



PHOTOFACT[®]

TRADE NAME : Lafayette Model HE-20B

SUPPLIER : Lafayette Radio Electronics Corp.
111 Jericho Turnpike, Syosset, L. I., N. Y.

TYPE SET : 7 Tube Citizens Band Transceiver

POWER SUPPLY : 110-120VAC, 60 Cycles (or)
12 Volt Storage Battery

RATING : 51 Watts, .5 Amp. @ 117VAC (or)
3.7 Amp. @ 12.6VDC (Receive)

TUNING RANGE : Any 8 Crystal Controlled Channels 1-23
(Receiver may be manually tuned)



ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

A1, A2, A3.... GENERAL CEMENT #5000, 5003, 5006
WALSCO #2515, 2516, 2518

A4..... GENERAL CEMENT #8282, 8606, 8606L
WALSCO #2526, 2543, 2544

A5 thru A10.... GENERAL CEMENT #5097, 8607, 8727
WALSCO #2515

RECEIVER ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 7 (grid) of Converter, low side to ground. Tune to 1650KC (400v Mod.).	Any	A5, A6, A7, A8, A9, A10	Turn squelch control fully clockwise. Adjust for maximum output.
Across antenna receptacle. Tune to Channel Frequency.	Center Channel Used (Fixed)	A11	Connect a 100Ω resistor and .005mfd capacitor in series across the secondary of L3. Adjust for maximum output.
"	"	A12	Move resistor and capacitor to the primary of L3. Adjust for maximum output. Remove resistor and capacitor.
"	1 (26.965MC) (Tune)	A13	Adjust for maximum output. Two peaks will be obtained. Use the higher.
"	23 (27.255MC) (Tune)	A14	Adjust for maximum output. Readjust A13 and A14 until maximum calibration is attained.
		A4	Adjust for MINIMUM interference on the three lower TV channels.

TRANSMITTER ALIGNMENT

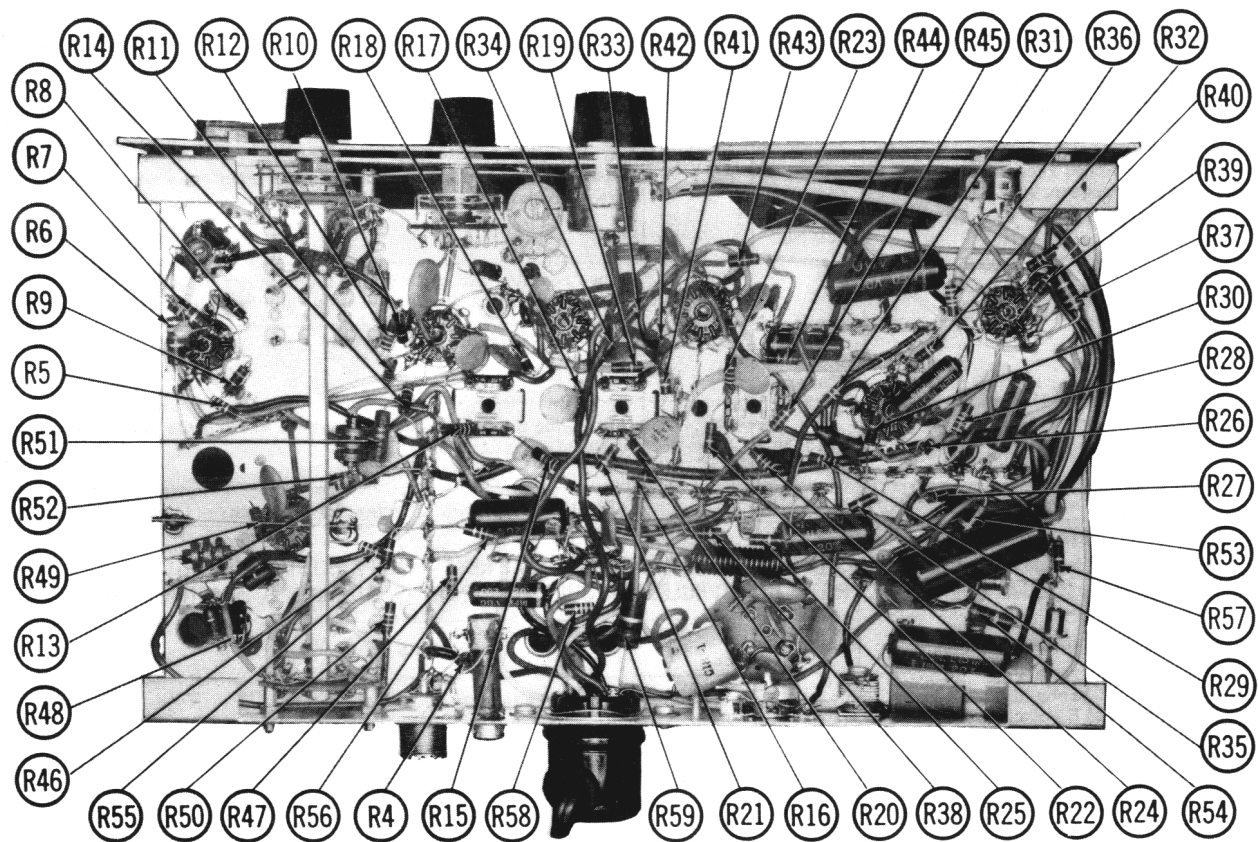
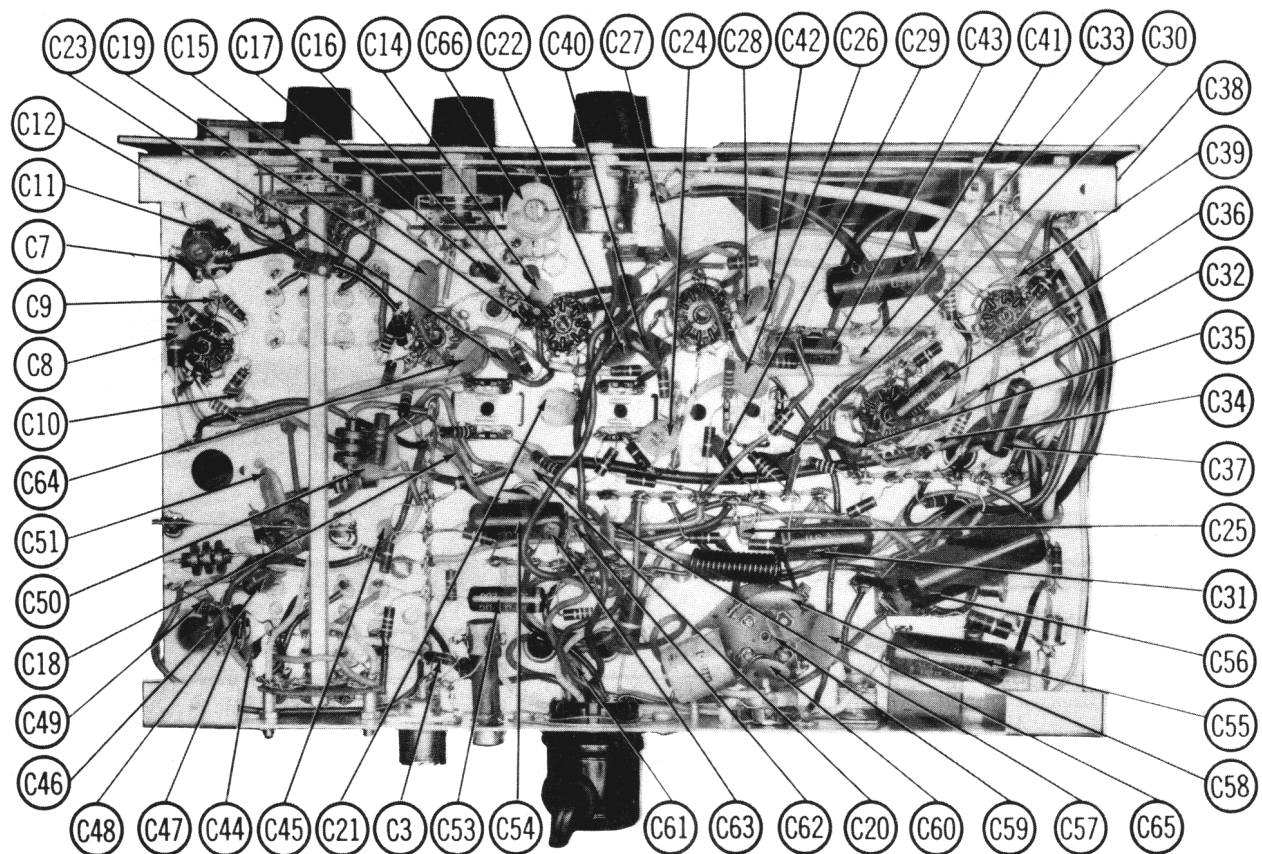
ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES & REGULATIONS PART 19, SUBPART D, SECTION 19.71)

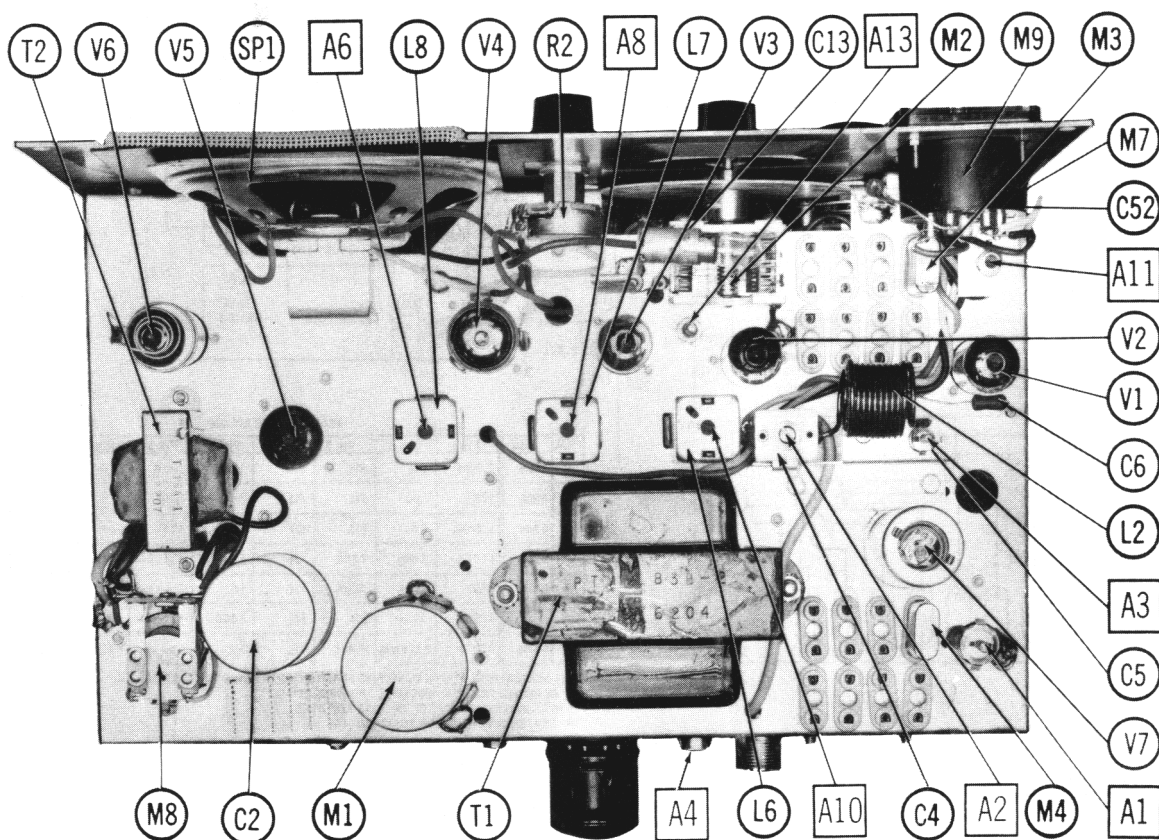
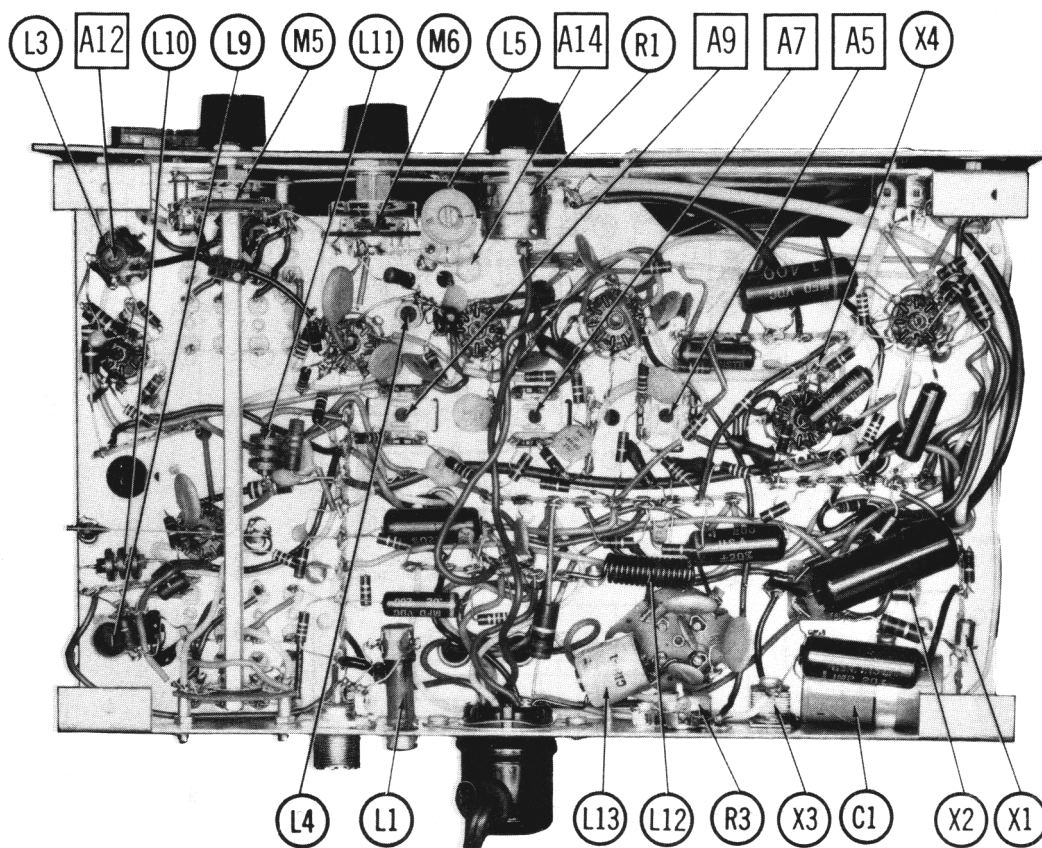
INDICATOR	ADJUST	REMARKS
Connect DC probe of VTVM to pin 7 (grid) of final RF Amp, common to ground.	A1	Key transmitter and adjust for maximum deflection.
RF Power Indicator Meter	A2, A3	Key transmitter and adjust for maximum deflection.

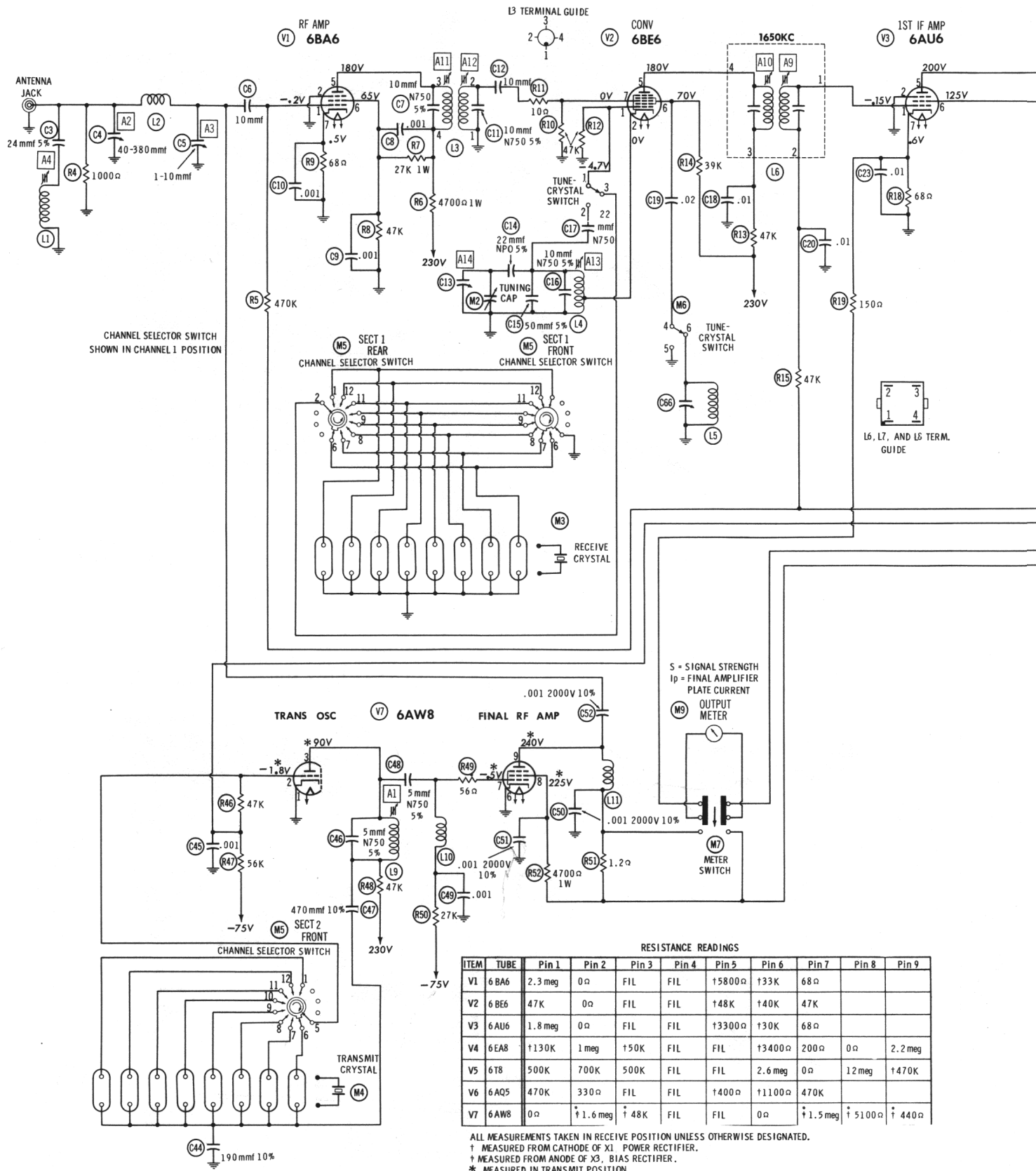
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

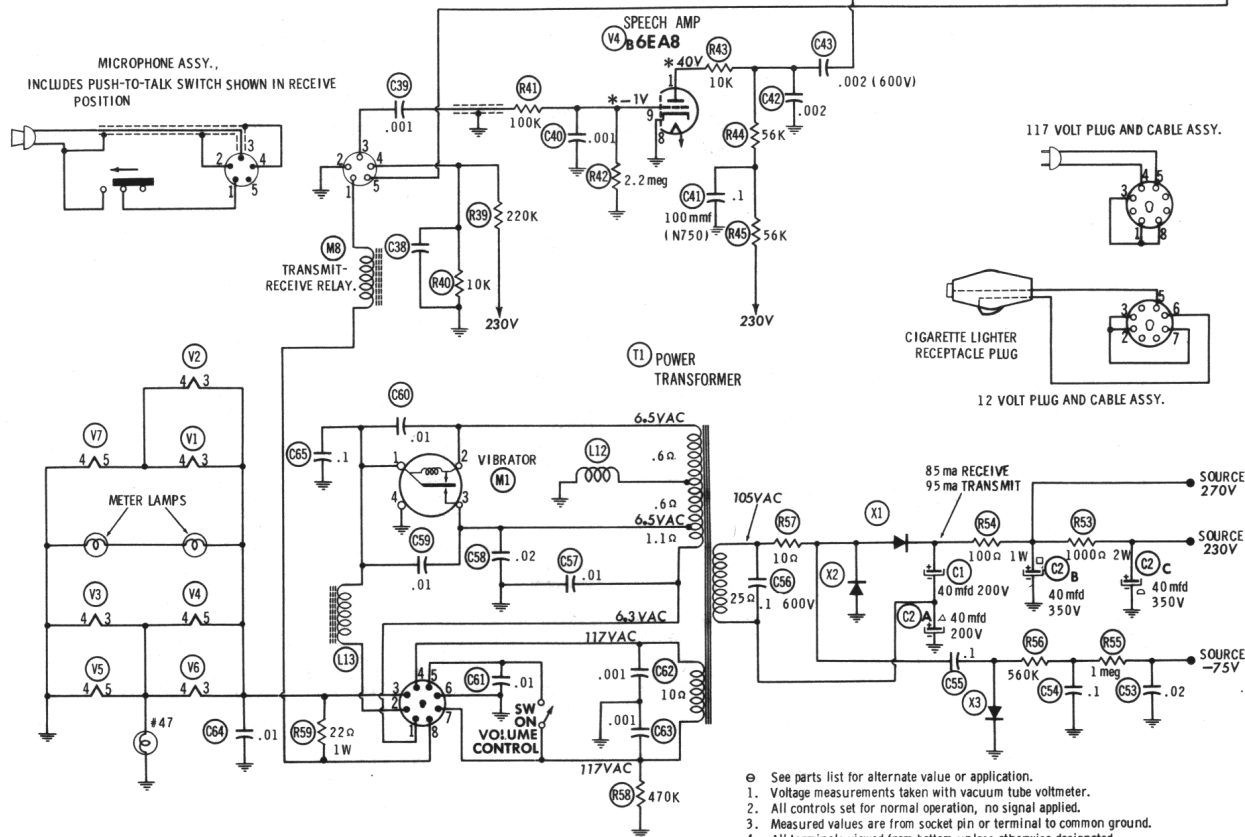
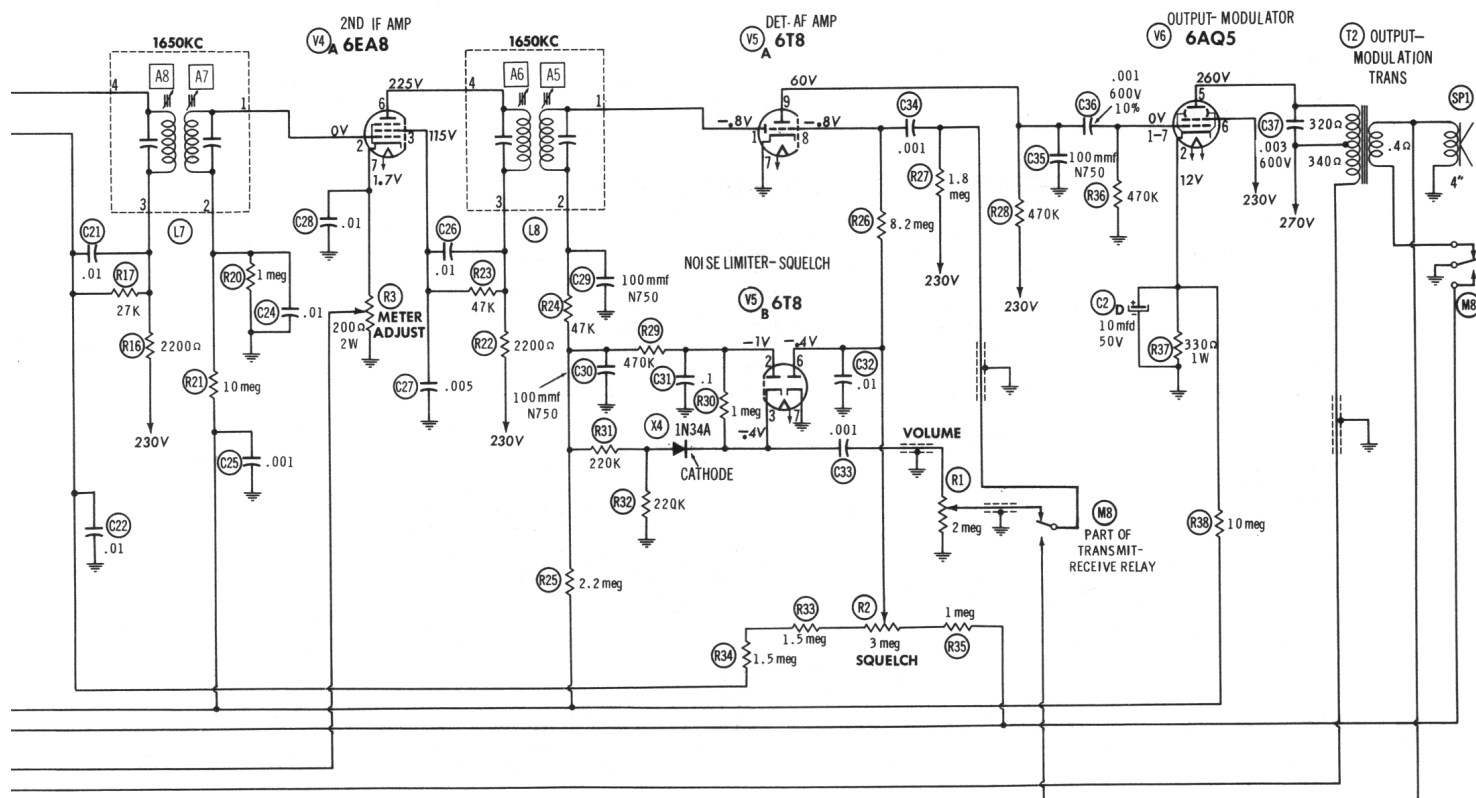
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LAFAYETTE MODEL HE-20B









- ① 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.

LAFAYETTE MODEL HE-20B

PARTS LIST AND DESCRIPTION

TUBES

♦ AMPEREX ♦		GENERAL ELECTRIC ♦		RCA ♦		RAYTHEON ♦		SYLVANIA ♦	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE			
V1	RF Amplifier	6BA6		V5	Det. -AF Amp. -	6T8			
V2	Converter	6BE6			Noise Limiter-Squelch				
V3	1st IF Amplifier	6AU6			Output - Modulator	6AQ5			
V4	2nd IF Amp. -Speech Amp.	6EA8			Trans. Osc. - Final	6AW8			

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS			NOTES
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X1 X2 X3 X4			1N2070 1N2070	1N1763 1N1763	40H 40H Model 12 1N34A	HV Rectifier HV Rectifier Bias Rectifier Noise Limiter

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Lafayette PART No.	AEROVOX PART No.	CORNEILL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	40	200	B	PRS1580	BR4025	Q71-14	TD-40-250	TC58	TVA-1511
C2A	▲ 40	200		A FH3-43	C0340	XC4-22	TMT-3700	FP420. 36	TVA-1611
B	■ 40	350		PRS1580	BR4035				
C	■ 40	350							
D	10	50							

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALPART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	24 5%		1469-000024	TCZ-24	22R5Q24	CM-19B-240J	CNO-425	MS-424
C4	40-380							
C5	1-10			829-10				
C6	10							
C7	10 N750 5%		N750-SI 10	TCN-10	C10QIU	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	.001		BPD-.001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C11	10 N750 5%		N750-SI 10	TCN-10	C10QIU	CCTN-100	CN7-410	10TCU-Q10
C12	10		1469-00001	TCZ-10	22R5Q1	CM-19B-100M	MCB215	MS-41
C13								
C14	22 NPO 5%			DTZ-22	C10J22C		CNO-422	10TCC-Q22
C15	50 5%		1469-00005	TCZ-50	22R5Q5	CM-19B-500J	MCE225	MS-45
C16	10 N750 5%		N750-SI 10	TCN-10	C10QIU	CCTN-100	CN7-410	10TCU-Q10
C17	22 N750		N750-SI 22	TCN-22	C10Q22U	CCTN-22	CN7-422	10TCU-Q22
C18	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C19	.02		BPD-.02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C20	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C21	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C22	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C24	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C25	.001		BPD-.001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C26	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C27	.005		BPD-.005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C28	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C29	100 N750		N750-SI 100	TCN-100	C10TIU	CCTN-101	CN7-310	10TCU-T10
C30	100 N750		N750-SI 100	TCN-100	C10TIU	CCTN-101	CN7-310	10TCU-T10
C31	.1 200V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C32	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C33	.001		BPD-.001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C34	.001		BPD-.001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C35	100 N750		N750-SI 100	TCN-100	C10TIU	CCTN-101	CN7-310	10TCU-T10
C36	.001 600V 10%		V84C6D1		PM6D1	6DP-1-102	GEM-1621	6TM-D10
C37	.003 600V		P688N-003	D6-302	CUB6D3	6DP-1-302	GEM-623	6TM-D30
C38	.001		BPD-.001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C39	.001		BPD-.001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C40	100 N750		N750-SI 100	TCN-100	C10TIU	CCTN-101	CN7-310	10TCU-T10
C41	.1		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C42	.002		BPD-.002	DD-202	CUB10D2	CCD-202	B-220	5HK-D20
C43	.002 600V		P688N-002	D6-202	CUB6D2	6DP-1-202	GEM-622	6TM-D20
C44	190 10%		1469-00002	TCZ-200	22R5T2	CM-19B-201K	MCB237	MS-32
C45	.001		BPD-.001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C46	5 N750 5%		N750-SI 5	TCN-5	C10V5U	CCTN-050	CN7-550	10TCU-V50
C47	470 10%							
C48	5 N750 5%		N750-SI 5	TCN-5	C10V5U	CCTN-050	CN7-550	10TCU-V50
C49	.001		BPD-.001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C50	.001 2000V 10%							
C51	.001 2000V 10%							
C52	.001 2000V 10%							
C53	.02 200V		P288N-02	DD-203	CUB2S2	4DP-2-203	GEM-412	2TM-S20
C54	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C55	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C56	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C57	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C58	.02		BPD-.02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C59	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C60	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C61	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C62	.001		E F-001	MFT-1000		CTF-102	CT280A	
C63	.001		E F-001	MFT-1000		CCF-102	CT280A	
C64	.01		BPD-.01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C65	.1 100V							
C66								

PARTS LIST AND DESCRIPTION (CONTINUED)

CONTROLS

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

ITEM No.	USE	RESIST-ANCE	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	B-76, KR-1	A47-2meg-Z, FS-3, SWE-12	Q13-139, 76-1	U55, US-26
R2	Squelch	3meg	V-331A-2	B-84, AK-31	A-43-200, FKS-1/4	WH-200, SK-5	U57, EB247
R3	Meter Adjust	200Ω 2W	P325-3	WN-201			

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	TV Trap	T188-1 T-189-3					
L2	Antenna Load						
L3	RF Bandpass						
L4	Rec. Oscillator						
L5	Crystal Feedback (6.8uh)						
L6	1st IF	1-110-5	TV-188	6174	RTC-8592	T324	
L7	2nd IF	1-110-5					
L8	3rd IF	1-110-5					
L9	Transmitter Osc.	190-1					
L10	RF Choke (500uh)						
L11	RF Choke (500uh)		TV-188	6174	RTC-3592	T324	
L12	RF Choke (.56uh)						
L13	Hash Choke(30uh)	187-1					

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 @ .5A(or) 12.6VCT @ 2.5A	105V @ .080A	12.6V @ * 1.8A	PTV-183-2					* 117 Volts operation only.

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 @ 4600Ω	3-4Ω	T-184-1					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Lafayette PART No.	QUAM PART No.	
SP1	4" PM 3-4Ω	ST17-1	4A07	

VIBRATOR

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

MISCELLANEOUS

ITEM No.	PART NAME	Lafayette PART No.	NOTES
M2	Variable Cap		1 Gang, Receiver Tuning Receiver (Order channel desired) Transmitter (Order channel desired) Channel Selector (Rotary Wafer Type) Receiver Tuning, Crystal -Tune (Wafer Type) Meter (STDP, Slide Type) Transmit - Receive Power Monitor or Signal Strength Includes Spring Loaded Push-to-talk Switch
M3	Crystal		
M4	Crystal		
M5	Switch		
M6	Switch		
M7	Switch		
M8	Relay		
M9	Meter		
	Microphone		

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.)