

PHOTOFACT®

TRADE NAME : Lafayette Model HE-20C
 SUPPLIER : Lafayette Radio Electronics Corp.
 111 Jericho Turnpike, Syosset, L. I., N. Y.
 TYPE SET : 7 Tube Transceiver
 POWER SUPPLY : 110 - 120 VAC, 60 Cycles (or)
 12 Volt Storage Battery
 RATING : .52 Amp. @ 117VAC (or)
 4.5 Amp. @ 12.6VDC
 TUNING RANGE : Any 8 of CB Channels 1 thru 23
 Receiver may be continuously tuned.



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:
 A1 thru A6.....GENERAL CEMENT #5097, 8727, 8607
 WALSCO #2515
 A7, A8, A9, A10, A12, A13..... GENERAL CEMENT #8282, 8606, 8606L
 WALSCO #2526, 2543, 2544
 A11..... GENERAL CEMENT #5000, 5003, 5066
 WALSCO #2512, 2525, 2528

RECEIVER ALIGNMENT

Connect output meter across voice coil.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 2 of 6EA8 (Mixer), low side to chassis. Tune to 1650KC (400% Mod.)	Any	A1, A2, A3, A4, A5, A6	Turn squelch control fully clockwise, adjust for maximum deflection.
Across antenna receptacle. Tune to channel frequency.	Center Channel used.	A7	Set Crystal-Tune switch to Tune. Set tuning dial to channel used. Turn A7 all the way in (Clockwise), then back out until a signal is heard. (Coil adjustment has several peaks, use peak with slug nearly in coil.)
"	"	A8, A9	Connect 100Ω and .005mfd in series across winding not being adjusted. Adjust for maximum output. Remove resistor and capacitor.

TRANSMITTER ALIGNMENT

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

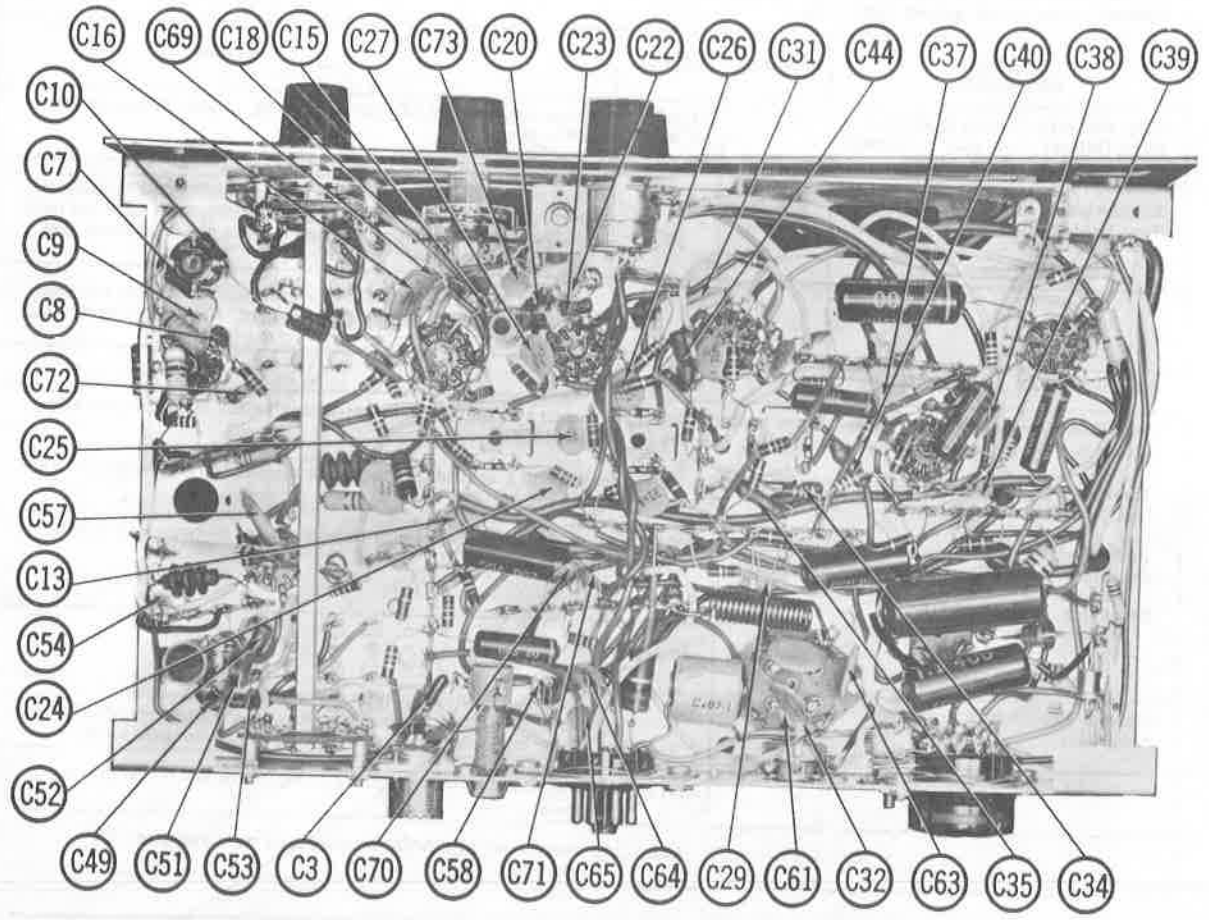
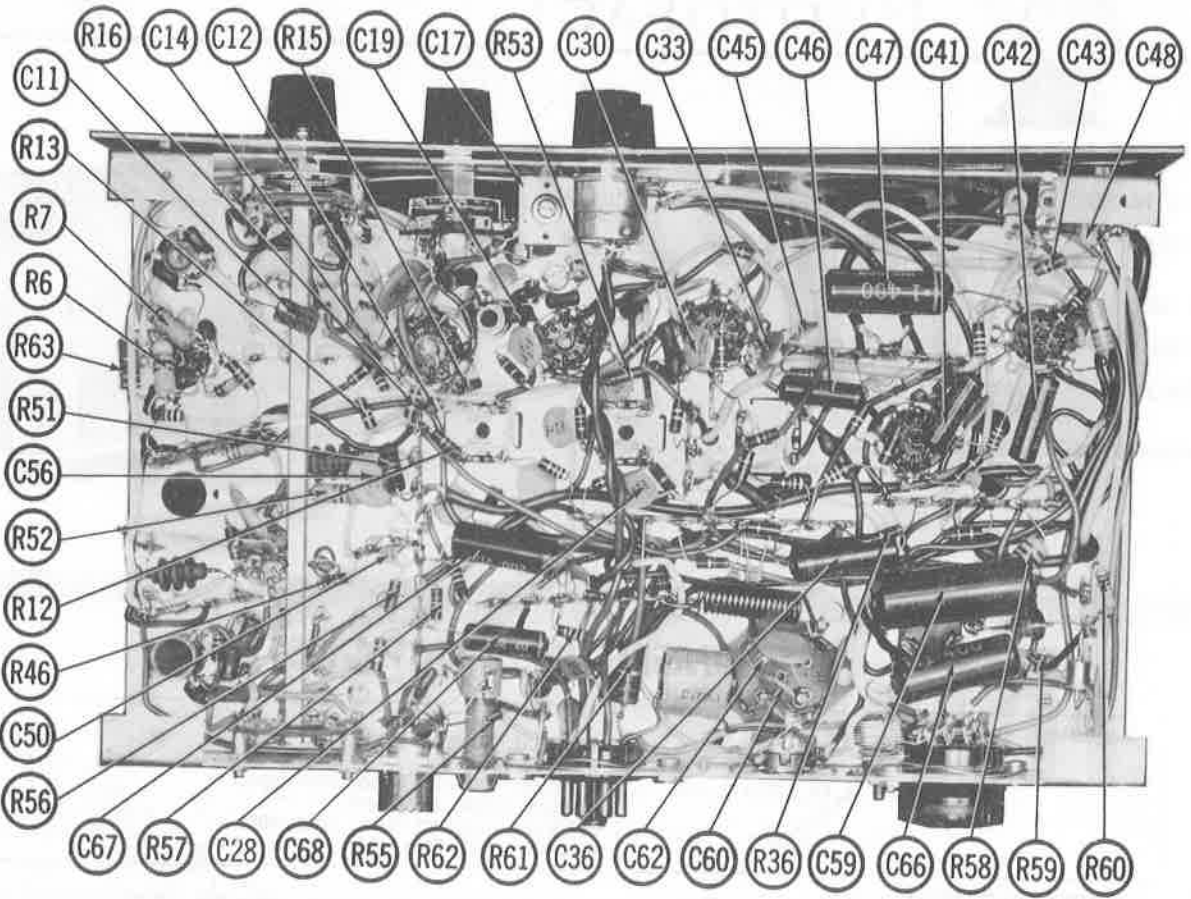
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

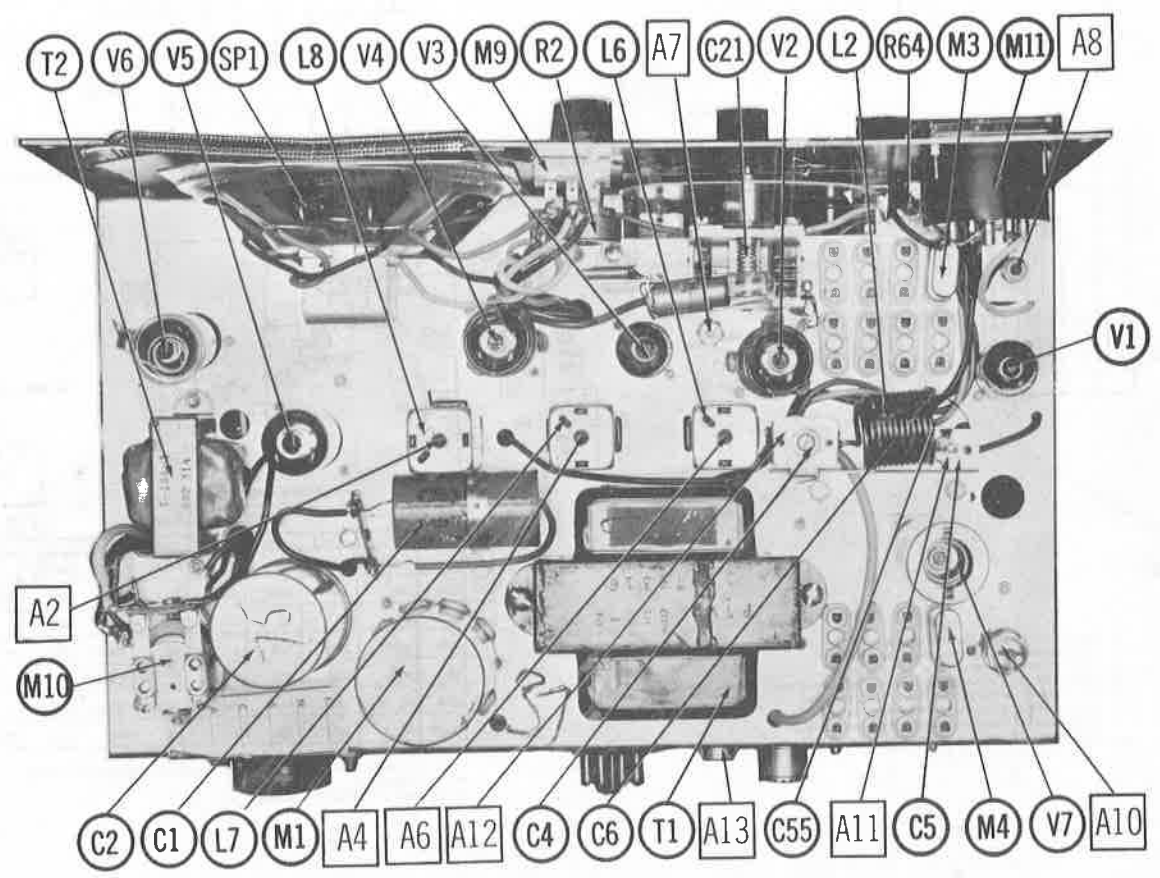
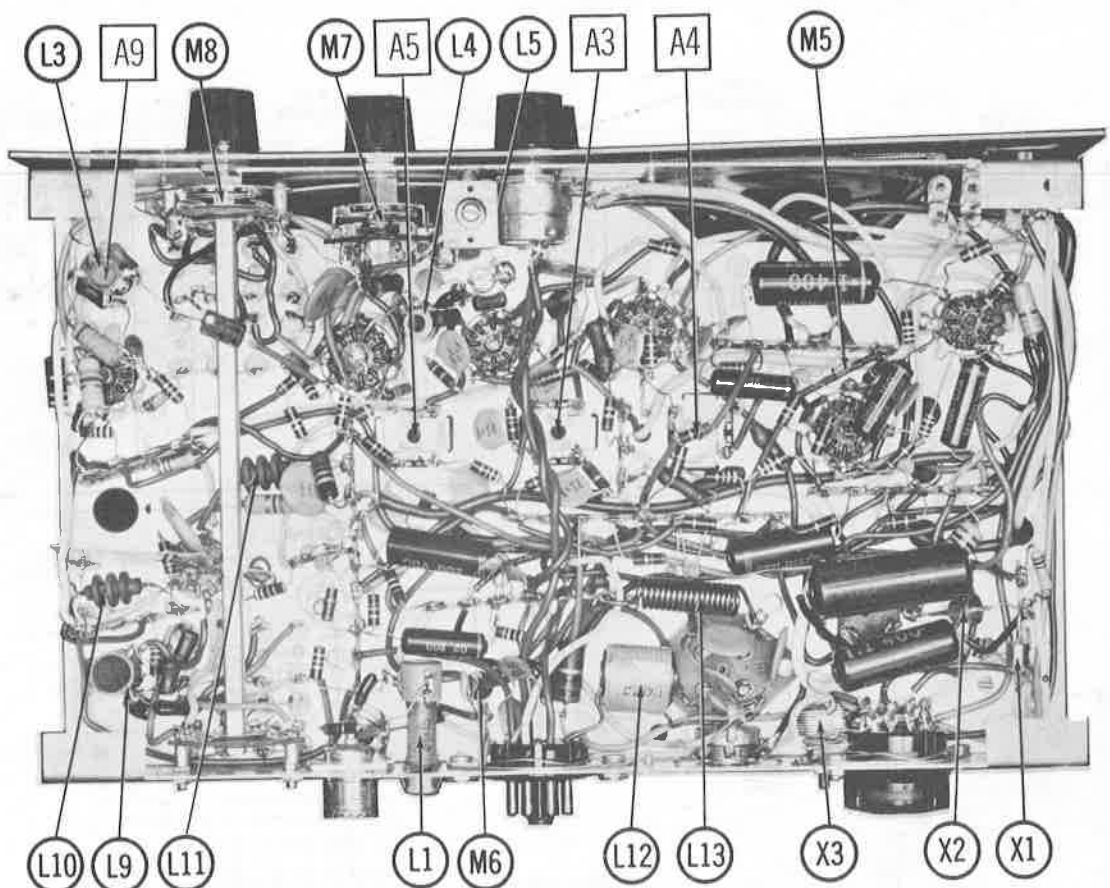
Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

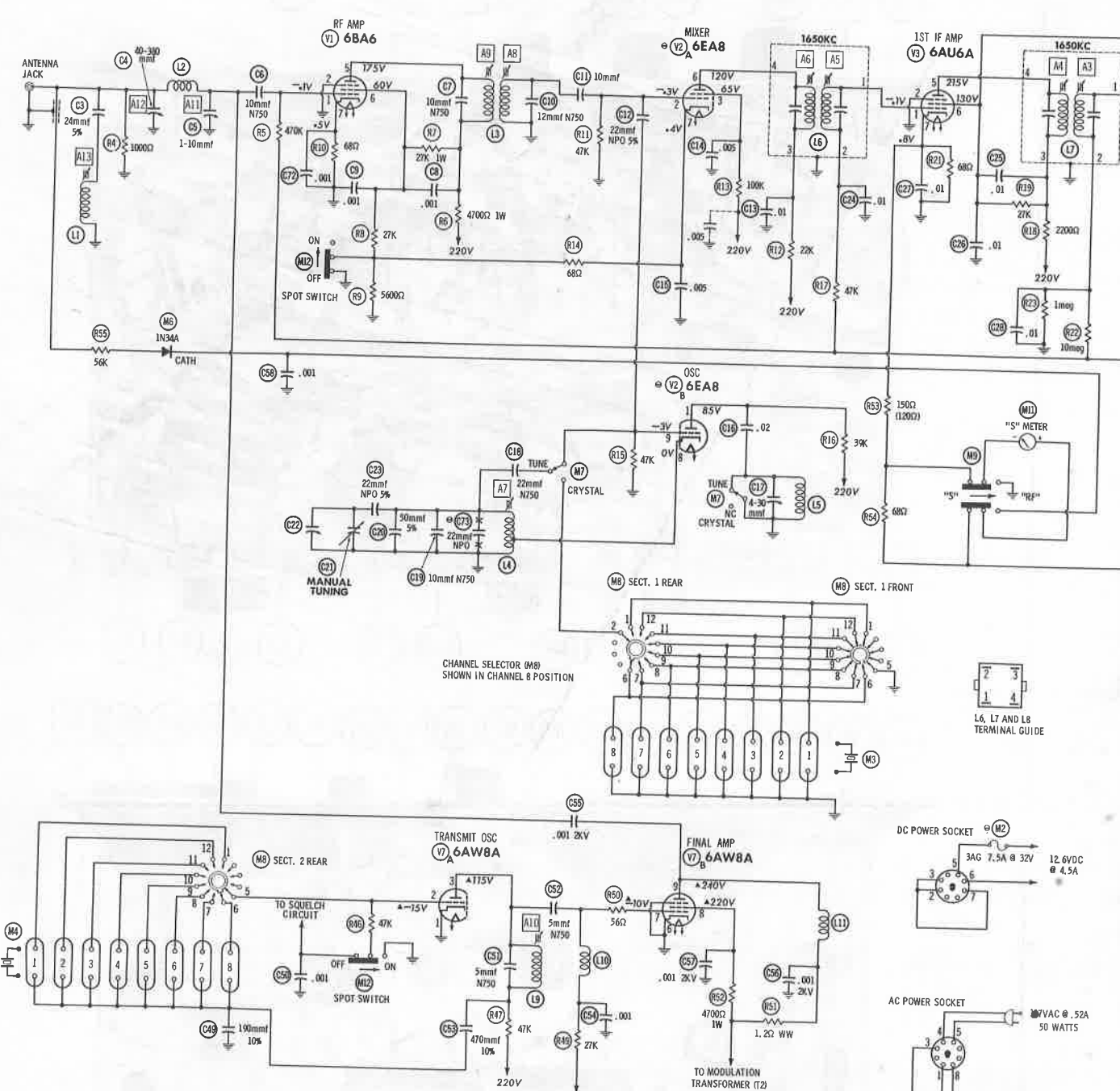
Set meter switch to P RF

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
Connect dummy load to antenna receptacle.		A10	Key transmitter. Adjust for maximum deflection. Set A10 slightly below peak. Key transmitter several times to be sure oscillator starts. Check all channels used.
"		A11, A12	Key transmitter. Adjust for maximum deflection of front panel meter.
		A13	Adjust for MINIMUM interference on lower three TV channels.

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





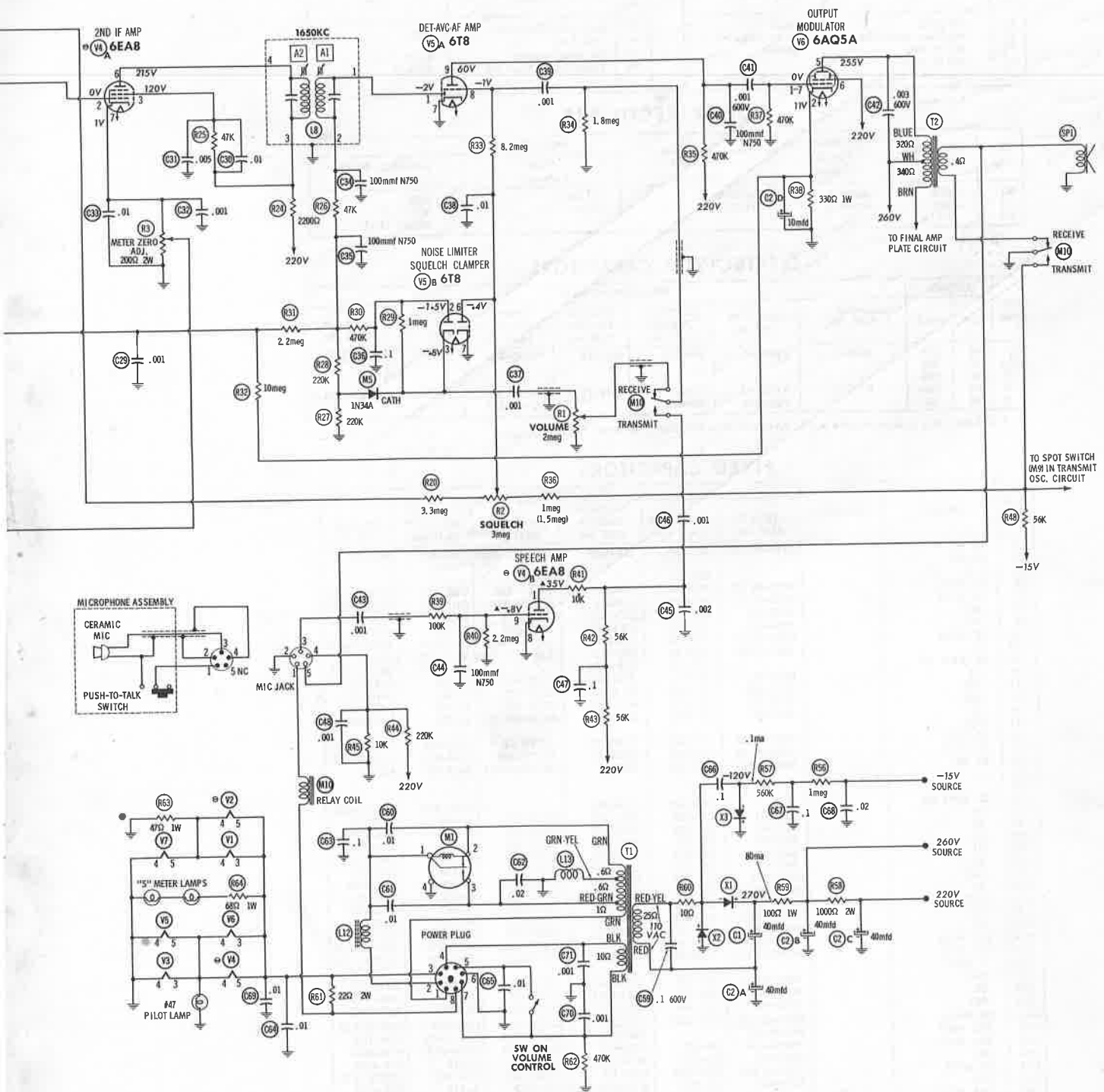


- Ⓞ See parts list for alternate value or application.
 1. Voltage measurements taken with vacuum tube voltmeter.
 2. All controls set for normal operation, no signal applied.
 3. Measured values are from socket pin or terminal to common ground.
 4. All terminals viewed from bottom unless otherwise designated.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

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	2.2meg	0Ω	FIL	FIL	15800Ω	132K	68Ω		
V2	6EA8	140K	47K	†100K	FIL	FIL	†23K	68Ω	0Ω	470K
V3	6AU6A	1.8meg	0Ω	FIL	FIL	†2400Ω	130K	68Ω		
V4	6U8A	†120K	1meg	†15K	FIL	FIL	†2400Ω	200Ω	0Ω	2.2meg
V5	6T8	440K	625K	475K	FIL	FIL	2.3meg	0Ω	10meg	1470K
V6	6AQ5	NC	330Ω	FIL	FIL	†420Ω	†1100Ω	470K		
V7	6AW8A	0Ω	†47K	148K	FIL	FIL	0Ω	†80K	15100Ω	1440Ω

† MEASURED FROM OUTPUT OF X1
 ALL MEASUREMENTS MADE IN "RECEIVE" POSITION UNLESS OTHERWISE DESIGNATED.
 NC NO CONNECTION
 ▲ MEASURED IN "TRANSMIT" POSITION.



LAFAYETTE MODEL HE-20C

PARTS LIST AND DESCRIPTION

TUBES

♦ AMPEREX ♦		GENERAL ELECTRIC ♦		RCA ♦		RAYTHEON ♦		SYLVANIA ♦		
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE				
V1	RF Amp. Receiver Mixer-Osc. 1st IF Amp. 2nd IF Amp. - Speech Amp.	6BA6	6EA8 (6UBA)* 6AU6A 6EA8 (6UBA)*	V5	Det. -ANL- Squelch- AF Amp. Output-Modulator Trans. Osc. -Final RF	6T8				
V2							6AQ5			
V3							6AW8A			
V4										

* Alternate

POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.080A	SR846-2	1N2070	1N1763	40H
X2	.080A	SR846-2	1N2070	1N1763	40H
X3	.0001A	①			Model 12 ①

① Selenium Type.

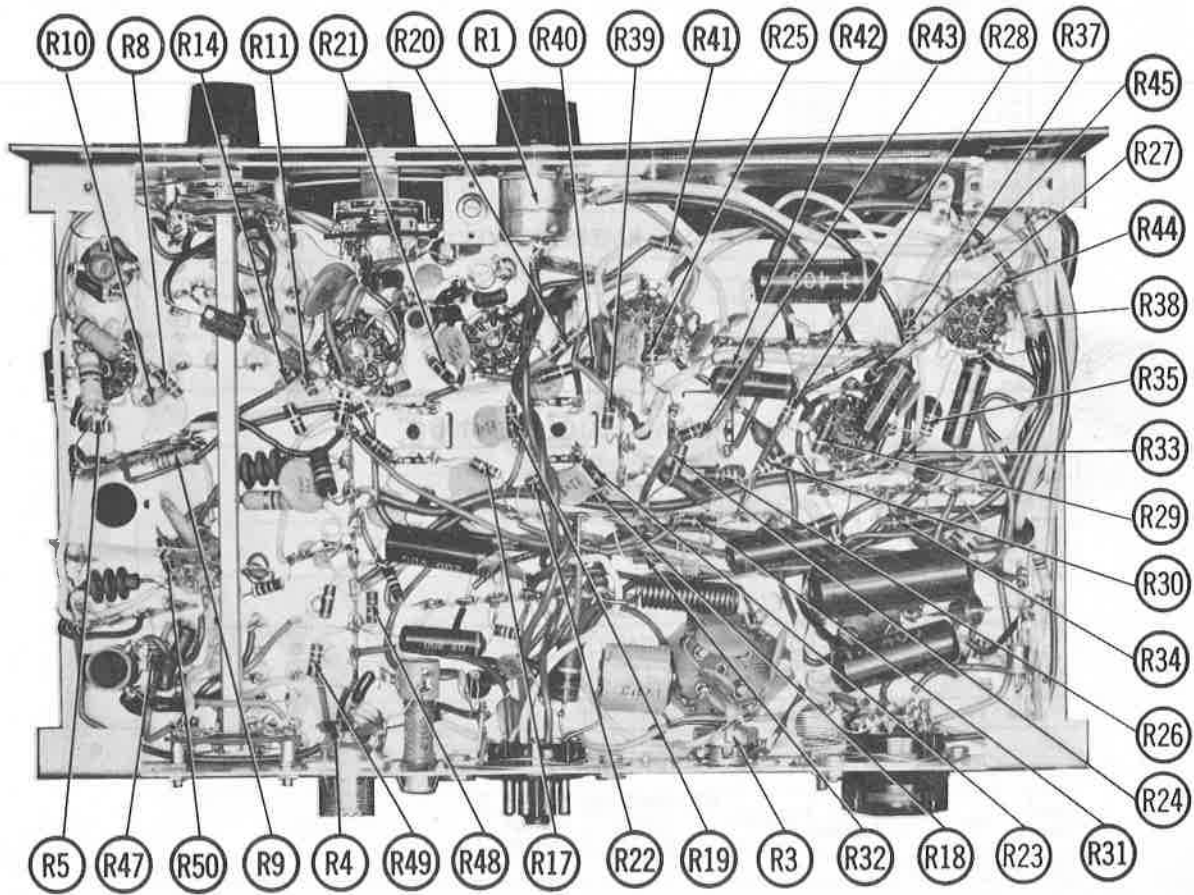
ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Lafayette PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	40	200	E238-1	PRS1580	BR4025	QT1-14	TD-40-250	TC58	TV-1511
C2A	40	350	E237-1	AFH3-43 PRS1580	C0340 BR4035	XC4-22	TMT-3700 TD-40-350	FP425	TVLS-4624.5*
B	40	350							
C	40	200							
D	10	50							

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

FIXED 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.	
C3	24 5%	#V235A-4	1489-000024	TCZ-24	22R5Q24	CM-19B-240J	CNO-425	MS-424	
C4	40-380								
C5	1-10								
C8	10 N750			N750-SI 10	TCN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C7	10 N750			N750-SI 10	TCN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C8	.001			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C9	.001			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C10	12 N750			N750-SI 12	TCN-12	C10Q12U	CCTN-120	CN7-412	10TCU-Q12
C11	10			1489-00001	TCZ-10	22R5Q1	CM-19B-100M	MCB-215	MS-41
C12	22 NPO 5%				DTZ-22	C10Q22C		CNO-422	10TCC-Q22
C13	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C14	.005			BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C15	.005			BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C16	.02			BPD-02	DD-203	BYA6S2	CCD-203	B-120	5HK-S20
C17	4-30								
C18	22 N750			N750-SI 22	TCN-22	C10Q22U	CCTN-22	CN7-422	10TCU-Q22
C19	10 N750			N750-SI 10	TCN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C20	50 5%			1489-00005	TCZ-50	22R5Q5	CM-19B-500J	MCE225	MS-45
C21									
C22									
C23	22 NPO 5%				DTZ-22	C10Q22C		CNO-422	10TCC-Q22
C24	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C25	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C26	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C27	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C28	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C29	.001			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-S10
C30	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-D10
C31	.005			BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-S10
C32	.001			BPD-001	DD-102	BYA10D1	CCD-102	B-250	5HK-D50
C33	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-210	5HK-D10
C34	100 N750			N750-SI 100	TCN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C35	100 N750			N750-SI 100	TCN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C36	.1 200V								
C37	.001			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C38	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C39	.001			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C40	100 N750			N750-SI 100	TCN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C41	.001 600V			P688N-001		PM6D1	8DP-1-102	GEM-1621	6TM-D10
C42	.003 600V			P688N-003	D6-302	CUB6D3	8DP-1-302	GEM-623	6TM-D30
C43	.001			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C44	100 N750			N750-SI 100	TCN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C45	.002			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C46	.001 400V								
C47	.1 400V								
C48	.001			P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C49	180 10%			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C50	.001			1489-00002	TCZ-200	22R5T2	CM-19B-201K	MCB237	MS-32
C51	5 N750			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C52	5 N750			N750-SI 5	TCN-5	C10V5U	CCTN-050	CN7-550	10TCU-V50
C53	470 10%			N750-SI 5	TCN-5	C10V5U	CCTN-050	CN7-550	10TCU-V50
C54	.001								
C55	.001 2000V			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C56	.001 2000V								
C57	.001 2000V								
C58	.001								
C59	.1 800V			BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C60	.01			P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C61	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C62	.02			BPD-02	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C63	.1			BPD-02	DD-203	BYA6S2	CCD-203	B-120	5HK-S20
C64	.01			P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C65	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C66	.1 400V			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
				P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10



PARTS LIST AND DESCRIPTION (CONTINUED)

FIXED 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.
C67	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C68	.02 200V		P288N-02	DF-203	CUB2S2	4DP-2-203	GEM-412	2TM-S20
C69	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C70	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C71	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C72	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C73	22 NPO	Note 1		DTZ-22	C10Q22C		CNO-422	10TCC-Q22

Lafayette Part Number.
 Note 1. Not used in some versions.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Lafayette PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	2meg	V-332A-2	F2-2meg, SU204, KR-1	A47-2meg-Z, FS-3, SWE-12	Q13-139, 76-1 or (BU1, CF27, SS14, GC)*	UA26A, SF1000, US-41 or (RU26A, SL38, SF1000, US-41) or (U55, US-26)
R2	Squelch	3meg	331A-4	F1-3meg, SU204, AK-31, or (B-04, AK-31)	A47-3meg-S, FS-3	QCB1①, B11-140, TM5, or (BU2, CF21, SS14, DC1)*	UA36L, SF1000, or (RU36L, SL38, SF1000) or (U59, EB247)
R3	Meter	200Ω 2W	P325-3			W11-100, SK5, or (BU1, WF1, SS3)*	

* "SNAPTROL"
 ① Use QCB1 instead of Tab Mount Plate in TM5.

PARTS LIST AND DESCRIPTION (CONTINUED)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Lafayette PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	54MC Trap	C191-2					
L2	Ant. Loading	C194-1					
L3	RF Bandpass	T188-1					
L4	Rec. Osc. (Tune)	O189					
L5	Rec. Osc. (Crystal)						
L6	1st IF	I110-5				TA632	
L7	2nd IF	I110-5				TA632	
L8	3rd IF	I110-5				TA632	
L9	Trans. Osc.	C190-1					
L10	RF Choke (500uh)	C185-12	TV-188	6174	RTC-8592	T324	
L11	RF Choke (500uh)	C185-12	TV-188	6174	RTC-8592	T324	
L12	Hash Suppressor	187-1					
L13	RF Choke(.56uh)						

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	Lafayette PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC a).52A (or 12.6VCT @4.5A	105V @.080A DC	12.6V @ 3A	PTV-183-2					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Lafayette PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	10.7K Tap@ 4800Ω	3-4Ω	T184-1					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Lafayette PART No.	QUAM PART No.	
SP1	4" PM 3-4Ω	S717-1	4A07	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA			NOTES
				Lafayette PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	12.6	115v		6301	G-1601	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Lafayette PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	7 1/2A 32V	①		31207.5	155020	AGC 7 1/2	HDJ

① Used in 12.6VDC Versions only.

MISCELLANEOUS

ITEM No.	PART NAME	Lafayette PART No.	NOTES	
M3	Crystal		Receive (order by channel and frequency desired) Transmit (order by channel and frequency desired)	
M4	Crystal			
M5	Noise Limiter	1N34A	Crystal-Tune (selector, rotary type) Crystal Selector (rotary wafer type) Meter, S-P RF (DPDT Slide type) Receive-Transmit	
M6	Meter Rectifier	1N34A		
M7	Switch	811-1		
M8	Switch	BS-866B-1		
M9	Switch			
M10	Relay			
M11	S Meter	8109-1		
M12	Switch			
	Microphone Ass'y.	M866B-1		Spot Tuning Includes Push-to-talk Switch

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Knob - Tuning	K4005-11	Cabinet - Less Front Panel	RC9099C
Knob - All except tuning	K4005-12	Cabinet Front Panel	FP9091E
Dial Scale	DS817A-2		

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) 8258 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No. 8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene) 8498 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.)