	JENSEN PART No.	QUAM PART No.	
SP1	2" X 6"	PN	4 ohms	589-1002-001	P2X6X3	26A07	

FUSE DEVICES

ITEM No.	DESCRIPTION		REPLACEMENT DATA					
			PART No.		BUSS PART No.		LITTELFUSE PART No.	
			DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	WORKMAN PART No.
F1	AGC	2 Amp			AGC 2	H11J	312002	155020

MISCELLANEOUS

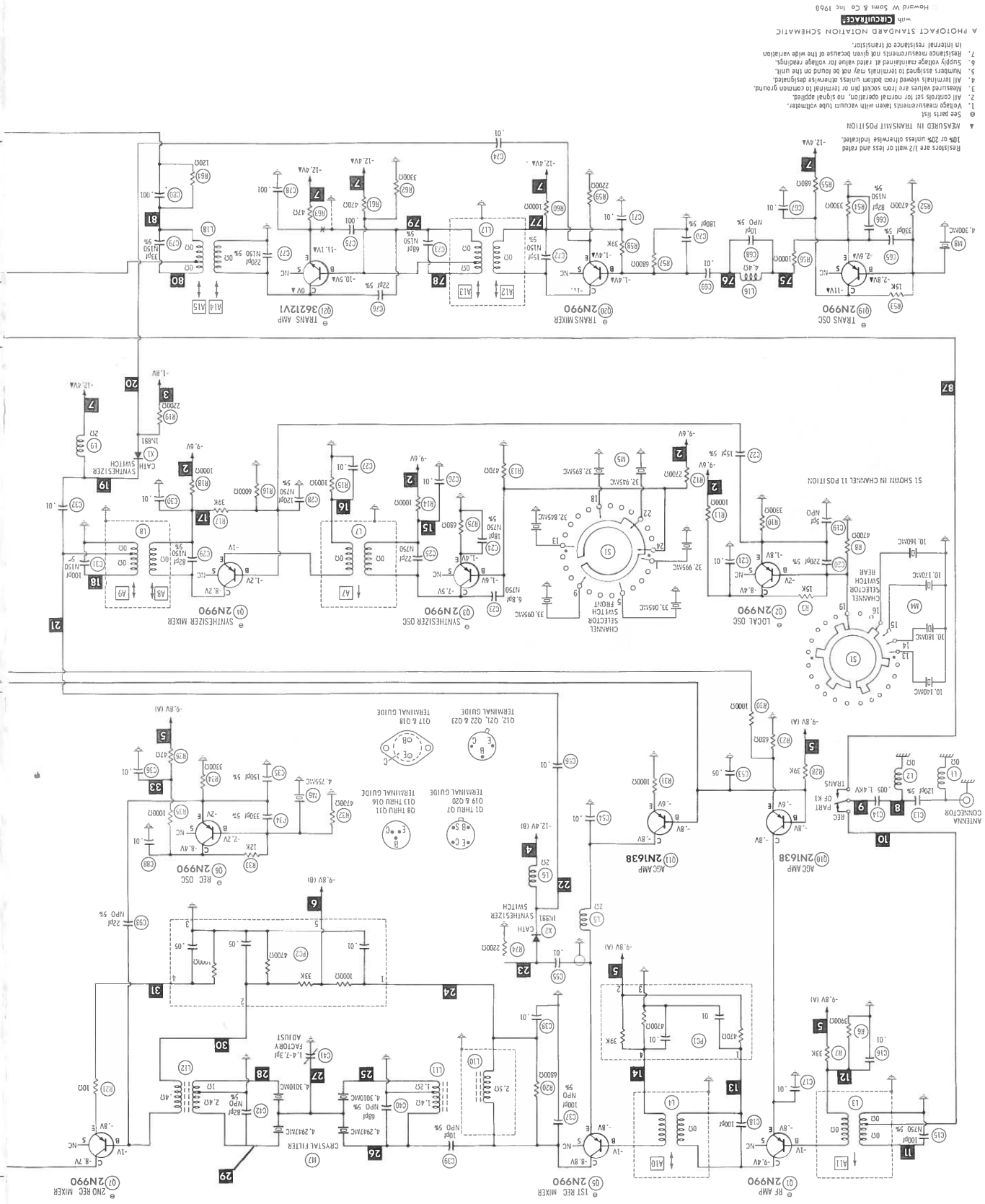
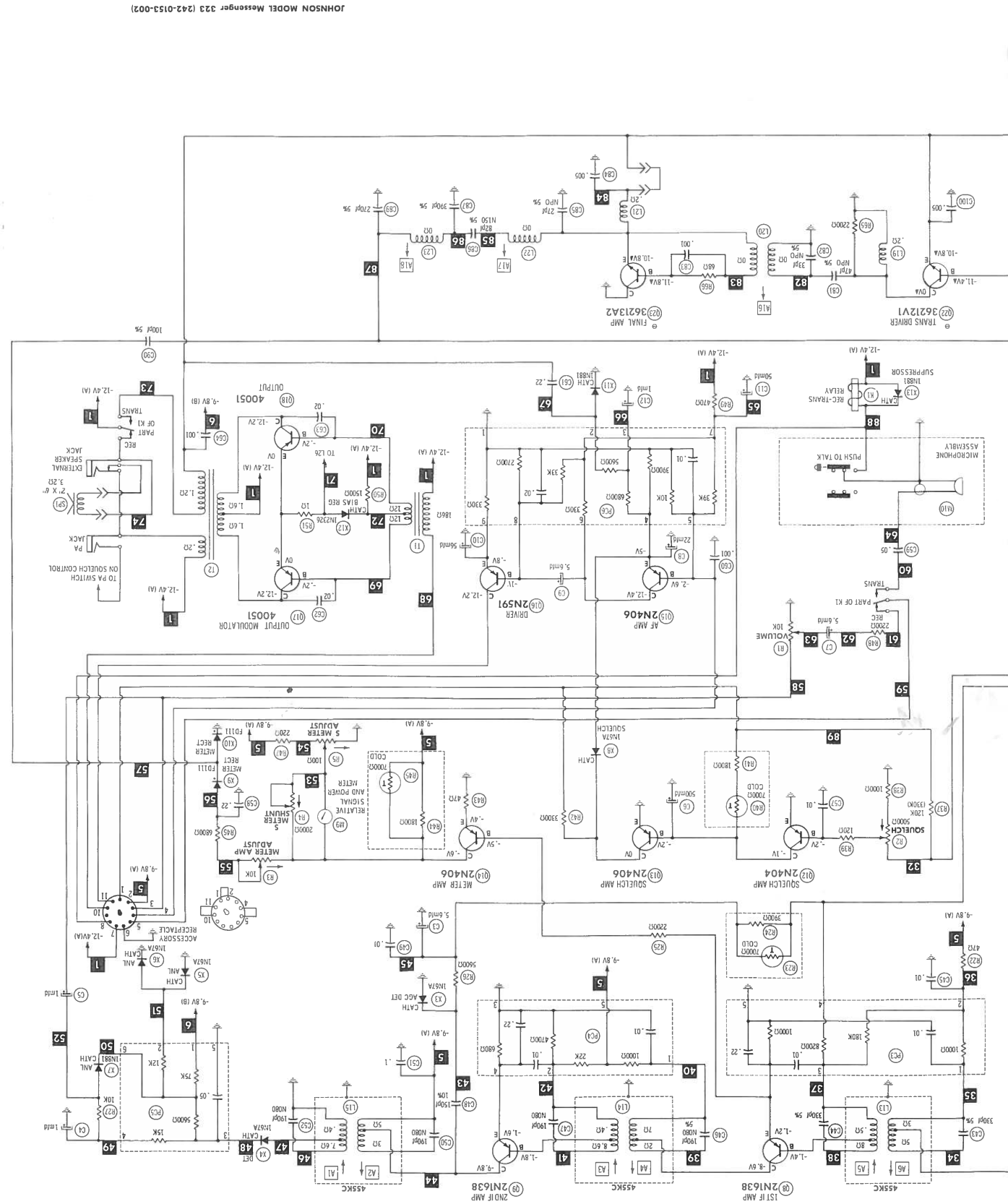
ITEM No.	PART NAME	PART No.	NOTES
K1	Relay	567-0003-012	Receive-Transmit
	Socket	515-9002-003	Relay
M1	Lamp, Channel	549-3001-007	Clear
M2	Lamp, Meter	549-3001-007	Clear
M3	Lamp, Transmit	549-3001-004	Red
M4	Crystal	519-0006-014	10.180MC Channel 1,5,9,13,17,21
		519-0006-013	10.170MC Channel 2,6,10,14,18,22
		519-0006-012	10.160MC Channel 3,7,11,15,19
		519-0006-011	10.140MC Channel 4,8,12,16,20,23
M5	Crystal	519-0005-011	32.845MC Channel 1,2,3,4
		519-0005-012	32.895MC Channel 5,6,7,8
		519-0005-013	32.945MC Channel 9,10,11,12
		519-0005-014	32.995MC Channel 13,14,15,16
		519-0005-015	33.045MC Channel 17,18,19,20
		519-0005-016	33.095MC Channel 21,22,23
M6	Crystal	519-0012-001	4.755MC
M7	Filter Crystal Set	519-0007-001	Includes two each of 4.2947MC & 4.3010MC Crystals
M8	Crystal	519-0008-001	4.300MC
M9	Meter	544-0009-001	Signal & Power
M10	Microphone Assembly	589-0006-004	Ceramic
PC1	Receive 1st Mixer	544-0002-001	
PC2	Receive 2nd Mixer	544-0002-002	
PC3	1st IF	544-0002-003	
PC4	2nd IF	544-0002-004	
PC5	Noise Limiter	544-0002-005	
PC6	Audio	544-0002-016	
S1	Switch, Selector	583-2009-103	
	Switch, Selector	583-2009-102	
	AC Adapter	239-0122-001	(117VAC)

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	ITEM	PART No.
Cabinet Shell	017-1458-001	Knob, Control	013-1086-005
Front Panel	015-0757-002	Dial	032-0154-001
Knob, Selector	015-1052-013	Cabinet, Complete	023-2211-002

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 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)
Coiled Microphone Cable	8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene)
	8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression	Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No. 8661 (3/8 In.)





PHOTOFACT[®] with

CIRCUITRACE[®]

TRADE NAME : Pearce-Simpson Model Sentry II
 SUPPLIER : For Current Address, See Annual Index
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .3 Amp @ 12.6 VDC (Receive)
 1.2 Amp @ 12.6 VDC (Transmit)
 TUNING RANGE : Any 5 CB Channels 1 thru 23



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools :

A1 & A9.	GENERAL CEMENT: 9089	WALSCO: 2541
A2 thru A5.	GENERAL CEMENT: 5000	WALSCO: 2525
A6 thru A8, A10 thru A12.	GENERAL CEMENT: 9302	WALSCO: 2511

RECEIVER ALIGNMENT

Connect an AC VTVM across Speaker Voice Coil. Turn volume control full clockwise, turn squelch control fully counterclockwise.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to Base of Q2 (Rec. Mixer), low side to chassis. Tune to 455KC (Mod.)	Any	A1, A2, A3, A4, A5	Adjust for maximum.
High side thru .01mfd to Antenna Receptacle. Low side to chassis. Set Frequency to 27.085MC. Channel 11 (Mod.)	11	A6, A7, A8	Adjust for maximum.

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 95, SUBPARTS C & D).

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.

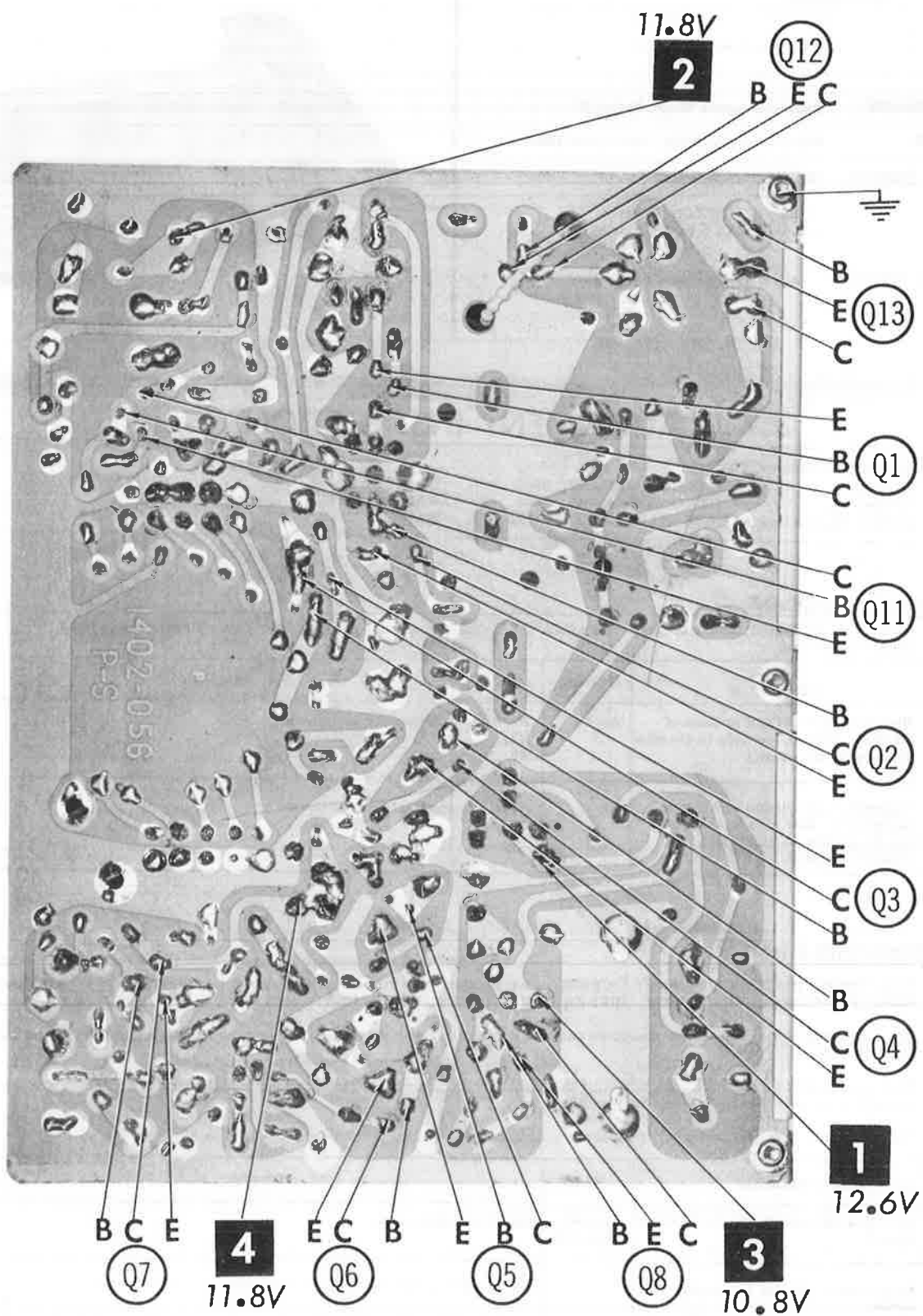
Connect either 50Ω dummy load or the normally used antenna system.

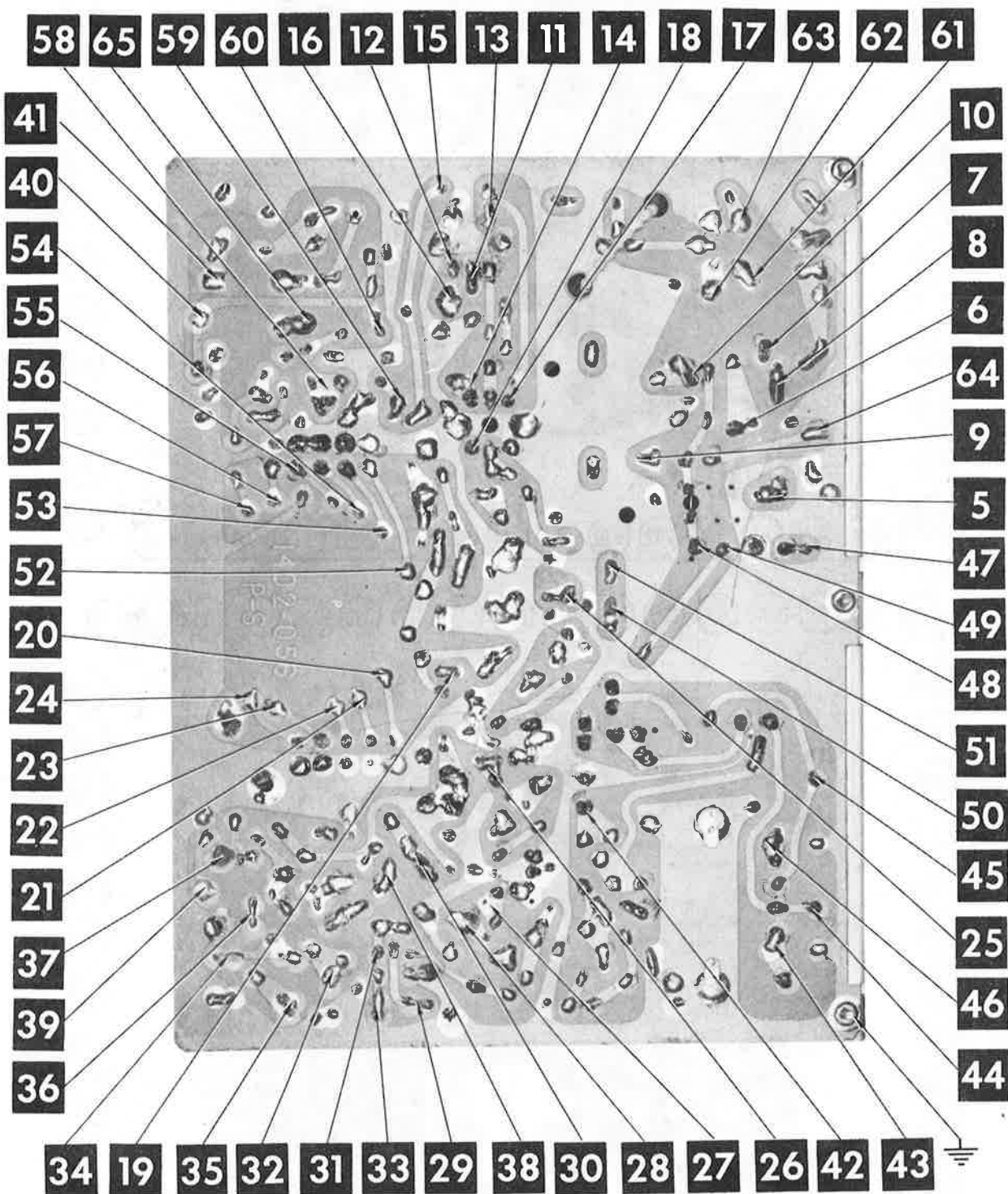
INDICATOR	ADJUST	REMARKS
RF Field Strength Meter or RF Watt Meter.	A9, A10, A11, A12	Adjust for maximum.
Hetrodyne or Digital Frequency Meter.		Check all Channels for proper Frequency.

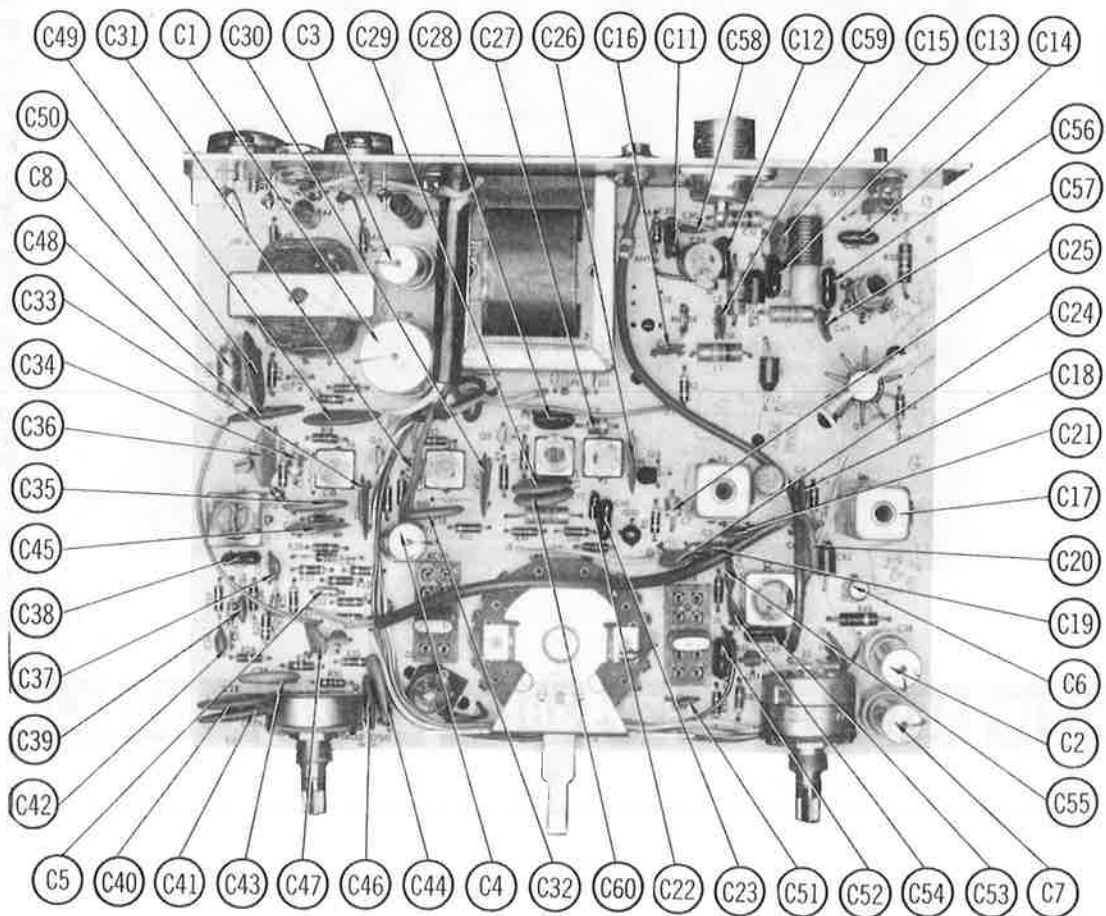
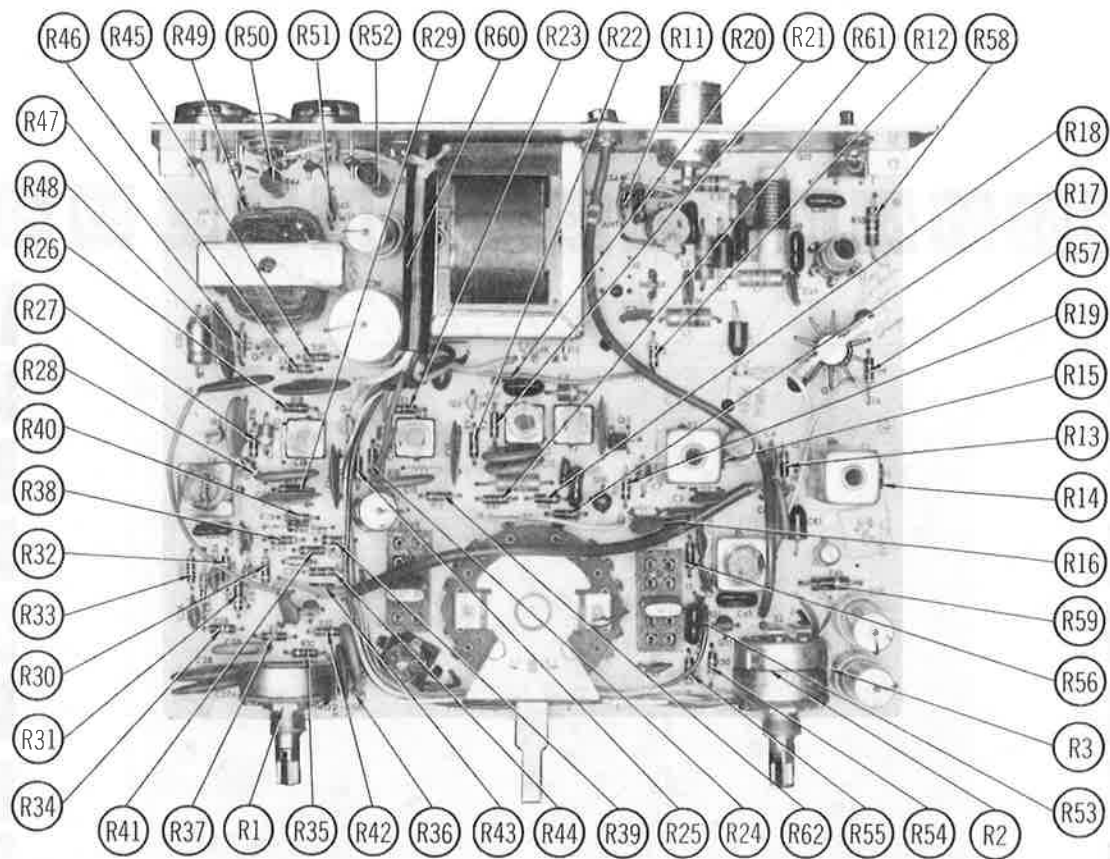
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

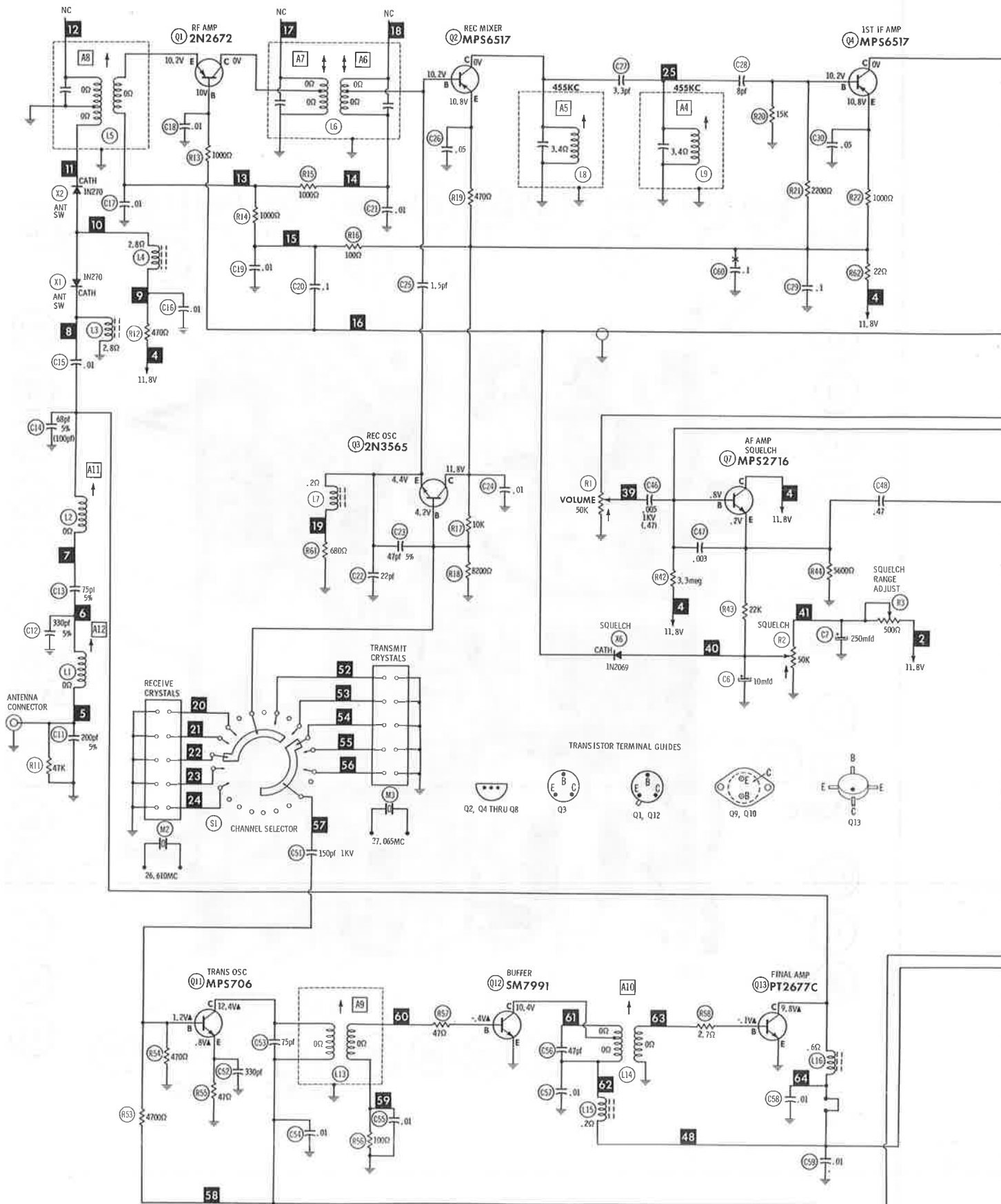
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PEARCE-SIMPSON MODEL Sentry II

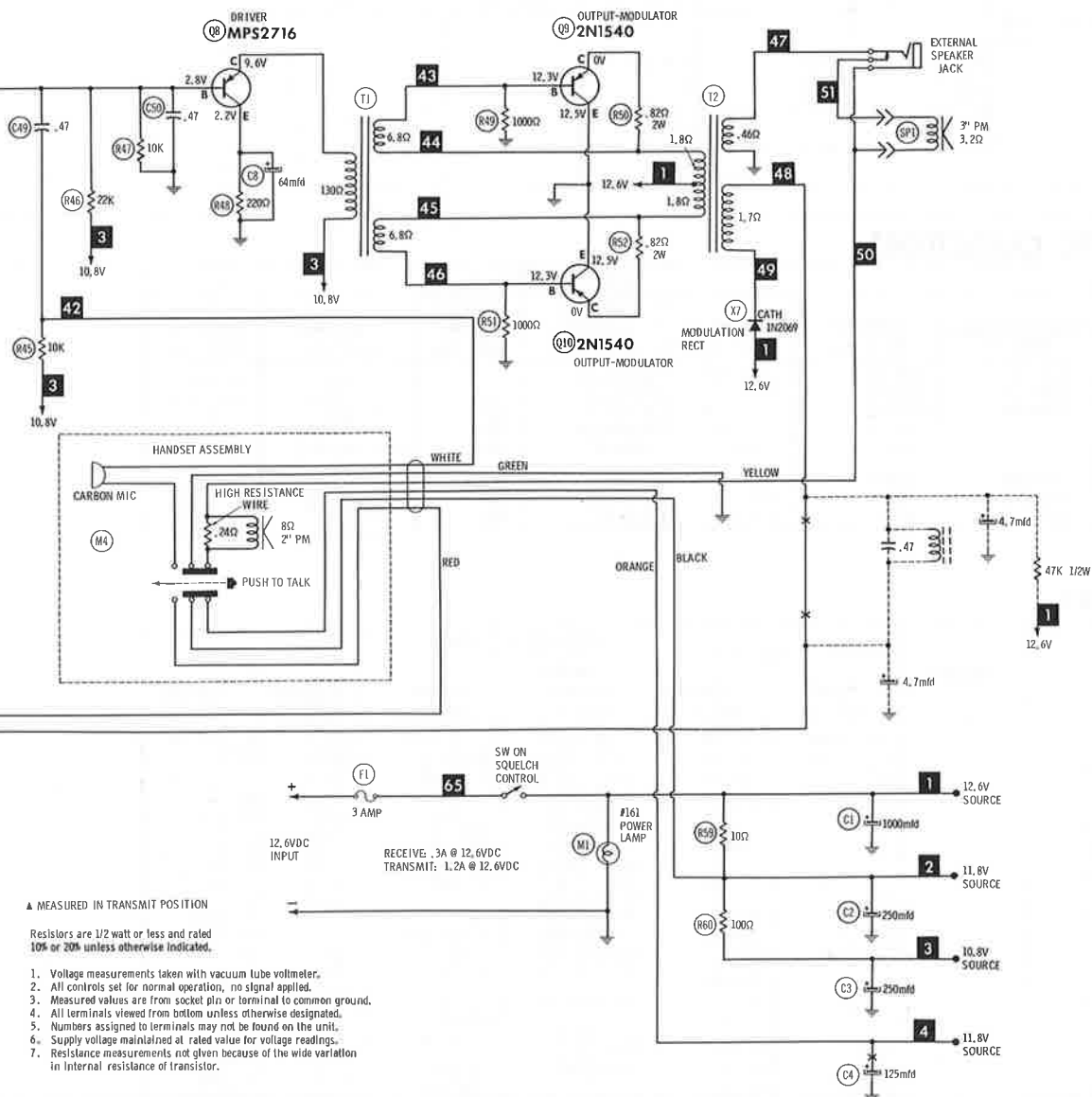
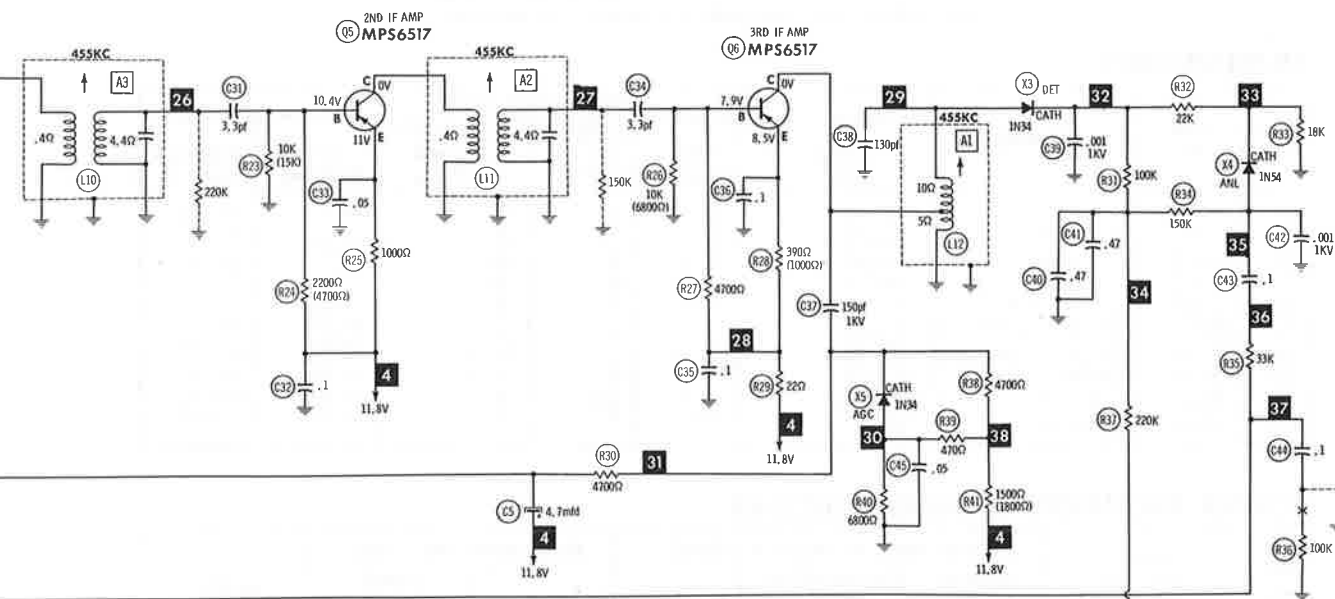








A PHOTOFAC STANDARD NOTATION SCHEMATIC
with **CircuitTrace**
© Howard W. Sams & Co., Inc. 1968



▲ MEASURED IN TRANSMIT POSITION
Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

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.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.
Q1	2N2672	RF Amp.	2904-016	DS-41	GE-9A	TR-17	SK-3006	ECG 126
Q2	MPS6517	Rec. Mixer	2904-038	DS-41	GE-9A	TR-17		ECG 126
Q3	2N3565	Rec. Osc.	2904-045	DS-74	GE-20	TR-21	SK-3018	ECG 108
Q4	MPS6517	1st IF Amp.	2904-038	DS-41	GE-9A	TR-17		ECG 126
Q5	MPS6517	2nd IF Amp.	2904-038	DS-41	GE-9A	TR-17		ECG 126
Q6	MPS6517	3rd IF Amp.	2904-038	DS-41	GE-9A	TR-17		ECG 126
Q7	MPS2716	AF Amp. - Squelch	2904-034	DS-66	GE-10	TR-22	SK-3020	ECG 123
Q8	MPS2716	Driver	2904-034	DS-66	GE-10	TR-22	SK-3020	ECG 123
Q9	2N1540	Output - Modulator	2904-008	DS-520	GE-3	TR-01	SK-3009	ECG 104
Q10	2N1540	Output - Modulator	2904-008	DS-520	GE-3	TR-01	SK-3009	ECG 104
Q11	MPS70C	Trans. Osc.	2904-033	DS-74	GE-20	TR-21	SK-3018	ECG 108
Q12	SM7991	Buffer	2904-032	DS-74	GE-20	TR-21	SK-3018	ECG 108
Q13	PT2677C	Final Amp.	2904-037					

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES			REPLACEMENT RECTIFIERS		NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X1	1N270 [2102-028]						
X2	1N270 [2102-028]						
X3	1N34A	1N34AS	1N34A	ECG 109			
X4	1N54A	1N34AS	1N34A	ECG 109			
X5	1N34A	1N34AS	1N34A	ECG 109			
X6	1N2069	GE-504A	8D4 or 1N2069	ECG 116 or ECG 117		F-4 or 40C	
X7	1N2069	GE-504A	8D4 or 1N2069	ECG 116 or ECG 117		F-4 or 40C	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		Pearce-Simpson PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	1000 16V	0406-067	PRS1295	EA30-1000	BR1000-25		TC2510	TL-1166.5
C2	250 16V	0406-068	PRS1280	EA30-250	BR250-25	QT1-28	MTA250F20	TL-1164.5
C3	250 16V	0406-068	PRS1280	EA30-250	BR250-25	QT1-28	MTA250F20	TL-1164.5
C4	125 16V		CRE626A	EA30-100	NLW100-25	MT1-20	MTA125F35	TL-1163
C5	4.7 16V		CRE604A	EA30-5	NLW6-25	MT1-3	TAS475K020POC	150D475X9020 B2
C6	10 16V	0406-069	CRE607A	EA30-10	NLW10-25	MT1-6	MTA10D35	TL-1155
C7	250 16V	0406-068	PRS1280	EA30-250	BR250-25	QT1-28	MTA250F20	TL-1164.5
C8	64 4V	0406-051	CRE318A	EA6-50	NLW50-6	MT1-15	MTA50D6	TL-1101.5

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.
C11	200 5%		ADM-15-201	CPR-200J	CD10E201J500	DM-15-201J	SX320	MS-32
C12	330 5%		ADM-15-331	CPR-330J	CD15F331J500	DM-15-331J	SX333	MS-333
C13	75 5%		ADM-15-750	CPR-75J	CD10E750J500	DM-15-75-J	SX475	MS-475
C14	68 5%		ADM-15-680	CPR-68J	CD15E680J500	DM-15-680J	SX468	MS-468
C15	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C16	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C17	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C18	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C19	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C20	.1 16V		TTP-1	CK-104	HOY101ZV103P	CCD-103	TA110	TG-S10
C21	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA010	TG-P10
C22	22		ADM-15-220	CPR-22J	CD15E220J500	DM-15-220J	TA110	TG-S10
C23	47 5%		ADM-15-470	CPR-47J	CD15E470J500	DM-15-470J	SX422	MS-422
C24	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	SX447	MS-447
C25	1.5			TCZ-1R5			TA110	TG-S10
C26	.05 100V		TTP-05	DD-503	HOV101ZV503Z	CCD-503	CNO515	10TCC-V50
C27	3.3		NPO-DI 3.0	DTZ-3R3		CCD-303	TA150	TGL-S50
C28	8		ADM-15-100	TCZ-10	CD15C100J500	DM-15-100J	CNO533	10TCC-V30
C29	.1 16V		TTP-1	CK-104	HOV101ZV104Z		SX410	MS-41
C30	.05 100V		TTP-05	DD-503	HOV101ZV503Z	CCD-503	TA010	TG-P10
C31	3.3		NPO-DI 3.0	DTZ-3R3		CCD-303	TA150	TGL-S50
C32	.1 16V		TTP-1	CK-104	HOV101ZV104Z	CCTO-3R3	CNO533	10TCC-V30
C33	.05 100V		TTP-05	DD-503	HOV101ZV503Z	CCD-503	TA010	TG-P10
C34	3.3		NPO-DI 3.0	DTZ-3R3		CCD-503	TA150	TGL-S50
C35	.1 16V		TTP-1	CK-104	HOV101ZV104Z	CCTO-3R3	CNO533	10TCC-V30
C36	.1 16V		TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS (cont)

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.
C37	150 1KV		GPD X5F151K	DD-151		CCD-151	GP315	10TS-T15
C38	130		ADM-15-131	CPR-130J	CD10E131J500	DM-15-131J	SX313	MS-313
C39	.001 1KV		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C40	.47 10V			UK10-474			MAG12047	HY-330
C41	.47 10V			UK10-474			MAG12047	HY-330
C42	.001 1KV		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C43	.1 16V		TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10
C44	.1 16V		TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10
C45	.05 16V		TTP-05	DD-503	HOV101ZV503Z	CCD-503	TA150	TGL-S50
C46	.005 1KV		GPD X5R502K	DD-502	JBT601YP502K	CCD-502	JF250	10TS-D50
C47	.003		GPD X5R302K	DD-302	BYS601ZY302P	CCD-302		10TS-D30
C48	.47 10V			UK10-474			MAG12047	HY-330
C49	.47 10V			UK10-474			MAG12047	HY-330
C50	.47 10V			UK10-474			MAG12047	HY-330
C51	150 1KV		GPD X5F151K	DD-151		CCD-151	GP315	10TS-T15
C52	330		ADM-15-331	CPR-330J	CD15F331J500	DM-15-331J	SX333	MS-333
C53	75		ADM-15-750	CPR-75J	CD15E750J500	DM-15-750J	SX475	MS-475
C54	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C55	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C56	.47		ADM-15-470	CPR-47J	CD15E470J500	DM-15-470J	SX447	MS-447
C57	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C58	.01 50V		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C59	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C60	.1 16V		TTP-1	CK-104	HOV101ZV104Z		TA010	TG-P10

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume	50K	2008-066	F2-50K,SSK012	A47-50K-Z, KSS-3 or (NP-50K-Z, UP-C-400)	Q13-123 or (BU1,CP63,SS6)*	UA54A,SK750 or (RU54A,SL38, SK750)
R2	Squelch & Switch	50K	2008-067	F3-50K,SSK012, KR-1		B17-123,SK1,76-1	UA54R,SK750, US42 or (RU54R, SL38,SK750,US42)
R3	Squelch Range Adjust	500	2008-068				

* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	MFGR. PART No.			IRC PART No.	WORKMAN PART No.	MFGR. PART No.
R50	.82 2W	BWH.82	WS.82	2000-016	R52	.82 2W	BWH.82	WS.82	2000-016

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	Pi Network	1201-211			
L2	Antenna Loading	1201-211			
L3	RFC (47uh)	1201-170		74F475AI	
L4	RFC (47uh)	1201-170		74F475AI	
L5	Antenna Input	1201-153			
L6	RF Interstage	1201-152			
L7	RFC (5.6uh)	1201-144		4609	
L8	Input IF	1201-166			
L9	Interstage IF	1201-166			
L10	Interstage IF	1201-167			
L11	Interstage IF	1201-167			
L12	Output IF	1201-192			
L13	Transmit Oscillator	1201-169			
L14	Buffer	1201-212			
L15	RFC (5.6uh)	1201-144		4609	
L16	RFC (15uh)	1201-145	19-1006	4624	T862

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	4	1	1	1202-159					

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.1	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	108	4	1202-160					
		SEC. 2						
		DC Resistance 1.7						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA			NOTES
				MFGR. PART No.	JENSEN PART No.	QUAM PART No.	
SP1	3"	PM	4 ohms	2501-020	P3W3	30A05	Part of M4 (Hand Set Assembly)
SP2	2"	PM	8 ohms		P20001		

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	3A 250V (Part of A Lead Assembly)	3108-019		AGC3	HHJ	312003	155020	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M1	Lamp,Power	1801-023	#161 CHICAGO MINIATURE Replacement CM-161 26.610MC 27.065MC Order Part Number 0514-001 (Ch.1) thru 0514-023 (Ch.23) Order Part Number 0513-001 (Ch.1) thru 0513-023 (Ch.23) Carbon
M2	Crystal	0514-009	
M3	Crystal	0513-009	
	Crystal,Receive		
	Crystal,Transmit		
M4	Hand Set Assembly	1601-018	
S1	Switch,Selector	2701-088	

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	ITEM	PART No.
Cabinet	1511-090	Knob,Switch	1301-060
Knob,Control	1301-057	Mounting Bracket	1506-144

WIRING DATA

General-use Hook-up Wire Use BELDEN No. 8530 (Solid) Available in 12 Colors	
8524 (Stranded) Available in 12 Colors	
Shielded Antenna Lead Use BELDEN No. 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)	
Coiled Microphone Cable Use BELDEN No. 8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene)	
8496 3 Conductor- 1 Shielded for Press-to-Talk (Vinyl)	
Ignition Noise Suppression Use BELDEN No. 7300-Series Spark-Plug Sets	
Bonding Strap Use BELDEN No. 8661 (3/8 In.)	