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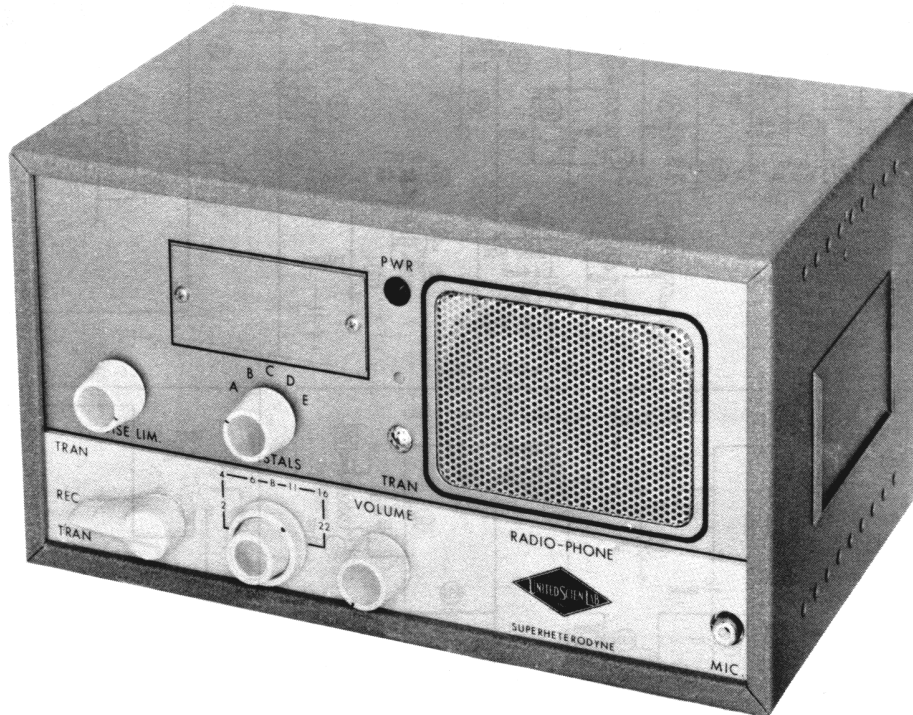
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PHOTOFACT® Folder



U.S.L. MODEL
TR-800



U.S.L. MODEL
TR-800

TRADE NAME	U. S. L. Model TR-800
MANUFACTURER	United Scientific Laboratories Inc., 35-15 37th Ave., Long Island City 1, N. Y.
TYPE SET	AC-Battery Operated Crystal Controlled 6 Tube Citizens Band Transmitter-Receiver
POWER SUPPLY	110 - 120 Volts AC, 50-60 Cycles (or) 6 or 12 Volt Storage Battery
RATING	40 Watts, .38 Amp. @117 Volts AC
FREQ. RANGE	TRANSMITTER: Any 5 of Citizens Band Channels 1 thru 22 RECEIVER: All Citizens Band Channels 1 thru 22

NOTICE

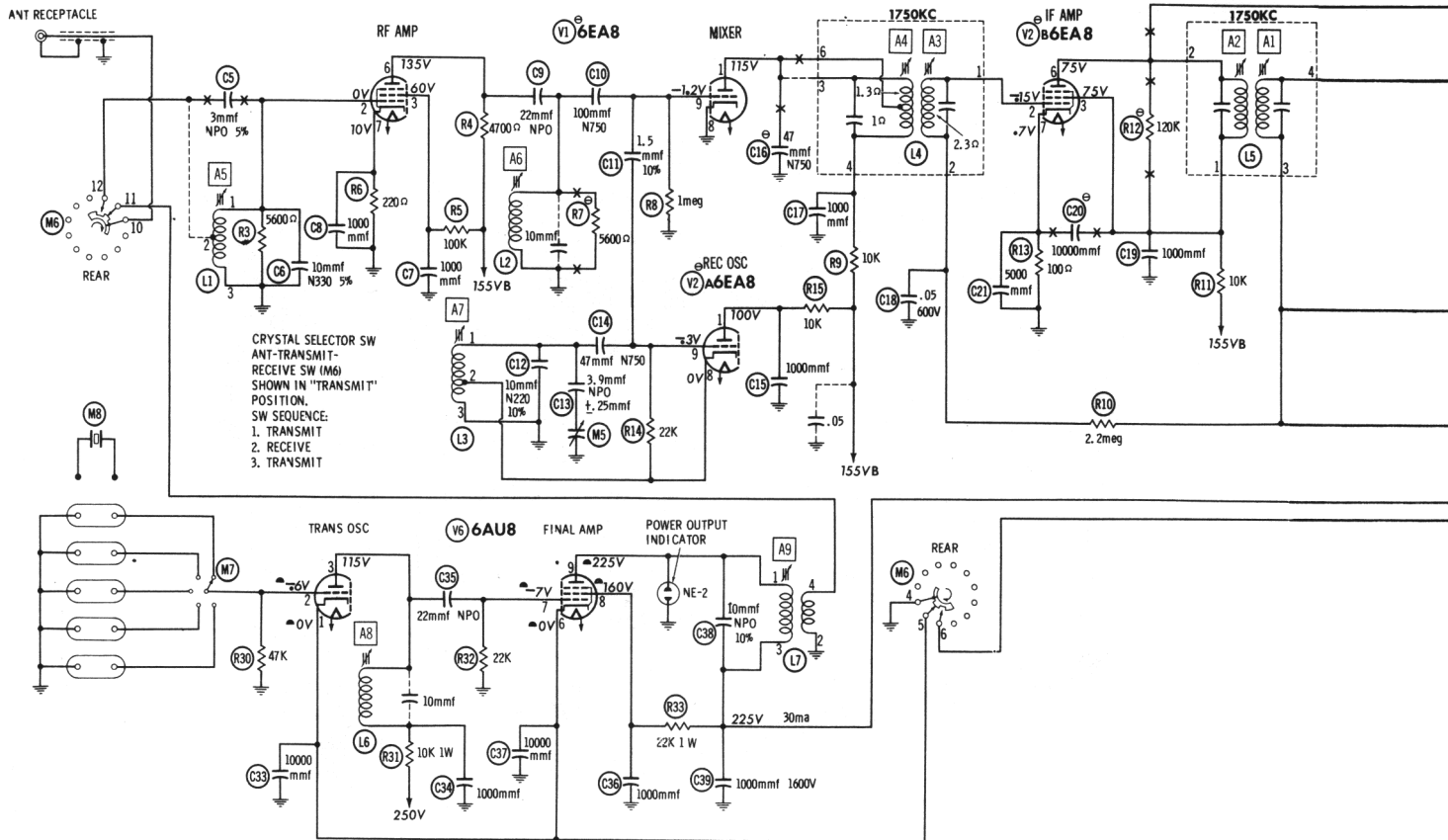
ONLY THOSE PERSONS PROPERLY LICENSED BY FCC ARE PERMITTED TO MAKE CRYSTAL SUBSTITUTION OR EFFECT REPAIRS ON THE TRANSMITTER PORTION OF THIS UNIT.

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



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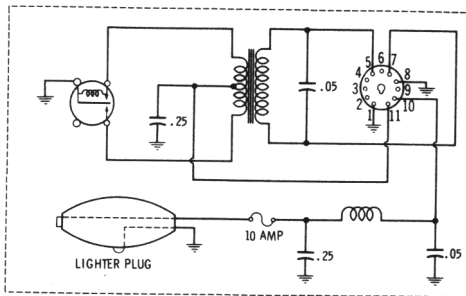


NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

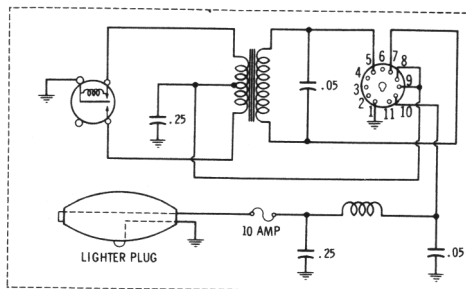
RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6EA8	+15K	0Ω	+100K	0Ω	+10K	220Ω	0Ω	1meg	
V2	6EA8	+15K	2.8meg	+15K	0Ω	.1Ω	+15K	100Ω	0Ω	22K
V3	6AL5	2.1meg	500K	.1Ω	0Ω	2.1meg	0Ω	500K		
V4	ECC83 12AX7	+475K	4.7meg	0Ω	.1Ω	.1Ω	+225K	470K	3300Ω	0Ω
V5	6V6GT	0Ω	.1Ω	+630Ω	+330Ω	470K	TP	0Ω	470Ω	
V6	6AU8	+0Ω	47K	+10K	.1Ω	0Ω	+0Ω	22K	+22K	+680Ω

ALL MEASUREMENTS MADE IN "RECEIVE" POSITION UNLESS OTHERWISE DESIGNATED.
 ▲ MEASURED IN "TRANSMIT" POSITION. NC NO CONNECTION
 † MEASURED FROM OUTPUT OF M1. TP TIE POINT

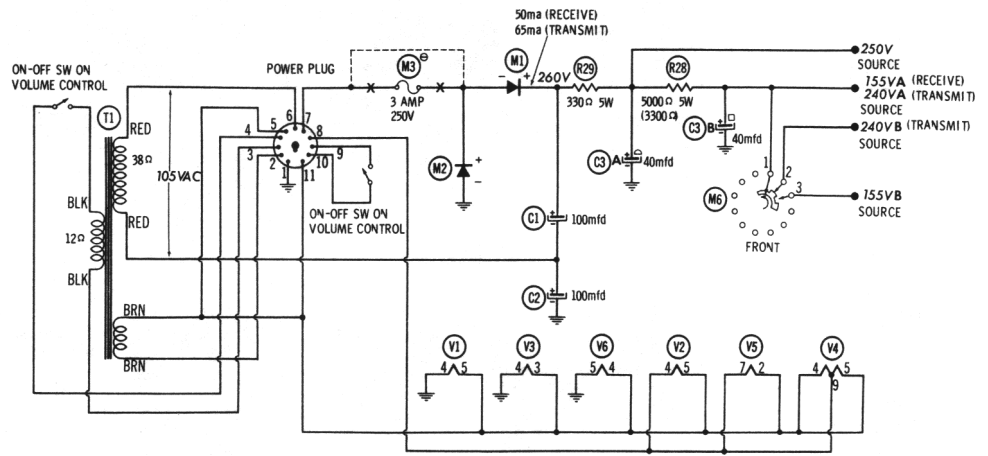
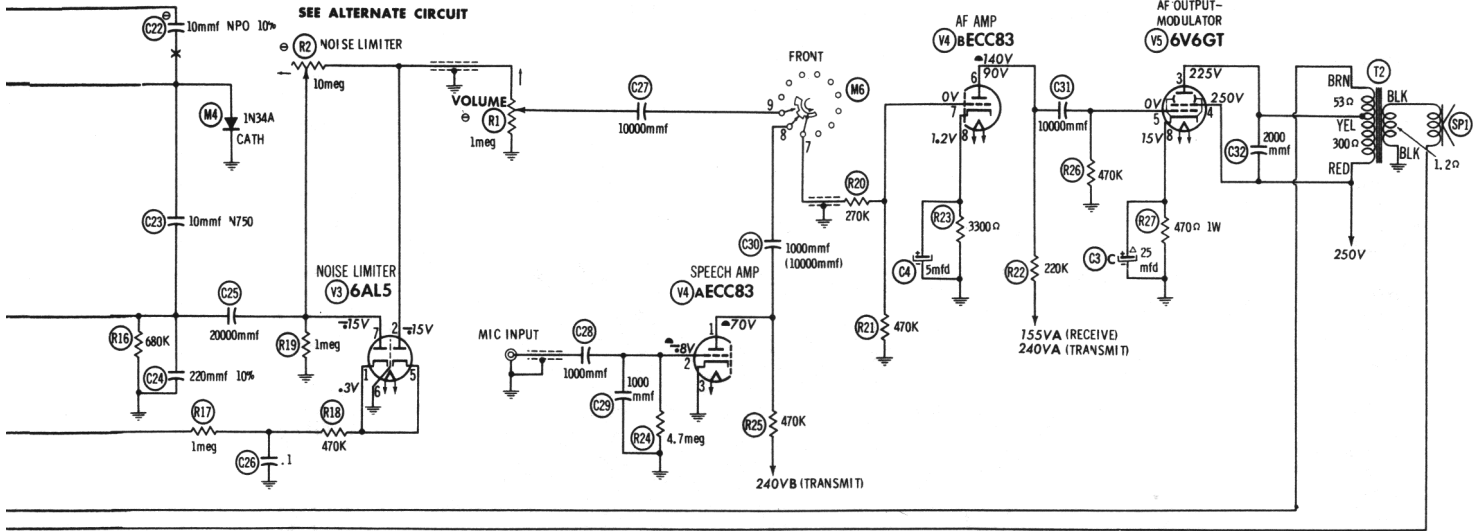


INPUT POWER CIRCUIT USED IN 6 VOLT OPERATION

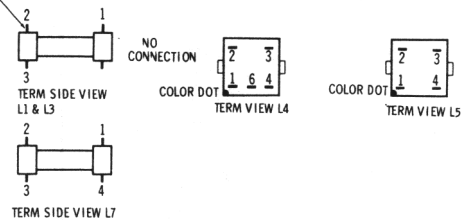


INPUT POWER CIRCUIT USED IN 12 VOLT OPERATION

A PHOTOFAC STANDARD NOTATION SCHEMATIC
 © Howard W. Sams & Co., Inc. 1961



NOT USED IN ALL VERSIONS

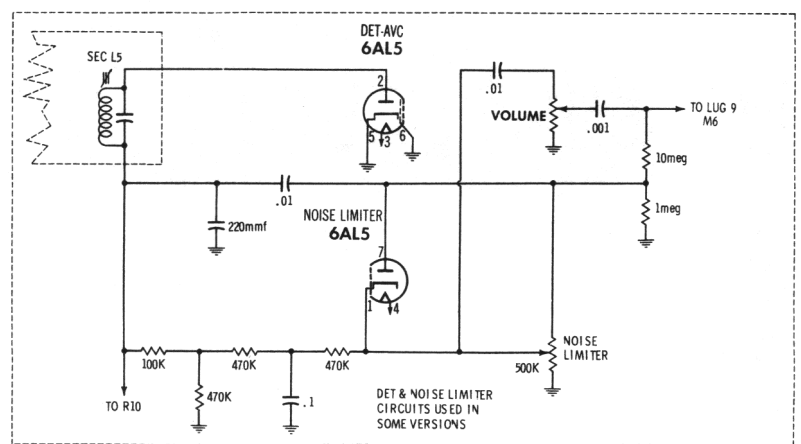


- DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common ground.
- Line voltage maintained at 117 volts for voltage readings.
- Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
- Volume control at maximum, no signal applied for voltage measurements.

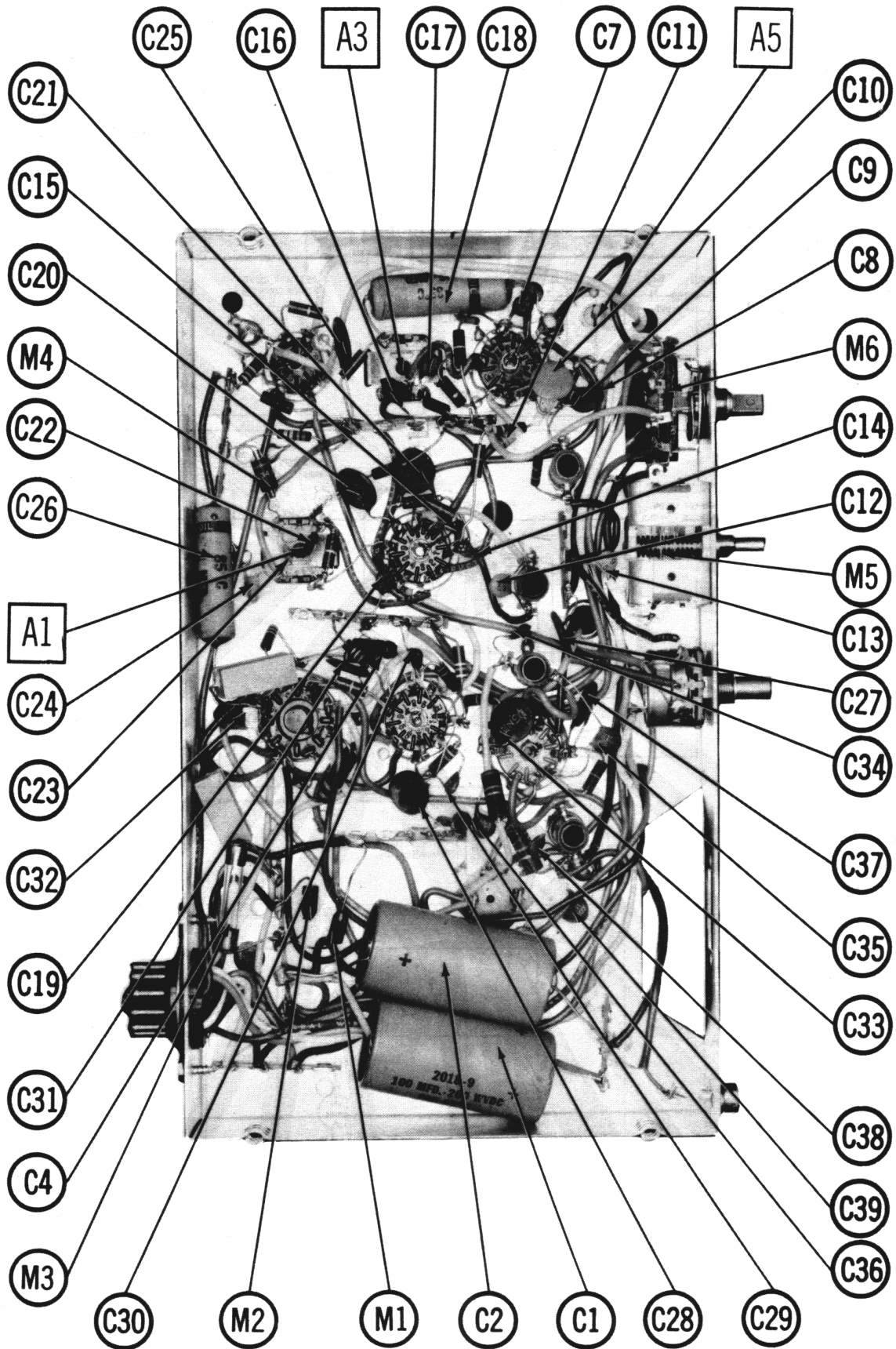
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

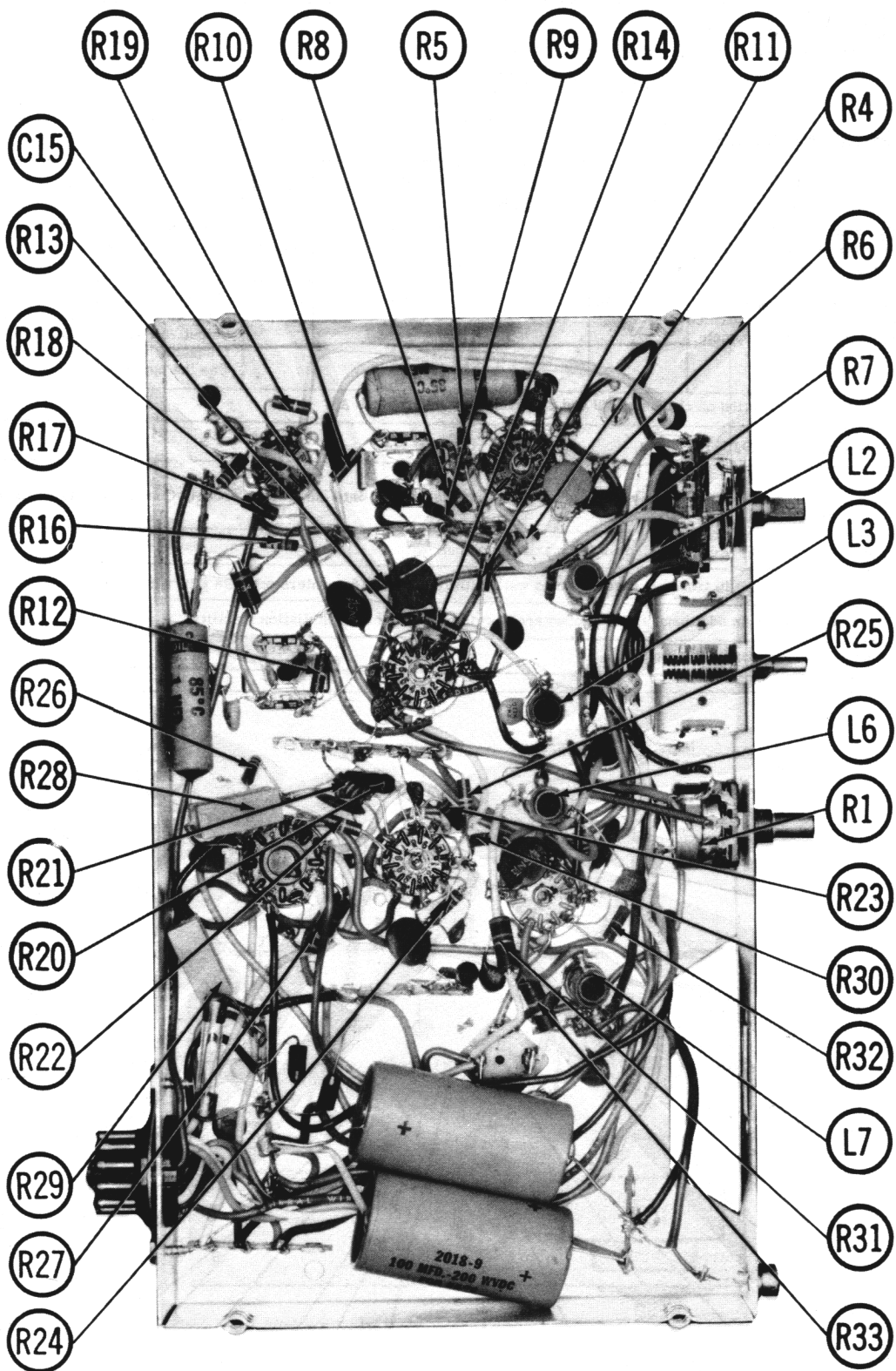
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)



U.S.L. MODEL TR-800



CHASSIS BOTTOM VIEW-ALIGNMENT, CAPACITOR & MISC. IDENT.



CHASSIS BOTTOM VIEW-RESISTOR & INDUCTOR IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

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

Suggested Alignment Tools: A1 thru A4... GENERAL CEMENT #5097, 8727
WALSCO #2515
A5 thru A9... GENERAL CEMENT #8721, 8722
WALSCO #2519

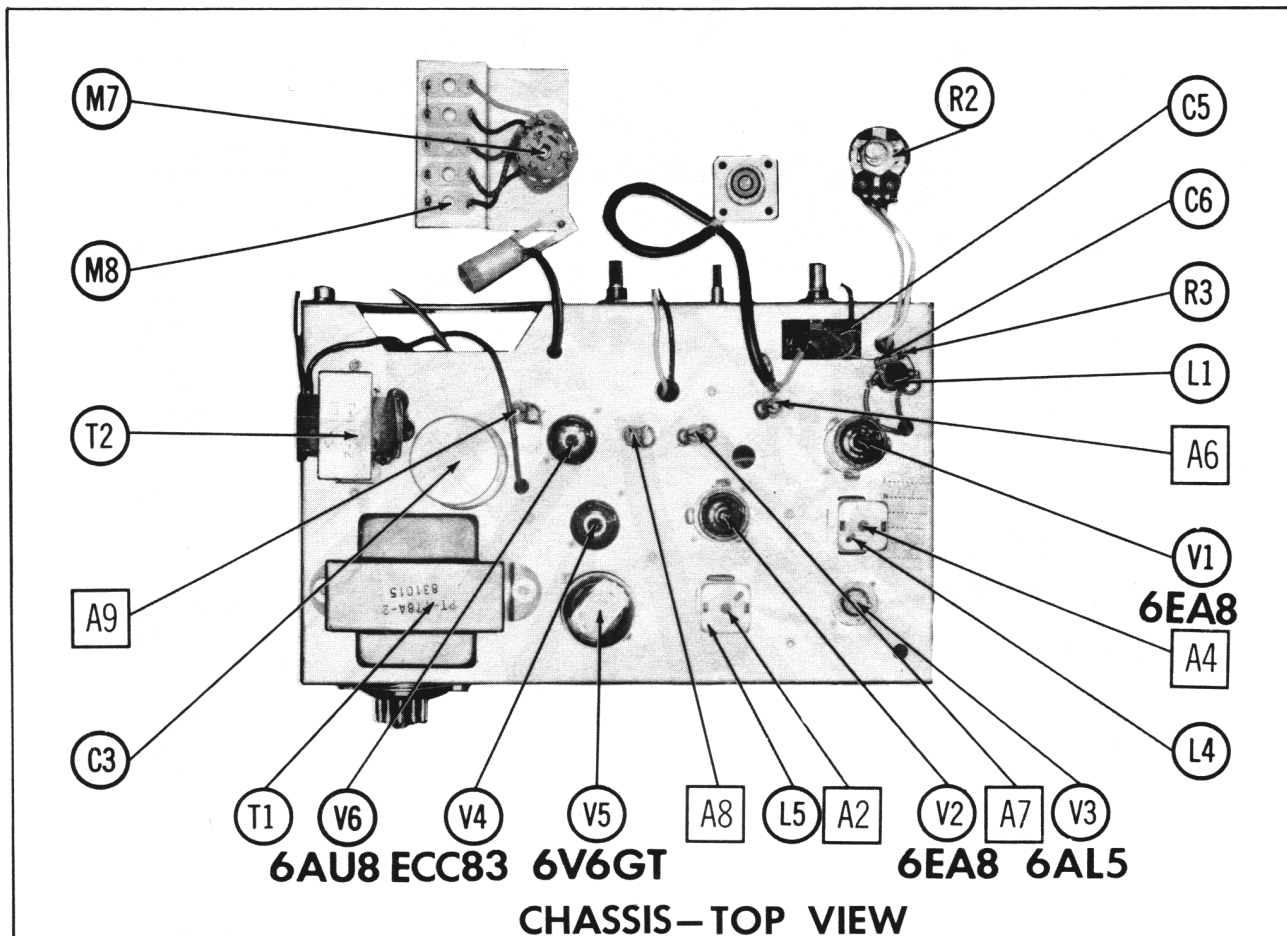
RECEIVER ALIGNMENT

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .01mf to pin 9 (grid) of Mixer. Low side to chassis.	1750KC (400% Mod.)	—	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	Connect output of generator having 52 Ω output impedance to antenna input receptacle.	27.065MC	—	Across voice coil.	A5, A6, A7	Preset A7 three-fourth of the way out. Adjust A5, A6 & A7 for maximum output. A7 has 2 peaks. The image frequency is the bottom or lower peak. Use the upper peak.
3.	Check dial calibration on channels 1, 9 and 22. If necessary, retouch A7.					

TRANSMITTER ADJUSTMENT

Insert a 52 Ω non-inductor dummy load (minimum 3 watt dissipation) into the antenna socket. Connect a suitable RF meter across the load.

- Switch to transmit. Adjust A8 and A9 for maximum output.
- Switch from receive to transmit several times while slowly turning A8 counterclockwise 1/2 turn at a time for maximum output.
- Carefully turn A8 an additional 1 1/2 turns counterclockwise for maximum oscillation stability.
- Readjust A9 for maximum output.



PARTS LIST AND DESCRIPTIONS

CONTROLS

ITEM No.	RATING RESISTANCE	REPLACEMENT DATA				INSTALLATION NOTES
		U. S. L. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	
RIA	1 meg Shaft Switch	V-329-3	B-70-S Not Req.	A47-1meg-Z FS-3 Not Req.	Q13-137 Not Req.	Volume (Note 1) Power Off-On Noise Limiter (Note 2)
B	10meg	V-330-1		SWE-20	US-27	
C						
R2						

Note 1. Some versions may use 2meg in this application.
Note 2. Some versions may use 500K in this application.

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA		REMARKS	ITEM No.	RATING	REPLACEMENT DATA		REMARKS
		U. S. L. PART No.	WORKMAN TV PART No.				IRC PART No.	WORKMAN PART No.	
R3	56000				R19	1meg			
R4	47000				R20	270K			
R5	100K				R21	470K			
R6	220K				R22	220K			
R7	56000			Note 1	R23	33000			
R8	1meg				R24	4.7meg			
R9	10K				R25	470K			
R10	2.2meg				R26	470K			
R11	120K				R27	470K 1W			
R12	100K			Note 1	R28	50000 5W			PW5-5000
R13	100K				R29	3300 5W			PW5-SQ-330
R14	22K				R30	47K			
R15	10K				R31	10K 1W			
R16	680K				R32	22K			
R17	1meg				R33	22K 1W			
R18	470K								

* Alternate Value.

Note 1. Not used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		U. S. L. PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Ant.		TV-118	6171-A	RTC-8609	* Remove Trap
L2	RF		TV-118	6171-A	RTC-8609	
L3	Osc.					
L4	Input IF					
L5	Output IF		TV-118	6171-A	RTC-8609	
L6	Transmitter Osc.		TV-141	6253 *	RTC-8571 *	
L7	Transmitter Output					

TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	SEC. 1	SEC. 2	U. S. L. PART No.	Merit PART No.	Stancor PART No.	
T1	117V @ .38A	105V @ .200A	PT-178A-2			

TUBES

ITEM No.	USE	TYPE	RAYTHEON		USE	TYPE
			ITEM No.	SYLVANIA		
V1	RF Amp. - Mixer	6EA8 (6U8A) *	V4	AF Amp. - Speech Amp.	ECC83/12AX7	
V2	Rec. Osc. -IF Amp.	6EA8 (6U8A) *	V5	AF Output-Mediator	6V6GT	
V3	Noise Limiter	6AL5	V6	Trans. Osc. - Final Amp.	6AU6	

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP. VOLT.	REPLACEMENT DATA				NOTES
		U. S. L. PART No.	AEROVOX PART No.	CORNELL-DUBIER PART No.	PYRAMID PART No.	
C1	100 200		P8S1595	BR10035	TC1285	TD-100-200TVAS-1445 *
C2	100 200		P8S1595	BR10035	TC1285	TD-100-200TVAS-1445 *
C3A	40 350		APB3-111	C0870	FP367.5	TMT-3387 TVL-3754.5
C3B	40 350					
C3C	25 25					
C4	5 10		PTT-10005	NLW5-15	TT12X5	MLV5-12 TE-1127

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

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA				SPRAGUE PART No.
			CORNELL-DUBIER PART No.	ELMENDO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	3 NPO 5%		TCZ-3R3	CCTO-3R3	CNO-533	10TCC-V33	
C6	10 N330 5%		TCA-10		B-210	10TCS-Q33	
C7	1000		DD-102	CCD-102	B-210	5HK-D10	
C8	1000		DD-102	CCD-102	CNO-422	5HK-D10	
C9	22 NPO		DZ-22	C10Q22C	CNT-310	10TCC-Q22	
C10	100 N750		DTN-100	CCTN-101	CNO-510	10TCC-Q10	
C11	1.5 10%		TCZ-1R5			10TCC-Q10	
C12	10 N220 10%					10TCC-Q10	
C13	3.9 NPO ±.25mmf					10TCC-Q47	
C14	47 N750		DTN-47	CCTN-470	CNT-447	5HK-D10	
C15	1000	Note 1	DD-102	CCD-102	B-210	5HK-D10	
C16	105 600V		DTN-47	CCTN-470	B-210	5HK-D10	
C17	1000		DD-102	CCD-102	B-210	5HK-D10	
C18	1000		DD-102	CCD-102	B-210	5HK-D10	
C19	1000		DD-102	CCD-102	B-210	5HK-D10	
C20	1000		DD-102	CCD-102	B-210	5HK-D10	
C21	5000	Note 1	DD-102	CCD-102	B-210	5HK-D10	
C22	10 NPO 10%		DTN-10	C10Q10	CNO-410	10TCC-Q10	
C23	10 N750		DTN-10	C10Q10	CNO-410	10TCC-Q10	
C24	220 10%		DD-220	CCD-221	GP322	10TCC-Q10	
C25	20000		DD-220	CCD-203	B-120	5HK-S20	
C26	.1 200V		DF-104	CUBEP21	ZMP-3-104	5HK-S10	
C27	10000		DD-102	CCD-102	B-210	5HK-D10	
C28	1000		DD-102	CCD-102	B-210	5HK-D10	
C29	1000		DD-102	CCD-102	B-210	5HK-D10	
C30	1000		DD-102	CCD-102	B-210	5HK-D10	
C31	10000		DD-102	CCD-102	B-210	5HK-D10	
C32	2000		DD-102	CCD-102	B-210	5HK-D10	
C33	10000		DD-102	CCD-102	B-210	5HK-D10	
C34	1000		DD-102	CCD-102	B-210	5HK-D10	
C35	22 NPO		DTN-22	C10Q22C	CNO-422	10TCC-Q22	
C36	1000		DD-102	CCD-102	B-210	5HK-D10	
C37	10000		DD-102	CCD-102	B-210	5HK-D10	
C38	10 NPO 10%		DTN-10	C10Q10	CNO-410	10TCC-Q10	
C39	1000 1600V		DD-300-102	3CCD-102	2HV-210	BL-D10	

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

† Alternate Value.

Note 1. Not used in some versions.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRL	SEC.	U.S. L. PART No.	Merit PART No.	Thorntson PART No.	Triad PART No.	
T2	65000 Tap @ 48000						

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		SIZE	FIELD	V. C. IMP.	
SP1	4" PM	3-40	7890144A (87171)	4A1	

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
		CURRENT (Measured)	U.S. L. PART No.	RCA PART No.	SARKES TAZZIAN PART No.	
M1	.065A		IN1763	40H	SR500	Silicon Type
M2	.065A		IN1763	40H	SR500	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				
			U.S. L. PART No.	LITTELFUSE PART No.	BUSS PART No.	HOLDER	
							FUSE
M3	3AG	3A 250V P/T	(Note 1)	318003 (3A 250V P/T)		GJV 3	

Note 1. Not used in some versions.

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		U.S. L. PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M4	IN34A					AVC Diode (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	U.S. L. PART No.	NOTES
M5	Tuning Cap.		Antenna, Transmit-Receive-Transmit, (Rotary Type) Crystal Selector (Rotary Type)
M6	Switch		
M7	Switch		
M8	Crystal		

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)