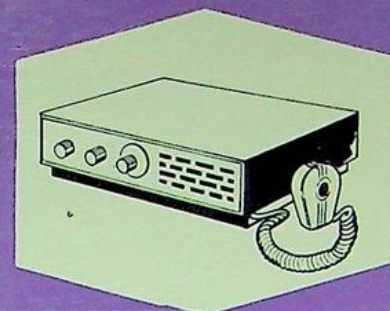
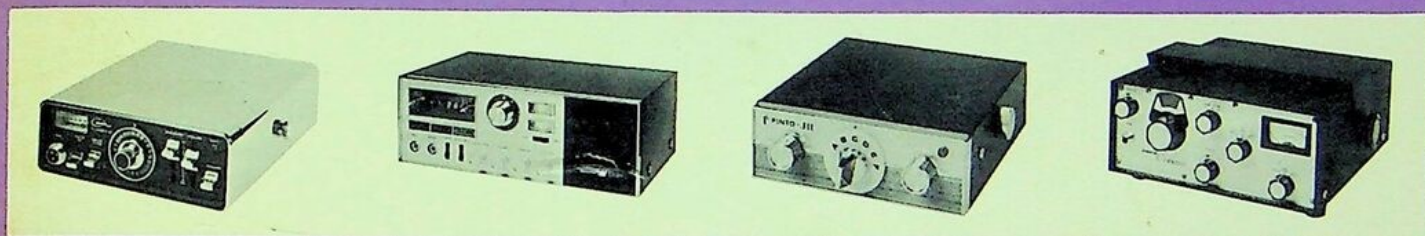


SAMS PHOTOFACT[®]

CB RADIO SERIES



CB-30
30
OCTOBER 1970



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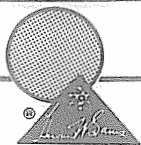
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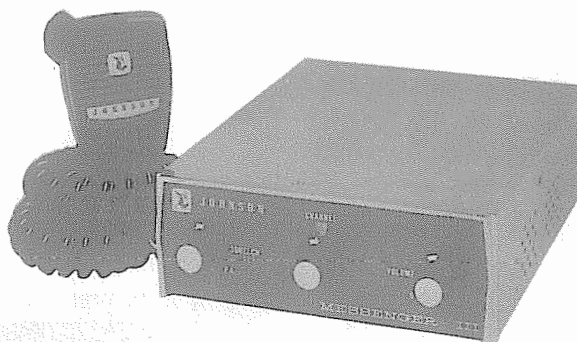
NOTE

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-ohm dummy load or the normally used antenna system.



JOHNSON MODEL MESSENGER III (242-143) (Revised)

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 thru A11, A15.....GENERAL CEMENT #8868,8987,9089..WALSCO #2531-X,2541,2587

A12,A13,A14,A16.....GENERAL CEMENT #8606,8606L,8869.WALSCO #2543,2544,2588

JOHNSON MODEL MESSENGER III (REVISED)

RECEIVER

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

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .1mfd to Base of Q6 (2nd Mixer) low side to chassis. Tune to 455KC (Mod.).	Any	A1 thru A6	With slugs backed out of Coil form (ccw) adjust for maximum on first peak (cw).
High side thru .1mfd to Base of Q3 (1st Mixer), low side to chassis. Tune 50 4.3MC (Mod.)	Any	A7, A8	Adjust for maximum.
High side thru .1mfd to Antenna Receptacle. Low side to chassis. Set frequency to 27.065MC (Channel 9).	9	A9 thru A16	Adjust for maximum. Adjust A10 on first peak (cw) from top of Coil form. Adjust A11 on second peak (cw) from top of Coil form.

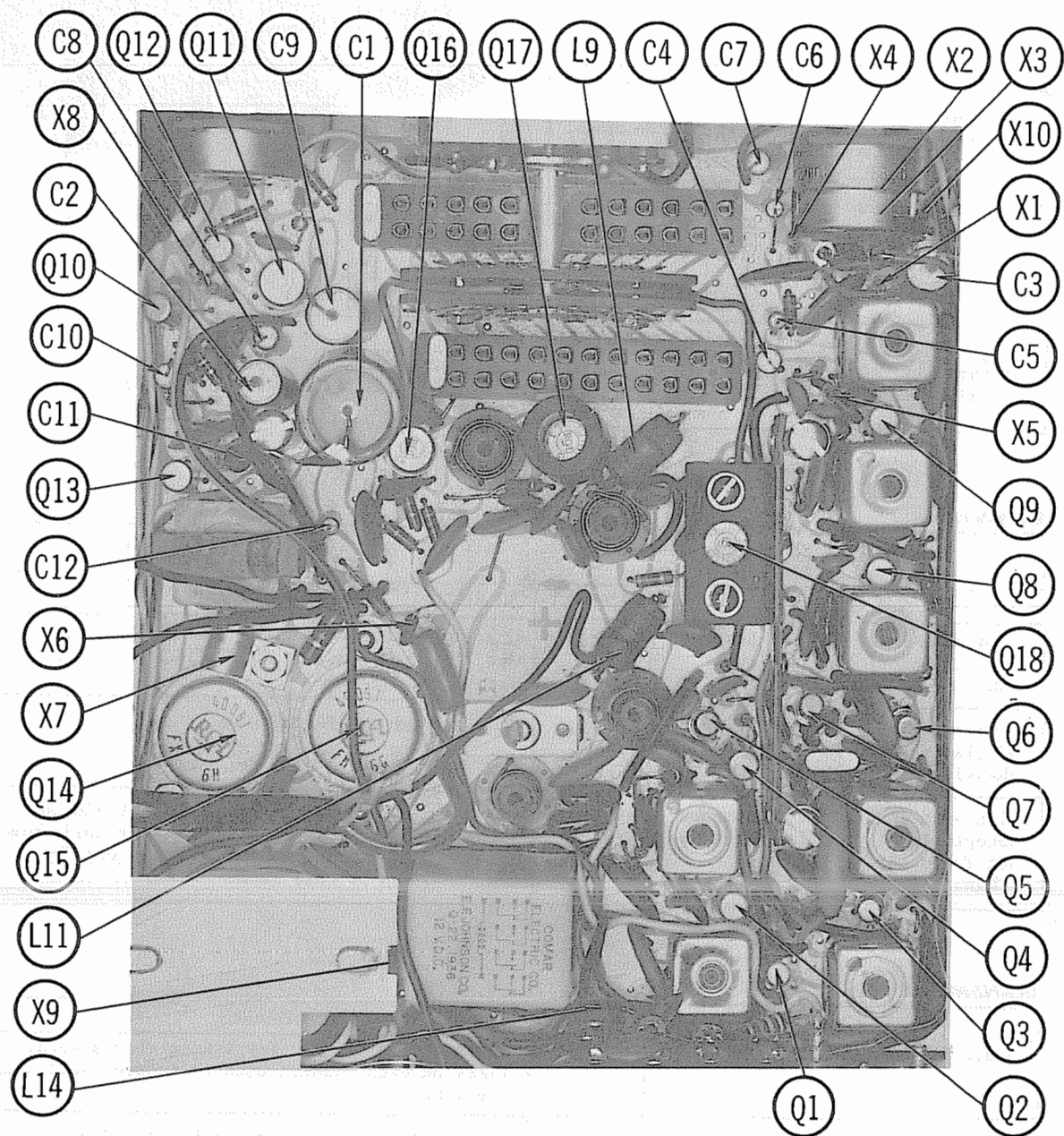
TRANSMITTER

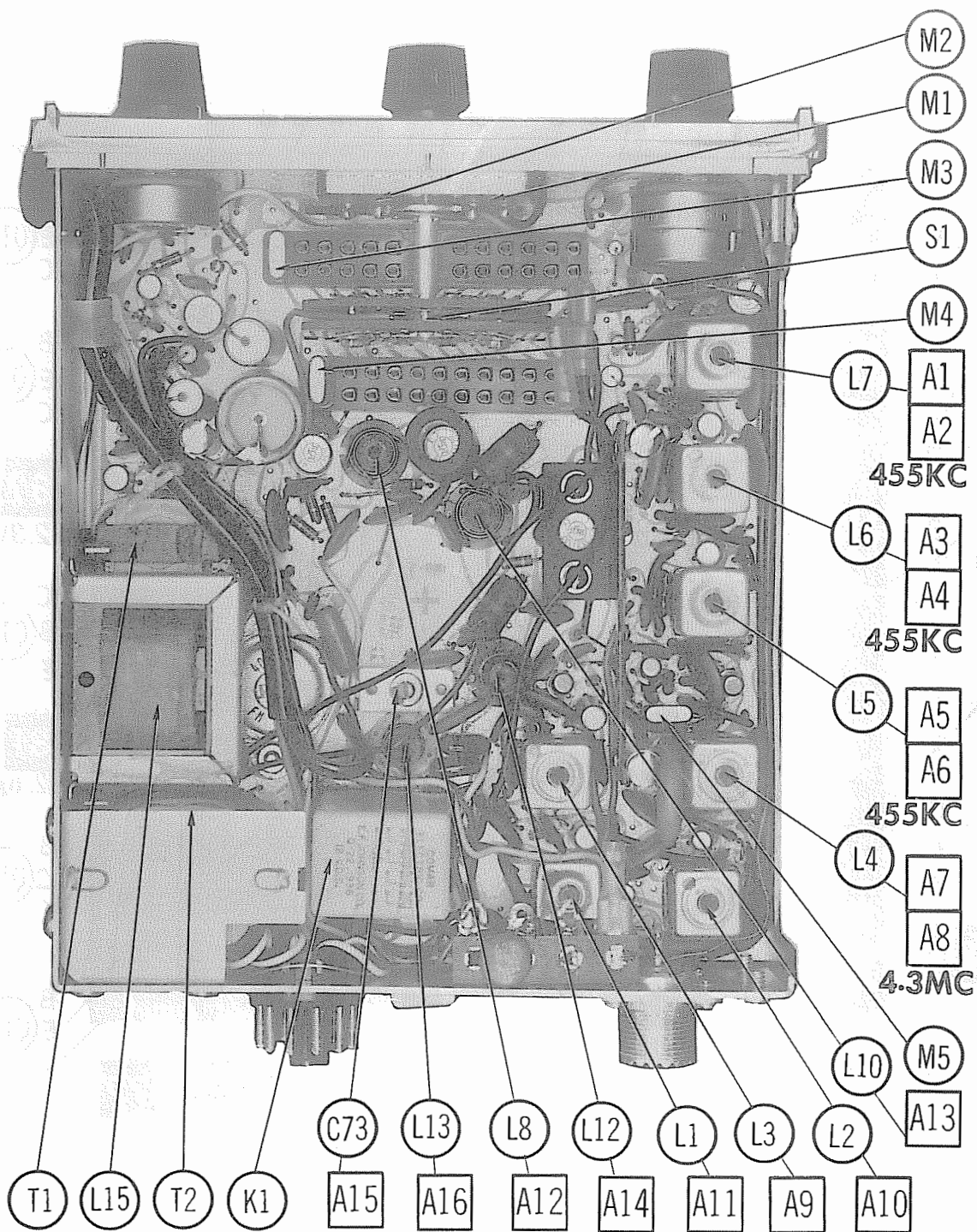
INDICATOR	ADJUST	REMARKS
Field Strength Meter.	A12,A13	Adjust for maximum. Key Transmitter several times on each channel used to insure oscillator starting.
Field Strength Meter and 0-1 DC Ammeter.	A14,A15, A16	Insert Ammeter in Series with L11, adjust A14 slug to 1/8" from top of Coil form. Adjust A16 for 5 Watts (approx. 400ma). Repeat adjustment of A14 & A15.

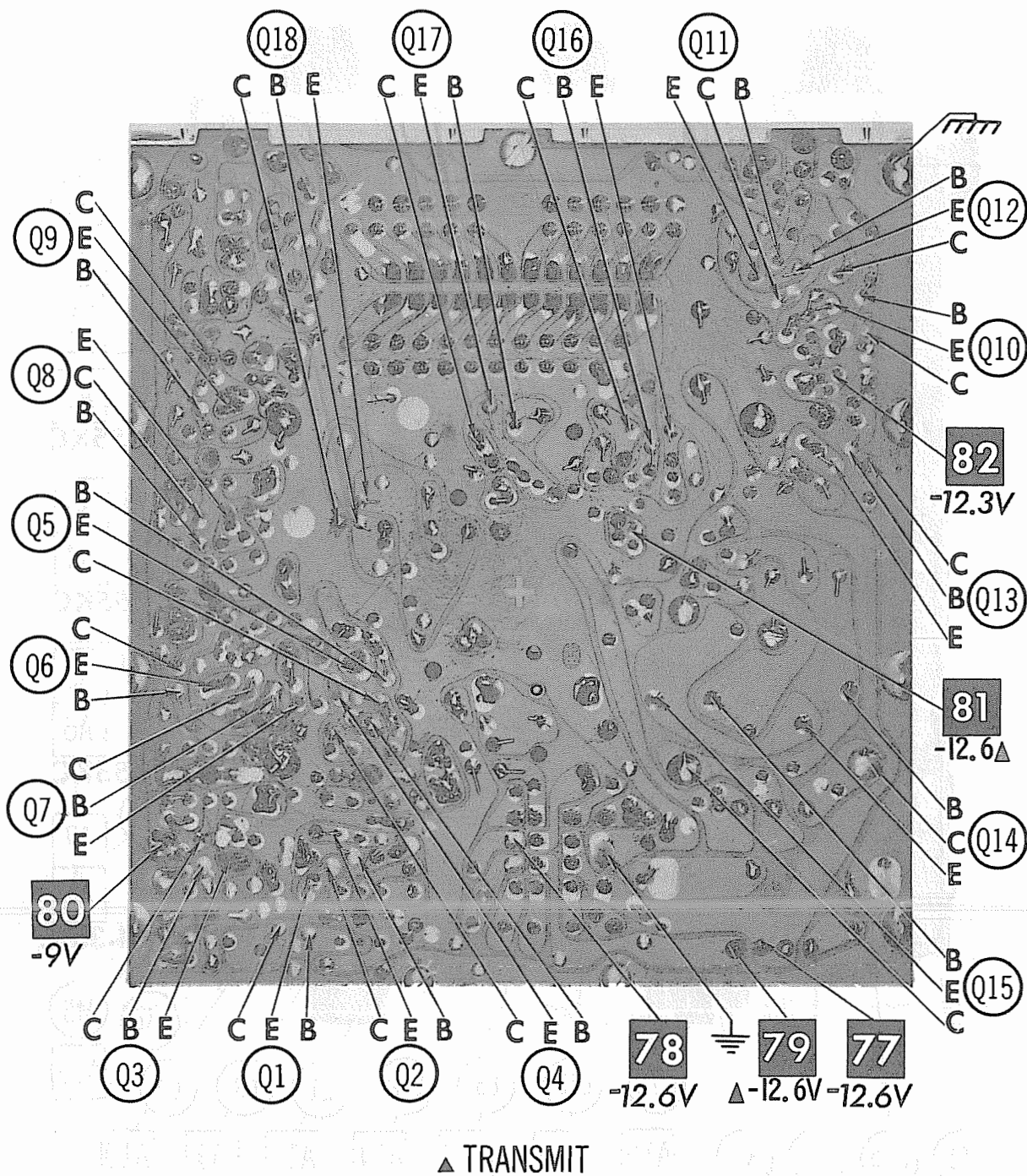
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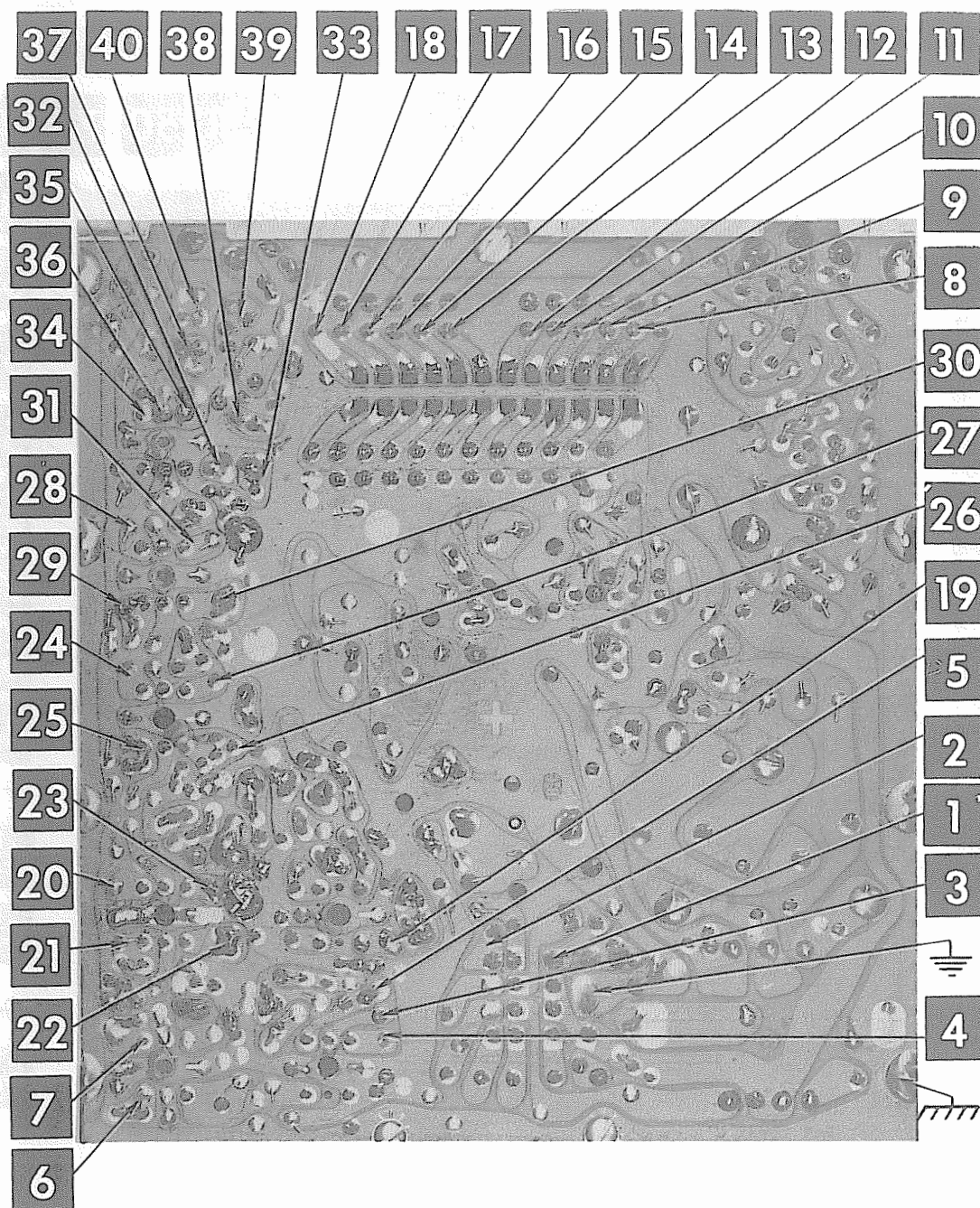
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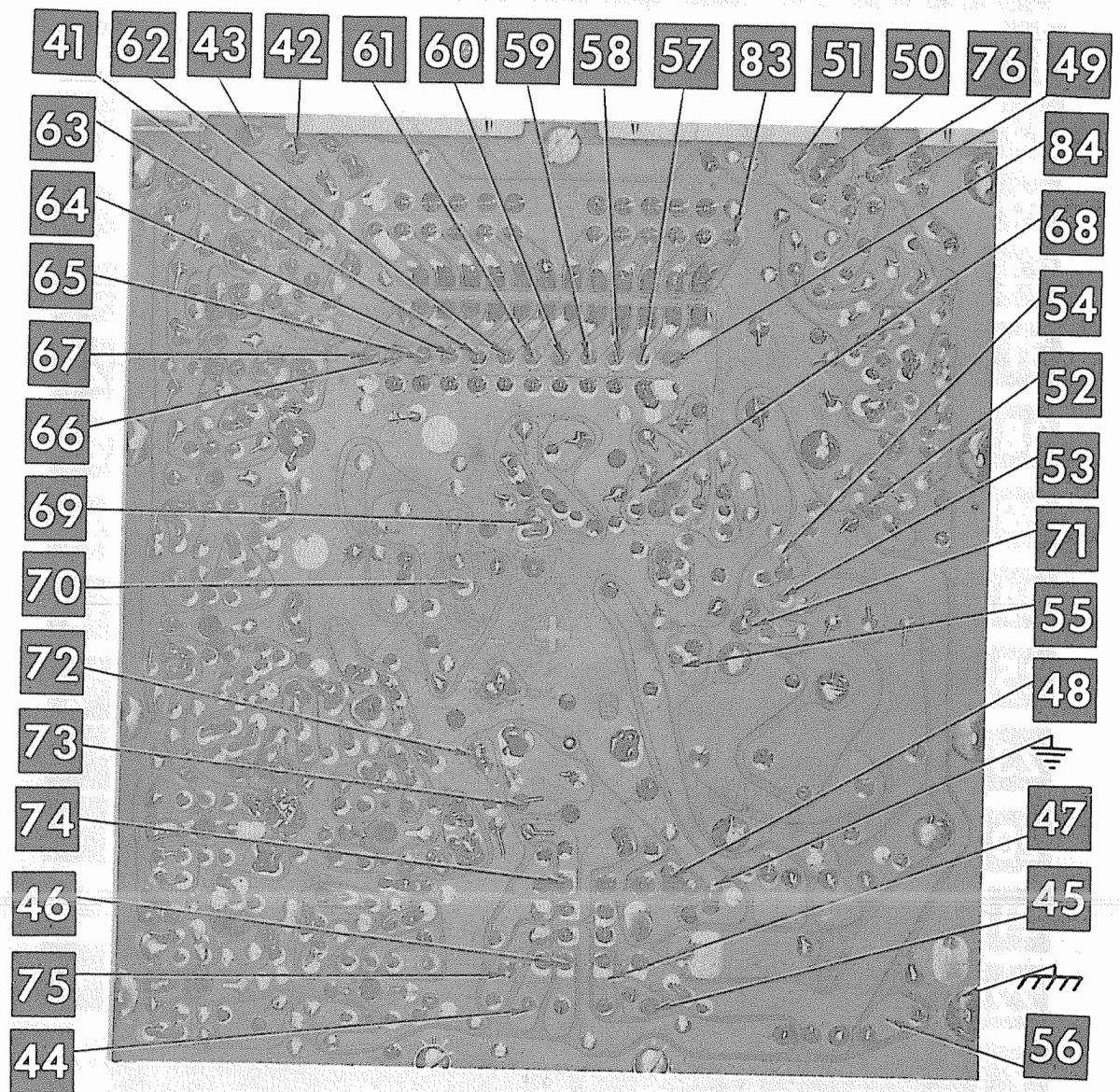






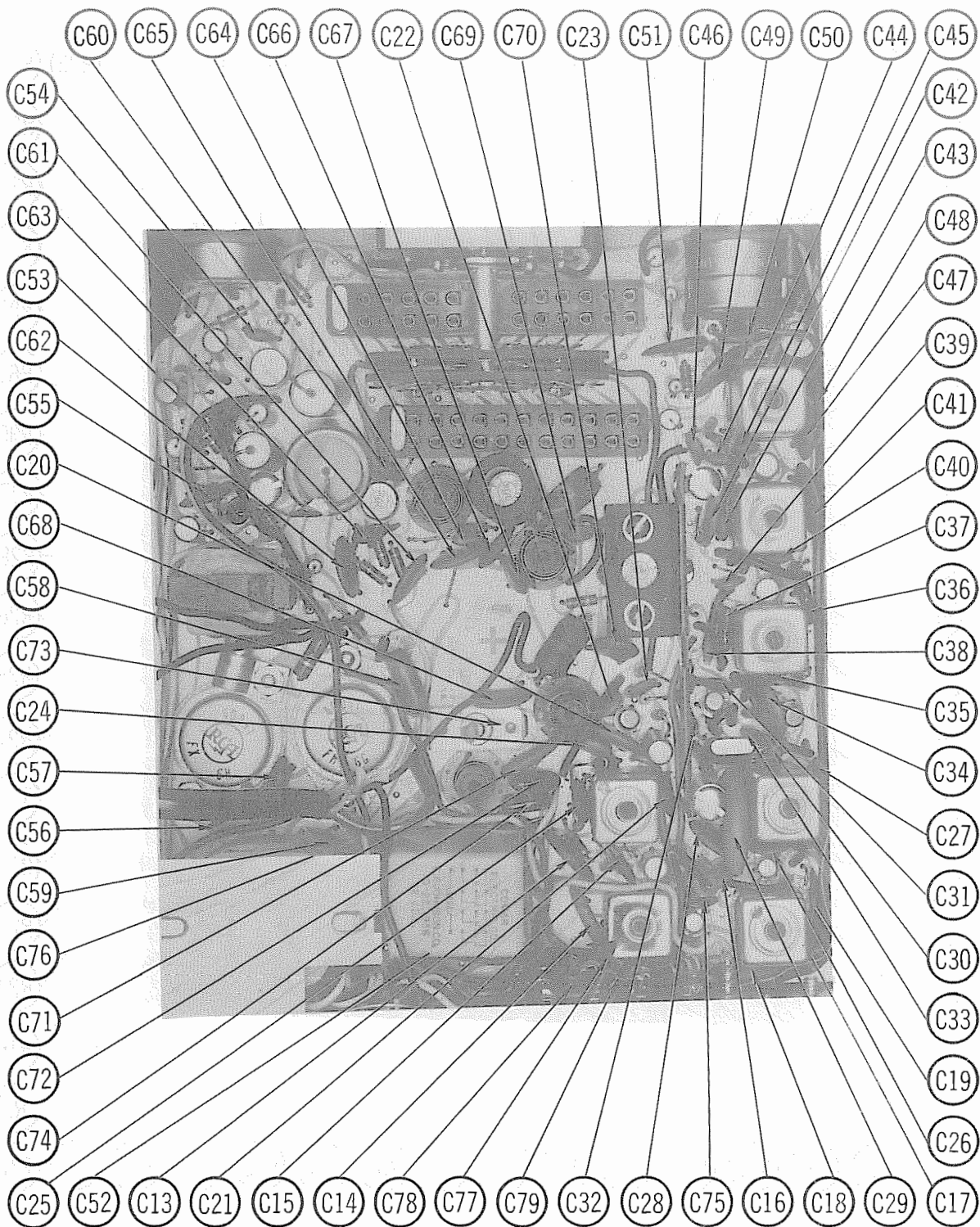
JOHNSON MODEL MESSENGER III (REVISED)

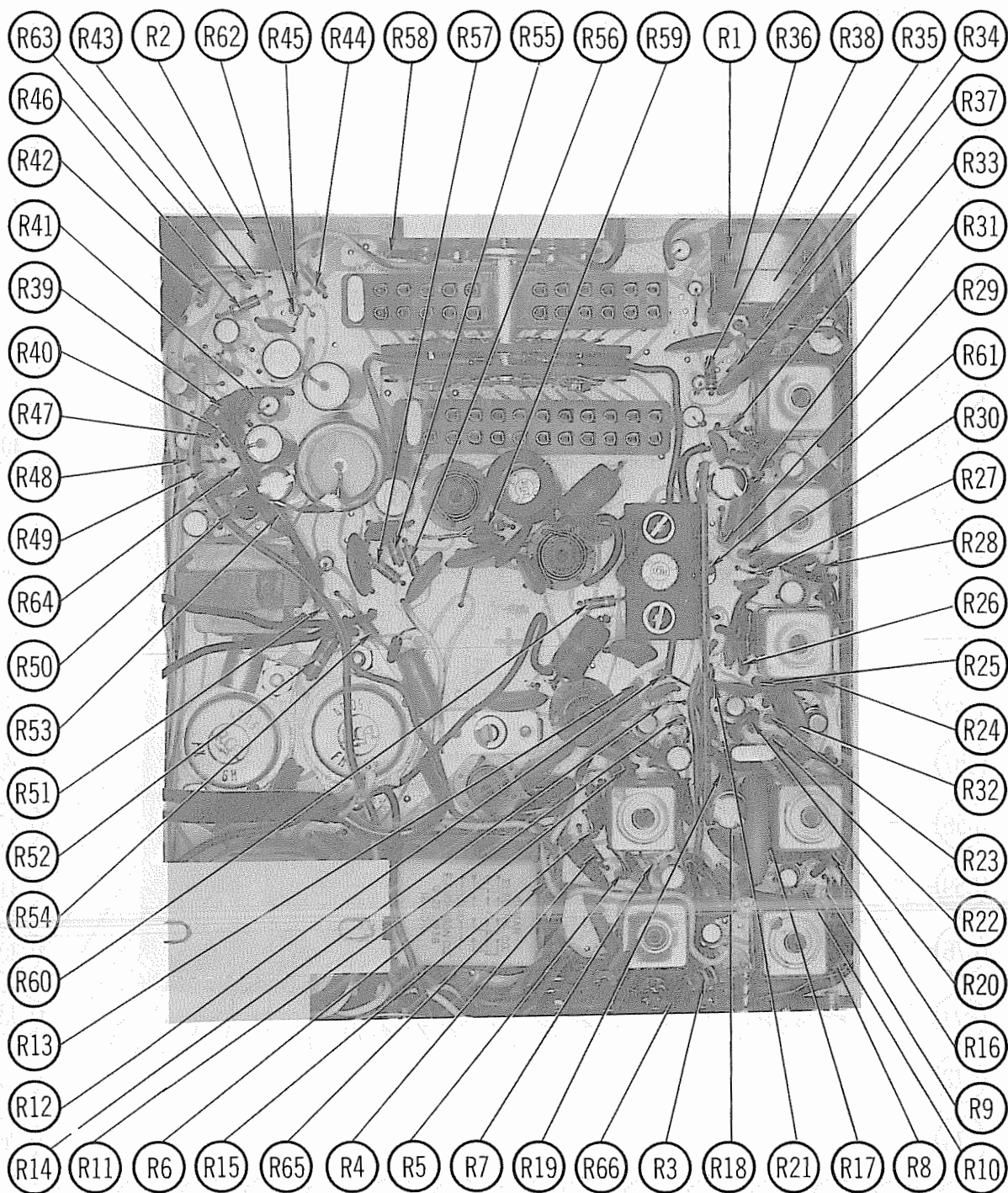




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JOHNSON MODEL MESSENGER III (REVISED)





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

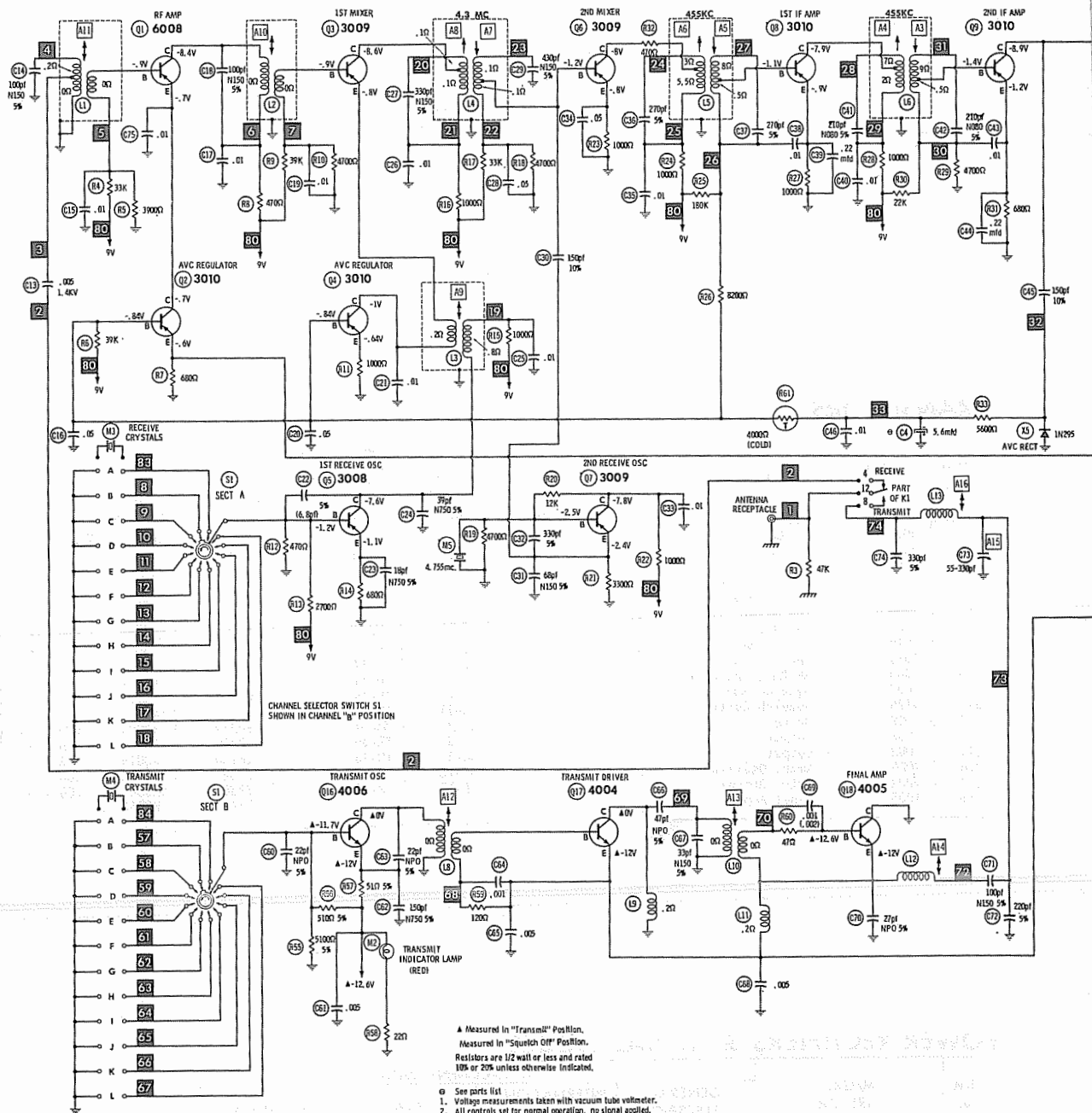
ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q1	6008	RF Amp		GE-9	TR-17	HEP3	SK3006	ECG 126
Q2	3010	AVC Regulator		GE-1	TR-14	HEP639	SK3008	ECG 126
Q3	3009	1st Mixer		GE-9	TR-17	HEP3	SK3006	ECG 126
Q4	3010	AVC Regulator		GE-1	TR-14	HEP639	SK3008	ECG 126
Q5	3008	1st Receive Oscillator		GE-9	TR-17	HEP3	SK3006	ECG 126
Q6	3009	2nd Mixer		GE-9	TR-17	HEP3	SK3006	ECG 126
Q7	3009	2nd Receive Oscillator		GE-9	TR-17	HEP3	SK3006	ECG 126
Q8	3010	1st IF Amp		GE-1	TR-14	HEP639	SK3008	ECG 126
Q9	3010	2nd IF Amp		GE-1	TR-14	HEP639	SK3008	ECG 126
Q10	1003	AF Amp, Speech Amp		GE-2	TR-14	HEP632	SK3004	ECG 102A
Q11	1002	Squelch Amp		GE-2	TR-14	HEP633	SK3004	ECG 102A
Q12	4126	Squelch Control		GE-21	TR-30	HEP242	SK3025	ECG 159
Q13	1009	Driver		GE-2	TR-14	HEP254	SK3004	ECG 102A
Q14	2002	Output		GE-3	TR-16	HEP230	SK3014	ECG 104
Q15	2002	Output		GE-3	TR-16	HEP230	SK3014	ECG 104
Q16	4006	Xmtr. Oscillator		GE-18	TR-22	HEP56	SK3046	ECG 128
Q17	4004	Xmtr. Driver		GE-17	TR-22	HEP56	SK3047	ECG 123
Q18	4005	Final Amp				HEP713	SK3048	

JOHNSON MODEL MESSENGER III (REVISED)

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT DATA				NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	
X1	1N295	1N295	1N295		ECG 109	
X2	1N295	1N295	1N295		ECG 109	
X3	1N295	1N295	1N295		ECG 109	
X4	1N881	GE-504A	8D4 or 5A4-D	SK3030 or SK3031	ECG 116 or ECG 117	
X5	1N295	1N295	1N295		ECG 109	
X6	1N881	GE-504A	8D4 or 5A4-D	SK3030 or SK3031	ECG 116 or ECG 117	
X7	1N2326				ECG 109	
X8	1N295	1N295	1N295		ECG 109	
X9	1N881	GE-504A	8D4 or 5A4-D	SK3030 or SK3031	ECG 116 or ECG 117	
X10	DZ10	GEZD-9.1	1ZM9.1-T10	KD2504	ECG 139	Zener

(CONTINUED ON PAGE 46)



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PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		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		PRS1230	EA15-1000	WBR1000-16	QT1-32	TC1501A	TVA-1163
C2	150 25V		PRS1370	EA30-150	WBR150-35	MT1-21.5	MTA150F35	TE-1212
C3	150 25V		PRS1370	EA30-150	WBR150-35	MT1-21.5	MTA150F35	TE-1212
C4	5.6 35V				TYR13BF565K		TAS565K035POC	
C5	1 35V				TYR13BF105K		TAS105K035POA	1960105X0035DE
C6	1 35V				TYR13BF105K		TAS105K035POA	1960105X0035DE
C7	5.6 35V				TYR13BF565K		TAS565K035POC	
C8	22 15V		CRE461A	EA15-25	AL20-16	MT1-8.5	MTA20030	TE-1157
C9	47 25V		CRE617A	EA30-50	PC50-25	MT1-16.5	MTA50E25	TE-1209
C10	5.6 35V				TYR13BF565K		TAS565K035POC	
C11	56 6V		CRE467A	EA6-50	AL50-16	MT1-19	MTA60E20	TE-1133.5
C12	1 35V				TYR13BF105K		TAS105K035POA	1960105X0035DE

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	.005 1.4KV			DD16-502		3CC0-502	UAC250	BL-050
C14	100 N150 5%							10TCP-T10
C15	.01		TTP-01	CK-103	MGP01	CC0-103	TA110	TG-S10
C16	.05		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C17	.01		TTP-01	CK-103	MGP01	CC0-103	TA110	TG-S10
C18	100 N150 5%							10TCP-T10
C19	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C20	.05		TTP-05	CK-503	MGP05	CC0-503	TA150	TGL-S50
C21	.01		TTP-01	CK-103	MGP01	CC0-103	TA110	TG-S10
C22	6.8 NPO 5%		NPO-01 6.8	DTZ-6R8	NPO6P8		CN0568	10TCC-V68
C23	18 N750 5%			TCN-18			CN7418	10TCU-Q18
C24	39 N750 5%			TCN-39		CCTN-390	CN7439	10TCU-Q39
C25	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C26	.01		TTP-01	CK-103	MGP01	CC0-103	TA110	TG-S10
C27	330 N150 5%							10TCP-T33
C28	.05		TTP-05	CK-503	MGP05	CC0-503	TA150	TGL-S50
C29	430 N150 5%							
C30	150 10%		GPD X5F151K	00-151	GP150	CC0-151	GP315	10TS-T15
C31	68 N150 5%							10TCP-Q68
C32	330 5%		ADM-15-331	CPR-330J	CD15F331J500	DM-15-331J	SX333	MS-333
C33	.01		TTP-01	CK-103	MGP01	CC0-103	TA110	TG-S10
C34	.05		TTP-05	CK-503	MGP05	CC0-503	TA150	TGL-S50
C35	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C36	270 5%			CPR-270J	ED15F271J500	DM-15-271J	SX327	MS-327
C37	270 5%			CPR-270J	ED15F271J500	DM-15-271J	SX327	MS-327
C38	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C39	.22 3V							
C40	.01		TTP-01	CK-103	MGP01	CC0-103	TA110	TG-S10
C41	210 N080 5%							
C42	210 N080 5%							
C43	.01		TTP-01	CK-103	MGP01	CC0-103	TA110	TG-S10
C44	.22 3V							
C45	150 10%		GPD X5F151K	00-151	GP150	CCD-151	GP315	10TS-T15
C46	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C47	.1							
C48	190 N080 5%							
C49	190 N080 5%							
C50	.05		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C51	.03		TTP-03	CK-303		CCD-303	GP130	TG-S30
C52	.05		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C53	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C54	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C55	.02		TTP-02	CK-203	MGP02	CCD-203	TA120	TG-S20
C56	.02		TTP-02	CK-203	MGP02	CCD-203	TA120	TG-S20
C57	.02		TTP-02	CK-203	MGP02	CCD-203	TA120	TG-S20
C58	.22		DBE6P22		DPMS4P22	4DP-5 224	PVC4Q22	4PS-P22
C59	.05		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C60	22 NPO 5%		NPO-DI22	DTZ-22		CCTO-220	CN0422	10TCC-Q22
C61	.005 500V		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C62	150 N750 5%			DTN-150		CCTN-151	CN7315	10TCU-T15
C63	22 NPO 5%		NPO-DI22	DTZ-22		CCTO-220	CN0422	10TCC-Q22
C64	.001		GPD X5F102K	DM-102	GP1000	CCD-102	SM210	2SS-D10
C65	.005		TTP-005	CK-502	MGP005	CCD-502	TA250	TG-D50
C66	47 NPO 5%		NPO-DI47	DTZ-47		CCTO-470	CN0447	10TCC-Q47
C67	33 N150 5%							10TCP-Q33
C68	.005		TTP-005	CK-502	MGP005	CCD-502	TA250	TG-D50
C69	.001		GPD X5F102K	DM-102	GP1000	CCD-102	SM210	2SS-D10
C70	27 NPO 5%		NPO-DI 25	DTZ-25			CN0425	10TCC-Q25
C71	100 N150 5%							10TCP-T10
C72	390		ADM-15-391	CPR-390J	CD15F391J500	DM-15-391	SX339	MS-339
C73	55-330							
C74	330 500V 5%							
C75	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C76	.05		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C77	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C78	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C79	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10

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	5000	562-0001-007	F2-5000 SF102,BA008, CA005,KR-3		QCB2 (1), B13-114,TM5, 76-4 or [BU3, CF60,SS1,VF]*	RU53A,SL41 (2), SL3500,US43
R2	Squelch/PA-Switch	10K	562-0001-006	F2-10K,SF102, SF102,BA008, CA005,KR-3		QCB2 (1),B13-116, TM5,76-4 or [BU3,CF60,SS1, VF]*	RU53A,SL41 (2), SL3500, US43

* "Snaptrol"

- (1) Use QCB2 bushing instead of Tab Mount plate in TM5 Kit.
(2) Alter bushing to meet requirements.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R61	4000 (Cold)		

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R62	1800 (Cold)		

JOHNSON MODEL MESSENGER III (REVISED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	Antenna Matching				
L2	RF Interstage				
L3	Osc. Injection				
L4	Input IF (4.33MC)				
L5	Interstage IF (455KC)				
L6	Interstage IF (455KC)				
L7	Output IF (455KC)				
L8	Trans. Oscillator				
L9	RF Choke (13uh)				
L10	Driver				
L11	RF Choke (13uh)			23A687RPC (1)	
L12	Final Output				
L13	Pi Network				
L14	RF Choke (13uh)				

(1) Clip unused Pin

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L15	.7	.5	20mh					

PARTS LIST AND DESCRIPTION (CONTINUED)

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

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	MFR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD Part No.	
T1	3	1CT						

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	Sec. 1	MFR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	80 CT	4					
		SEC. 2					
		1.3 DC RES					

SPEAKER

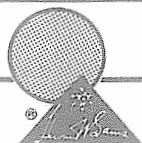
ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFR. PART No.	QUAM PART No.	
SP1	3" X 5" PM, 4 ohms		35A05	

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 2A 250V			AGC 2	HHJ-B	312002	155020		

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
K1	Relay	567-0003-013	31.365MC
M3	Receive Crystal		27.065MC
M4	Transmit Crystal		4.755MC
M5	Rec. Osc. Crystal		Ceramic
M6	Microphone Assembly		Printed Circuit
S1	Switch		11-Pin Jumper
	Plug		Model 6559
	AC Adapter		



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NOTE

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-ohm dummy load or the normally used antenna system.



MIDLAND MODEL 13-877

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1 Thru A4, A20 Thru A25.....GENERAL CEMENT #8868, 9089..WALSCO #2541, 2587.
A5 Thru A19.....GENERAL CEMENT #8606L, 9440.WALSCO #2501, 2544

RECEIVER

Connect an AC VTVM across speaker voice coil. Set Volume Control fully clockwise and squelch control fully counterclockwise.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to base of Q5 (2nd Mixer), low side to chassis. Tune to 455KC (Mod).	Any	A1, A2, A3, A4	Adjust for maximum.
High side thru .01mfd to Antenna Connector, low side to chassis. Tune to 27.085MC (Mod).	11	A5 Thru A12	Adjust for maximum. Check all channels for oscillator starting.

TRANSMITTER

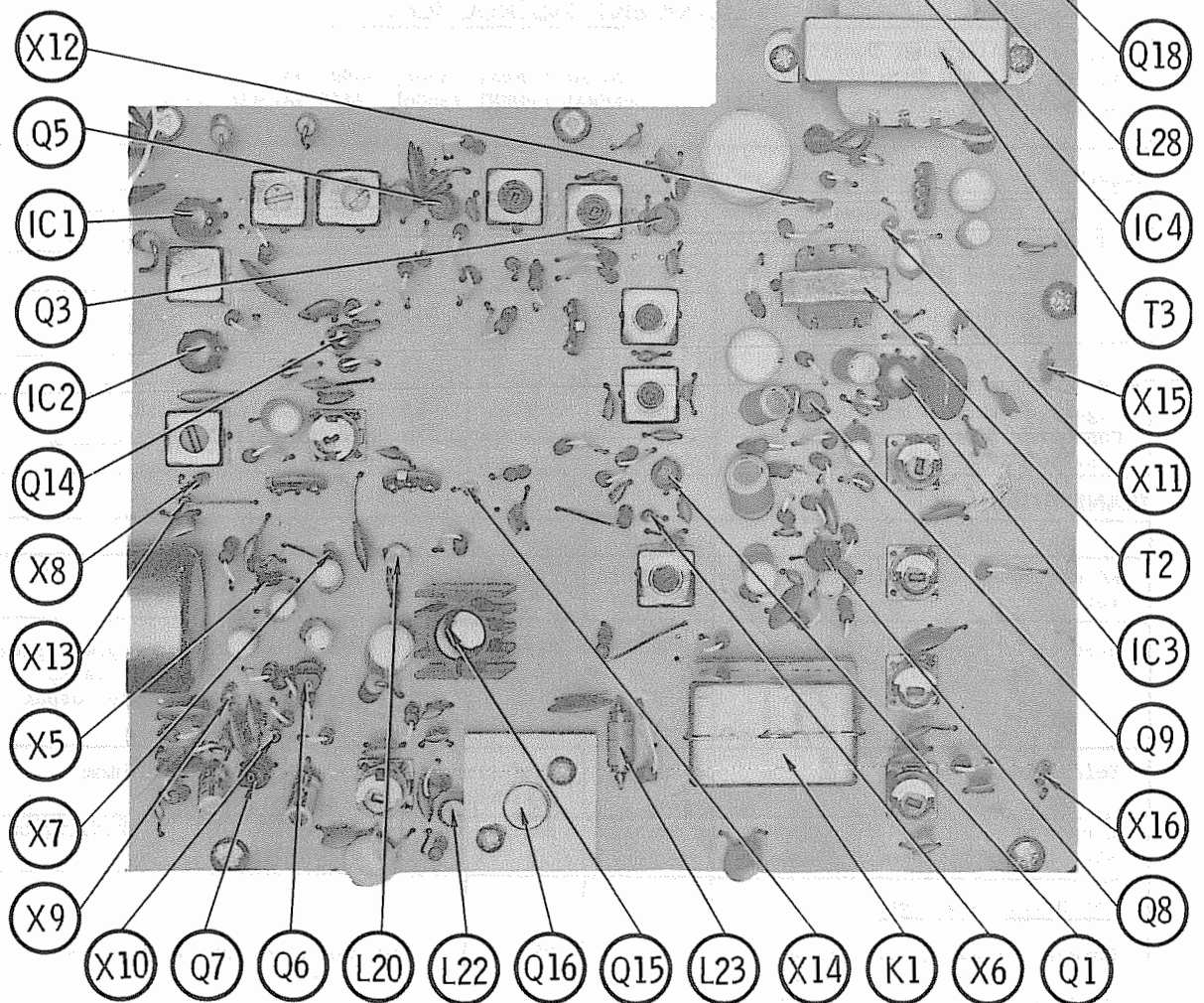
INDICATOR	ADJUST	REMARKS	
RF wattmeter or Field strength meter.	A13 Thru A24	Adjust for maximum.	
0-500ma DC Ammeter	A24	Remove jumper from pins 5 and 6 of power plug and insert meter. Adjust A24 for 5 watts input to Q16 (Final Amp). Check the output of all channels.	
Television	A25	Key transmitter and adjust for minimum interference on TV.	
Connect a 1000 cps audio generator to the microphone jack.	Any	R4	Adjust for 90° modulation reading on a modulation meter.
<u>"S" Meter Adjustment</u> Connect signal generator to antenna connector. Tune to 27.085MC with 1000 cps 30% modulation and 100 uv input	11	R5	Adjust for a reading of 9 on "S" meter scale.
<u>RF Power Meter Adjustment.</u>	Any	R6	Connect a dummy load and key transmitter. Adjust so the meter reads in the red section.

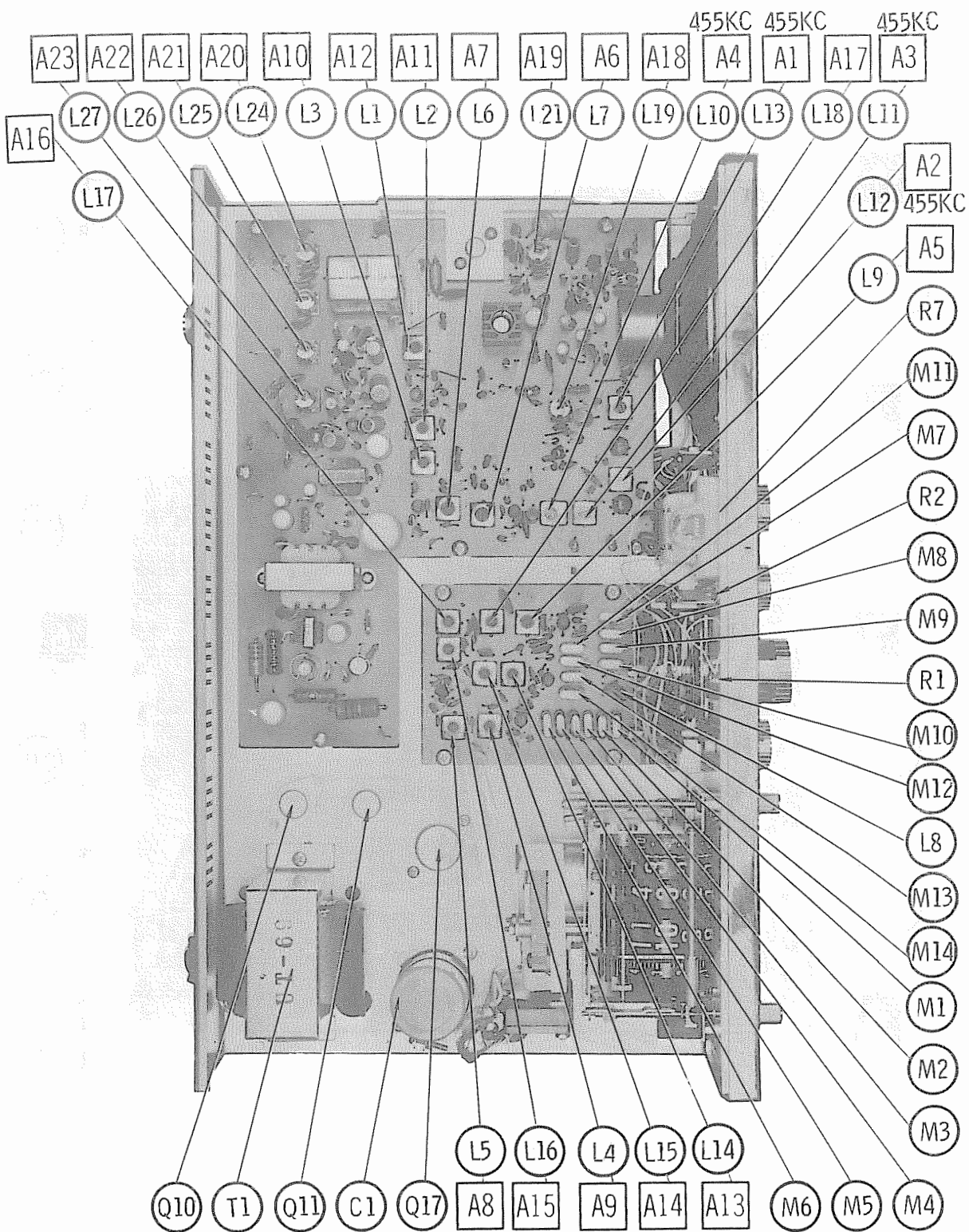
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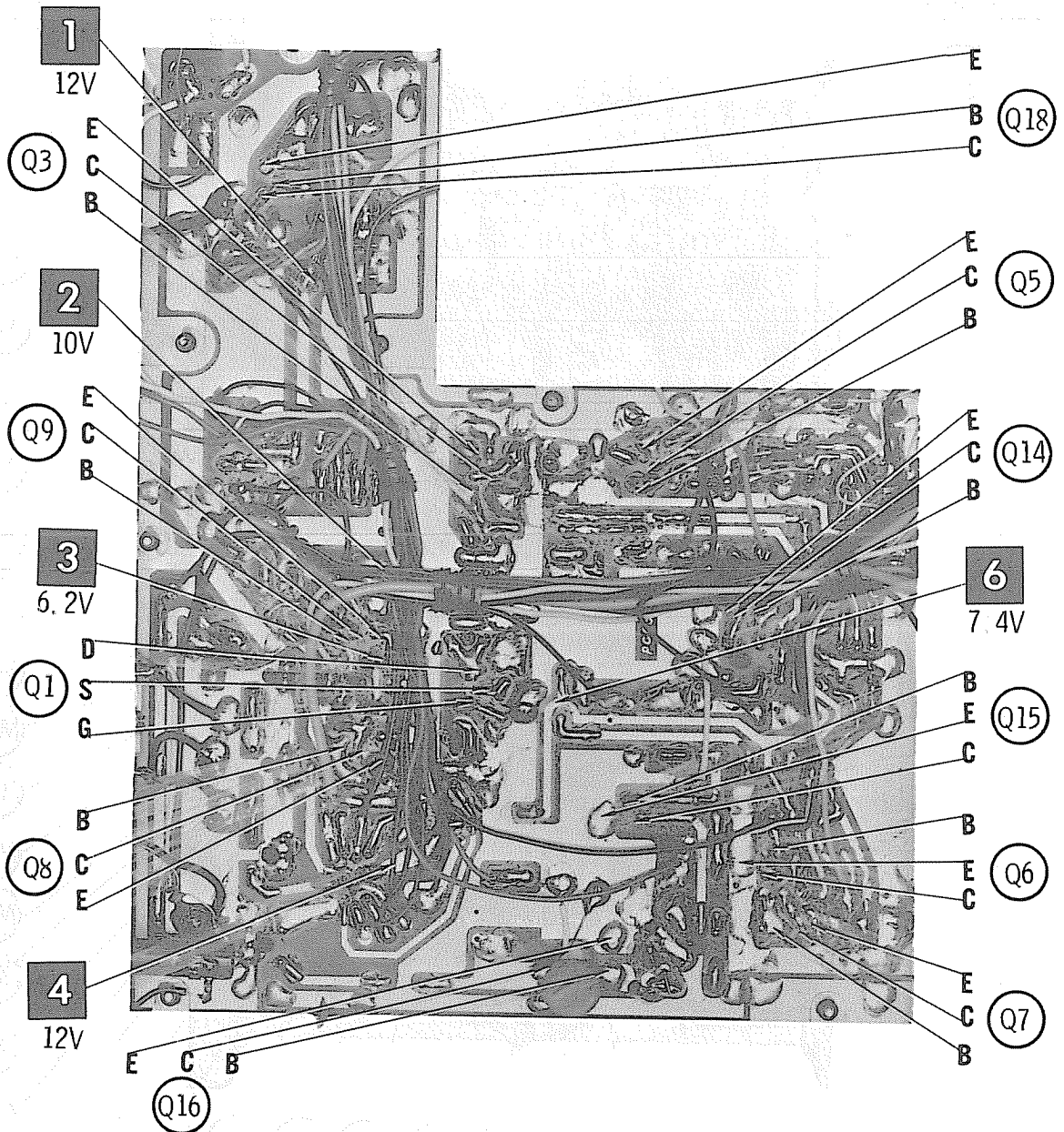
TY855

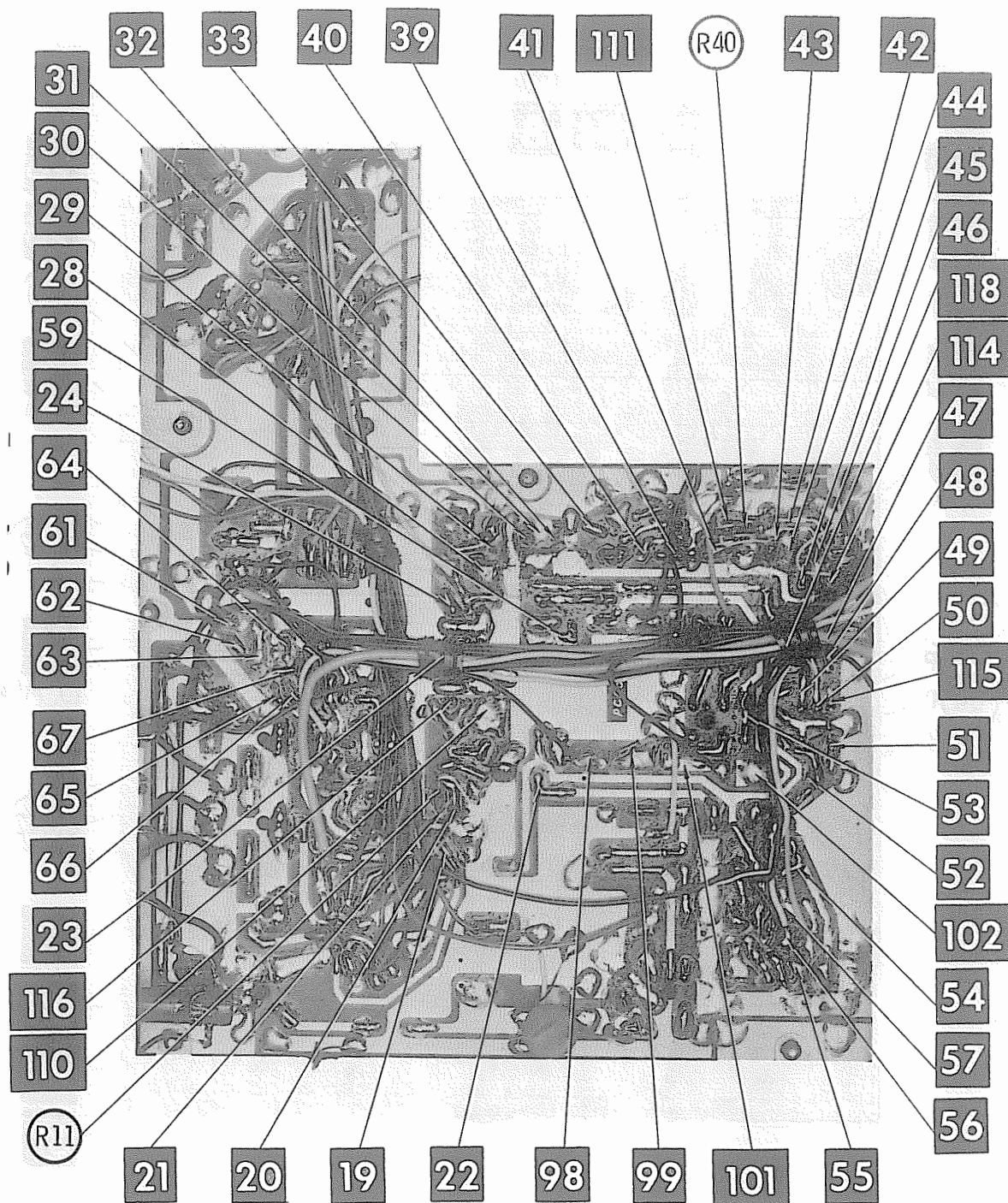
MIDLAND MODEL 13-877

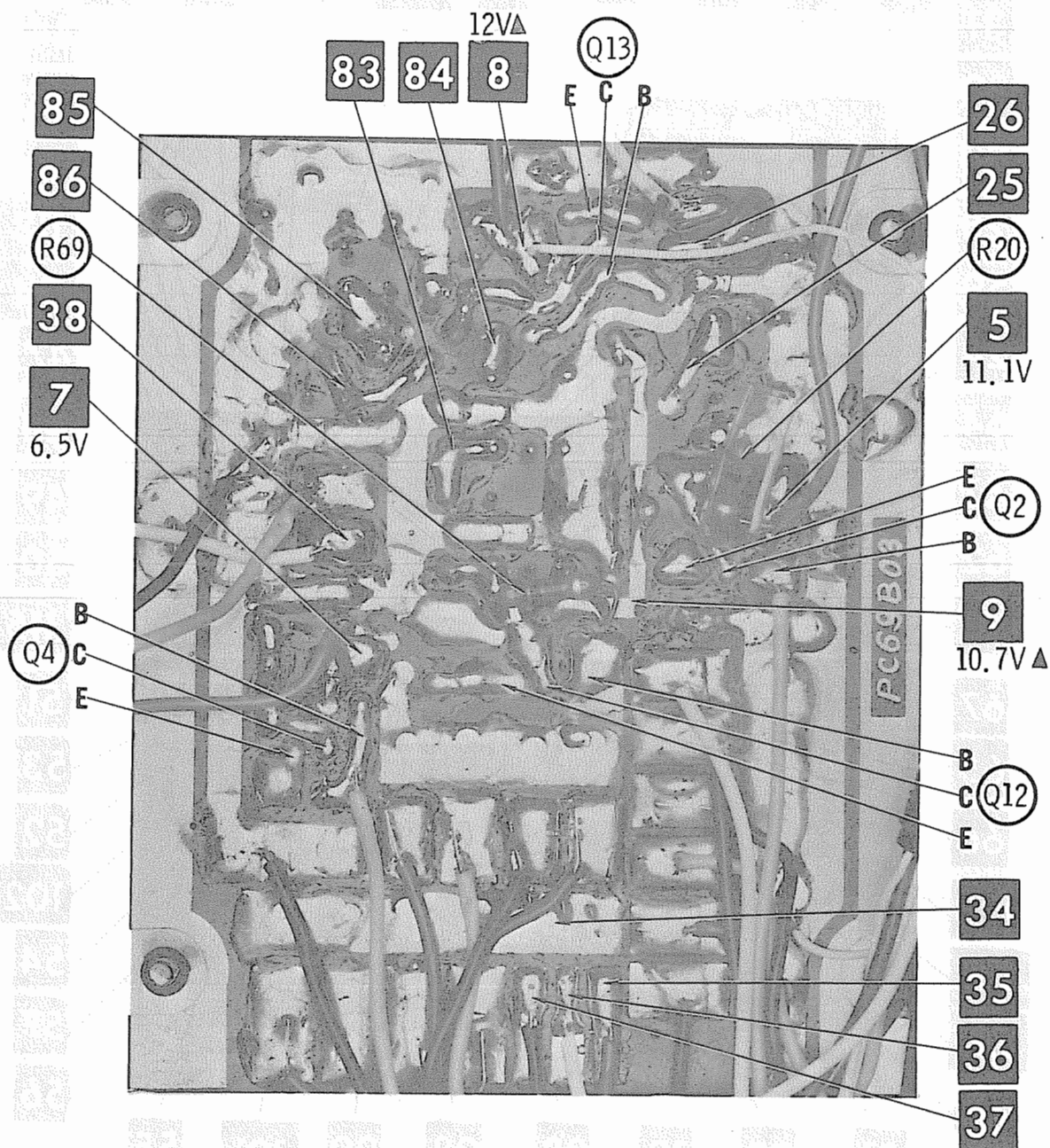


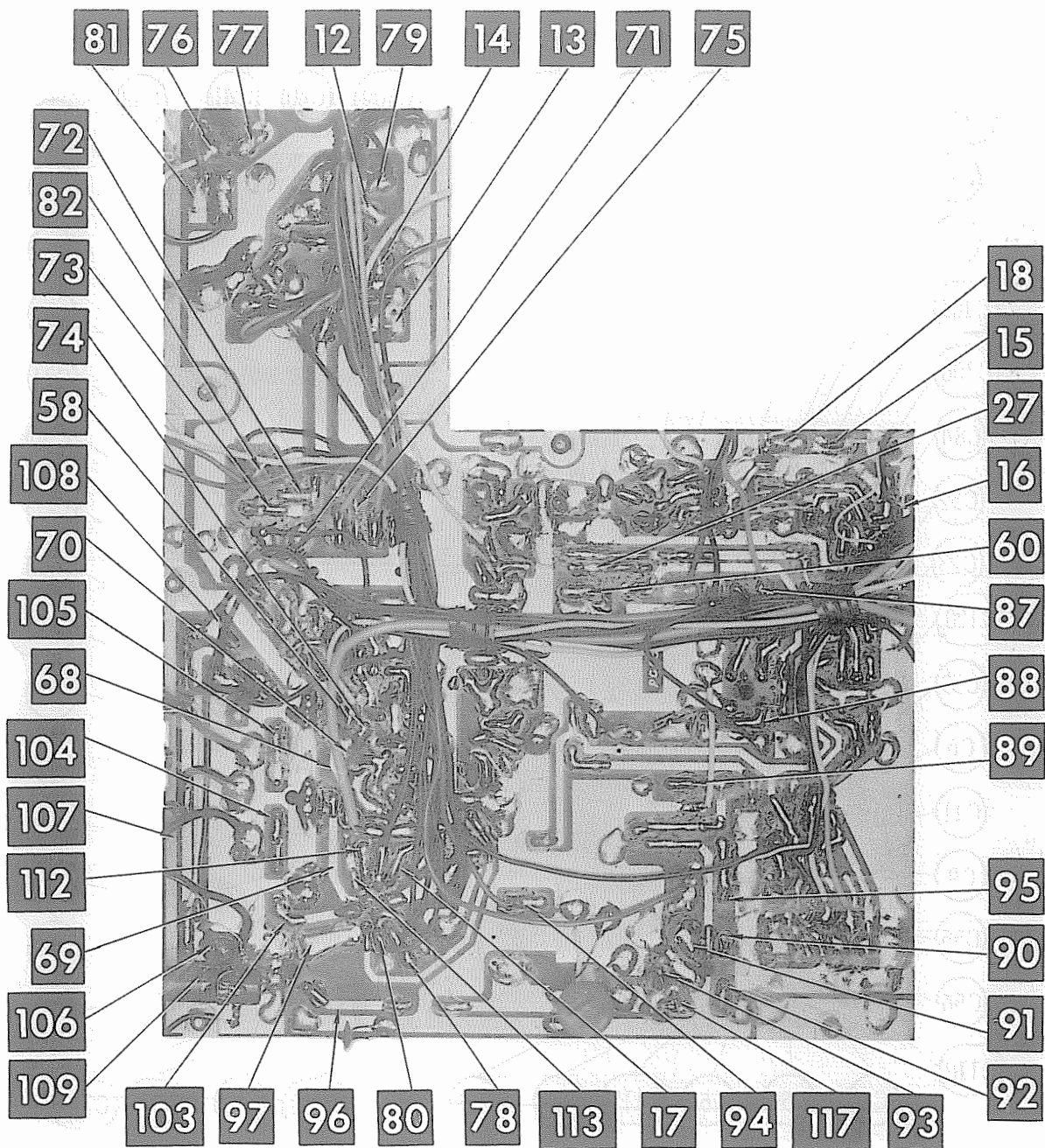


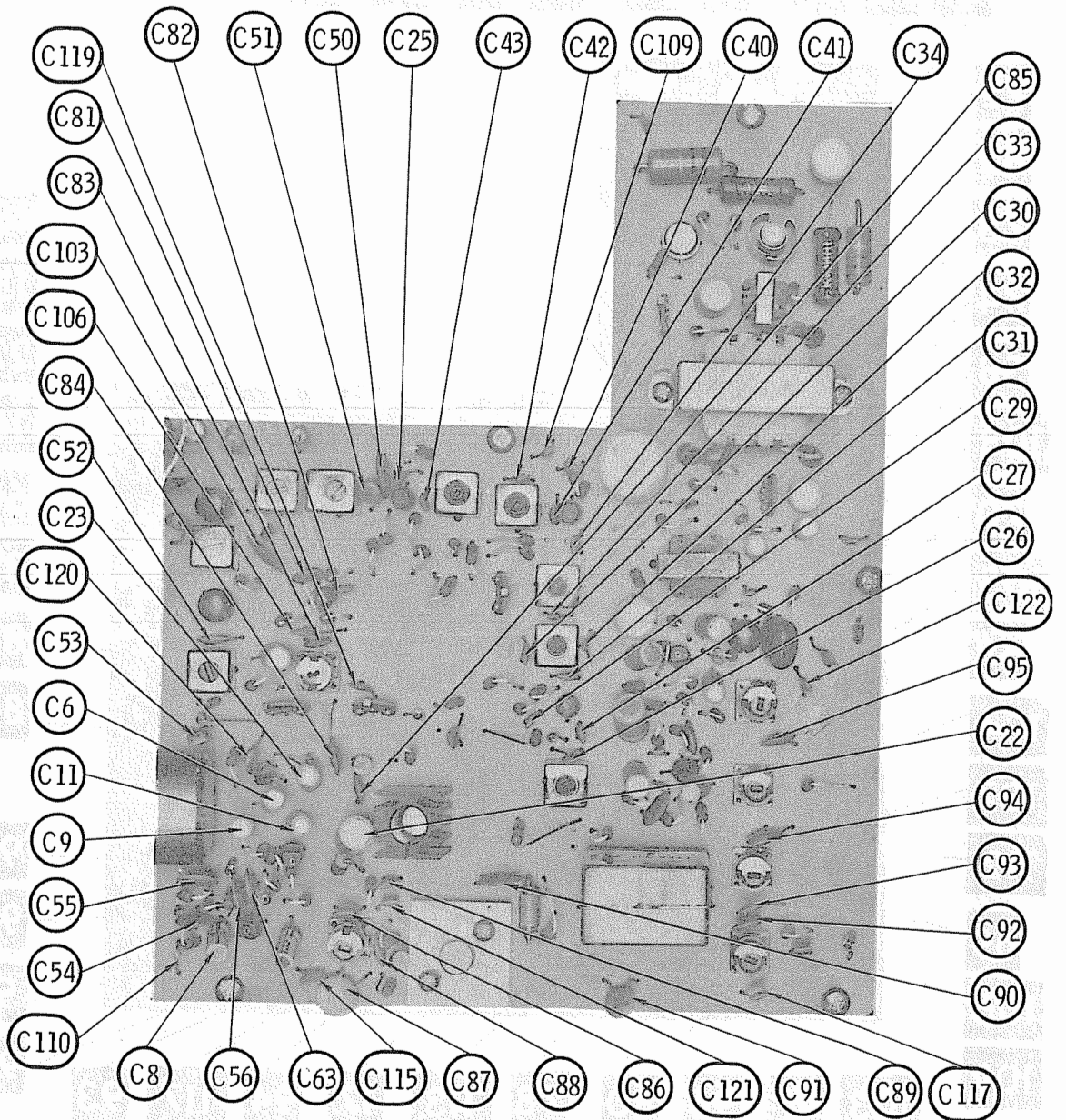
MIDLAND MODEL 13-877

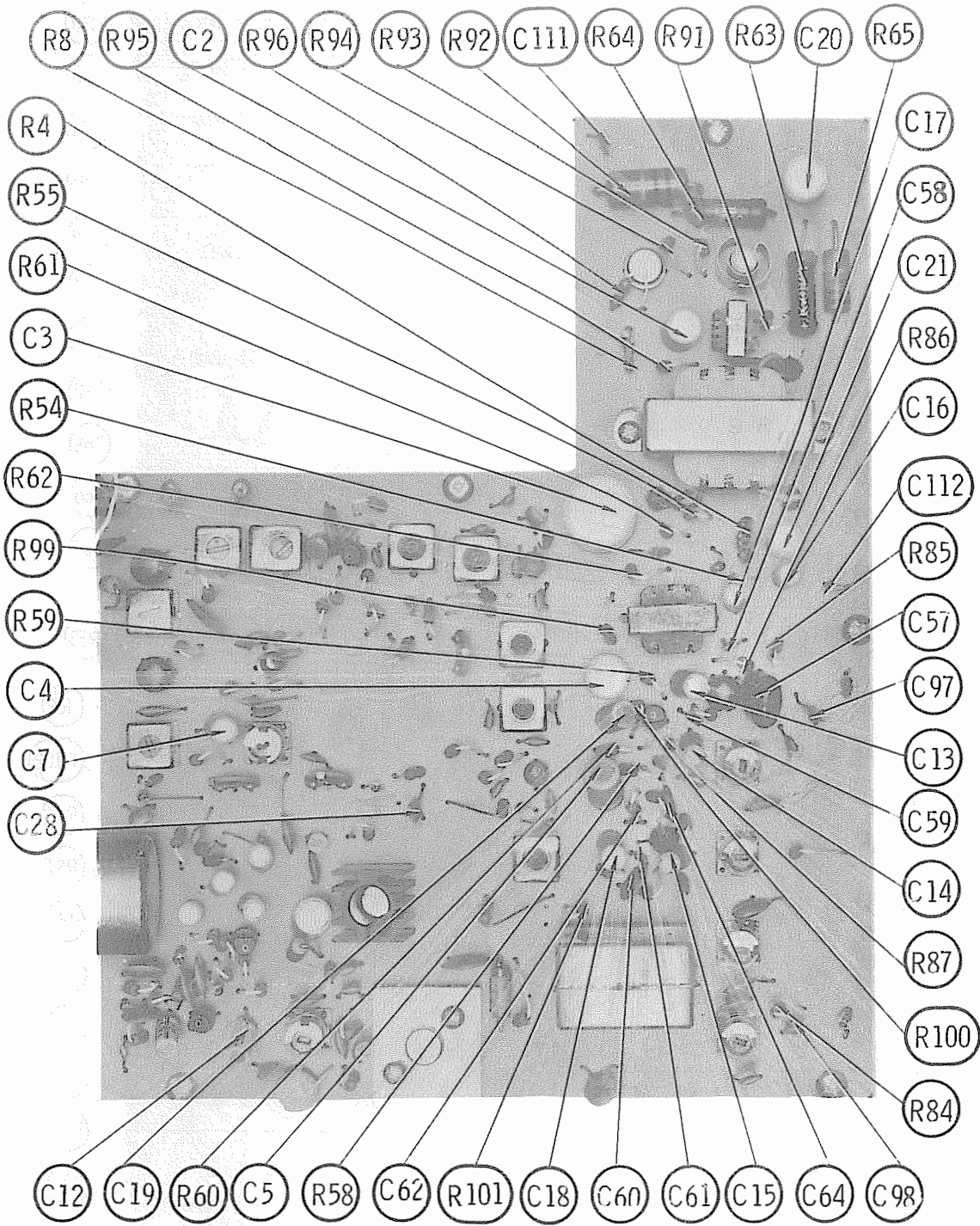


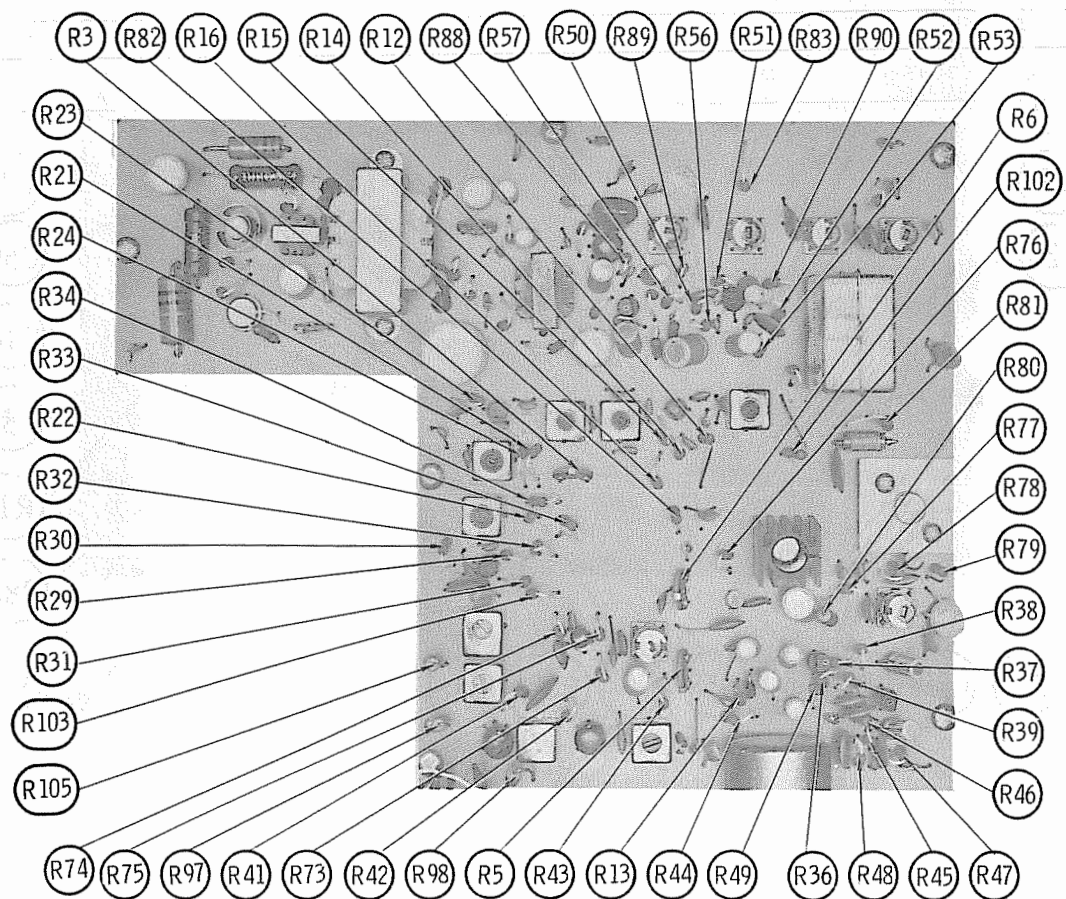
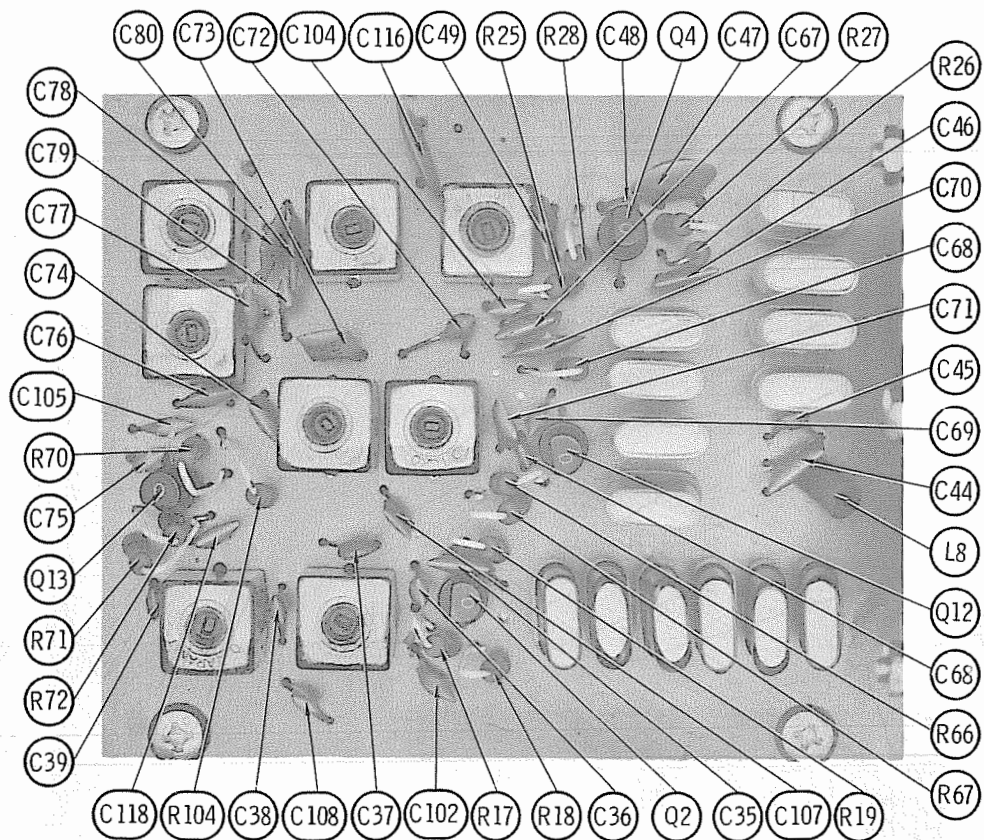




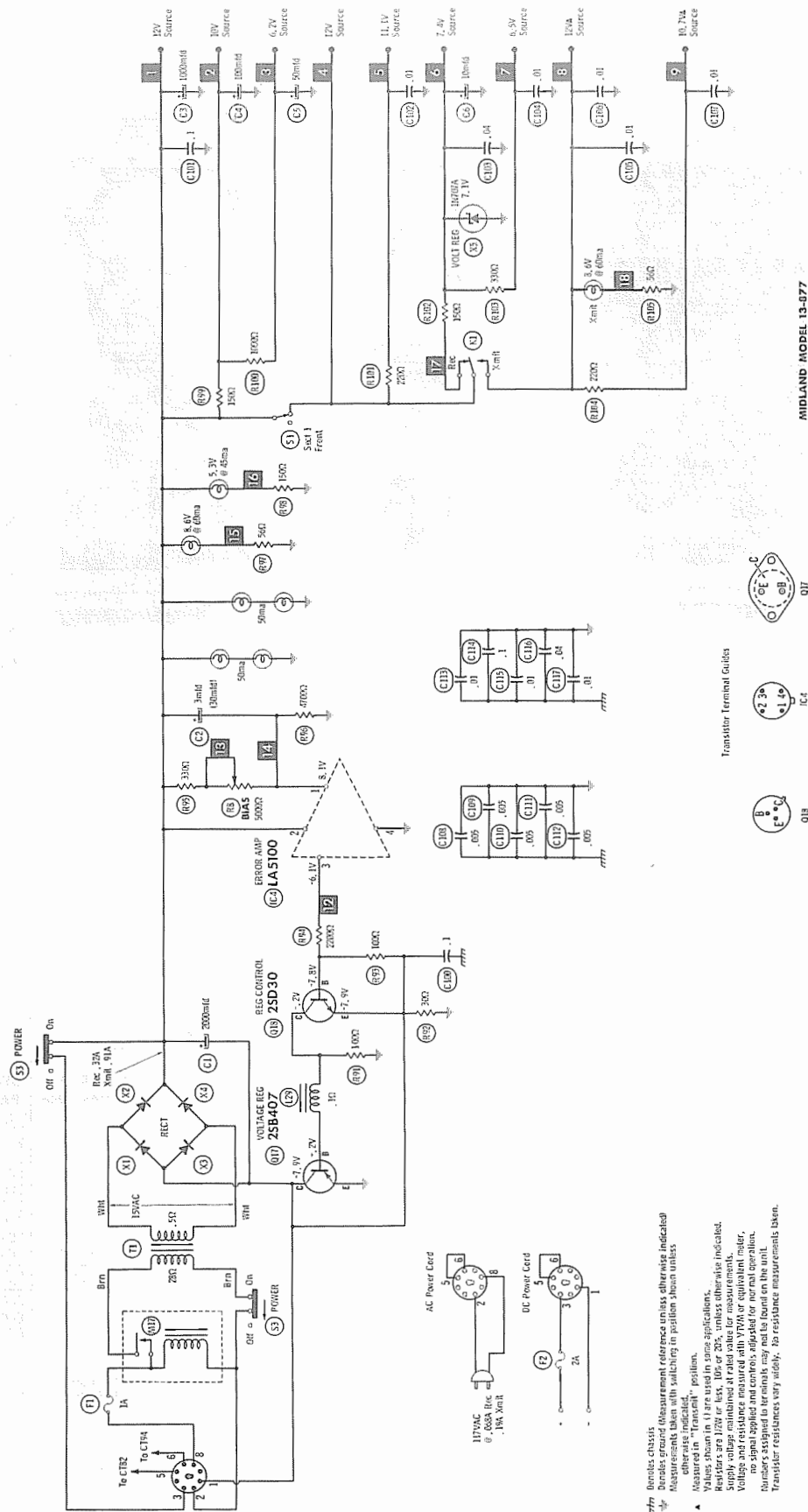








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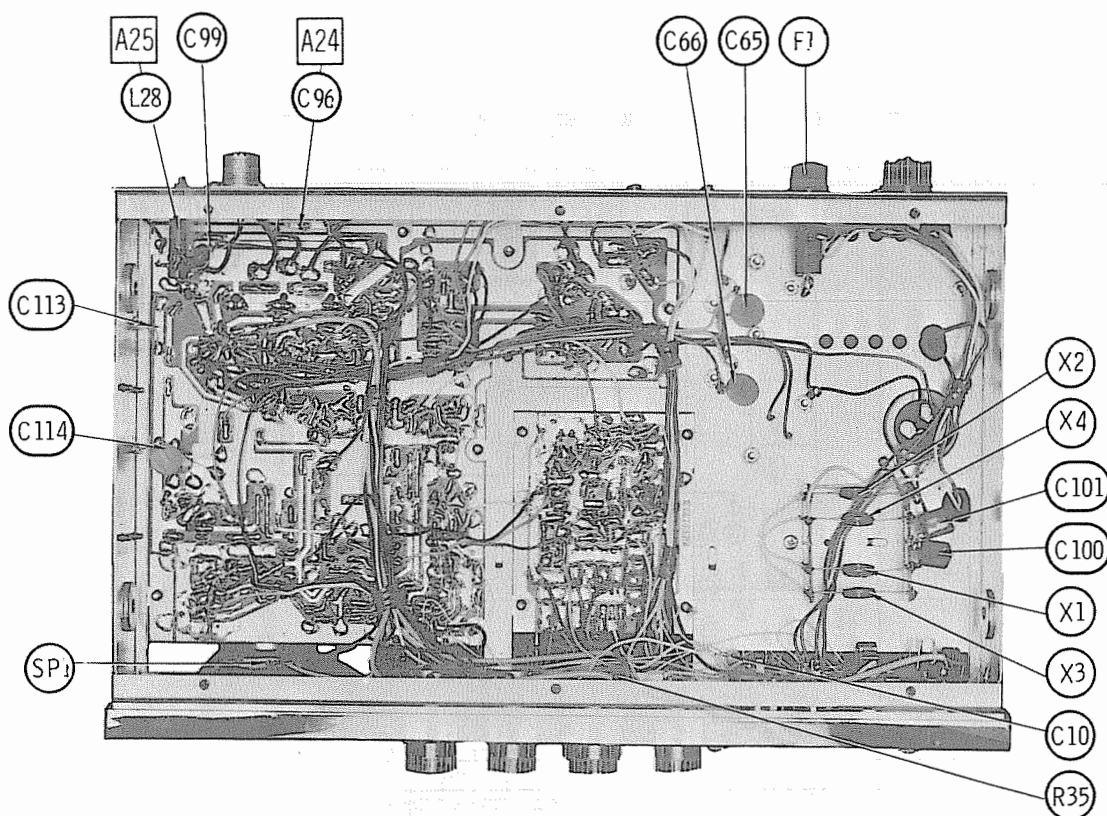
MIDLAND MODEL 13-877

Transistor Terminal Guide



Notes chassis
 Denotes ground measurement reference unless otherwise indicated
 Measurements taken with switching in position shown unless
 otherwise indicated
 Resistor values are in ohms unless otherwise indicated
 Resistor values in parentheses are used in some applications
 Supply voltage maintained at rated value for measurements
 Voltage and resistance measured with VOM or equivalent meter
 No signal applied and controls adjusted for normal operation
 Transistor resistances very stable. No resistance measurements taken.

A PHOTOFAC STANDARD NOTATION SCHEMATIC
 with CIRCUITAGE
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PARTS LIST AND DESCRIPTION

WIRING DATA

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

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.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q1	2SK19GR	RF Amp	09-305014	GE-FET-1	TR-FE100	HEP802		ECG 132
Q2	2SC3720	Synthesizer Oscillator	09-302039	GE-20	TR-21	HEP55		ECG 123A
Q3	2SC3720	1st Mixer	09-302039	GE-20	TR-21	HEP55		ECG 123A
Q4	2SC3720	Receive Oscillator	09-302039	GE-20	TR-21	HEP55		ECG 123A
Q5	2SC3720	2nd Mixer	09-302039	GE-20	TR-21	HEP55		ECG 123A
Q6	2SC3720	Squelch	09-302039	GE-20	TR-21	HEP55		ECG 123A
Q7	2SC3720	Squelch	09-302039	GE-20	TR-21	HEP55		ECG 123A
Q8	2SC3720	AF Amp	09-302039	GE-20	TR-21	HEP55		ECG 123A
Q9	2SC7350	Driver	09-302040	GE-18	TR-25	HEP243		ECG 128
Q10	2SD130BL	Output-Modulator	09-303005	GE-23		HEP703	SK3020	ECG 152
Q11	2SD130BL	Output-Modulator	09-303005	GE-23		HEP703	SK3026	ECG 152
Q12	2SC3720	XMTR-Oscillator	09-302039	GE-20	TR-21	HEP55		ECG 123A
Q13	2SC3720	XMTR-Mixer	09-302039	GE-20	TR-21	HEP55		ECG 123A
Q14	2SC4780	Buffer	09-302030	GE-17	TR-22	HEP55		ECG 123A
Q15	2SC696F	Driver	09-302041					ECG 123
Q16	2SC799	Final Amp	09-302042					
Q17	2SB407	Voltage Regulator	09-301010	GE-3	TR-01	HEP230	SK3009	ECG 104
Q18	2SD30	Regulator Control	09-033006	GE-8	TR-09	HEP641	SK3010	ECG 103A

INTEGRATED CIRCUITS

ITEM No.	FUNCTION	MFGR. PART No.	REMARKS
IC1	1st IF Amp	09-308004(QA703E)	
IC2	2nd IF Amp	09-308004(QA703E)	
IC3	Microphone Amp	09-308004(QA703E)	
IC4	Error Amp	09-308005(LA5100)	

PARTS LIST AND DESCRIPTION (CONTINUED)

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

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFR. PART OR TYPE No.	REPLACEMENT DATA				NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	
X1	09-306053(SW-1)		R250F		ECG 156	Zener
X2	09-306053(SW-1)		R250F		ECG 156	
X3	09-306053(SW-1)		R250F		ECG 156	
X4	09-306053(SW-1)		R250F		ECG 156	
X5	09-306052(1N707A)		1ZM7.5-T10		ECG 138	
X6	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	
X7	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	
X8	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	
X9	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	
X10	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	
X11	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	
X12	(M8513R)					
X13	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	
X14	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	
X15	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	
X16	09-306051(SD-46)	1N34AS	1N34A	1N34A	ECG 109	

ELECTROLYTIC CAPACITORS

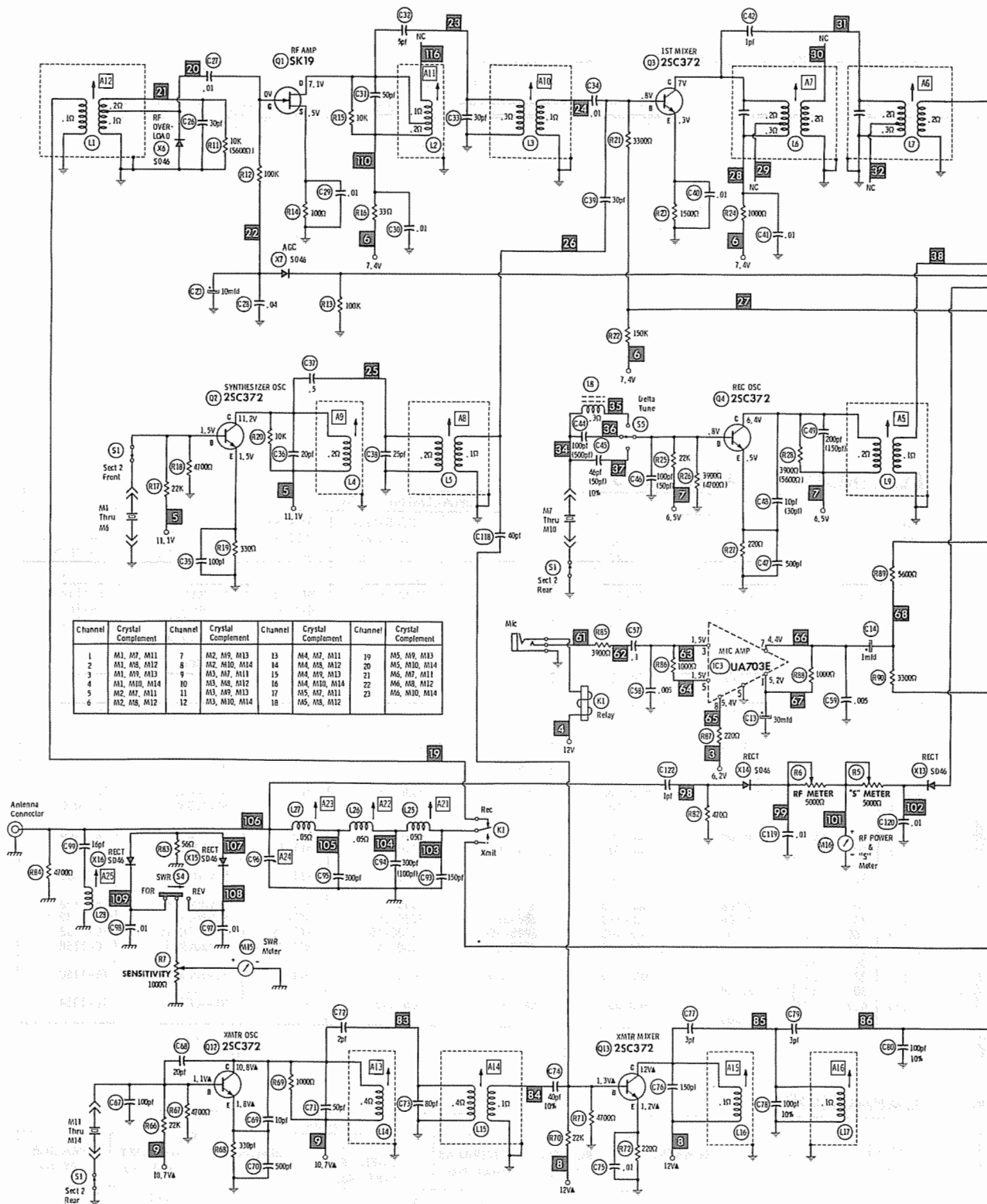
ITEM No.	RATING	REPLACEMENT DATA						
		PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	2000 25V	77-339208	PRS1296		BR2000-25		TC2520	TL-1220
C2	30 10V	77-336306	MCD-110	EP15-25	PC30-35	MT1-13.5	MTV30CB25	TE-1132.1
C3	1000 16V	77-331108	PRS1230	EA15-1000	WBR1000-16	QT1-32	TC1501A	TL-1166.5
C4	100 15V	77-331107	MCD-180	EP15-100	PC100-16	MT1-19	MTV100CF15	TE-1162
C5	47 10V	77-336506	MCD-130	EP15-50	PC50-16	MT1-16	MTV50CB15	TE-1133
C6	50 10V							
C7	10 10V	77-336106	MCD-70	EP15-10	PC10-50	MT1-5	MTV10CB50	TE-1128
C8	30 6V	77-335306	MCD-110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C9	1 6V	77-335105	MCD-10		PC1-100	MT1-1	MTV1CB50	TE-1080
C10	1 6V	77-335105	MCD-10		PC1-100	MT1-1	MTV1CB50	TE-1080
C11	1 3V							
C12	1 6V	77-335105	MCD-10		PC1-100	MT1-1	MTV1CB50	TE-1080
C13	10 6.3V							
C14	5 6V	77-335505	MCD-70	EP6-10	PC10-50	MT1-5	MTV10CB50	TE-1087
C15	30 6V	77-335306	MCD-110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C16	1 3V							
C17	1 6V	77-335105	MCD-10		PC1-100	MT1-1	MTV1CB50	TE-1080
C18	10 6.3V							
C19	5 6V	77-335505	MCD-70	EP6-10	PC10-50	MT1-5	MTV10CB50	TE-1087
C20	10 6.3V							
C21	5 6V	77-335505	MCD-70	EP6-10	PC10-50	MT1-5	MTV10CB50	TE-1087
C22	30 6V	77-335306	MCD-110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C23	30 6V	77-335306	MCD-110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C24	100 15V	77-331107	MCD-180	EP15-100	PC100-16	MT1-19	MTV100CF15	TE-1162
C25	33 16V							
C26	30 15V	77-331306	MCD-110	EP15-25	PC30-35	MT1-13.5	MTV30CB25	TE-1158
C27	33 16V							
C28	30 15V	77-331306	MCD-110	EP15-25	PC30-35	MT1-13.5	MTV30CB25	TE-1158
C29	4.7 6.3V							
C30	5 6V	77-335505	MCD-50	EP6-5	PC5-100	MT1-3	MTV5CB50	TL-1084

MIDLAND MODEL 13-877

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.
C25	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C26	30			OD-300		CCO-300	GP430	10TS-Q30
C27	.01		TTP-01	CK-103	MGP01	CCO-103	TA110	TG-S10
C28	.04			OD-403			GP140	
C29	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C30	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C31	50		GPD X5F500K	DD-500	NP050	CCO-500	GP450	10TS-Q50
C32	5			DD-050	NP05	CCO-050	GP550	10TS-V50
C33	30			DD-300		CCD-300	GP430	10TS-Q30
C34	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C35	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C36	20			DD-200	NP020	CCD-200	GP420	10TS-Q20
C37	.5							

(CONTINUED ON PAGE 64)

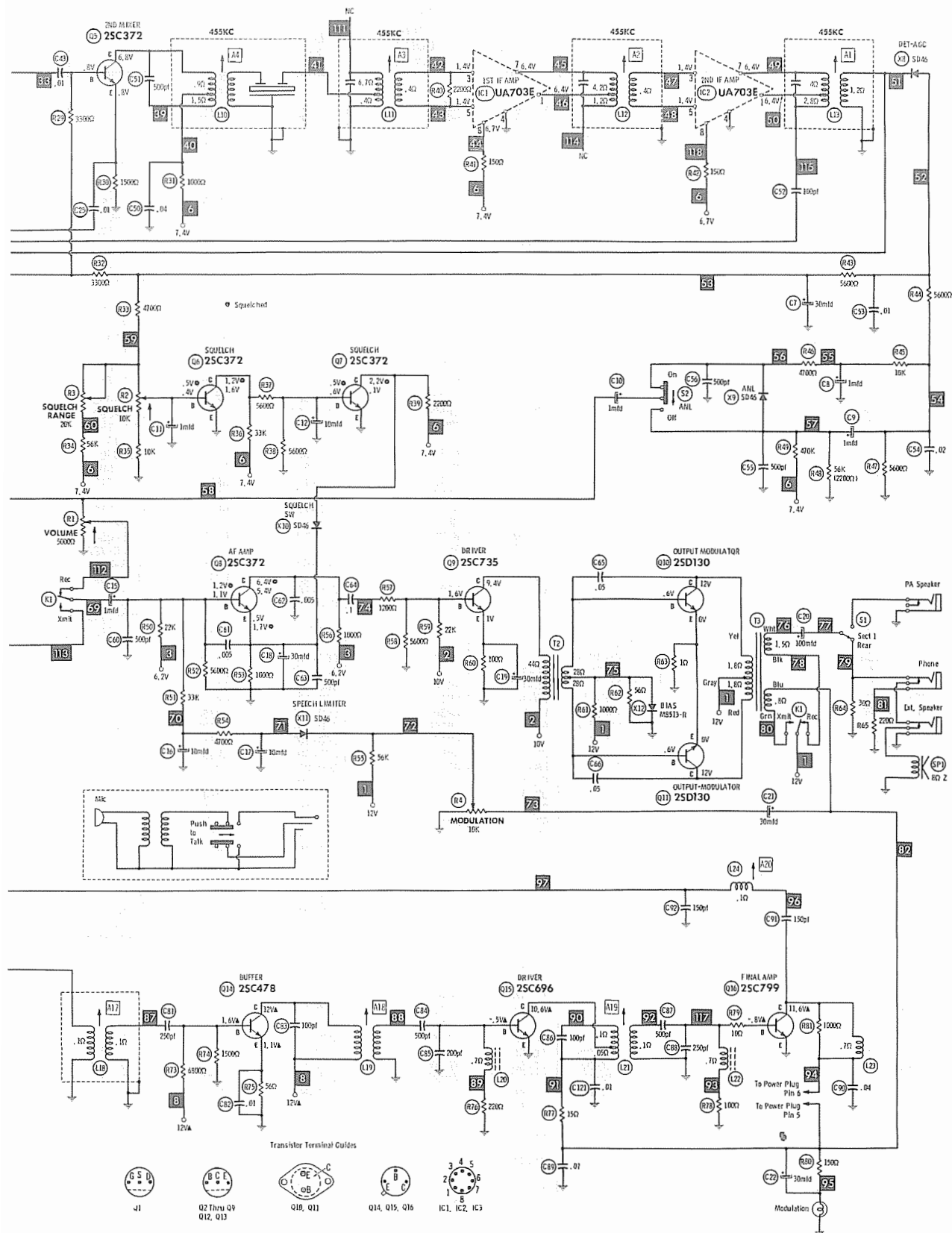


A PHOTOFAC STANDARD NOTATION SCHEMATIC

with CIRCUITRACE

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NC, No Connection
 --- Denotes chassis
 --- Denotes ground/Measurement reference unless otherwise indicated
 Measurements taken with switching in position shown unless otherwise indicated.
 ▲ Measured in "Transmit" position.
 Values shown in () are used in some applications.
 Resistors are 1/2W or less, 10% or 20%, unless otherwise indicated.
 Supply voltage maintained at rated value for measurements.
 Voltage and resistance measured with VTVM or equivalent meter, no signal applied and controls adjusted for normal operation.
 Controls viewed from actuator end. Arrow indicates clockwise rotation.
 Numbers assigned to terminals may not be found on the unit.
 Transistor resistances vary widely. No resistance measurements taken.



MIDLAND MODEL 13-877

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.
C38	25			DD-250		CCD-250	GP425	10TS-Q25
C39	30			DD-300		CCD-300	GP430	10TS-Q30
C40	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C41	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C42	1		NPO-DI 1.0	TCZ-1			CN0510	10TCC-V10
C43	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C44	100	10%	GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C45	46							
C46	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C47	500		GPD X5F501K	DM-501	GP500	CCD-501	GP350	10TS-T50
C48	10		GPD C0H100K	DD-100	NP010	CCD-100	GP410	10TS-Q10
C49	200		GPD X5F201K	DD-201	GP200	CCD-201	GP320	10TS-T20
C50	.04			DD-403			GP140	
C51	500					DM-16-501		MS-35
C52	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C53	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C54	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C55	500		GPD X5F501K	DM-501	GP500	CCD-501	GP350	10TS-T50
C56	500		GPD X5F501K	DM-501	GP500	CCD-501	GP350	10TS-T50
C57	.1		DBE2P1		DPMS2P1	1DP-2 104	PVC101	225P10491WD3
C58	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C59	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C60	500		GPD X5F501K	DM-501	GP500	CCD-501	GP350	10TS-T50
C61	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C62	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C63	500		GPD X5F501K	DM-501	GP500	CCD-501	GP350	10TS-T50
C64	.1		TTP-1	CK-104			TA010	TG-P10
C65	.05		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C66	.05		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C67	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C68	20			DD-200	NP020	CCD-200	GP420	10TS-Q20
C69	10		GPD C0H100K	DD-100	NP010	CCD-100	GP410	10TS-Q10
C70	500		GPD X5F501K	DM-501	GP500	CCD-501	GP350	10TS-T50
C71	50		GPD X5F500K	DD-500	NP050	CCD-500	GP450	10TS-Q50
C72	2		NPO-DI 2.2	DTZ-2R2	NP02P2		CN0522	10TCC-V22
C73	80		GPD X5F820K	DD-820	NP082	CCD-820	GP482	10TS-Q82
C74	40	10%		DD-390		CCD-390	GP439	10TS-Q39
C75	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C76	150		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C77	3		NPO-DI 3.0					10TCC-V30
C78	100	10%	GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C79	3		NPO-DI 3.0					10TCC-V30
C80	100	10%	GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C81	250		GPD X5F251K	DD-251		CCD-251	GP325	10TS-T25
C82	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C83	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C84	500		GPD X5F501K	DM-501	GP500	CCD-501	GP350	10TS-T50
C85	200		GPD X5F201K	DM-201	GP200	CCD-201	GP320	10TS-T20
C86	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C87	500		GPD X5F501K	DM-501	GP500	CCD-501	GP350	10TS-T50
C88	200		GPD X5F201K	DM-201	GP200	CCD-201	GP320	10TS-T20
C89	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C90	.04			DD-403			GP140	
C91	150		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C92	150		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C93	150		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C94	300		GPD X5F301K	DM-301	GP300	CCD-301	GP330	10TS-T30
C95	300		GPD X5F301K	DM-301	GP300	CCD-301	GP330	10TS-T30
C96	250-300	#13-123023						
C97	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C98	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C99	.16			DD-150	NP015	CCD-150	GP415	10TS-Q15
C100	.1		DBE2P1		DPMS2P1	1DP-2-104	PVC101	225P10491WD3
C101	.1		DBE2P1		DPMS2P1	1DP-2-104	PVC101	225P10491WD3
C102	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C103	.04			DD-403			GP140	
C104	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C105	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C106	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C107	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C108	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C109	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C110	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C111	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C112	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C113	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C114	.1		TTP-1	CK-104			TA010	TG-P10
C115	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C116	.04			DD-403			GP140	
C117	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C118	40			DD-390		CCD-390	GP439	10TS-Q39
C119	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C120	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C121	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C122	1		NPO-DI 1.0	TCZ-1			CN0510	10TCC-V10

Midland 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	5000	13-160062	F2-5000 (2), SSK012		Q13-114 (2) or [BU1 (2), CF60, SS6]*	RU53A, SL36, SL3250 or UA53A (2), SK750 or U12
R2	Squelch	10K	13-166023	F2-10K (2), SSK012	A47-10K-Z (2), KSS-3 or NP-10K-Z (2), UP-C-400	Q13-116 (2) or [BU1 (1), CF61, SS6]*	RU14A, SL36, SL3250 or UA14A (2), SK750 or U18(2)
R3	Squelch Range	20K	13-164060	TSV-25K (1) or T-20K (1)		X201R253B (1)	MTC24L1 (1)
R4	Modulation	10K	13-164061	TSV-10K or T-10K		X201R103B	MTC14L
R5	"S" Meter	5000	13-164040	T-5000 (1) or TSV-5K (1)		X201R502B (1)	MTC5361 (1)
R6	RF Power	5000	13-164040	T-5000 (1) or TSV-5K (1)		X201R502B (1)	MTC5361 (1)
R7	SMR Sensitivity	1000	13-166024	F1-1000 (2), SSK100	A47-1000-S (2), KSS-3 or NP-1000-S (2), UP-C-400	Q11-108 (2) or [BU1 (2), CF6, SS6]*	RU13L, SL36, SL3250, UA13L (2), SK750 or U4 (2)
R8	Bias	5000	13-164040	T-5000 (1) or TSV-5K (1)		X201R502B (1)	MTC5361 (1)

* "SNAPTROL"

(1) Cut off one of the end terminals & bend to fit "PC" Board.

(2) Enlarge mounting hole.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R63	1 1/2W		77-302109

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R79	10 1/2W		77-302100

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	Antenna Matching	13-176254			
L2	RF	13-176255			
L3	RF	13-176256			
L4	Synthesizer Oscillator	13-170149			
L5	Synthesizer Oscillator	13-170150			
L6	IF Input	13-090166			
L9	IF Output	13-090166			
L8	Micro Inductor	13-178077		74F126AP	T811
L9	Receiver Oscillator	13-170151			
L10	IF Input	13-179014			
L11	IF Interstage	13-090167			
L12	IF Interstage	13-090168			
L13	IF Output	13-090169			
L14	Xmtr. Oscillator	13-170152			
L15	Xmtr. Oscillator	13-176257			
L16	Xmtr. Mixer	13-176258			
L17	Harmonic Suppressor	13-176258			
L18	Buffer Input	13-176259			
L19	Buffer Output	13-176260			
L20	RF Choke	13-178076		74F276AP	7814
L21	Driver Output	13-176261			
L22	RF Choke	13-178076		74F276AP	7814
L23	RF Choke	13-176262		74F126AP	T811
L24	Transmitter Output	13-176263			
L25	Pi Network	13-179015			
L26	Pi Network	13-179015			
L27	Pi Network	13-179015			
L28	TVI Trap	13-178075			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L29		.1	1.5MH	13-178078				

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC 0.068A AC* .19A AC+	15VAC 0.32A DC* .91A DC+	13-098006				* Receive + Transmit

MIDLAND MODEL 13-877

PARTS LIST AND DESCRIPTION (CONTINUED)

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

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD Part No.	
T2	1	1 CT		13-096100				

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	72	8	13-096101				
		SEC. 2					
		.8 DC Resistance					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				MFGR. PART No.	QUAM PART No.	
SP1	4"	PM	8 ohms	13-060059	4A1Z8	

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA					
		PART No.		BUSS PART No.		LITTELFUSE PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER
F1	1A	13-204001	13-159074				
F2	2A	13-204004					

MISCELLANEOUS

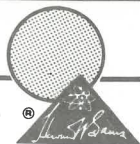
ITEM No.	PART NAME	PART No.	NOTES
K1	Relay	13-105009	
M1	Crystal	13-128149	37.600MC
M2	Crystal	13-128150	37.650MC
M3	Crystal	13-128151	37.700MC
M4	Crystal	13-128152	37.750MC
M5	Crystal	13-128153	37.800MC
M6	Crystal	13-128154	37.850MC
M7	Crystal		10.180MC
M8	Crystal		10.170MC
M9	Crystal	13-128157	10.160MC
M10	Crystal	13-128158	10.140MC
M11	Crystal	13-128159	10.635MC
M12	Crystal	13-128160	10.625MC
M13	Crystal	13-128161	10.615MC
M14	Crystal	13-128162	10.595MC
M15	Meter, SWR	13-200026	
M16	Meter, RF/Signal	13-200025	
M17	Clock, Digital	13-079002	
S1	Switch, PA-Rec	13-180053	
S2	Switch, ANL	13-183116	
S4	Switch, SWR		
S5	Switch, Delta Tune	13-180054	

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

ITEM	PART No.	ITEM	PART No.
Cabinet, Cover	13-011014	Knob, Delta Tune, Volume, Squealch & SWR Sens.	13-110097
Cabinet, Front	13-010123	Knob, Alarm Set	13-115024
Cabinet, Rear	13-013079	Knob, Off-On-Auto Alarm	13-115025
Knob, Selector	13-115022		

ACCESSORIES

ITEM	MFGR. PART No.	REMARKS
Microphone	13-038043	



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NOTE

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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 50-ohm dummy load or the normally used antenna system.



PENNCREST MODEL 985-6055 (Pinto Jr.)

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:	GENERAL CEMENT #	WALSCO #
A1, A2, A3, A4	8276,8277,8290	2512,2515,2525
A5, A6, A7, A8	8606L,9440	2501,2544
A9, A10, A11	8868,9089	2541,2587

PENNCREST MODEL 985-6055

RECEIVER

Connect an AC VTVM across speaker voice coil. Set volume control fully clockwise and squelch control fully clockwise.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to base of Q2 (Mixer), low side to chassis. Tune to 455KC (Mod.)	Any	A1 thru A4	Adjust for maximum.
High side thru .01mfd to antenna connector, low side to chassis. Tune to 27.065MC (Mod.)	9	A5,A6, A7	Adjust for maximum.

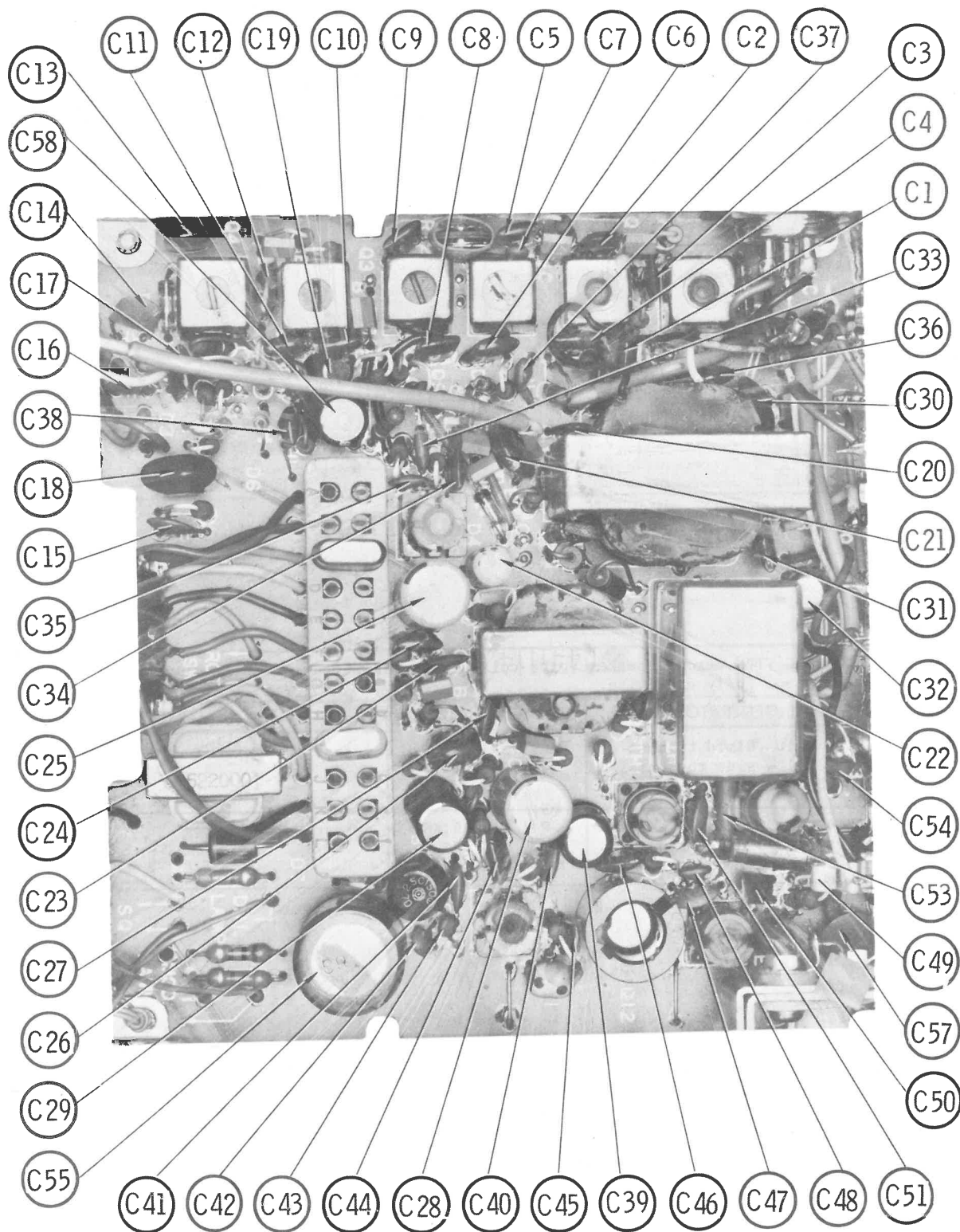
TRANSMITTER

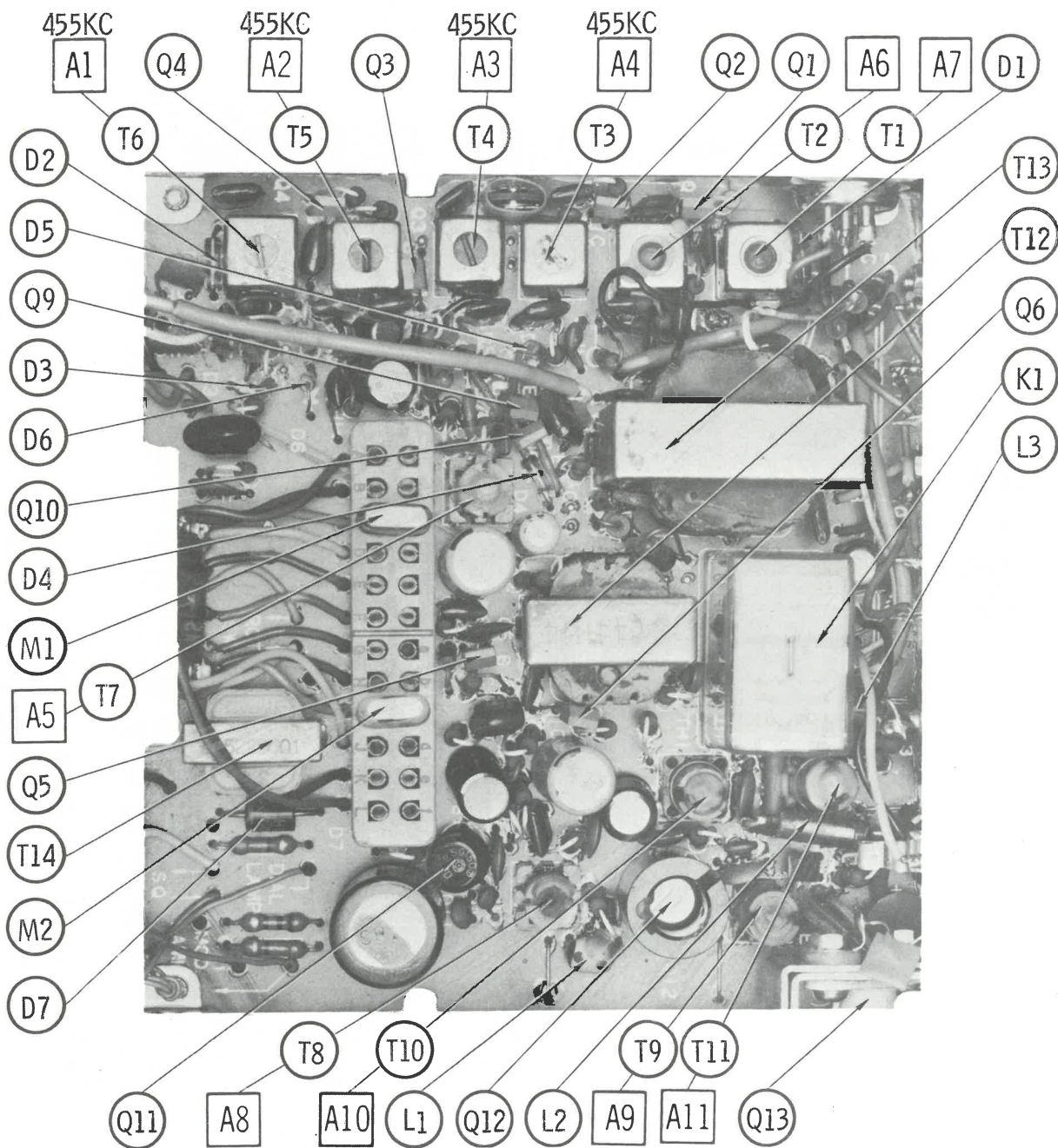
INDICATOR	ADJUST	REMARKS
RF Wattmeter or field strength meter	A8 thru A11	Adjust for maximum.
0-500ma DC Ammeter	A10	Remove meter jumper and insert meter. Readjust A10 for 5 Watts input to Q13, (Final Amp.)

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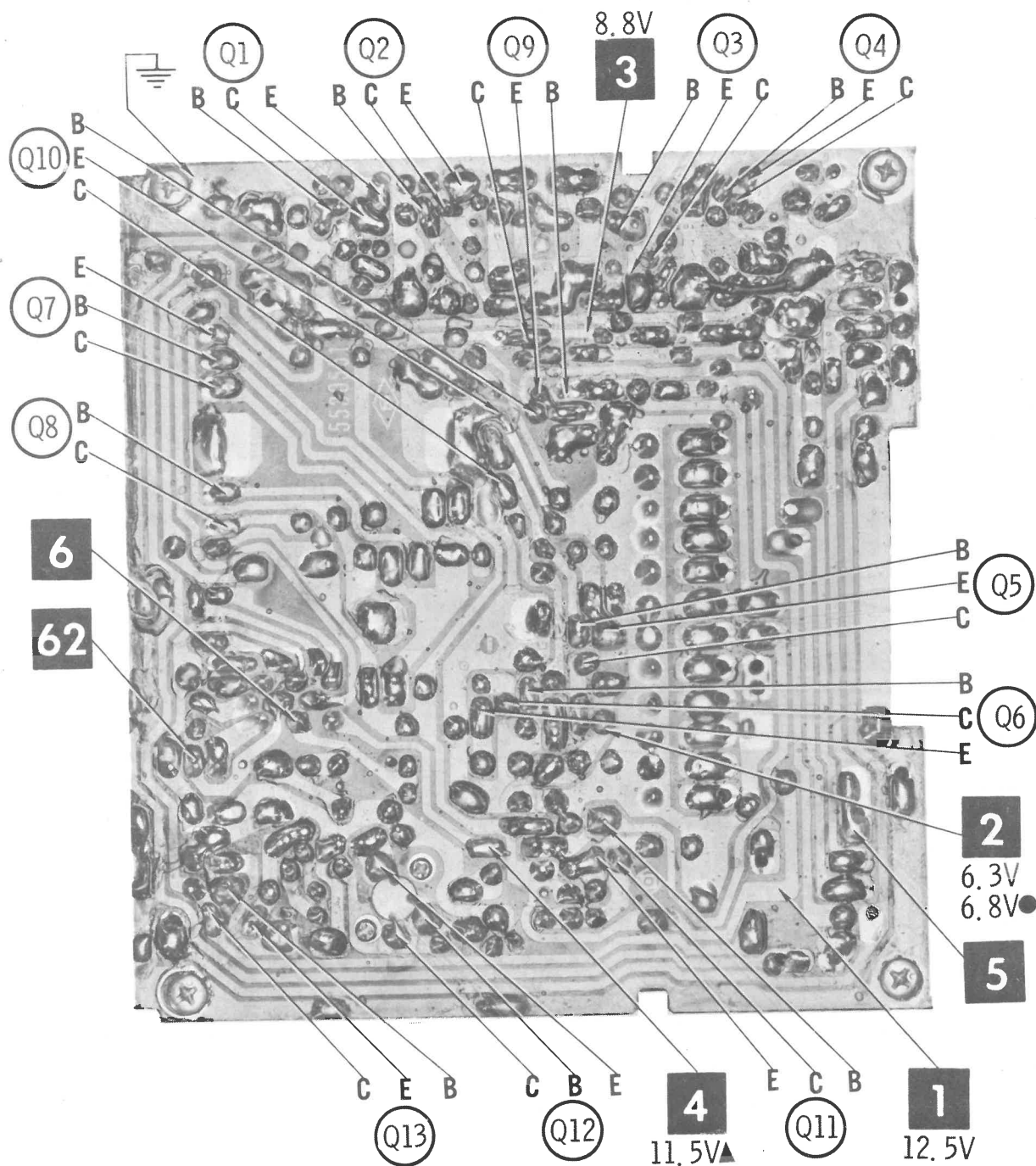
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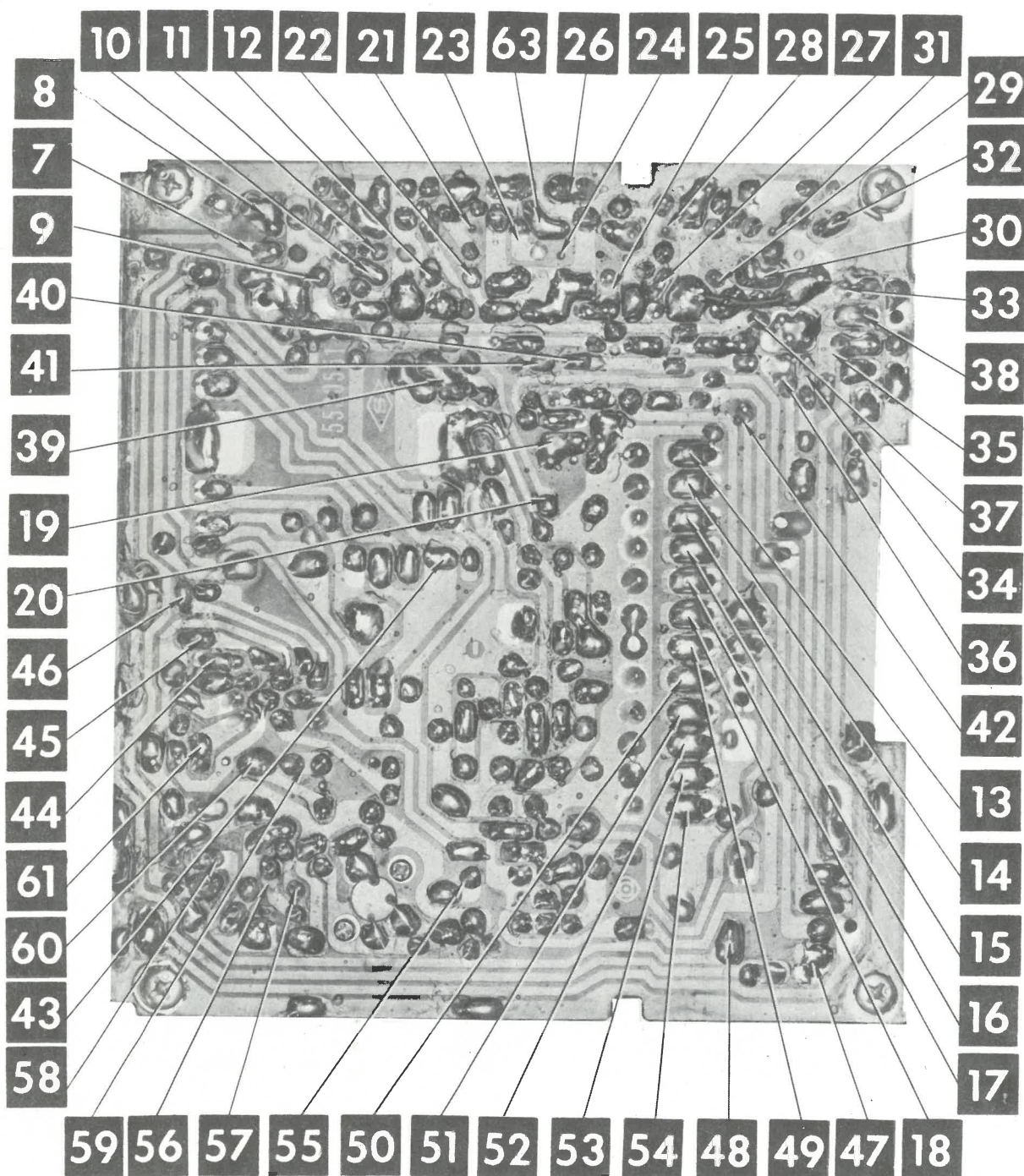
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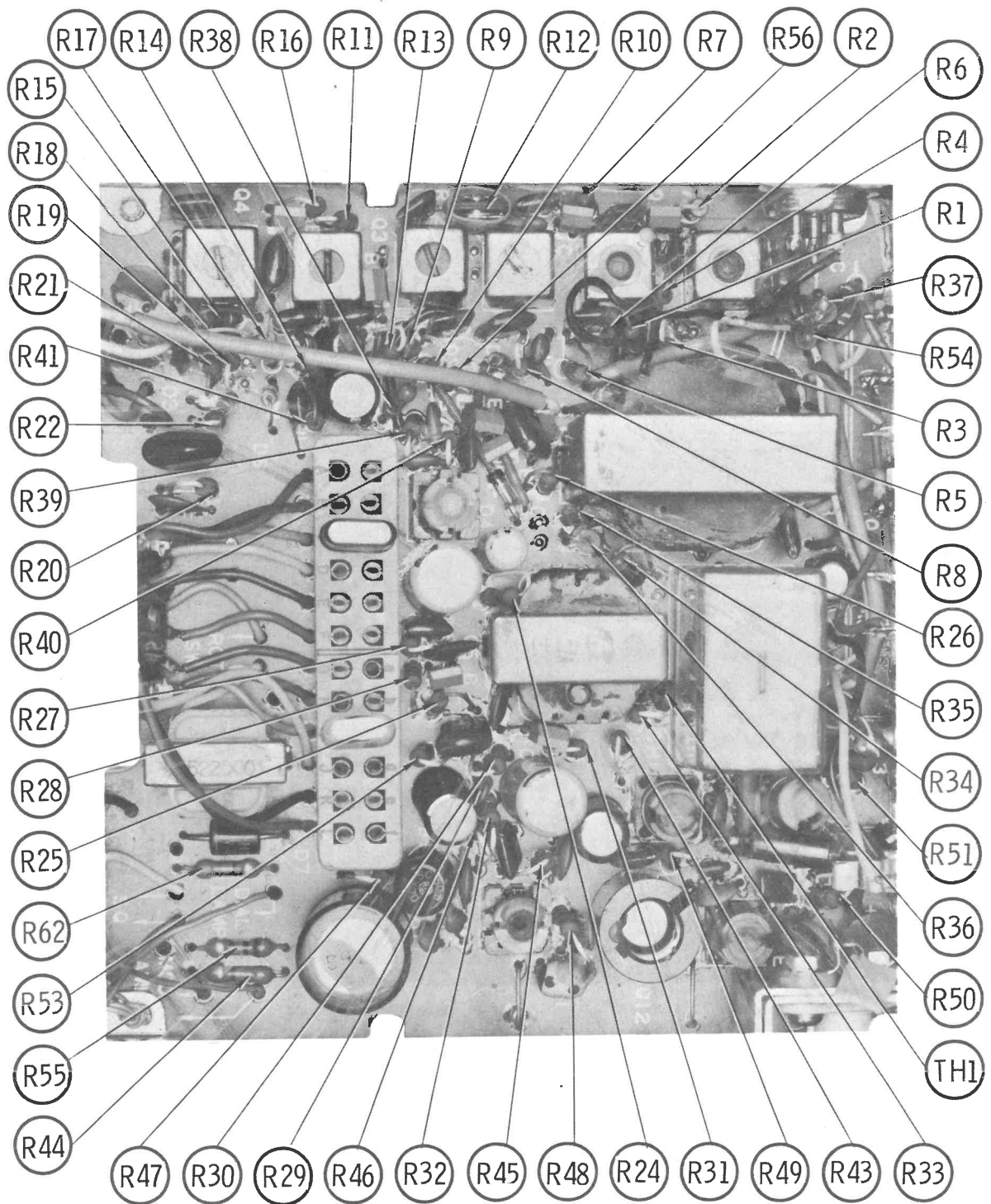




PENNCREST MODEL 985-6055







PARTS LIST AND DESCRIPTION

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

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q1	2SC535(A)	RF Amp	0573509	GE-17	TR-24	HEP56	SK3018	ECG 108
Q2	2SC460(B)	Mixer	0573486	GE-11	TR-21	HEP53	SK3018	ECG 107
Q3	2SC454(B)	1st IF Amp	0573491	GE-20	TR-21	HEP53	SK3018	ECG 128
Q4	2SC454(B)	2nd IF Amp	0573491	GE-20	TR-21	HEP53	SK3018	ECG 128
Q5	2SC458(B or LG)	AF Amp	5320022	GE-10	TR-21	HEP738	SK3020	ECG 123A
Q6	2SC458(B)	Driver	0573480	GE-10	TR-21	HEP53	SK3020	ECG 123A
Q7	2SB337(B)	Output - Modulator	0573040	GE-3	TR-01	HEP232	SK3009	ECG 121
Q8	2SB337(B)	Output - Modulator	0573040	GE-2	TR-01	HEP232	SK3009	ECG 121
Q9	2SC454(B)	Rec. Oscillator	0573491	GE-20	TR-21	HEP53	SK3018	ECG 128
Q10	2SC458(B)	Squelch	057-3480	GE-10	TR-21	HEP53	SK3020	ECG 123A
Q11	2SC150T	XMTR Oscillator	0573517	GE-17	TR-24	HEP75	SK3018	ECG 128
Q12	2SC116T	Buffer	0573519	GE-18		HEP713	SK3047	ECG 128
Q13	2SC609T	Final Amp	0573541				SK3049	

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT DATA				NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	
D1	1N60	1N60	1N60	1N60	ECG 109	
D2	1N60	1N60	1N60	1N60	ECG 109	
D3	1N60	1N60	1N60	1N60	ECG 109	
D4	1N34A	1N34AS	1N34A	1N34A	ECG 109	
D5	1N34A	1N34AS	1N34A	1N34A	ECG 109	
D6	1N34A	1N34AS	1N34A	1N34A	ECG 109	
D7	HR-2A	GE-504A	8D4 or 5A4-D	SK3030 or SK3031	ECG 116 or ECG 117	

ELECTROLYTIC CAPACITORS

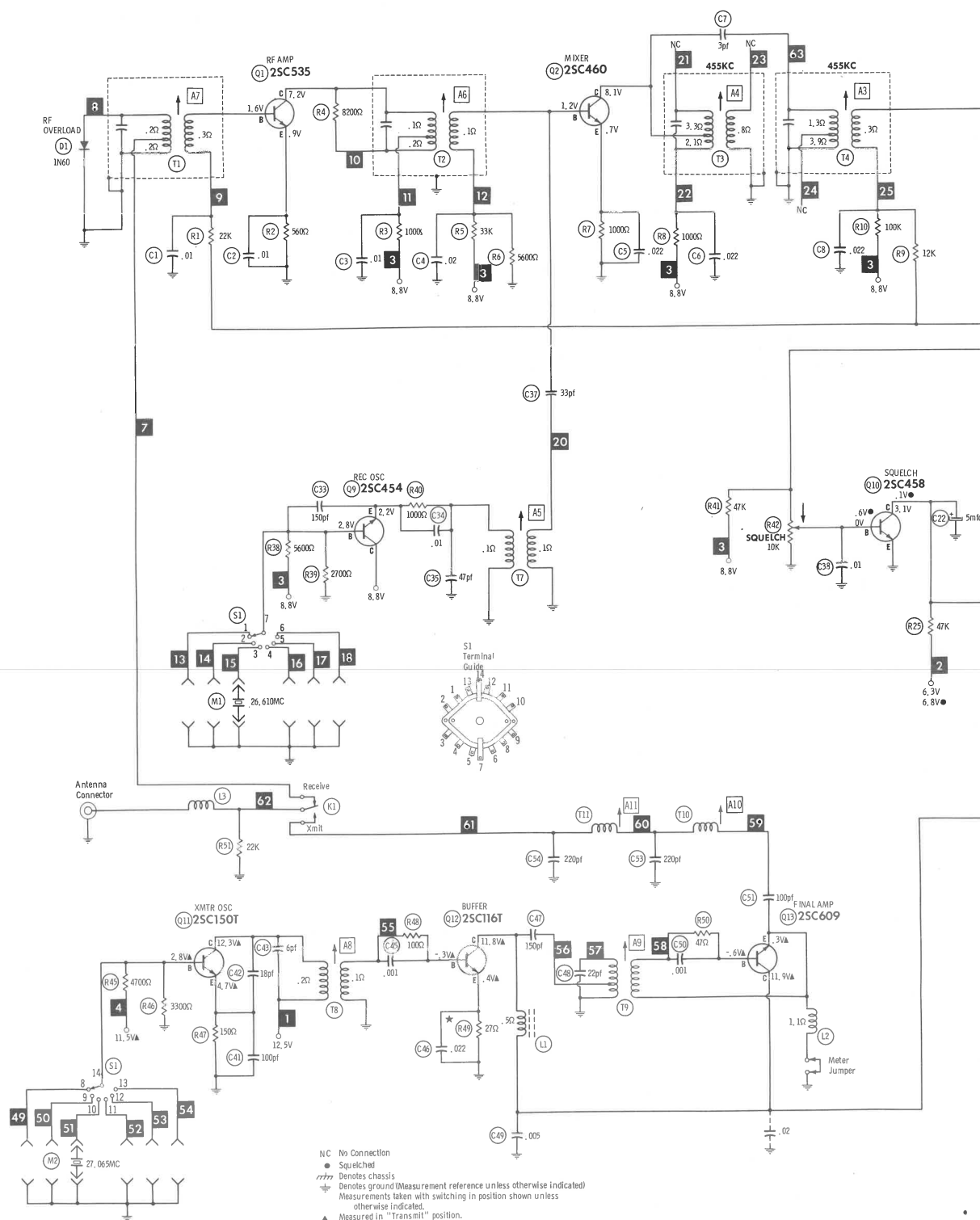
ITEM No.	RATING	REPLACEMENT DATA						
		PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C19	3 15V	0252513	MCD-40	EP30-2	PC5-100	MT1-3	MTV3CB50	TL-1302
C22	5 6V	0252215	MCD-50	EP6-5	PC5-100	MT1-3	MTV5CB50	TL-1084
C25	33 16V	0251080	MCD-110	EP15-25	PC30-35	MT1-13.5	MTV30CB25	TE-1158
C28	33 16V	0251080	MCD-110	EP15-25	PC30-35	MT1-13.5	MTV30CB25	TE-1158
C29	100 10V	0252331	MCD-180	EP15-100	PC100-16	MT1-19	MTV100CD10	TE-1135
C32	4.7 25V	0252615	MCD-50	EP30-5	PC5-100	MT1-3	MTV5CB50	TE-1202
C39	50 10V	0252325	MCD-130	EP15-50	PC50-16	MT1-16	MTV50CB15	TE-1133
C55	470 16V	0252535	BCD15500		PC500-16			
C58	30 15V	0252523	MCD-110	EP15-25	PC30-35	MT1-13.5	MTV30CB25	TE-1158

CAPACITORS

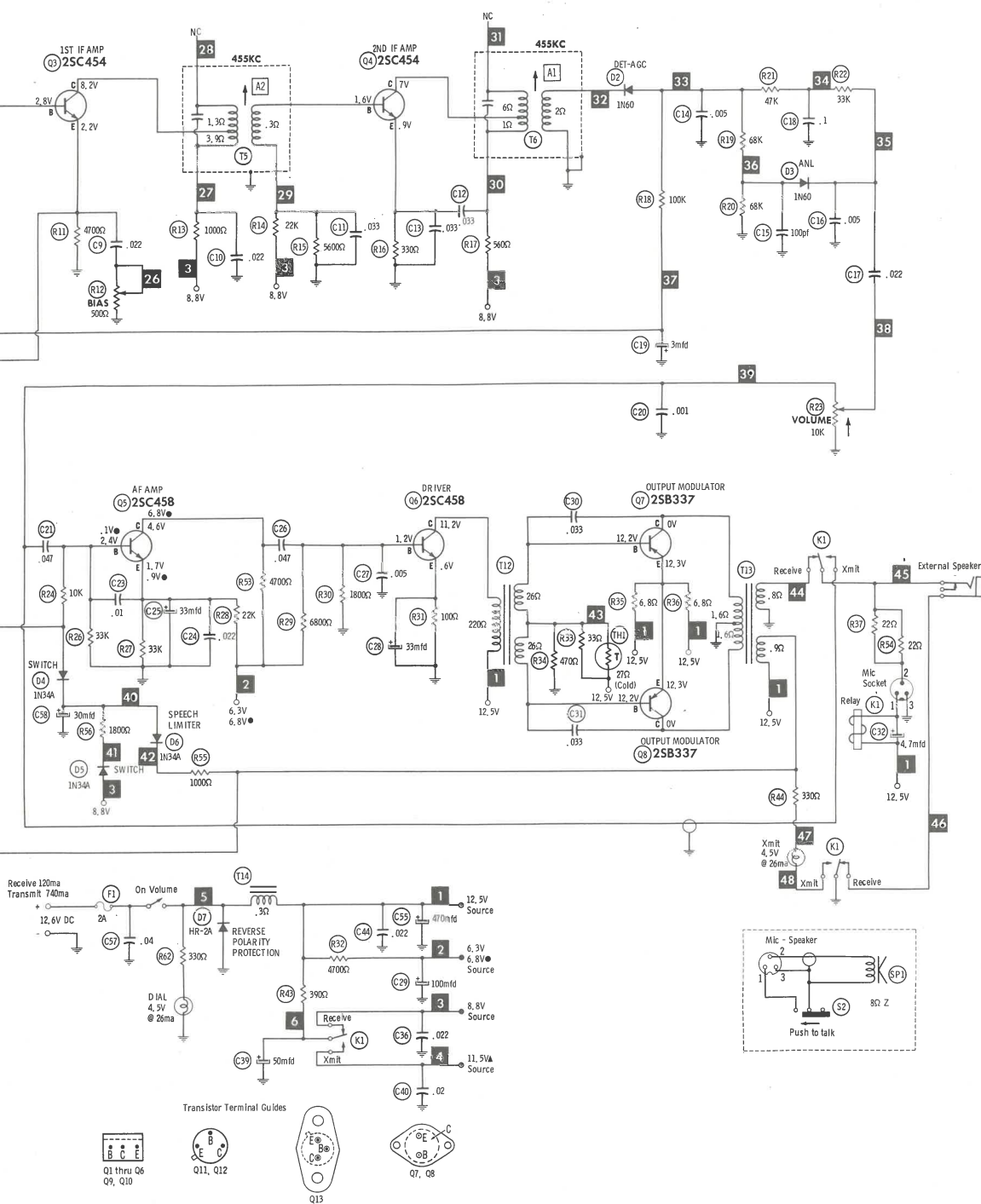
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C2	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C3	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C4	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C5	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C6	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C7	3		NPO-DI 3.0					10TCC-V30
C8	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C9	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C10	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C11	.033 50V		DBE6S33		DPMS6S33	4DP-2-333	PVC6133	4PS-S33
C12	.033 50V		DBE6S33		DPMS6S33	4DP-2-333	PVC6133	4PS-S33
C13	.033 50V		DBE6S33		DPMS6S33	4DP-2-333	PVC6133	4PS-S33
C14	.005		TTP-005	CK-502	MGP005	CCD-502	TA250	TG-D50
C15	100 10%		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C16	.005		TTP-005	CK-502	MGP005	CCD-502	TA250	TG-D50
C17	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C18	.1 50V		TTP-1	CK-104			TA010	TG-P10
C20	.001 50V		GPD X5F102K	DM-102	GP1000	CCD-102	SM210	ZSS-D10
C21	.047 50V		V1612S47		DPMS6S47	1DP-2-473	PVC1147	225P47391WD3
C23	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C24	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C26	.047 50V		V1612S47		DPMS6S47	1DP-2-473	PVC1147	225P47391WD3
C27	.005		TTP-005	CK-502	MGP005	CCD-502	TA250	TG-D50
C30	.033 50V		DBE6S33		DPMS6S33	4DP-2-333	PVC6133	4PS-S33
C31	.033 50V		DBE6S33		DPMS6S33	4DP-2-333	PVC6133	4PS-S33
C33	150 10%		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C34	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10

(CONTINUED ON PAGE 76)

PENNCREST MODEL 985-6055



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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.
C35	47 10%		NPO-DI 50	DTZ-50	NPO50	CCTO-510	CN0450	10TCC-Q50
C36	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C37	33		NPO-DI 33	DTZ-33	NPO33	CCTO-330	CN0433	10TCC-Q33
C38	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C40	.02		TTP-02	CK-203	MGP02	CCD-203	TA120	TG-S20
C41	100 10%		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C42	18 10%			TCZ-18	NP018	CCTO-180	CN0418	10TCC-Q18
C43	6							10TCC-V56
C44	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C45	.001 50V		GPD X5F102K	DM-102	GP1000	CCD-102	SM210	2SS-D10
C46	.022 50V		V1612S22		DPMS6S22	1DP-1-223	PVC1122	225P22391WD3
C47	150 10%		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C48	22 10%		NPO-DI 25	DTZ-25			CN0425	10TCC-Q25
C49	.005		TTP-005	CK-502	MGP005	CCD-502	TA250	TG-D50
C50	.001 50V		GPD X5F102K	DM-102	GP1000	CCD-102	SM210	2SS-D10
C51	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C53	220 10%		GPD X5F221K	DD-221	GP220	CCD-221	GP322	10TS-T22
C54	220 10%		GPD X5F221K	DD-221	GP220	CCD-221	GP322	10TS-T22
C57	.04			DD-403			GP140	

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.
R12	Bias Adjust	500	0151164 (RV-9)				
R23	Volume/Switch	10K	0151723				
R42	Squelch	10K	0151353				

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R35	6.8 1/2 W	WS-6.8	0134287
R36	6.8 1/2 W	WS-6.8	0134287

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
TH1	27 (Co1d) (13D27)	FR26.5	0576031 (13D27)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	RF Choke (12uh)	0333086		72F125AP	
L2	RF Choke (5.6uh)	5150064		74F566AP	
L3	Ant Tuning (.33uh)	5150071	19-2013		
T1	Ant Matching	5120098			
T2	RF	5120099			
T3	Input IF	0322117	16-9026	8517	
T4	Interstage IF	0322146	16-9026	8517	
T5	Interstage IF	0322146	16-9027	8517	
T6	Output IF	5136022	16-9028	8518	
T7	REC Oscillator	5123101			
T8	XMTR Oscillator	5123102			
T9	Driver Output	9317195			
T10	Final Output	9317196			
T11	Pi Network	0317197			

*deleted
5-8-72*

PARTS LIST AND DESCRIPTION (CONTINUED)

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

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T14	.74A	.3	1.5mh	5220001				

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD Part No.	
T12	4.4	1	1	0441114				

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T13	50	8	0452047				
		SEC. 2					
		.9 DC Resistance					

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
			MFGR. PART No.	QUAM PART No.	
SP1	2"	PM 8 ohms	5410291		

PENNCREST MODEL 985-6055

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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	2 AMP	0591138		AGC 2	HDJ	312002	155020	FG2-2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
K1	Relay	5640051	
M1	Crystal (Rec)	0599771	26.610MC
M2	Crystal (Xmit)	5780013	27.065MC
S1	Switch	5610121	Selector
S2	Switch	0533160	Push to Talk

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

ITEM	PART No.	ITEM	PART No.
Cabinet, Upper		Knob, Volume - Squelch	
Cabinet, Lower		Knob, Selector	

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.)



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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 50-ohm dummy load or the normally used antenna system.



COURIER MODEL CLASSIC II

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

GENERAL CEMENT WALSCO

A1 thru A5, A7, A11, A12, A13, A15 thru A18 .. 8868, 9089 ... 2541, 2587
A6, A8, A9, A10, A14, A19 8606L, 9440 .. 2501, 2544

RECEIVER

Connect an AC VTVM across speaker voice coil. Set Volume and Squelch control fully clockwise.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to base of Q3 (2nd Mixer), low side to chassis. Tune to 455KC (Mod.).	Any	A1,A2, A3	Adjust for maximum.
High side thru .01mfd to antenna connector, low side to chassis. Tune to 27.085MC (Mod.).	Any	A4 thru A8	Adjust for maximum.
"	Any	A9	Adjust to eliminate interference from any 41MC Source.
High side thru .01mfd to antenna connector, low side to chassis. Tune to 27.0837MC (Mod.).	Any	A10	Set Delta Tuner switch to minus (-) side. Adjust A10 for maximum.
High side thru .01mfd to antenna connector, low side to chassis. Tune to 27.0863MC (Mod.).	Any	A11	Set Delta Tune switch to plus (+) side. Adjust A11 for maximum.

TRANSMITTER

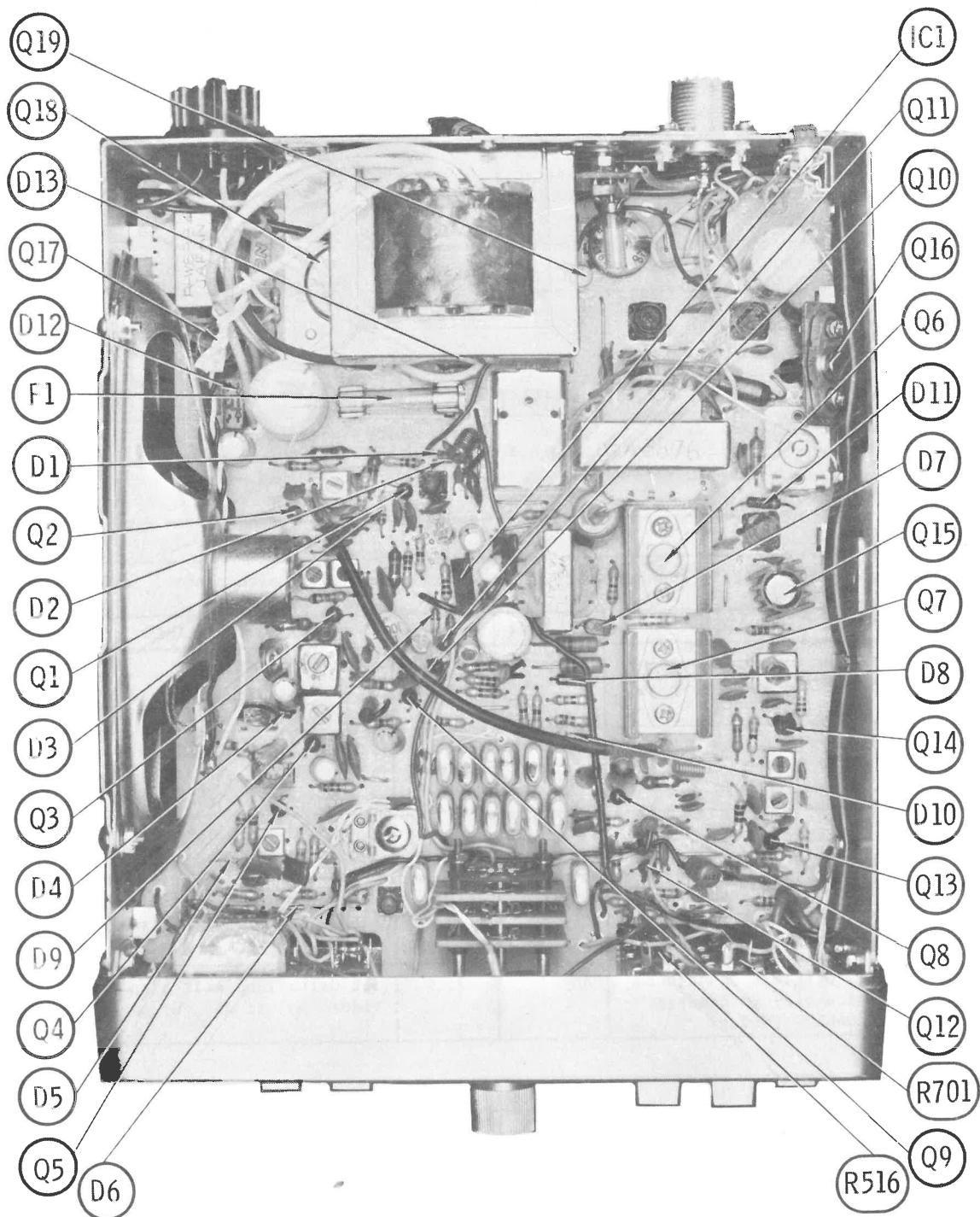
INDICATOR	ADJUST	REMARKS
RF wattmeter or Field Strength meter	A12 thru A18	Adjust for maximum.
0-500 ma DC Ammeter	A17	Remove meter jumper and insert meter. Readjust A17 for 5 watts input.
Television	A19	Key transmitter and adjust for MINIMUM interference on TV.

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

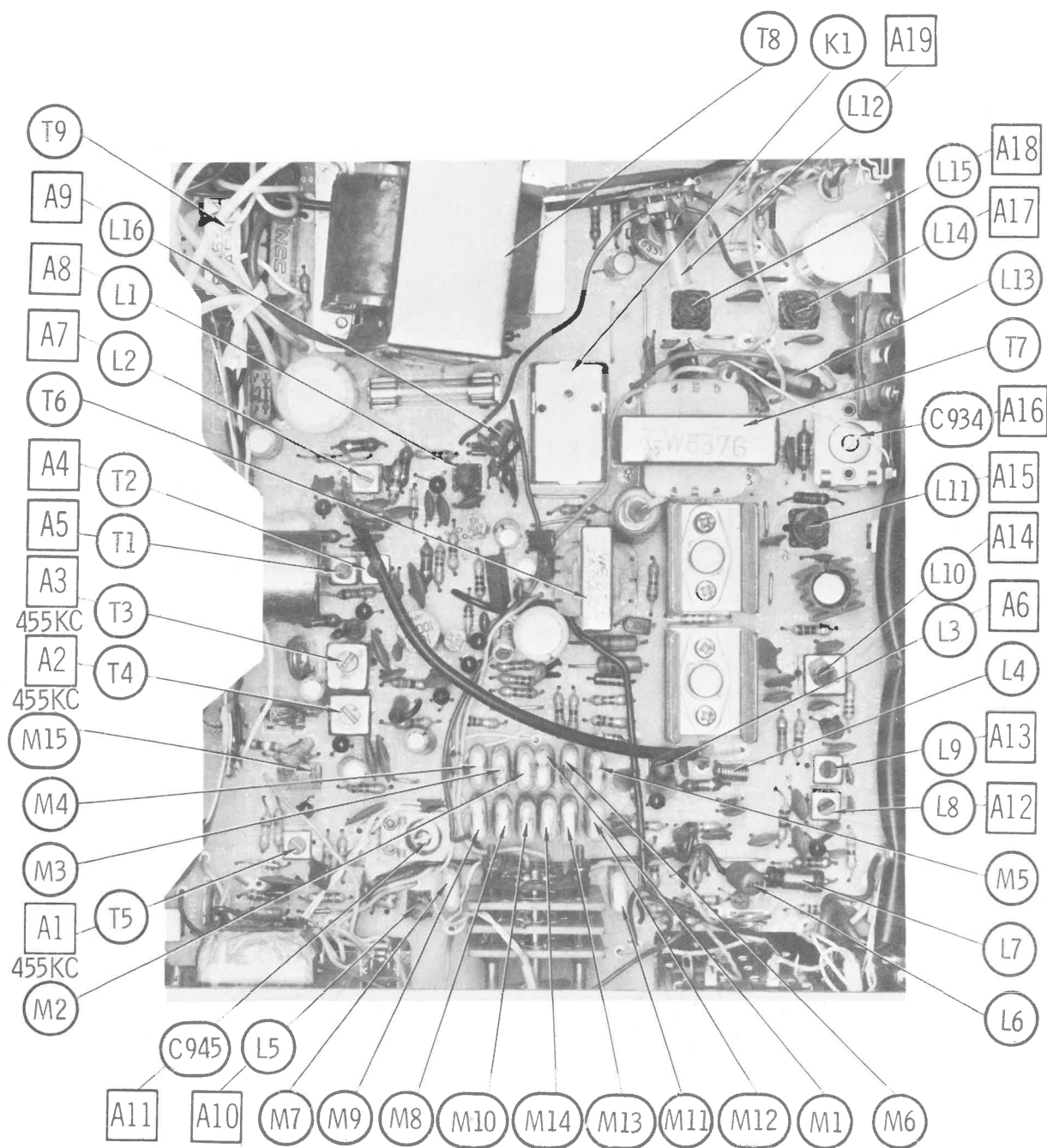
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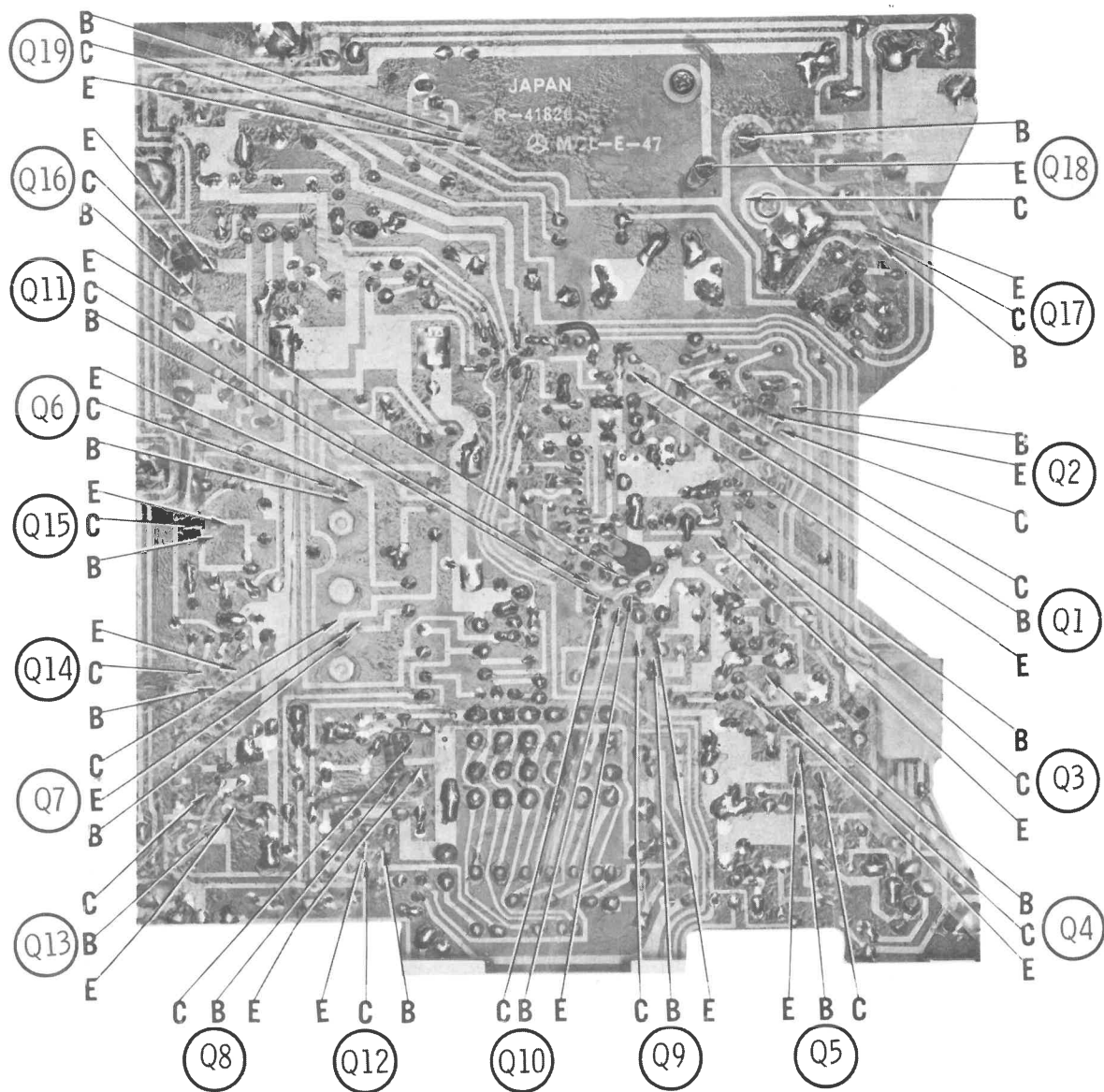
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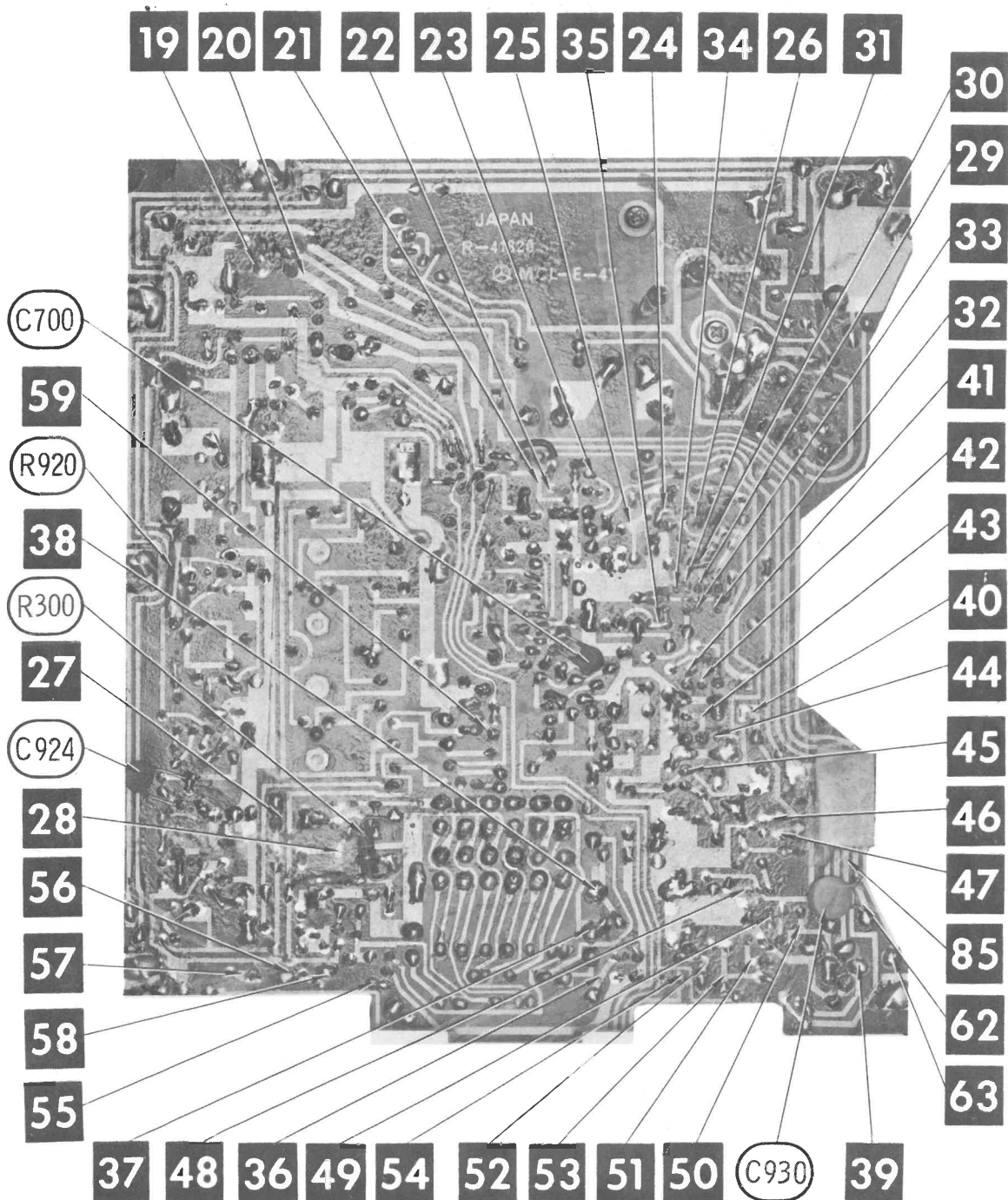
COURIER MODEL CLASSIC II

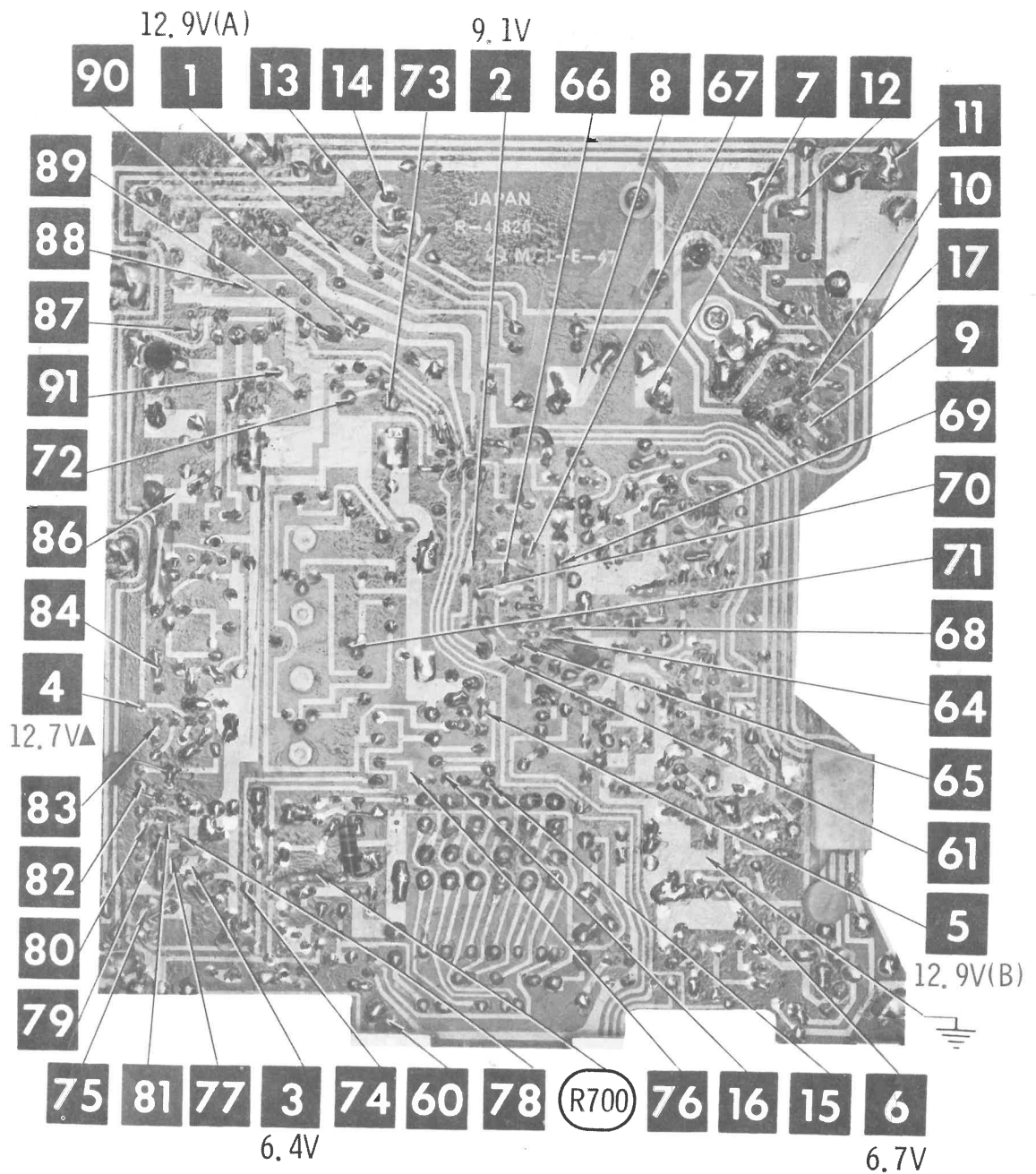


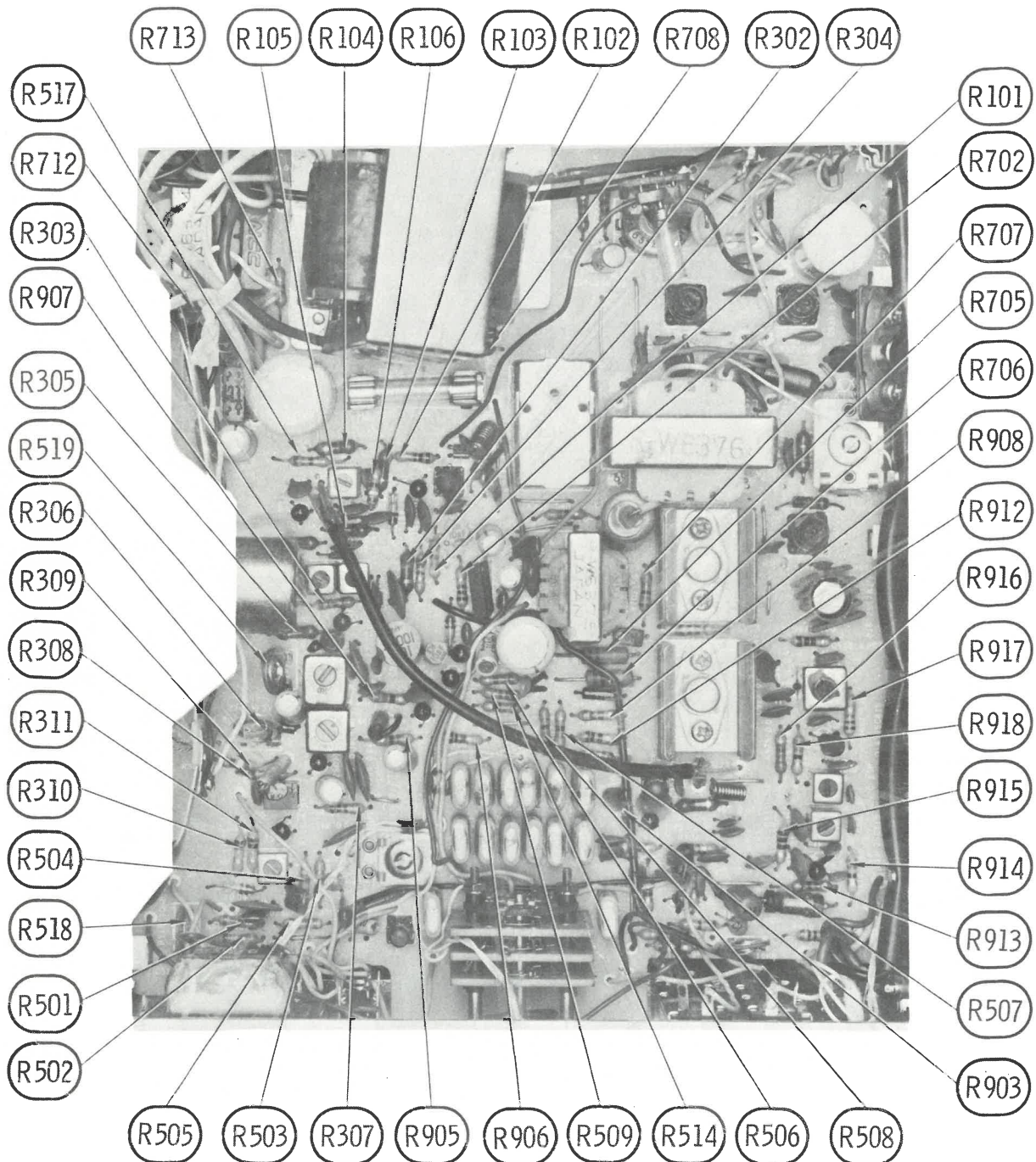
COURIER MODEL CLASSIC II



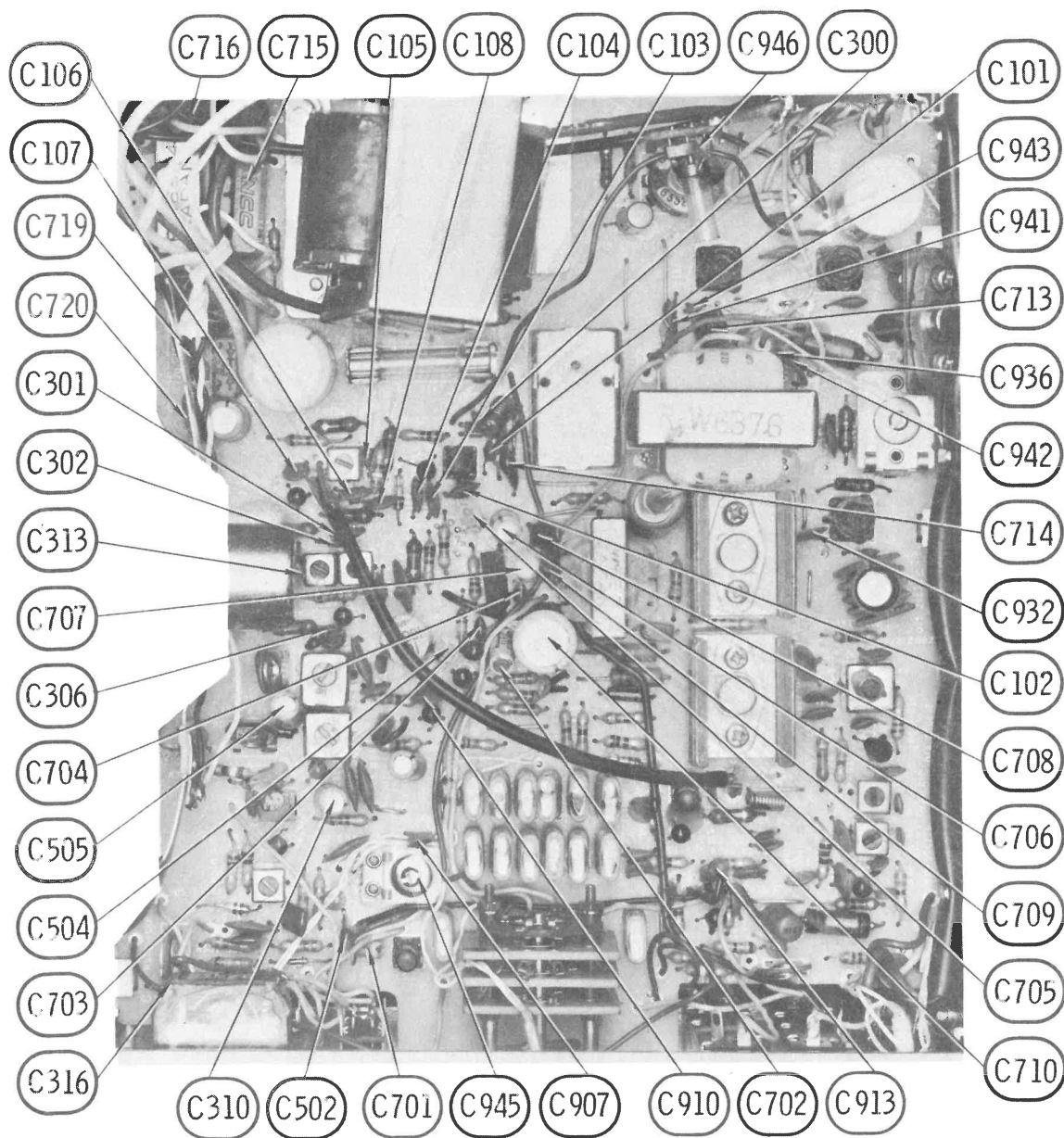


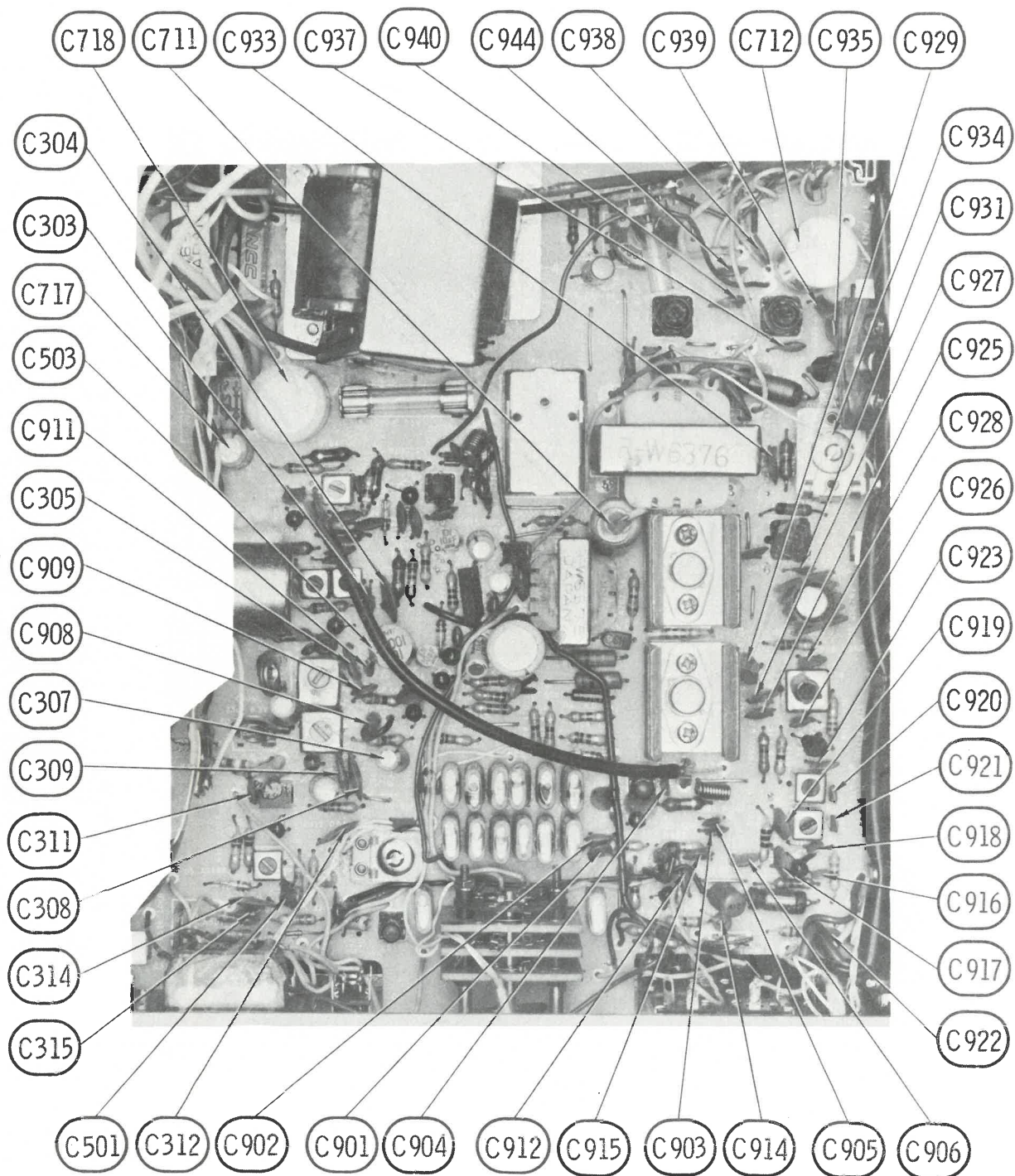




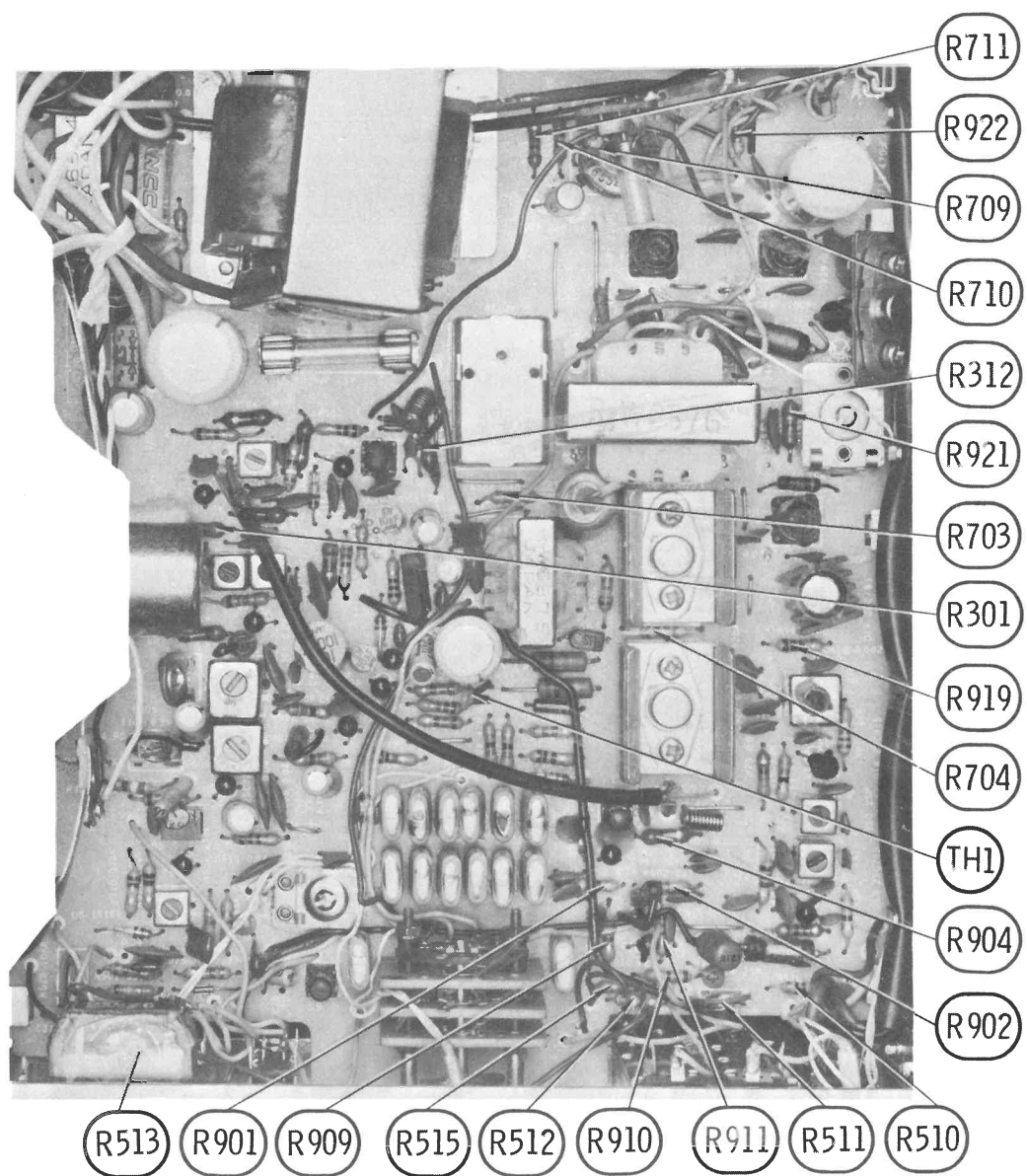


COURIER MODEL CLASSIC II





COURIER MODEL CLASSIC II



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.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q1	2SC930EV	RF Amp		GE-11	TR-22	HEP56	SK3019	ECG 108
Q2	2SC929DU	1st Mixer		GE-20	TR-21	HEP50	SK3018	ECG 108
Q3	2SC772CX	2nd Mixer		GE-20	TR-21	HEP50	SK3018	ECG 108
Q4	2SC772CX	1st IF Amp		GE-20	TR-21	HEP50	SK3018	ECG 108
Q5	2SC772CX	2nd IF Amp		GE-20	TR-21	HEP50	SK3018	ECG 108
Q6	2SD223	Output-Modulator					SK3049	
Q7	2SD223	Output-Modulator					SK3049	
Q8	2SC772CX	Synthesizer		GE-20	TR-21	HEP50	SK3018	ECG 108
Q9	2SC772CX	Rec. Oscillator		GE-20	TR-21	HEP50	SK3018	ECG 108
Q10	2SC537GI	Squelch		GE-18	TR-21	HEP723	SK3020	ECG 123A
Q11	2SC537GI	Squelch		GE-18	TR-21	HEP723	SK3020	ECG 123A
Q12	2SC772CU	Xmtr. Oscillator		GE-20	TR-21	HEP50	SK3018	ECG 108
Q13	2SC715EV	Xmtr. Mixer		GE-20	TR-24	HEP56	SK3020	ECG 123A
Q14	2SC815	Buffer		GE-20	TR-21	HEP50	SK3018	ECG 108
Q15	2SC781	Driver		GE-18	TR-25	HEP243	SK3020	ECG 128
Q16	2SC799	Final Amp					SK3049	
Q17	2SB187	Reg. Control		GE-2	TR-14	HEP632	SK3004	ECG 123A
Q18	2SB407	Voltage Reg.		GE-3	TR-01	HEP230	SK3009	ECG 104
Q19	2SB186	Error Amp		GE-2	TR-14	HEP254	SK3004	ECG 102A

COURIER MODEL CLASSIC II

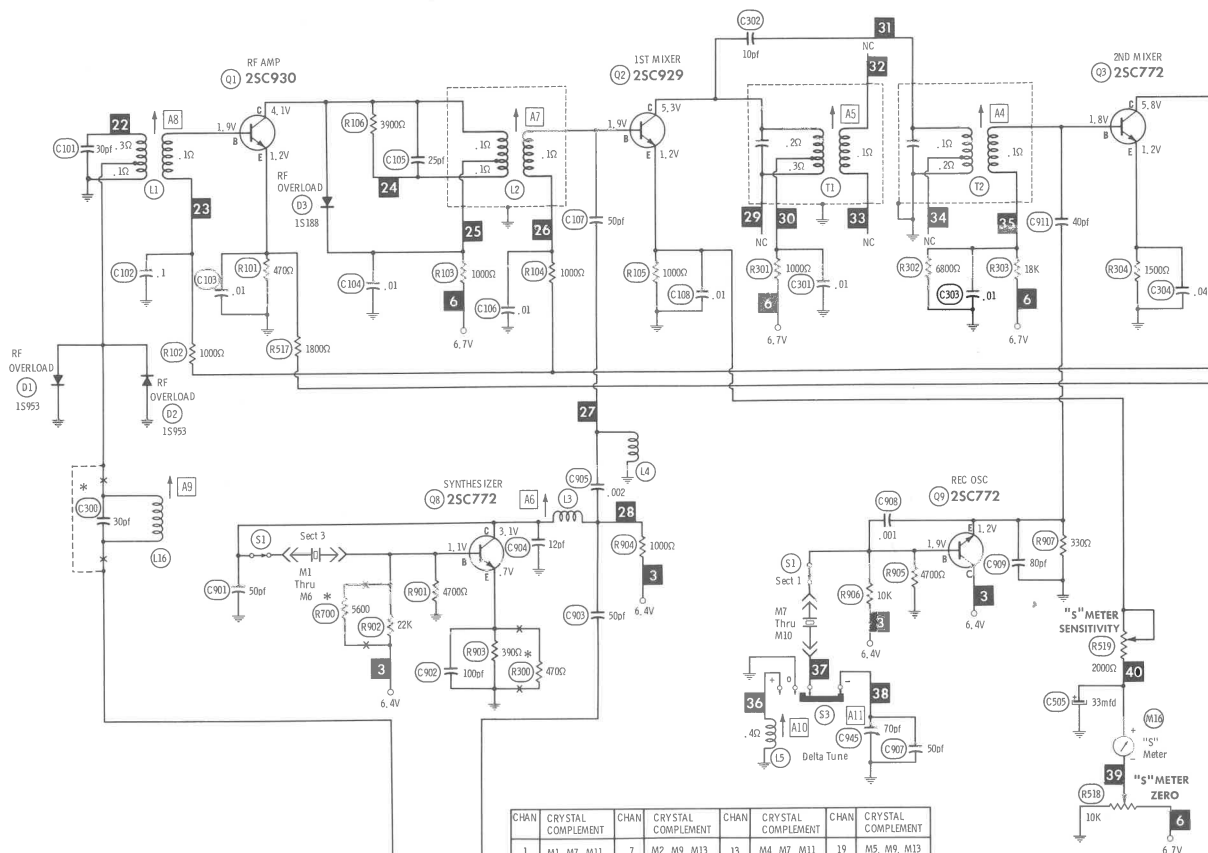
INTEGRATED CIRCUITS

ITEM No.	FUNCTION	MFGR. PART No.	REMARKS
IC1	AF Amp - Driver	LD3001	

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT DATA				NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	
D1	1S953	GE-504A	8D4 or 5A4-D	SK3030 or SK3031	ECG 116 or ECG 117	Zener
D2	1S953	GE-504A	8D4 or 5A4-D	SK3030 or SK3031	ECG 116 or ECG 117	
D3	1S188	1N60	1N60	1N60	ECG 109	
D4	RD-7A	GEZD-6.2	1ZM6.2-T10	KD2503	ECG 137	
D5	1S188	1N60	1N60	1N60	ECG 109	
D6	1S953	GE-504A	8D4 or 5A4-D	SK3030 or SK3031	ECG 116 or ECG 117	
D7	SH-1					Zener
D8	RD-7A	GEZD-6.2	1ZM6.2-T10	KD2503	ECG 137	
D9	1S188	1N60	1N60	1N60	ECG 109	
D10	1S188	1N60	1N60	1N60	ECG 109	
D11	RD-35A					Zener
D12	1S1849	GE-504A	8D4 or 18DC2A (3)	SK3030 or SK3031	ECG 116 or ECG 117	
D13	RD-7A	GEZD-6.2	1ZM6.2-T10	KD2503	ECG 137	

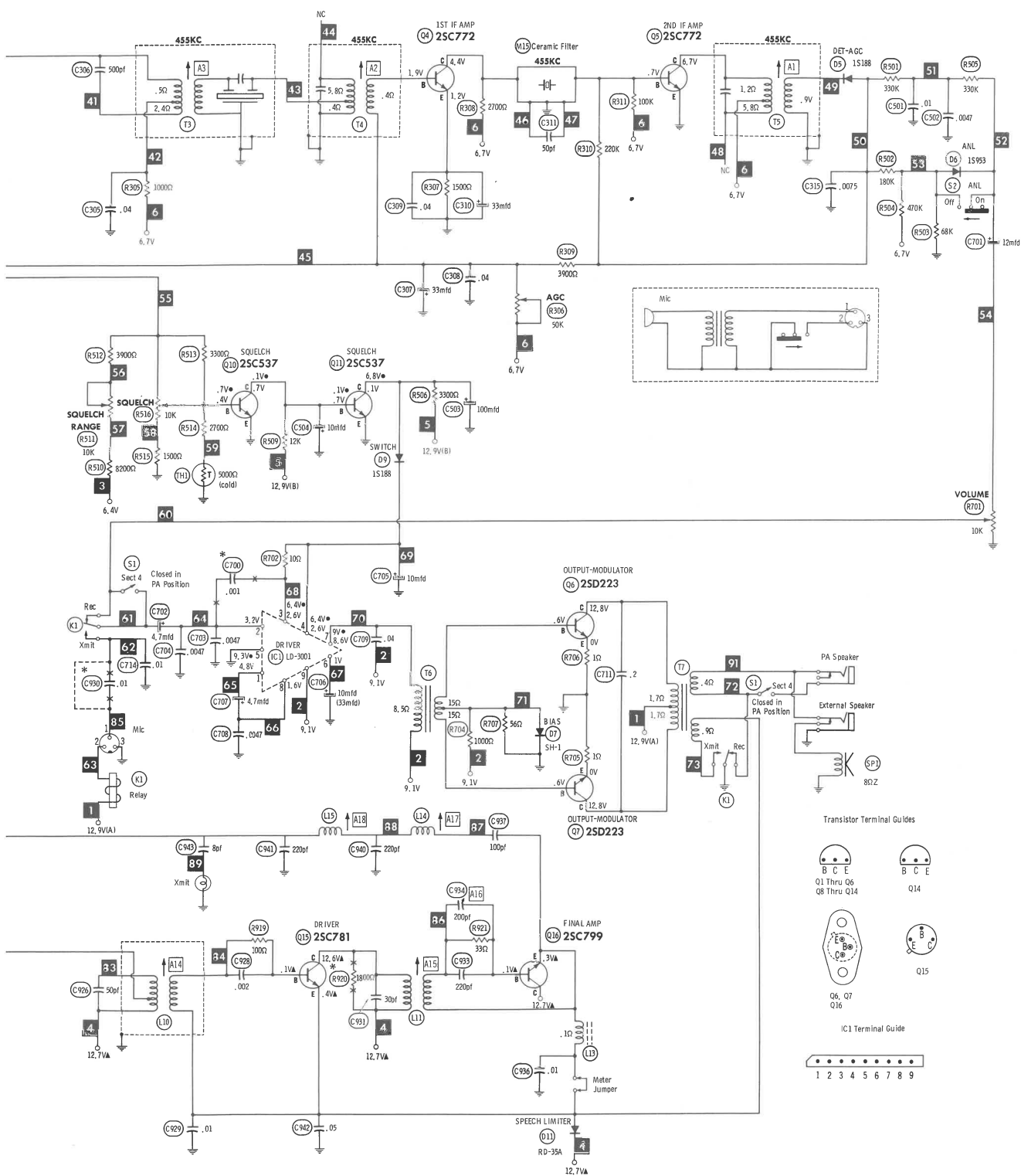
(CONTINUED ON PAGE 19)



CHAN	CRYSTAL COMPLEMENT	CHAN	CRYSTAL COMPLEMENT	CHAN	CRYSTAL COMPLEMENT	CHAN	CRYSTAL COMPLEMENT
1	M1, M7, M11	7	M2, M9, M13	13	M4, M7, M11	19	M5, M9, M13
2	M1, M8, M12	8	M2, M10, M14	14	M4, M8, M12	20	M5, M10, M14
3	M1, M9, M13	9	M3, M7, M11	15	M4, M9, M13	21	M6, M7, M11
4	M1, M10, M14	10	M3, M8, M12	16	M4, M10, M14	22	M6, M8, M12
5	M2, M7, M11	11	M3, M9, M13	17	M5, M7, M11	23	M6, M10, M14
6	M2, M8, M12	12	M3, M10, M14	18	M5, M8, M12		

- * Squelched
- NC No Connection
- Denotes chassis
- Denotes ground (Measurement reference unless otherwise indicated)
- Indicates connection used in some versions.
- Indicates connection not used in some versions.
- Omitted in some versions.
- Measurements taken with switching in position shown unless otherwise indicated.
- Measured in "Transmit" position.
- Values shown in () are used in some applications.
- Resistors are 1/2W or less, 10% or 20%, unless otherwise indicated.
- Supply voltage maintained at rated value for measurements.
- Voltage and resistance measured with VTVM or equivalent meter, no signal applied and controls adjusted for normal operation.

COURIER MODEL CLASSIC II



COURIER MODEL CLASSIC II

PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C307	33 6.3V	R-C9811	MCD 110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C310	33 6.3V	R-C9811	MCD-110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C313	2 10V	R-C9174	MCD-30	EP15-2	PC2-100	MT1-1	MTV2CB50	TE-1121
C503	100 10V	R-C9200	MCD-180	EP15-100	PC100-16	MT1-19	MTV100CD10	TE-1135
C504	10 10V	R-C9244	MCD-70	EP15-10	PC10-50	MT1-5	MTV10CB50	TE-1128
C505	33 6.3V	R-C9811	MCD-110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C701	.2 10V	R-C9120			TYR13BF474K		TAS224K010P0A	196D224X0035 DB
C702	4.7 6.3V	R-C9882	MCD-50	EP6-5	PC5-100	MT1-3	MTV5CB50	TL-1084
C705	10 10V	R-C9244	MCD-70	EP15-10	PC10-50	MT1-5	MTV10CB50	TE-1128
C706	33 6.3V	R-C9811	MCD-110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C707	4.7 6.3V	R-C9882	MCD-50	EP6-5	PC5-100	MT1-3	MTV5CB50	TL-1084
C710	330 16V	R-C9874	PRS1540	EA30-250	WBR300-35	QT1-30A	TC499A	TL-1188
C712	470 16V	R-C9874	BCD15500	EA15-500	PC500-16	QT1-30A	MTV500DN15	TL-1166
C717	33 16V	R-C9584	MCD-110	EP15-25	PC30-35	MT1-13.5	MTV30CB25	TE-1158
C718	1000 25V	R-C9827	PRS1295	EA30-1000	WBR1000-35		TC2510	TL-1218

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.
C101	30			TCZ-30		CCT0-300		10TCC-Q30
C102	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C103	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C104	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C105	25		NPO-DI 25	DTZ-25			CN0425	10TCC-Q25
C106	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C107	50		GPD X5F500K	DD-500	NP050	CCD-500	GP450	10TS-Q50
C108	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C300	30			TCZ-30		CCT0-300		10TCC-Q30
C301	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C302	10		GPD C0H100K	DD-100	NP010	CCD-100	GP410	10TS-Q10
C303	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C304	.04			DD-403			GP140	
C305	.04			DD-403			GP140	
C306	500					DM-16-501		MS-35
C308	.04			DD-403			GP140	
C309	.04			DD-403			GP140	
C311	50		GPD X5F500K	DD-500	NP050	CCD-500	GP450	10TS-Q50
C312	.04			DD-403			GP140	
C314	.04			DD-403			GP140	
C315	.0025		DBE6D25	CRP-2500J	DPMS6D25	6DP-1-252	PVC6225	6PS-D25
C316	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C501	.01 50V		V1612S1	CPR-10000J	DPMS6S1	1DP-1-103	PVC211	225P10391WD3
C502	.0047 50V		V1612D47	CPR-4700J	DPMS6D47	6DP-1-472	PVC6247	6PS-D47
C700	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C703	.0047 50V		V1612D47	CPR-4700J	DPMS6D47	6DP-1-472	PVC6247	6PS-D47
C704	.0047 50V		V1612D47	CPR-4700J	DPMS6D47	6DP-1-472	PVC6247	6PS-D47
C708	.0047 50V		V1612D47	CPR-4700J	DPMS6D47	6DP-1-472	PVC6247	6PS-D47
C709	.04 50V		DBE6S4		DPMS6S4	1DP-1-403	PVC114	6PS-S40
C711	.2		V1616P2		DPMS2P2	1DP-3-204	PVC602	2PS-P20
C713	.05 50V		V1612S5		DPMS2S5	1DP-2-503	PVC215	2PS-S50
C714	.01 50V		V1612S1	CPR-10000J	DPMS6S1	1DP-1-103	PVC211	225P10391WD3
C715	.1 250V		DBE2P1		DPMS2P1	1DP-2-104	PVC101	225P10491WD3
C716	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C719	.04			DD-403			GP140	
C720	.04			DD-403			GP140	
C901	50		GPD X5F500K	DD-500	NP050	CCD-500	GP450	10TS-Q50
C902	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C903	50		GPD X5F500K	DD-500	NP050	CCD-500	GP450	10TS-Q50
C904	12			DD-120	NP012	CCD-120	GP412	10TS-Q12
C905	.002 50V		DBE6D2	CPR-2000J	DPMS6D2	6DP-1-202	PVC622	6PS-D20
C906	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C907	50		GPD X5F500K	DD-500	NP050	CCD-500	GP450	10TS-Q50
C908	.001			CPR-1000J	CD19F102J500	DM-19-102J	SX210	424ME1001J501
C909	80		GPD X5F820K	DD-820	NP082	CCD-820	GP482	10TS-Q82
C910	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C911	40			DD-390		CCD-390	GP439	10TS-Q39
C912	50		GPD X5F500K	DD-500	NP050	CCD-500	GP450	10TS-Q50
C913	.001 50V		DBE6D1	CPR-1000J	DPMS6D1	6DP-1-102	PVC621	225P10291WD3
C914	25			DD-250		CCD-250	GP425	10TS-Q25
C915	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C916	25			DD-250		CCD-250	GP425	10TS-Q25
C917	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C918	25			DD-250		CCD-250	GP425	10TS-Q25
C919	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C920	25			DD-250		CCD-250	GP425	10TS-Q25
C921	8			DD-080	NP08		GP580	

COURIER MODEL CLASSIC II

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.
C922	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C923	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C924	470	10%	GPD X5F471K	DD-471	GP470	CCD-471	GP347	10TS-T47
C925	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C926	50		GPD X5F500K	DD-500	NP050	CCD-500	GP450	10TS-Q50
C927	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C928	.002		GPD X5F202K	DD-202	GP2000	CCD-202	GP220	10TS-D20
C929	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C930	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C931	30			DD-300		CCD-300	GP430	10TS-Q30
C932	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C933	220		GPD X5F221K	DD-221	GP220	CCD-221	GP322	10TS-T22
C934	200							
C935	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C936	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C937	100		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C938	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C939	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C940	220		GPD X5F221K	DD-221	GP220	CCD-221	GP322	10TS-T22
C941	220		GPD X5F221K	DD-221	GP220	CCD-221	GP322	10TS-T22
C942	.05		GPD Z5V503P	DD-503			GP150	
C943	8			DD-080	NP08		GP580	
C944	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C945	70							
C946	30			DD-300		CCD-300	GP430	10TS-Q30

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.
R306	IF Gain	50K	R-R11010	TSV-50K (1) or T-50K (1)		X201R503B (1)	MTC54L1 (1)
R511	Squelch Limit	10K	R-R11013	TSV-10K (1) or T-10K (1)		X201R103B (1)	MTC14LL (1)
R516	Squelch	10K	R-R2003				
R518	"S" Meter Adjust	10K	R-R11033	TSV-10K (1) or T-10K (1)		X201R103B (1)	MTC14L1 (1)
R519	"S" Meter Adjust	2000	R-R110809	TSV-2.5K (1) or T-2500 (1)		X201R252B (1)	MTC23L1 (1)
R701	Volume	10K	R-R2004				
R709	Voltage Adjust	500	R-R116552	B16-107			

(1) Cut off one of the end terminals and bend to fit "PC" board.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R702	10 1/4W 5%		R-R100J
R705	1 1/2W 5%		R-R010J

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R706	1 1/2W 5%		R-R010J
TH1	5000 (Co1d)		SDT-500

PARTS LIST AND DESCRIPTION (CONTINUED)

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

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	Rec. Antenna	R-W2376-1			
L2	Rec. RF	R-W2403-1			
L3	Xmtr. Oscillator	R-W8311-4			
L4	RF Choke	R-W1080			
L5	Rec. Oscillator	R-W8312-4			
L6	RF Choke (120uh)	R-W1070	19-3125	72F124AP	T307
L7	RF Choke (1.8uh)	R-W1081-4	19-1001	74F186AP	T811
L8	Xmtr. Mixer Input	R-W4055-1			
L9	Buffer Input	R-W4055-1			
L10	Buffer Output	R-W4063-4			
L11	Driver	R-W4056			
L12	TVI Trap	R-W4069-3			
L13	RF Choke (12.3uh)	R-W1506-3		72F125AP	
L14	Final	R-W9078-7			
L15	P1 Network	R-W9079			
L16	Wave Trap	R-W6384			
T1	Input IF	R-W5T349			
T2	Interstage IF	R-W5T308			
T3	Interstage IF	R-W5T366 (1)			
T4	Interstage IF	R-W5T367	16-9027	8517	
T5	Output IF	R-W5T352-1	16-9028	8812	

(1) Includes Mechanical Filter

COURIER MODEL CLASSIC II

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T9	.55A DC	.3	4.5mh	R-W6384				

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T8	117VAC @ .094A	33VAC, CT @ .55A	R-W7153				

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD Part No.	
T6	2	1 CT		R-W6375				

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.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T7	128 CT	8	R-W6376				
		SEC. 2					
		.9 DC Resistance					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	2" x 6" PM 8 ohms	R-S6496	26A07Z8	

FUSE DEVICES

FUSE DEVICES										
ITEM No.	DESCRIPTION		REPLACEMENT DATA							WORKMAN PART No.
			PART No.		BUSS PART No.		LITTELFUSE PART No.			
			DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	
F1	.7A	125V	R-S1041a	R-S1038	AGC 3/4	5682-02	312.750	121001	FG 1 1/2-2	
F2	1.5A	125V	R-S1569	R-S1576	AGC 1 1/2	HPJ	31201.5	155000		

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
K1	Relay	R-S4485	
M1	Crystal	R-H05401	37.600MC
M2	Crystal	R-H05402	37.650MC
M3	Crystal	R-H05403	37.700MC
M4	Crystal	R-H05404	37.750MC
M5	Crystal	R-H05405	37.800MC
M6	Crystal	R-H05406	37.850MC
M7	Crystal	R-H05410	10.180MC
M8	Crystal	R-H05409	10.170MC
M9	Crystal	R-H05408	10.160MC
M10	Crystal	R-H05407	10.140MC
M11	Crystal	R-H05414	10.635MC
M12	Crystal	R-H05413	10.625MC
M13	Crystal	R-H05412	10.615MC
M14	Crystal	R-H05411	10.595MC
M15	Ceramic Filter	R-S1398	
M16	Meter	R-S5557	
S1	Switch, Selector	R-S4473	
S2	Switch, ANL	R-S4471	
S3	Switch, Delta Tune	R-S4472	
S4	Switch, Power	R-S4571	

ACCESSORIES

ITEM	MFGR. PART No.	REMARKS
Microphone Assy.	R-S6493	