

SET 1086 FOLDER 4

HOWARD
CHASSIS AS-8107-1

PHOTOFACT® Folder with **CIRCUITRACE®**

For Supplier Address See PHOTOFACT Index

**HOWARD
CHASSIS AS-8107-1**



HOWARD
CHASSIS AS-8107-1

MODEL	CHASSIS	MODEL	CHASSIS
101W	AS-8107-1	981-2	AS-8107-1
980-1	AS-8107-1	998W	AS-8107-1
981-1	AS-8107-1	998MEW	AS-8107-1
		999MED	AS-8107-1

REMEMBER TO ASK— “What else needs fixing?”

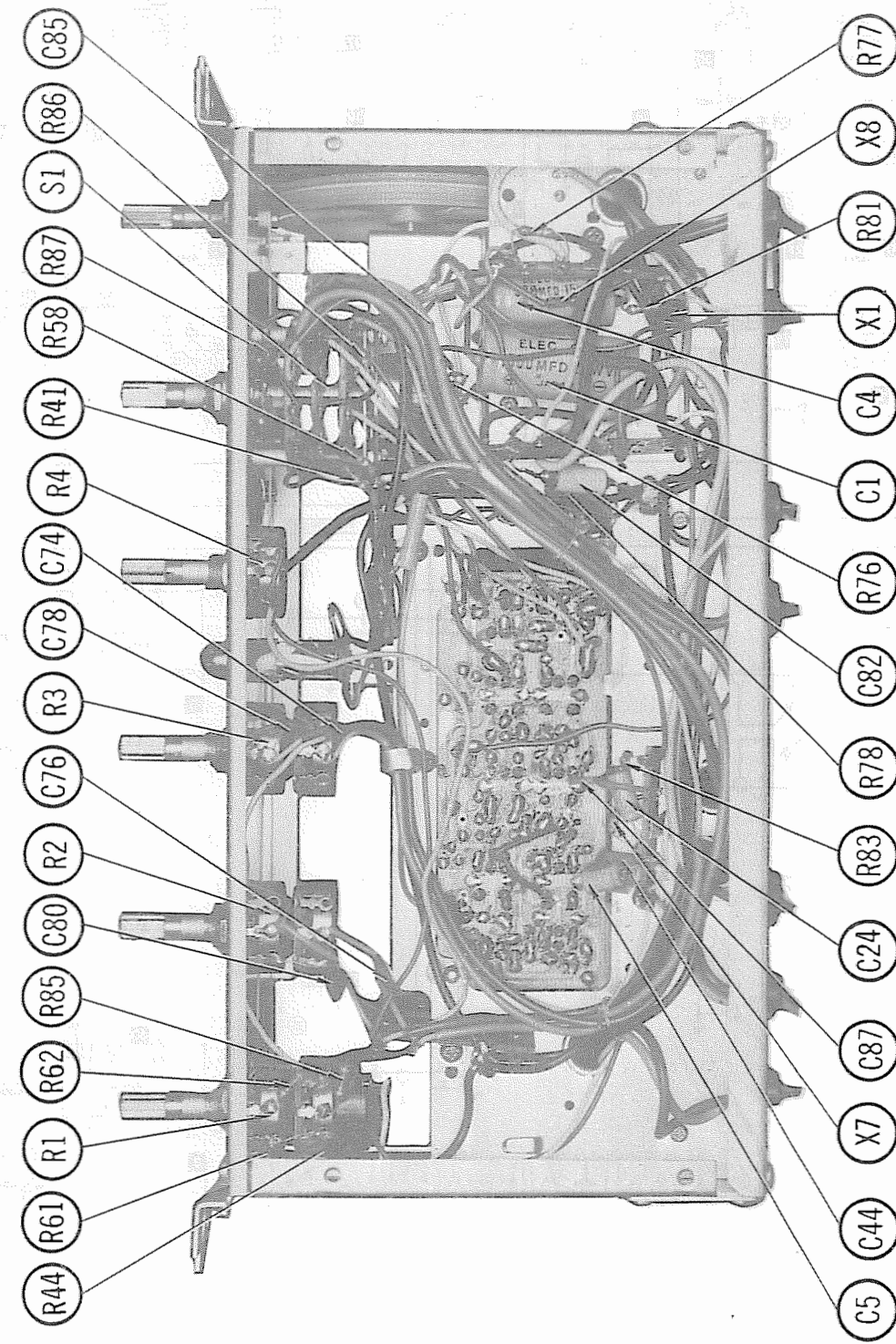
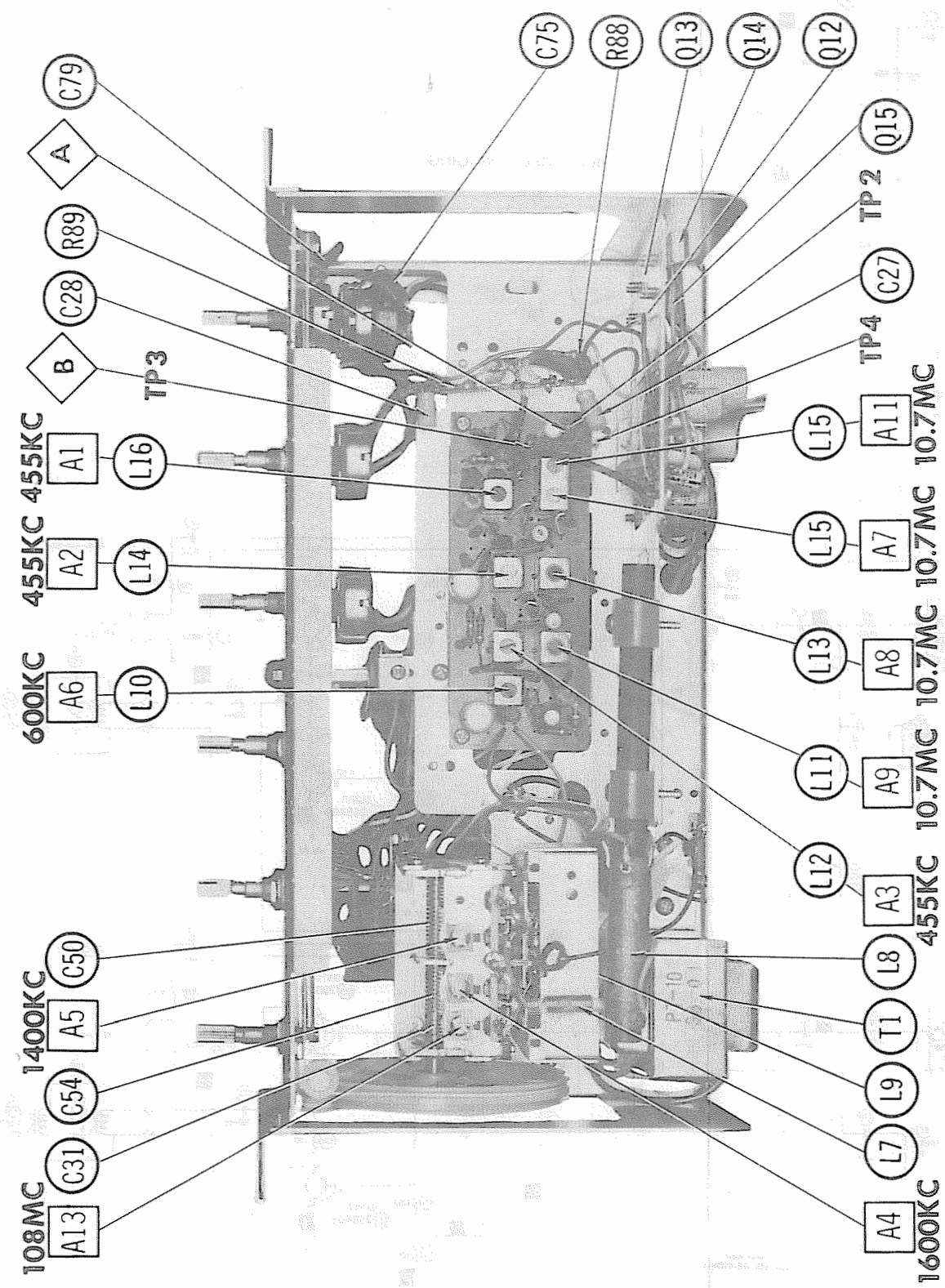
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

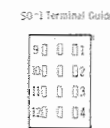
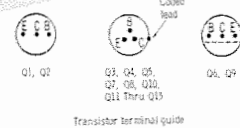
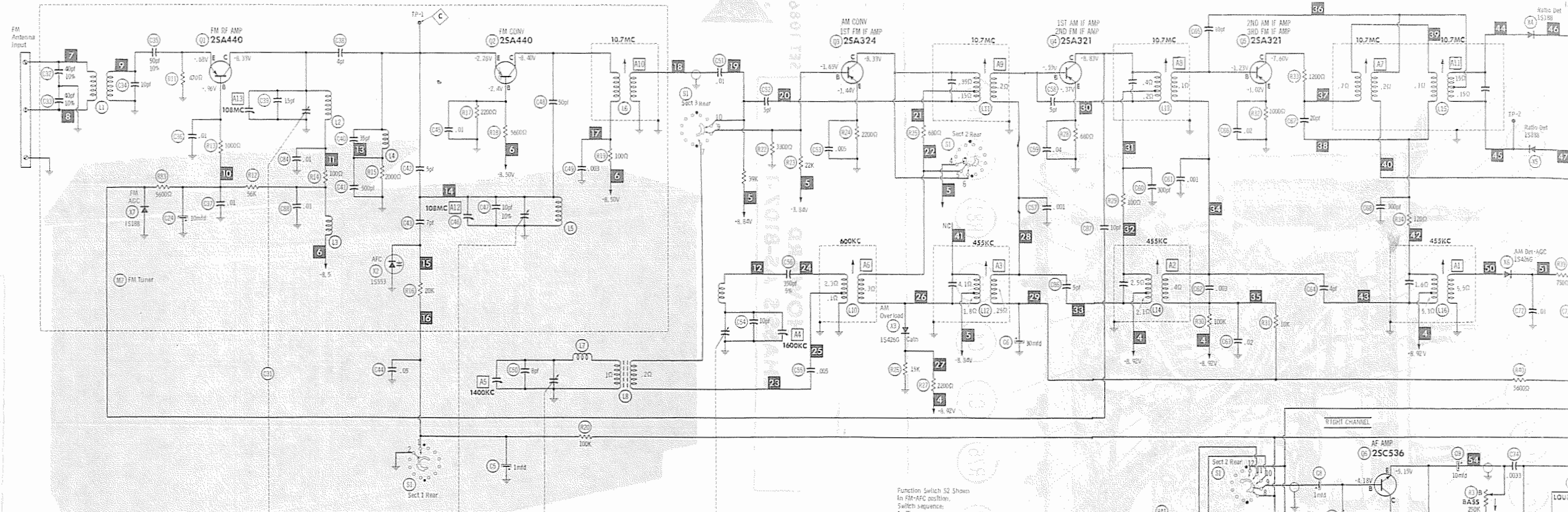


The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. UN509

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DATE 3-70 SET 1086 FOLDER 4



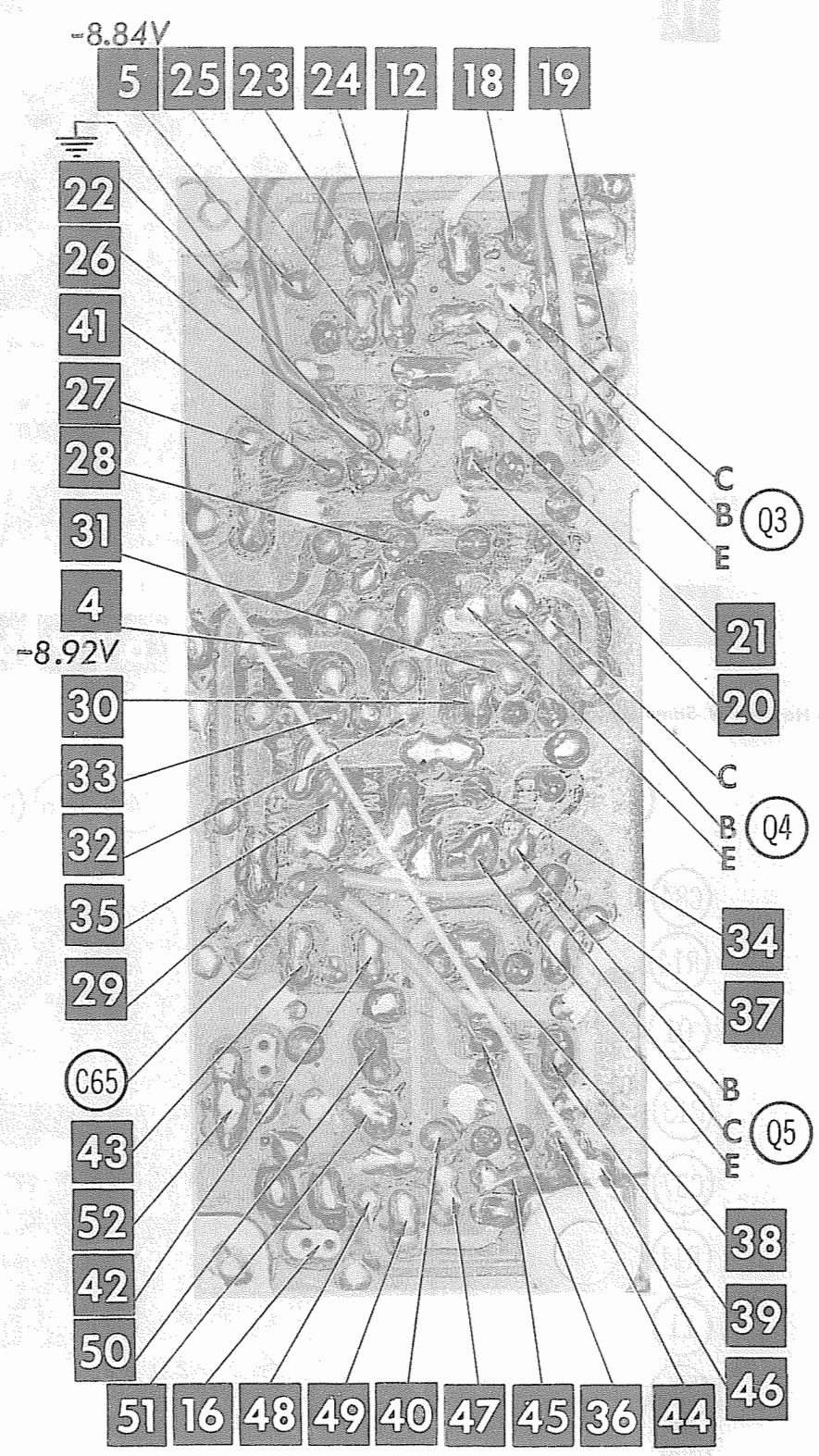
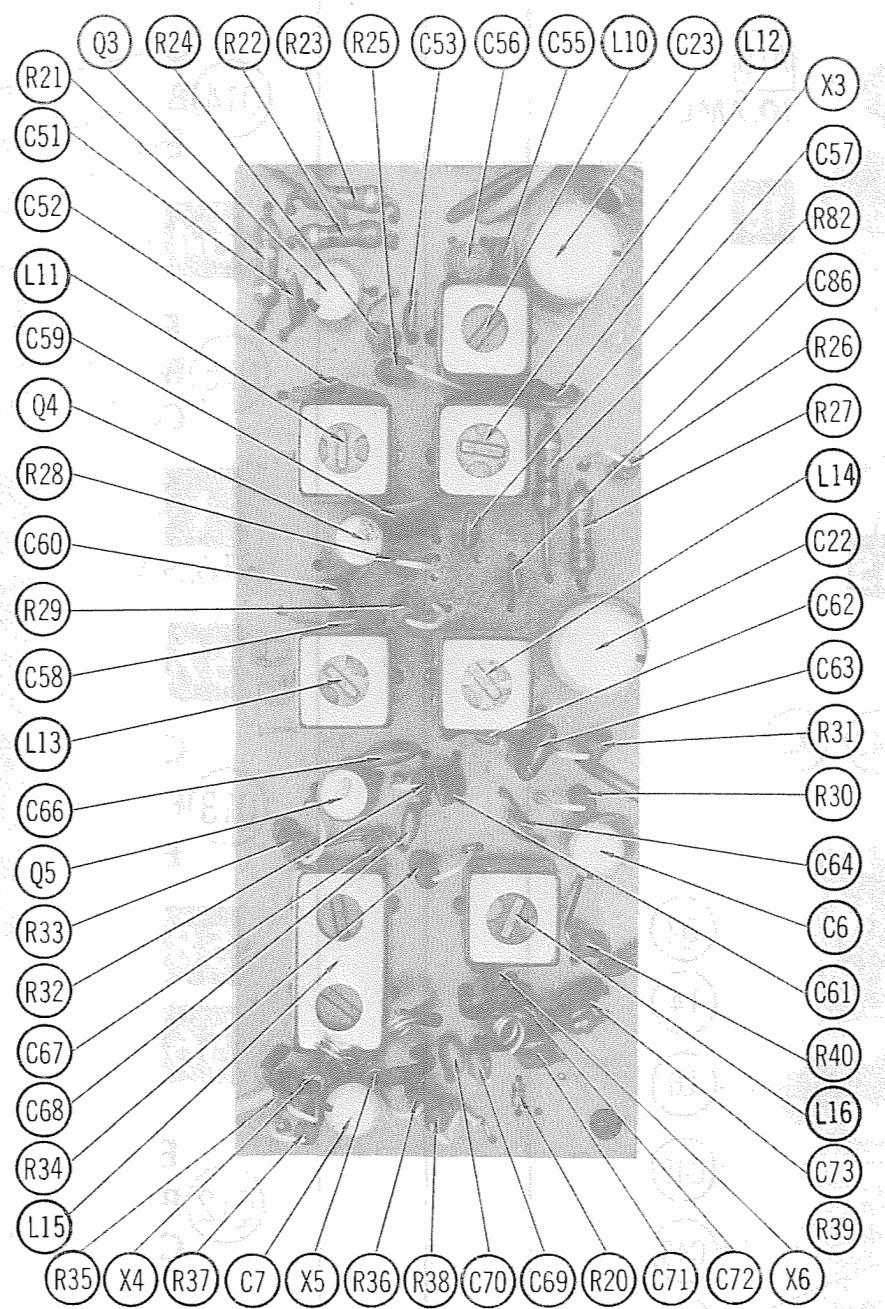
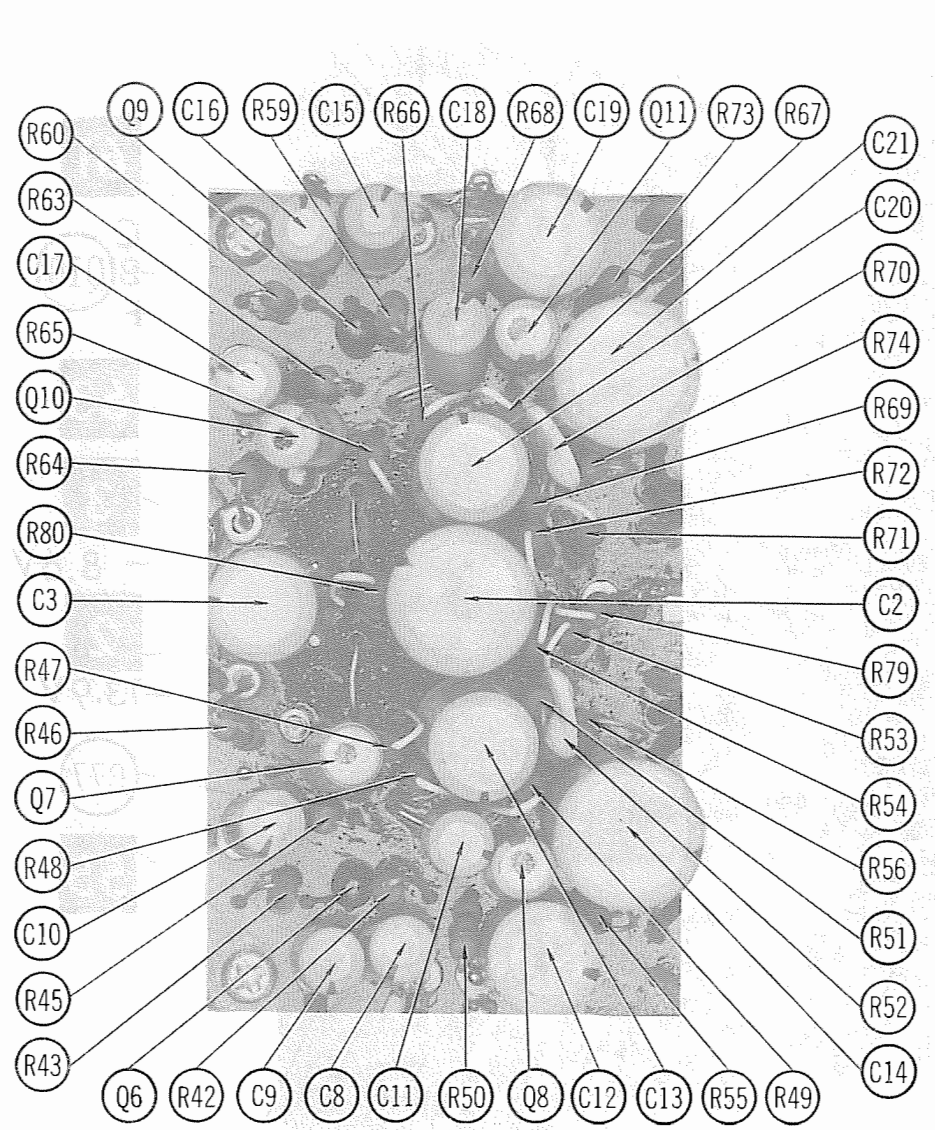


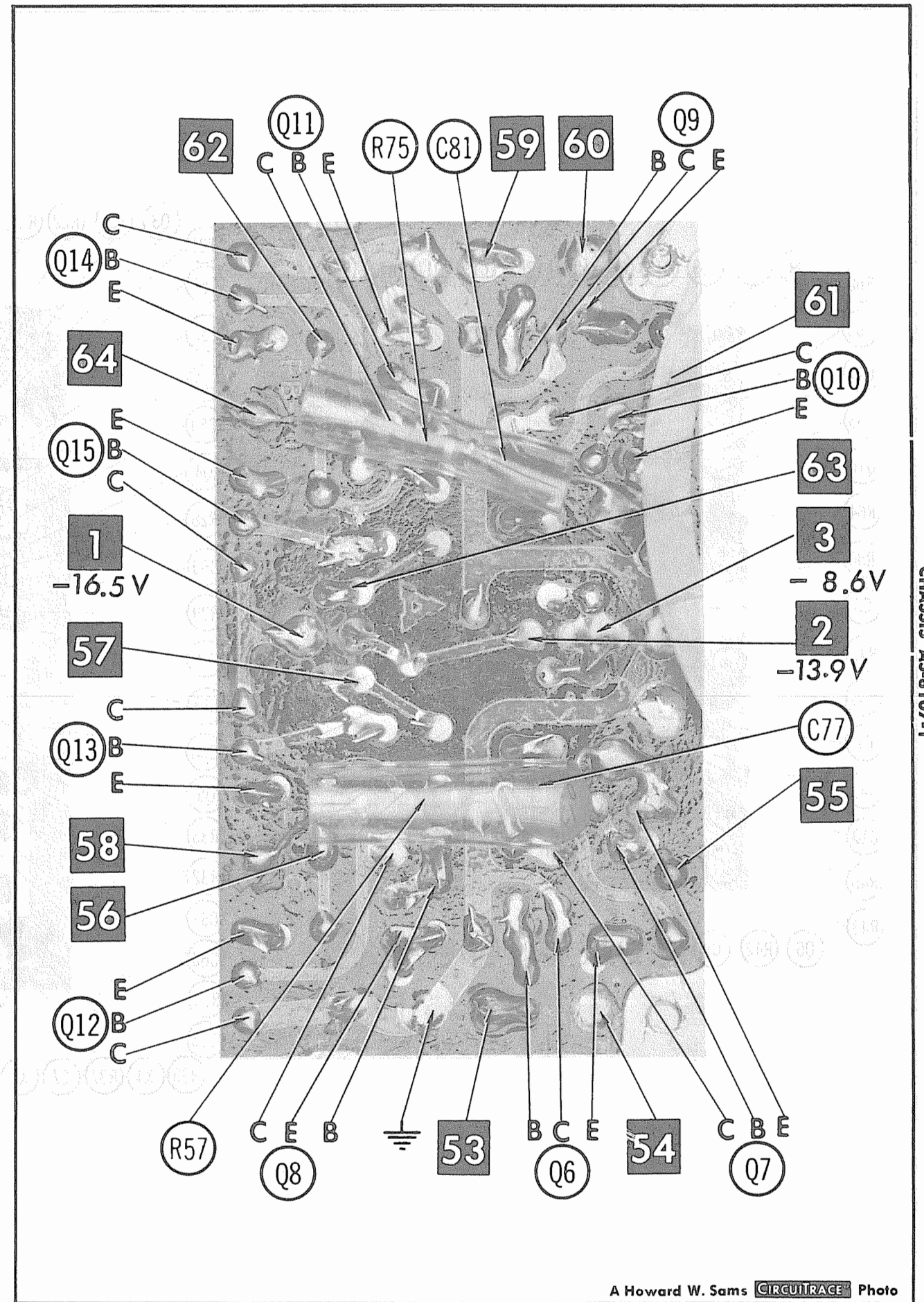
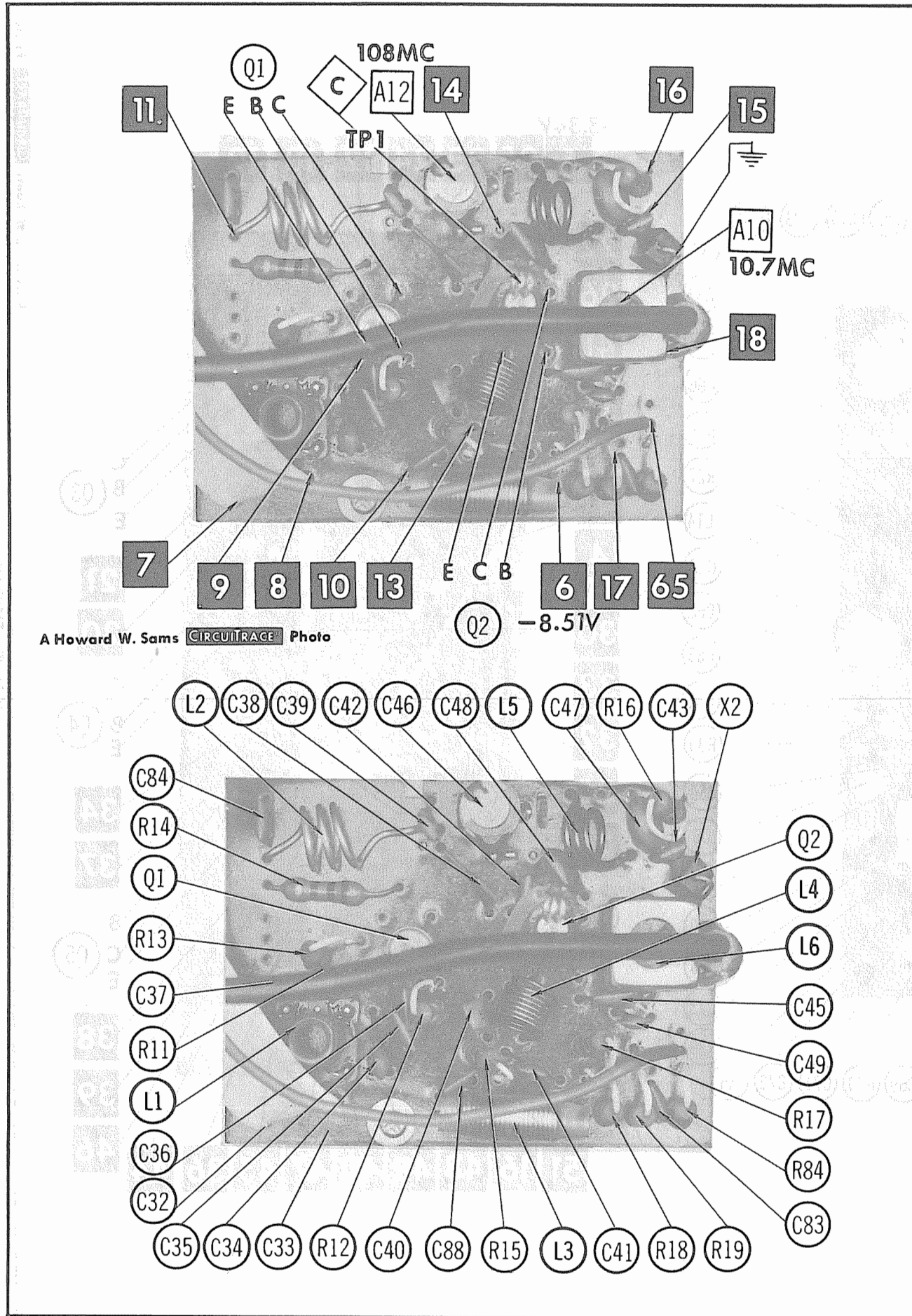
Function Switch S2 Shown for FM-AFC position. Switch sequence: 1. Phono 2. AM 3. FM 4. FM-AFC 5. Tape

- All voltages measured in FM-AFC unless otherwise indicated.
- * Denotes ground.
 - Not used in some versions.
 - See parts list.
 - 1. Controls viewed from actuator end.
 - 2. Resistor values are 10% or less and read 10% or 20% unless otherwise indicated.
 - 3. Voltage and resistance readings taken with a VTVM.
 - 4. Supply voltage maintained at rated value for voltage measurements.
 - 5. All controls set for normal operation, no signal applied.
 - 6. Measured values are from socket pin or terminal to common ground.
 - 7. All terminals viewed from bottom unless otherwise indicated.
 - 8. Numbers assigned to terminals may not be found on this unit.
 - 9. Resistance measurements not given because of the wide variation in internal resistance of the transistor.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUIFACE

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ALIGNMENT INSTRUCTIONS


Maintain line voltage at 117 volts. Use only enough generator output to obtain a suitable indication. Allow a 15 minute warmup for receiver and equipment. CAUTION: Use isolation transformer, if available. If not, observe polarity when connecting test equipment. Suggested Alignment Tools: A1 thru A13 .. GENERAL CEMENT #8868, 8987, 9089 WALSCO #2531-X, 2541, 2587



AM ALIGNMENT - SELECTOR IN AM POSITION

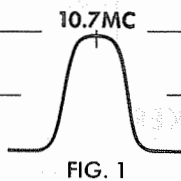
Fashion loop of several turns of wire and connect generator across loop. Set volume control at maximum.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
1. 455KC (400v Mod.)	Tuning gang fully open.	Output meter across voice coil.	A1, A2, A3	Adjust for maximum. Repeat until no further improvement can be made.
2. 1600KC	"	"	A4	Adjust for maximum.
3. 1400KC	Tune to signal.	"	A5	"
4. 600KC	"	"	A6	Rock tuning gang and adjust for maximum. Repeat steps 2 thru 4 until no further improvement can be made.


FM IF ALIGNMENT USING AM SIGNAL GENERATOR - SELECTOR IN FM POSITION



High side of generator thru .001mfd to point , low side to ground.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5. 10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point  , common to ground.	A7, A8, A9, A10	Adjust for maximum.
6. "	"	DC probe to point  , common to ground.	A11	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.




FM IF ALIGNMENT USING FM SIGNAL GENERATOR - SELECTOR IN FM POSITION

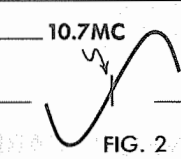
High side of generator thru .001mfd to point , low side to ground. Use only enough marker signal for indication. Use 60v frequency modulated signal with 450KC sweep. Use 60v sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5. 10.7MC (450KC Swp.)	Point of non-interference	Vert. amp. of scope to point  , low side to ground.	A7, A8, A9, A10	Disconnect stabilizing capacitor C7. Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown. Reconnect C7.
6. "	"	Vert. amp. to point  , low side to ground.	A11	Adjust A11 (secondary) to place marker at center of "S" curve similar to Fig. 2. Adjust A7 (primary) for maximum amplitude and straightness of line.

FM RF ALIGNMENT - SELECTOR IN FM POSITION

Connect generator across antenna terminals with 120Ω carbon resistors in series with each lead.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
7. 108MC	Set at high end.	DC probe of VTVM to point  , common to ground.	A12, A13	Adjust for maximum.



PARTS LIST AND DESCRIPTION

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

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELOEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Power Cord	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Feet 17109 (Plastic) or 17129 (Rubber) - 9 Feet
Low-loss Shielded Lead (Interconnecting)	Use BELOEN No. 8401 or 8421
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor-Unshielded) 8429 (Two Conductor-Shielded) 8419 (Three Conductor-Shielded)

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	2SA440	FM RF Amp		GE-9	TR-17	HEP3	SK3006	ECG 126
Q2	2SA440	FM Conv.		GE-9	TR-17	HEP3	SK3006	ECG 126
Q3	2SA324	AM Conv.- 1ST FM IF Amp		GE-9	TR-17	HEP637	SK3y06	ECG 126
Q4	2SA321	1ST AM - 2ND FM IF Amp		GE-9	TR-17	HEP639	SK3006	ECG 126
Q5	2SA321	2ND AM - 3RD FM IF Amp		GE-9	TR-17	HEP639	SK3006	ECG 126
Q6	2SC536	AF Amp		GE-20	TR-21	HEP54	SK3020	ECG 123
Q7	2SB186	AF Amp		GE-2	TR-14	HEP633	SK3004	ECG 102
Q8	2SB186	AF Amp		GE-2	TR-14	HEP633	SK3004	ECG 102
Q9	2SC536	AF Amp		GE-20	TR-21	HEP54	SK3020	ECG 123
Q10	2SB186	AF Amp		GE-2	TR-14	HEP633	SK3004	ECG 102
Q11	2SB186	AF Amp		GE-2	TR-14	HEP633	SK3004	ECG 102
Q12	2S072	Output		GE-8	TR-09	HEP641	SK3010	ECG 103
Q13	2SB405	Output		GE-2	TR-14	HEP254	SK3004	ECG 102
Q14	2SD72	Output		GE-8	TR-09	HEP641	SK3010	ECG 103
Q15	2SB405	Output		GE-2	TR-14	HEP254	SK3004	ECG 102

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.	
X1	SG005	GE-504A	804 or 5A4-0	ECG 116 or ECG 117	SK-3031 or SK-3017A	
X2	1S553 (1)	1N60	1N60	ECG 109		(1) Variable Capacitor Diode
X3	1S426G	1N60	1N60	ECG 110 (2)		(2) Matched Pair
X4	1S188	1N60	1N60	ECG 109		
X5	1S188	1N60	1N60	ECG 109		
X6	1S426G	1N60	1N60	ECG 109		
X7	1S188	1N60	1N60	ECG 109		
X8	RD9A	GEZD-9.1	1ZM9.1-T10	ECG 139		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		HOWARD PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	1500 20		PRS-1243		WBR2000-25	QT1-33	TC2515	TL-1192
C2	500 15		BC015500	EA15-500	PC500-16	QT30A	MTV500DN15	TL-1166
C3	200 10		BC010190	EA15-250	PC200-16	MT1-23	MTV200CK10	TE-1137
C4	500 15		BCD15500	EA15-500	PC500-16	QT30A	MTV500DN15	TL-1166
C5	1 10		BCD50001		PC1-100			TE-1120
C6	30 6		BCD12035		PC50-16			TE-1132.1
C7	10 10		BCD25010		PC10-50		MTV10CB50	
C8	1 10		BC050001		PC1-100			TE-1120
C9	10 10		BC025010		PC10-50		MTV10CB50	
C10	10 10		BC025010		PC10-50		MTV10CB50	
C11	10 10		BC025010		PC10-50		MTV10CB50	
C12	200 6		BCD25010		PC200-16	MT1-23	MTV10CB50	
C13	100 10				PC100-16			
C14	500 15				PC500-16		MTV500DN15	
C15	1 10		BC050001		PC1-100			TE-1120
C16	10 10		BC025010		PC10-50		MTV10CB50	
C17	10 10		BC025010		PC10-50		MTV10CB50	
C18	10 10		BC025010		PC10-50		MTV10CB50	
C19	200 6				PC200-16	MT1-23		
C20	100 10				PC100-16			
C21	500 15				PC500-16		MTV500DN15	TL-1166
C22	100 10				PC100-16			
C23	100 10				PC100-16			
C24	10 10		CRE457A	EA15-10	AL15-10	MT1-5	MTA10035	TE-1128
C25	2 NP 50				BRNP2-50			
C26	2 NP 50				BRNP1-50			
C27	10 10		BCD25010		PC10-50		MTV10CB50	
C28	10 10		BCD25010		PC10-50		MTV10CB50	

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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.
C31			NPO-DI 39	TCZ-39		CCTO-390	CN0439	10TCC-Q39
C32	40 10%		NPO-DI 39	TCZ-39		CCTO-390	CN0439	10TCC-Q39
C33	40 10%		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C34	10		NPO-DI 50	DTZ-50	CX601CG470K	CCTO-510	CN0450	10TCC-Q50
C35	50		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C36	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C37	.01							
C38	4		NPO-DI 15	DTZ-15	NPO3P9	CCTO-150	CN0415	10TCC-V39
C39	15		NPO-DI 35	TCZ-36	CZ601CG150J	CCTO-360	CN0433	10TCC-Q15
C40	35		GPD X5F501K	DM-501	CS601CG330K	CCD-501	CN0547	10TCC-Q33
C41	500		NPO-DI 5.0	DTZ-4R7	JBZ601YP501K	CCTO-050	GP350	10TS-T50
C42	5		NPO-DI 6.8	DTZ-6R8	CZ601CH5R0D	CCTO-6R8	CN0568	10TCC-V50
C43	.05		TTP-05	CK-503	CZ601CH6R8D	CCD-503	TA150	10TCC-V68
C44	.01		TTP-01	CK-103	HOY101ZV503Z	CCD-103	TA110	TG-S10
C45	.01				HOY101ZV103P			
C46								
C47	10		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C48	50		NPO-DI 50	DTZ-50	CX601CG470K	CCTO-510	CN0450	10TCC-Q50
C49	.003		GPD X5R302K	DM-302	BYS601ZU302P	CCD-302	GP230	25S-033
C50	8		NPO-DI 8.2					10TCC-V02
C51	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C52	5		NPO-DI 5.0	DTZ-4R7	CZ601CH5R0D	CCTO-050	CN0542	10TCC-V50
C53	.005		TTP-005	CK-502	HOY101ZV502P	CCD-502	TA250	TG-050
C54	10		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C55	.005 50V		DBE605	CPR-5000J	WMF105	10P-1-502	PVC625	6PS-050
C56	350 25V		ADM-15-361	CPR-360J	CD15F361J500	DM-15-361J	SK336	MS-336
C57	.001 50V		DBE601	CPR-1000J	WMF101	60P-1-102	PVC621	225P10291
C58	5		NPO-DI 5.0	DTZ-4R7	CZ601CH5R0D	CCTO-050	CN0547	10TCC-V50
C59	.04		TTP-05	DM-403	HOY101ZV503Z	CCD-503	GP140	5GA-S40
C60	300		GPD X5F301K	DM-301	JBZ601YP331K	CCD-301	GP330	10TS-T30
C61	.001 50V		DBE601	CPR-1000J	WMF101	60P-1-102	PVC621	225P10291
C62	.003		GPD X5R302K	DM-302	BYS601ZU302P	CCD-302	GP230	25S-033
C63	.02 50V		V1614S2		DPMS2S2	10P-1-203	PVC212	2PS-S20
C64	4							10TCC-V39
C65	10		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10
C66	.02		TTP-02	CK-203	HOY101ZV203P	CCD-203	TA120	TG-S20
C67	20		NPO-DI 20	DTZ-20	CY601CG220K	CCTO-200	CN0420	10TCC-Q20
C68	300		GPD X5F301K	DM-301	JBZ601YP331K	CCD-301	GP330	10TS-T30
C69	300		GPD X5F301K	DM-301	JBZ601YP331K	CCD-301	GP330	10TS-T30
C70	300		GPD X5F301K	DM-301	JBZ601YP331K	CCD-301	GP330	10TS-T30
C71	.013 50V		DBE6S12		WMF1S12	60P-2-123	PVC6112	225P12391
C72	.01 50V		V1612S1	CPR-10000J	WMF1S1	10P-1-103	PVC211	225P10391
C73	.01 50V		V1612S1	CPR-10000J	WMF1S1	10P-1-103	PVC211	225P10391
C74	.0033 50V		V1614D33	CPR-3300J	WMF1033	60P-1-333	PVC6233	225P33291
C75	.05 50V		V1612S5		WMF1S5	10P-2-503	PVC215	2PS-S50
C76	.02 50V		V1614S2		DPMS282	10P-1-203	PVC212	2PS-S20
C77	.1 12V		TTP-1	CK-104	HOY101ZV104Z	TA010	TA010	TG-P10
C78	.0033 50V		V1614D33	CPR-3300J	WMF1033	60P-1-333	PVC6233	225P33291
C79	.05 50V		V1612S5		WMF1S5	10P-2-503	PVC215	2PS-S50
C80	.02 50V		V1614S2		DPMS2S2	10P-1-203	PVC212	2PS-S20
C81	.1 12V		TTP-1	CK-104	HOY101ZV104Z	TA010	TA010	TG-P10
C82	.0047 450V							
C83	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C84	.01		TTP-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C85	100		GPD X5F101K	DM-101	JBZ601YP101K	CCD-101	GP310	10TS-T10
C86	5		NPO-DI 5.0	DTZ-4R7	CZ601CH5R0D	CCTO-050	CN0547	10TCC-V50
C87	10		GPD CDH100K	DM-100	CZ601CG100K	CCO-100	GP410	10TS-Q10
C88	.01		TTP-01	CK-103	HOY101ZV10eP	CCO-103	TA110	TG-S10

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.
R1A	Loudness (Right)	250K Tap @ 75K	VR-23J	F14-250K (1), R14-250K,SSK104, CPL-2,KR-1	NPF-250K (1), NRF-250K, UP-C-400,DC-2, NWE-12	B18-130X, B18-130X,SK1 (1), QCM,76-1 or [BU1 (1), CF107TT (2), CR72TT (2), SS1, BS7A,GC]*	P254T1253, 3014 (1), RU254T1253, CS3500,US41
B	Loudness/(Left) Switch	250K Tap @ 75K					
R2A	Treble (Right)	50K	VR-3	F1-50K (1), R1-50K,SSK104, CPL-2	NP-50K-S (1), NR-50K-S, UP-C-400,DC-2	B11-123,B11-123, SK1 (1),QCM or [BU1 (1),CF12, CR7,SS1,SS7A, DC1]*	P54L,3014 (1), RU54L,CS3500
B	Treble (Left)	50K					
R3A	Bass (Right)	250K	VR-25	F3-250K (1), R3-250K,SSK104, CPL-2		B17-129,B17-129, SK1 (1),QCM or [BU1 (1),CF95, CR64,SS1,SS7A, DC1]*	P254R,3014 (1), RU254R,CS3500
B	Bass (Left)	250K					
R4	Balance	100K	VR-20	F1-100K (1), SSK104	A47-100K-S (1), KSS-3 or [NP-100K-S (1), UP-C-400]	Q11-128 (1) or [BU1 (1),CF13, SS1,DC1]*	RU15L,SL36, SL3250 or [UA15L (1), SK3500] or U39 (1)

* "SNAPTROL"
(1) Enlarge Mtg. hole.
(2) Do not use 100K Tap

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	FM Ant				
L2	FM RF				
L3	RF Choke (6.6 uh)			74F686AP	T821
L4	10.7 Trap				
L5	FM Osc	(HT5) (39)	16-9032	2070 74F686AP	T821 TB521
L6	FM Input IF			2069	
L7	RF Choke (6.6 uh)				
L8	Loopstick				
L9	RF Choke (25 turns)			74F686AP	
L10	AM Osc	(HT1) (933P)		2066	
L11	FM Interstage IF	(HT6) (941S)		2071	
L12	AM Input IF	(HT2) (923H)	16-9026	2066	
L13	FM Interstage IF	(HT6) (941S)		2071	
L14	AM Interstage IF	(HT3) (931H)	16-9026 (16-9027)	8517	
L15	Ratio Det	(HT7) (932H)		2073 (1)	
L16	AM Output IF	(HT4) (923H)	16-9028	2068	

(1) Add external 56pf capacitor from the anode of X4 to the cathode of X5.

TRANSFORMER (Power)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .074AAC	12.5VAC @ .09ADC Tap @ 5.5VAC @ .115AAC		(PT-10)					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	8" PM 8 Ohm	SK-0023-3 (1)(3)	8A21Z6.8	(1) Used in models MW-998MED, MW-999MED
SP2	3-1/2" PM 8 Ohm	SK-0031 (1)	3A15Z8	(2) Third Speaker used in each channel of some versions of models MW-998MED, MW-999MED.
	6" PM 8 Ohm	SK-0059 (2)(4)		(3) Only size speaker used in models MW-101, MW-980-1.
SP3	8" PM 8 Ohm	SK-0023-3 (1)(3)	8Z21Z6.8	(4) Only size speaker used in model MW-998-W.
SP4	3-1/2" PM 8 Ohm	SK-0031 (1)	3A15Z8	(5) Only size speaker used in models MW-981-1, MW-981-2.
	6" X 9" PM 8 Ohm	SK-0059 (2)(4)		
		SK-0043 (5)		

PHONO CARTRIDGE & NEEDLES

ITEM No.	REPLACEMENT DATA						NOTES
	MFRG. PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		
	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	3-E20-A	E20					
M2							

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M7	Tuner		
M8	Motor		
S1	Switch		
	Switch		
	45 RPM Spindle Adapter	AS-8106	FM Phono Function (Phono-AM-FM-FM AFC-Tape) Power (ON-OFF) (Located on changer)

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

ITEM	PART No.	ITEM	PART No.
Escutcheon	ES-8045	Knob, Function Switch	KB-8032