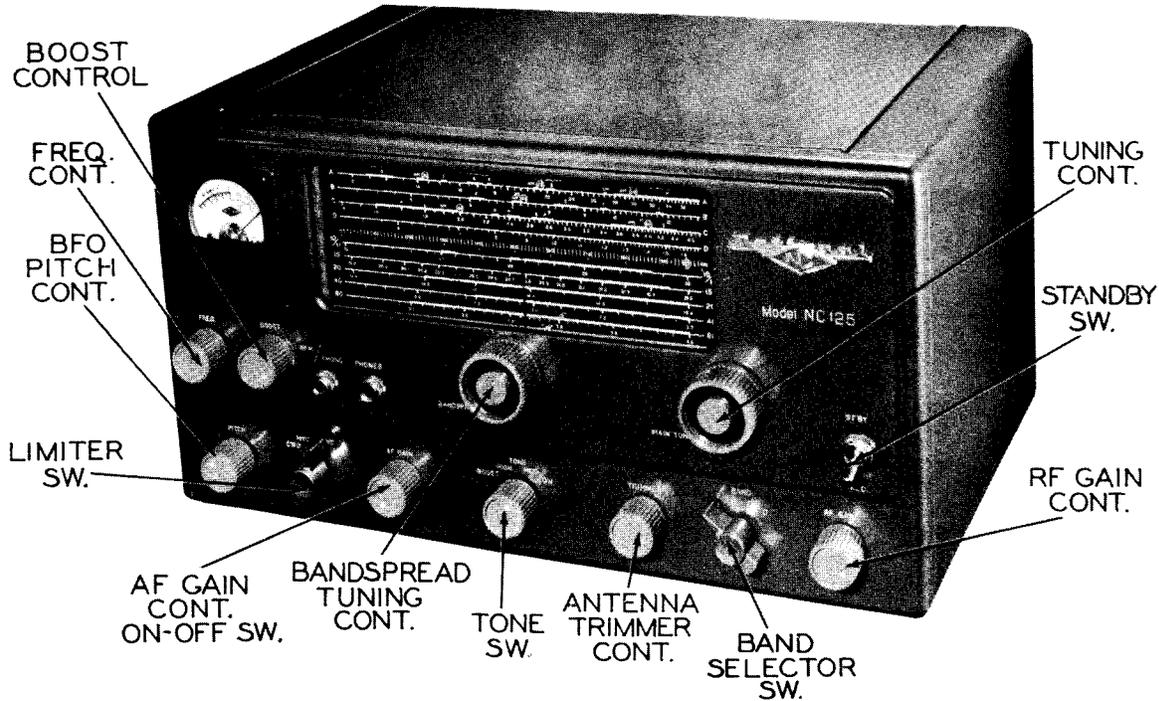




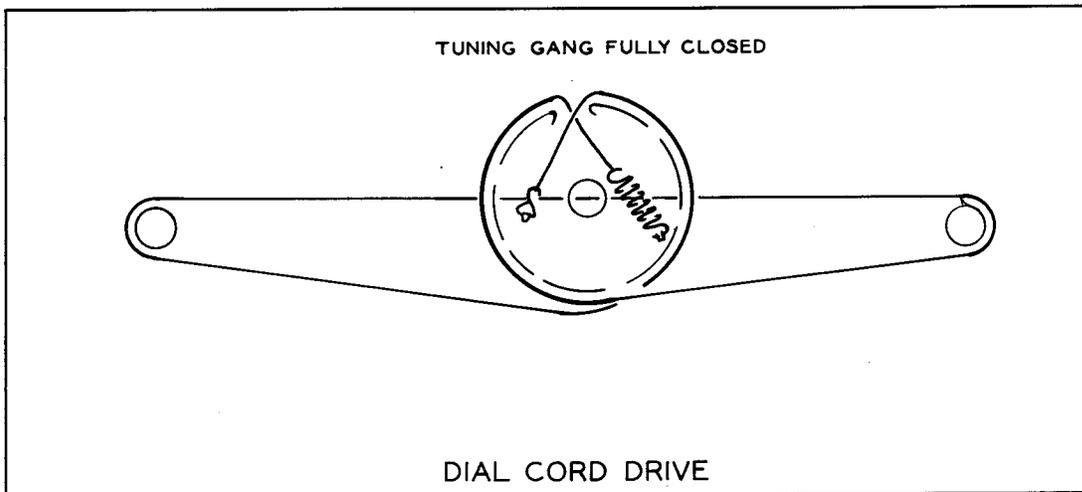
NATIONAL  
MODEL NC-125



NATIONAL  
MODEL NC-125

NATIONAL MODEL NC-125

TRADE NAME	National, Model NC-125
MANUFACTURER	National Co., Inc., Malden, Mass.
TYPE SET	AC Operated Multi-Band Communications Type Superheterodyne Receiver
TUBES (ELEVEN)	Types 6SG7 RF Amp., 6SB7-Y Converter, 6SG7 1st IF Amp., 6SG7 2nd IF Amp., 6H6 Det.-AVC-Noise Limiter, 6SL7GT Phase Inverter, 6SL7GT 1st AF Amp., 6SL7GT 2nd AF-CW Osc., 6V6GT Power Output, 0D3/VR-150 Voltage Regulator, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC
TUNING RANGE	Band A-12-35MC, Band B-4.4-12MC, Band C - 1.55-4.4MC, Band D -.56-1.55MC
RATING	.79 Amp. @ 117 Volts AC

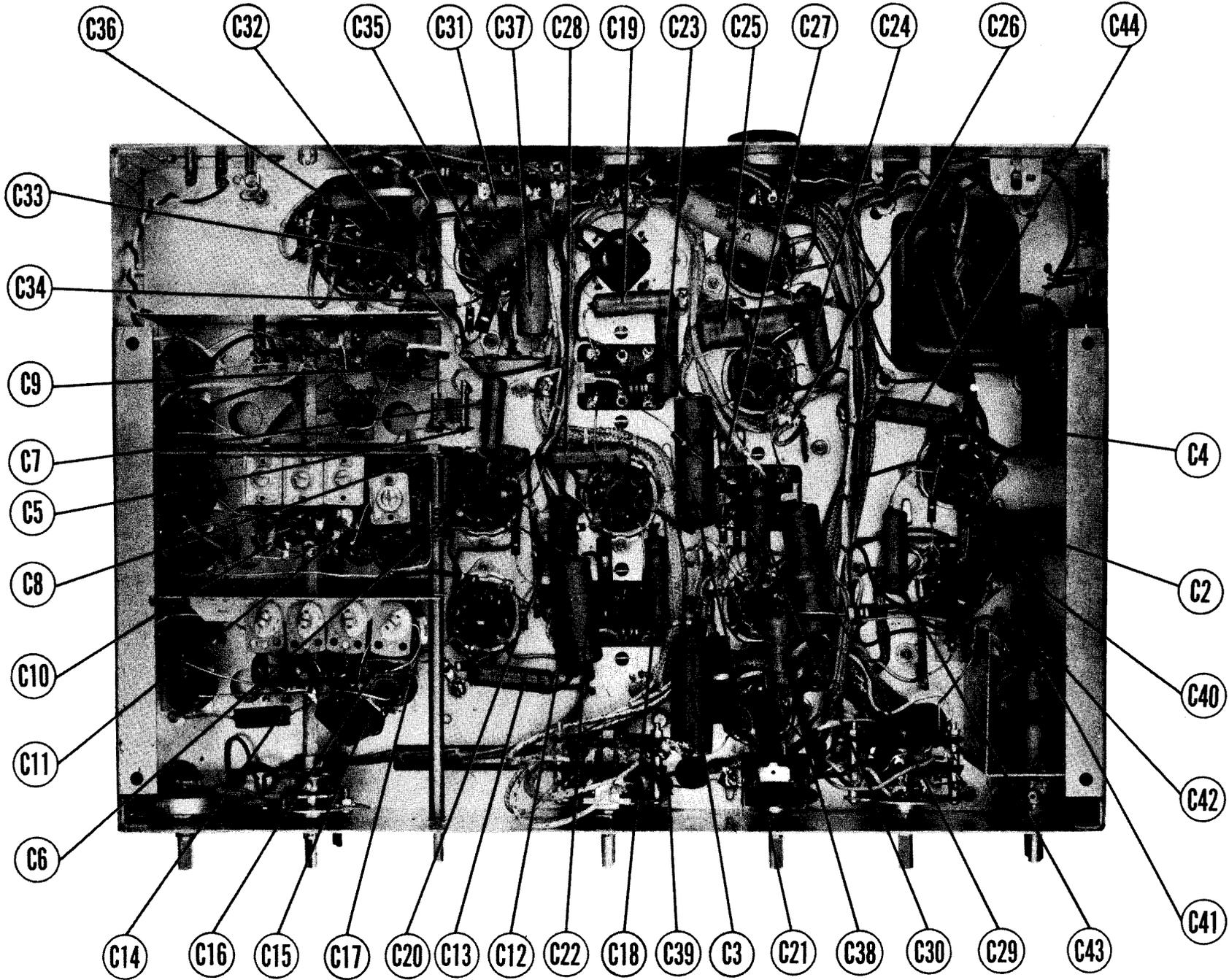


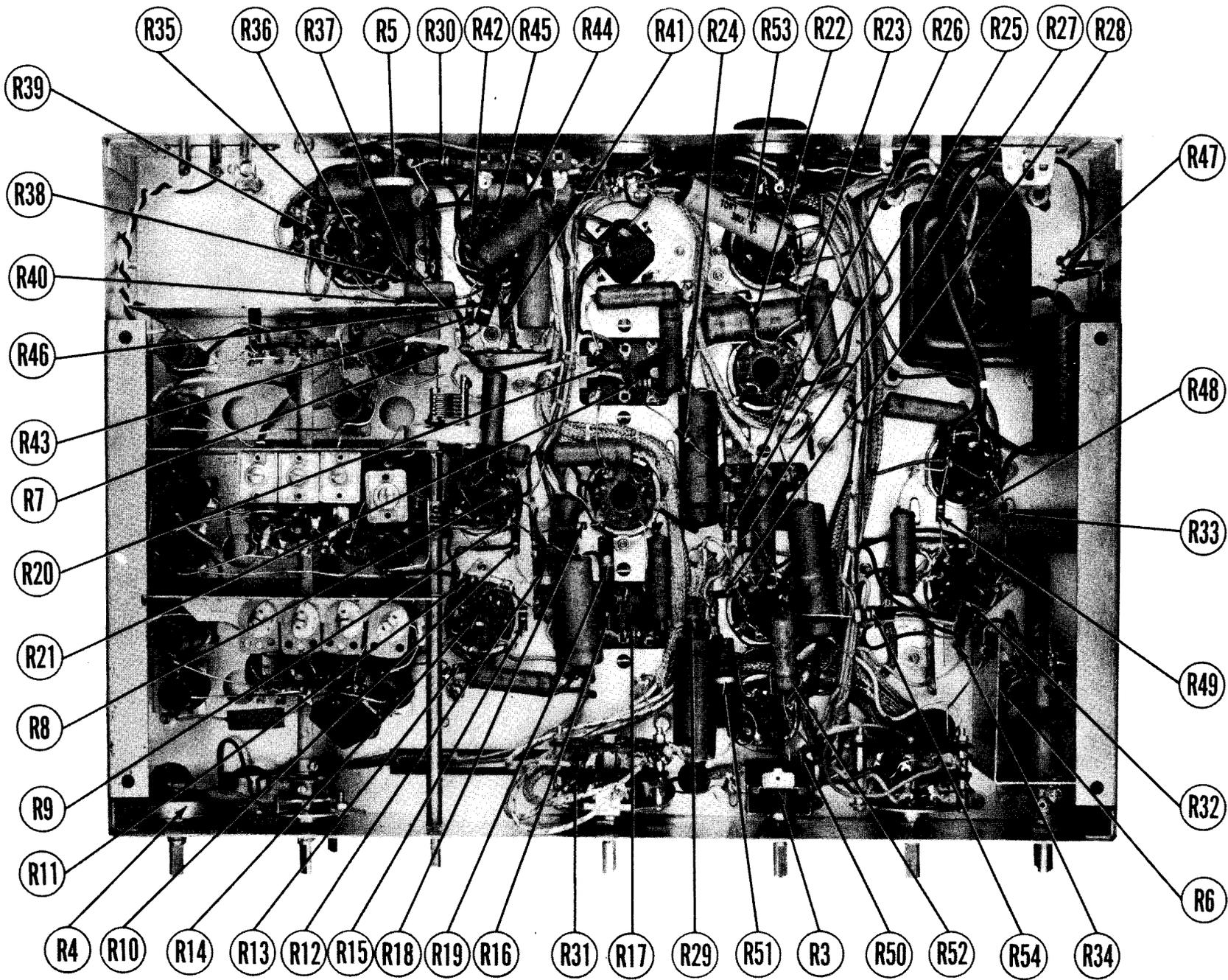
MAIN TUNING -- FOR BANDSPREAD SEE PAGE SIX.

HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

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**NATIONAL  
MODEL NC-125**

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

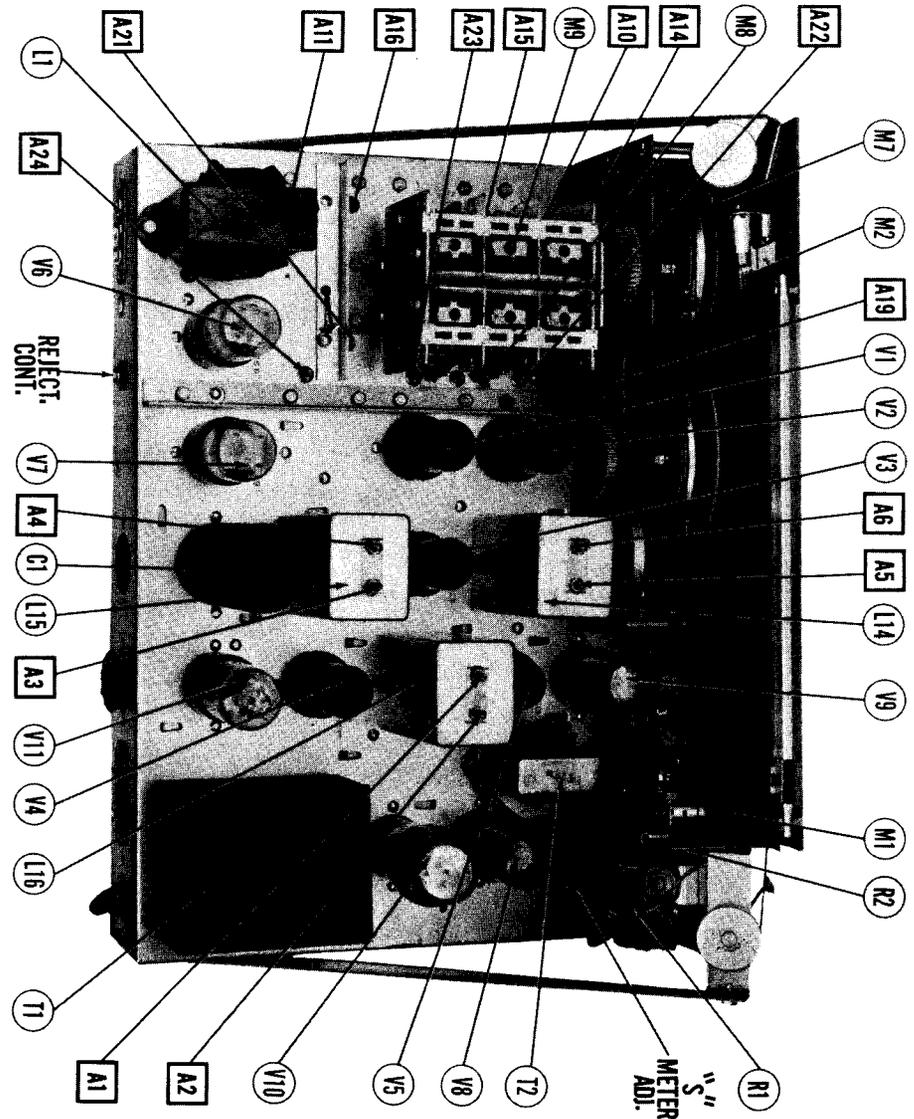
ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		NATIONAL PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6SG7	6SG7	8BK	
V2	Converter	6SB7	6SB7	8R	
V3	1st. IF Amplifier	6SG7	6SG7	8BK	
V4	2nd. IF Amplifier	6SG7	6SG7	8BK	
V5	Detector-AVC-Noise Limiter	6H6	6H6	7Q	
V6	Phase Inverter	6SL7GT	6SL7GT	8BD	
V7	1st. AF Amplifier	6SL7GT	6SL7GT	8BD	
V8	2nd. AF Amplifier	6SL7GT	6SL7GT	8BD	
V9	-CW Oscillator	6SL7GT	6SL7GT	8BD	
V10	Audio Output	6V6GT	6V6GT	7AC	
V10	Voltage Regulator	0D3/VR150	0D3/VR150	4AJ	
V11	Rectifier	5Y3GT	5Y3GT	5T	

### CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA							IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	NATIONAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.		
C1A	40	450	K945-1	AF88J					TVL-2746	Filter
B	40	450								
C2	10	50	E338-9	PRS50/10					TVA-1304	AF Amp. Cathode
C3	25	50	E338-4	PRS50/25					TVA-1306	Audio Output Cathode
C4	20	450	E338-3	PRS450/20					TVA-1709	Decoupling
C5	100	500	J665-32	S1100	D6-101		5W5T1	GPIK-101	19C11	RF Coupling
C6	.01	400	D827-5	P488-01	D6-103		GP2-333-103	4TM-S1	4TM-S1	RF Amp. Screen
C7	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	RF Amp. Cathode
C8	1000	500	J665-71	I488-001	D6-102		1W5D1	GP2L-102	1FM-21	RF Amp. Plate
C9	10000	500		I487-01	D6-103		ID3S1	GP2-333-103	1FM-11	AVC Filter
C10	15		D825D-405		TCZ-15			NPOK-150		RF Coupling A Band
C11	5		D825D-401	S15NP0				NPOK-050		RF Coupling B Band
C12	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	Conv. Plate Dec.
C13	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	Osc. Plate Dec.
C14	4300	500	J666-37							Fixed Padder
C15	1300	500	J666-18							Fixed Padder
C16	510	500	H500-5							Fixed Padder
C17	100	500	J665-32	I488-0001	D6-101		5W5T1	GPIK-101	1FM-31	Osc. Grid Cap.
C18	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	AVC Filter
C19	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	1st. IF Plate Dec.
C20	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	1st. IF Screen
C21	.1	800	D827-12	P688-1	DF-104		PTE6P1	GP2-333-103	6TM-P1	1st. IF Cathode
C22	.1	400	D827-12	P488-1	DF-104		PTE4P1		4TM-P1	Decoupling
C23	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	AVC Filter
C24	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	2nd. IF Screen
C25	.1	400	D827-12	P488-1	DF-104		PTE4P1		4TM-P1	2nd. IF Cathode
C26	10		D825D-402	S10N750	TCN-10			N750K-100		IF Coupling
C27	100	500	J665-32	I488-0001	D6-101		5W5T1	GPIK-101	1FM-31	RF Bypass
C28	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	AVC Filter
C29	.1	600	D827-12	P688-1	D6-104		PTE6P1		6TM-P1	RF Bypass
C30	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C31	.05	400	D827-1	P488-05	DF-503		PTE4S5		4TM-S5	Audio Coupling
C32	.05	400	D827-1	P488-05	DF-503		PTE4S5		4TM-S5	Audio Coupling
C33	1000	500	J666-14	I488-001	D6-102		1W5D1	GP2L-102	1FM-21	Audio Coupling
C34	1000	500	J666-14	I488-001	D6-102		1W5D1	GP2L-102	1FM-21	Audio Coupling
C35	.05	400	D827-1	P488-05	DF-503		PTE4S5		4TM-S5	Audio Coupling
C36	.05	400	D827-1	P488-05	DF-503		PTE4S5		4TM-S5	Audio Coupling
C37	.05	400	D827-1	P488-05	DF-503		PTE4S5		4TM-S5	Audio Coupling
C38	.001	600	D827-32	P688-001	D6-102		PTE6D1	GP2L-102	6TM-D1	Audio Coupling
C39	.02	600	D827-44	P688-02	DF-203		PTE6S2		6TM-S2	Tone Comp.
C40	270	500	J665-47	S1270	D6-271		5R5T25	GP2K-271	19C31	CW Osc. Grid
C41	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	CW Osc. Feedback
C42	220	500	H500-21	S1220	D6-221		5R5T2	GP2K-221	19C13	Fixed Trimmer
C43	.01	400	D827-5	P488-01	D6-103		PTE4S1	GP2-333-103	4TM-S1	Decoupling
C44	.01	400	D827-5	P688-01	D6-103		PTE6S1	GP2-333-103	6TM-S1	Line Filter

# CHASSIS-TOP VIEW



## PARTS LIST AND DESCRIPTIONS (Continued)

### CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	NATIONAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	2.5Meg	1/2	M879-2	Q13-140 M13-140	AM-60-Z	B-60	Frequency Control - Dual
B	2.5Meg						
R2A	500KΩ	1/2	J533-9	Q13-133	FS-3	Not res.	Boost Control
B	Shaft						
R3A	500KΩ	1/2	K347-1	Q13-133	AM-60-Z	B-60-S	Attach to R2A per instructions
B	Shaft						
C	Switch	1	J533-7	Q13-133	FS-3	Not req.	AF Gain Control
R4	10KΩ						
R5A	500KΩ	1	J533-7	Q13-133	AM-60-Z	AN-60	Attach to R3A per instructions
B	Shaft						
R6	1000Ω	1	D831-2	WK-1000	43-1000	AK-1	RF Gain Control - Wire Wound

φ Fashion shaft to duplicate original.

## PARTS LIST AND DESCRIPTIONS (Continued)

### TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117 VAC ② 79A	600VAC .112ADC	5VAC ② 2A	6.3VAC ② 3A	K316-2		P-2952	PH-120 ②

② Drill new mounting holes.

### TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5.5KΩ	3.2Ω	610Ω	.7Ω	K313-1	A-3849 ①	A-3019 ①	R0-9 ①	① Drill one new mounting hole.

## RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	NATIONAL PART No.	IRC PART No.	
R7	1Meg	1	J569-61	BTS-1Meg	AVC Network
R8	150KΩ		J569-51	BTS-150K	RF Amp. Grid
R9	220Ω	1	J569-17	BTS-220	RF Amp. Cathode
R10	1000Ω		J569-25	BTS-1000	RF Amp. Screen
R11	4700Ω	1	J569-33	BTS-4700	RF Amp. Plate Decoupling
R12	150KΩ		J571-51	BTA-150K	Voltage Divider
R13	33Ω	1	J569-7		Parasitic Suppressor
R14	22KΩ		J569-41	BTS-22K	Osc. Grid
R15	3900Ω	1	J569-32	BTS-3900	Osc. Anode
R16	1000Ω		J569-25	BTS-1000	Conv. Plate Decoupling
R17	470KΩ	1	J569-57	BTS-470K	AVC Network
R18	1200Ω		J571-51	BTS-1200	1st. IF Amp. Cathode - See Note
R19	150KΩ	1	J569-25	BTS-1000	1st. IF Amp. Screen
R20	1000Ω		J569-57	BTS-470K	1st. IF Amp. Plate Decoupling
R21	470KΩ	1	J569-17	BTS-220	AVC Network
R22	220Ω		J569-29	BTS-2200	2nd. IF Amp. Cathode
R23	2200Ω	1	J569-65	BTS-2.2Meg	2nd. IF Amp. Screen
R24	2.2Meg		J569-49	BTS-100K	AVC Network
R25	100KΩ	1	J569-61	BTS-1Meg	AVC Network
R26	1Meg		J569-61	BTS-1Meg	Noise Limiter Network
R27	1Meg	1	J569-61	BTS-1Meg	Noise Limiter Network
R28	33KΩ		J569-43	BTS-33K	Noise Limiter Load
R29	180KΩ	1	J569-52	BTS-180K	Noise Limiter Load
R30	330KΩ		J569-55	BTS-330K	Tone Compensation
R31	33KΩ	1	J569-43	BTS-33K	Tone Compensation
R32	22KΩ		J569-41	BTS-22K	CW Osc. Grid
R33	10KΩ	1	J569-37	BTS-10K	CW Osc. Plate
R34	330Ω		J569-19	BTS-330	Series "S" Meter
R35	1Meg	1	J569-61	BTS-1Meg	Phase Inv. Grid
R36	1800Ω		J569-1800	BTS-1800	Phase Inv. Cathode
R37	1800Ω	1	J569-37	BTS-10K	Phase Inv. Plate
R38	10KΩ		J569-3900	BTS-3900	Phase Inv. Grid
R39	3900Ω	1	J569-37	BTS-10K	Phase Inv. Cathode
R40	3900Ω		J569-37	BTS-3900	Phase Inv. Plate
R41	10KΩ	1	J569-34	BTS-5600	1st. AF Amp. Grid
R42	5600Ω		J569-41	BTS-22K	1st. AF Amp. Cathode
R43	22KΩ	1	J569-28	BTS-1800	1st. AF Amp. Plate
R44	1800Ω		J569-32	BTS-3900	1st. AF Amp. Cathode
R45	3900Ω	1	J569-41	BTA-22K	1st. AF Amp. Cathode
R46	22KΩ		J569-41	BTS-22K	1st. AF Amp. Plate
R47	22KΩ	1	J569-41	BTS-22K	Decoupling
R48	2700Ω		J569-30	BTS-2700	2nd. AF Amp. Cathode
R49	100KΩ	1	J569-49	BTS-100K	2nd. AF Amp. Plate
R50	470KΩ		J569-57	BTS-470K	Output Grid
R51	330Ω	2	J572-19	BTB-330	Output Cathode
R52	47KΩ		J569-45	BTS-47K	Output Transformer Shunt
R53	3900Ω	10	E959-12	1 3/4A-400	Filter - Wire Wound
R54	4.3Ω		K098-48	BW-1-4.3	Diode Filament - Wire Wound

Note The value of this resistor may vary from 330Ω to 2200Ω.

\* Must be paired within 2% of each other when replacing.

† Must be paired within 2% of each other when replacing.

## FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (D. CURRENT 1000 mA)	NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.112A	260Ω	8 Henries	K317-1	C-2303	C-2995 ①	R-8120 ①	① Drill one new mounting hole.

## R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	NATIONAL PART No.	MEISSNER PART No.	
L2	Ant. Coil	.1Ω	.1Ω	SA-4863		Band "A"
L3	Ant. Coil	.9Ω	.1Ω	SA-4867		Band "B"
L4	Ant. Coil	1.2Ω	1.6Ω	SA-4665		Band "C"
L5	Ant. Coil	2.8Ω	4.5Ω	SA-4666		Band "D"
L6	RF Coil	2.5Ω	.1Ω	SA-4870		Band "A"
L7	RF Coil	5Ω	.1Ω	SA-4872		Band "B"
L8	RF Coil	28Ω	1.6Ω	SA-4873		Band "C"
L9	RF Coil	.5Ω	4.2Ω	SA-4874		Band "D"
L10	Osc. Coil	.18Ω		SA-4866		Band "A" Tapp @ .1Ω
L11	Osc. Coil	.19Ω		SA-4868		Band "B" Tapp @ .1Ω
L12	Osc. Coil	.6Ω		SA-4658		Band "C" Tapp @ .3Ω
L13	Osc. Coil	2.3Ω		SA-4871		Band "D" Tapp @ .1Ω
L14	1st. IF	2.5Ω	1.3Ω	SA-4875		
L15	2nd. IF	2.2Ω	2.4Ω	SA-4533		
L16	3rd. IF	2.2Ω	2.4Ω	SA-4533		
L18	Pitch Coil	2Ω				Tapped @ .1Ω

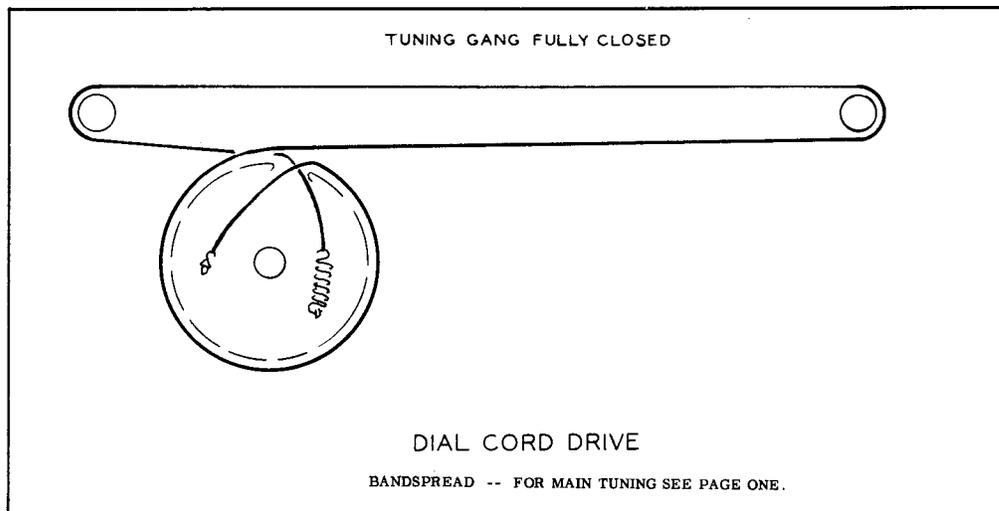
## DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					NATIONAL PART No.		
M1	Bayonet	6-8	.15	Brown	F136-11		Type #47
M2	Bayonet	6-8	.15	Brown	F136-11		Type #47
M3	Bayonet	6-8	.15	Brown	F136-11		Type #47

## MISCELLANEOUS

ITEM No.	PART NAME	NATIONAL PART No.	NOTES
M4	Switch	K752-1	Band
M5	Switch	SA:7621	Tone
M6	Switch	SA:7622	AVC-ANL
M7	Switch	E230-2	Stand By
M8	3 Gang Var. Cap.	SA:8102	Main
M9	3 Gang Var. Cap.		Bandsread
M10	"S" Meter	J984-3	

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
To set dial pointer, turn both tuning gangs fully closed and set both pointers to zero on the bandsread logging scales. Turn the bandsread pointer to "set" ( minimum cap. ). Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. Direct	High side to stator on center section of tuning gang. Low side to chassis.	455KC (400 % Mod. )	A	Tuning gang fully open	Across voice coil	A1, A2, A3, A4, A5, A6	Adjust for maximum output.
2. "	"	455KC (Unmod. )	"	"	"	A7	Turn the limiter Sw. to CW. Remove CW pitch knob. Loosen set screw securing pitch control shaft to coil slug. Turn control shaft so flattened portion is straight up. Insert small screw driver in hollow shaft and adjust A7 for zero beat. Tighten set screw and replace pitch control knob.
3. 300Ω carbon resistor	Across A-A terminals with 300Ω in series with high side. (disconnect shorting link.)	34MC (400 % Mod.)	"	34MC	"	A8, A9	Adjust for maximum output.
4. "	"	12MC	"	12MC	"	A10, L6, A 11	Adjust A10 and A 11 for maximum output. Adjust coil turn inside L6 form for maximum output. Repeat steps 3 and 4 until no further improvement can be made.
5. "	"	12MC	B	12MC	"	A12, A13	Adjust for maximum output.
6. "	"	4.4MC	"	4.4MC	"	A14, A15, A16	Repeat steps 5 and 6 until no further improvement can be made.
7. "	"	4.4MC	C	4.4MC	"	A17, A18	Adjust for maximum output.
8. "	"	1.6MC	"	1.6MC	"	A19, A20, A21	Repeat steps 7 and 8 until no further improvement can be made.
9. "	"	.6MC	D	.62MC	"	A22, A23, A24	Turn bandsread pointer to zero. Adjust for maximum output.
10. "	"	1.5MC	"	1.5MC	"	A25, A26	Turn band spread pointer to "set". Adjust for maximum output. Check dial calibration at .6MC with bandsread dial at zero. If necessary repeat steps 9 and 10 until no further improvement can be made.



ALL MEASUREMENTS TAKEN IN "D" BAND POSITION, AND ALL CONTROLS IN COUNTER-CLOCKWISE POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	0V	0V	23VDC	-.1VDC	23VDC	150VDC	6.3VAC	290VDC
V 2	65B7-Y	0V	0V	290VDC	105VDC	§-12VDC	0V	6.3VAC	0V
V 3	6SG7	0V	0V	24VDC	0V	24VDC	250VDC	6.3VAC	290VDC
V 4	6SG7	0V	0V	23VDC	0V	23VDC	150VDC	6.3VAC	290VDC
V 5	6H6	0V	0V	-.3VDC	-.3VDC	-.3VDC	105VDC	5.3VAC	0V
V 6	6SL7GT	0V	190VDC	2VDC	1.8VDC	185VDC	4VDC	6.3VAC	0V
V 7	6SL7GT	3.8VDC	170VDC	5.6VDC	3.8VDC	165VDC	5.8VDC	6.3VAC	0V
V 8	6SL7GT	0V	105VDC	1.2VDC	-2VDC	140VDC	0V	6.3VAC	0V
V 9	6V6GT	0V	6.3VAC	280VDC	290VDC	0V	0V	0V	16.5VDC
V 10	VR-150	150VDC	0V	0V	0V	150VDC	0V	0V	0V
V 11	5Y3GT	150VDC	310VDC	0V	350VAC	0V	350VAC	0V	310VDC

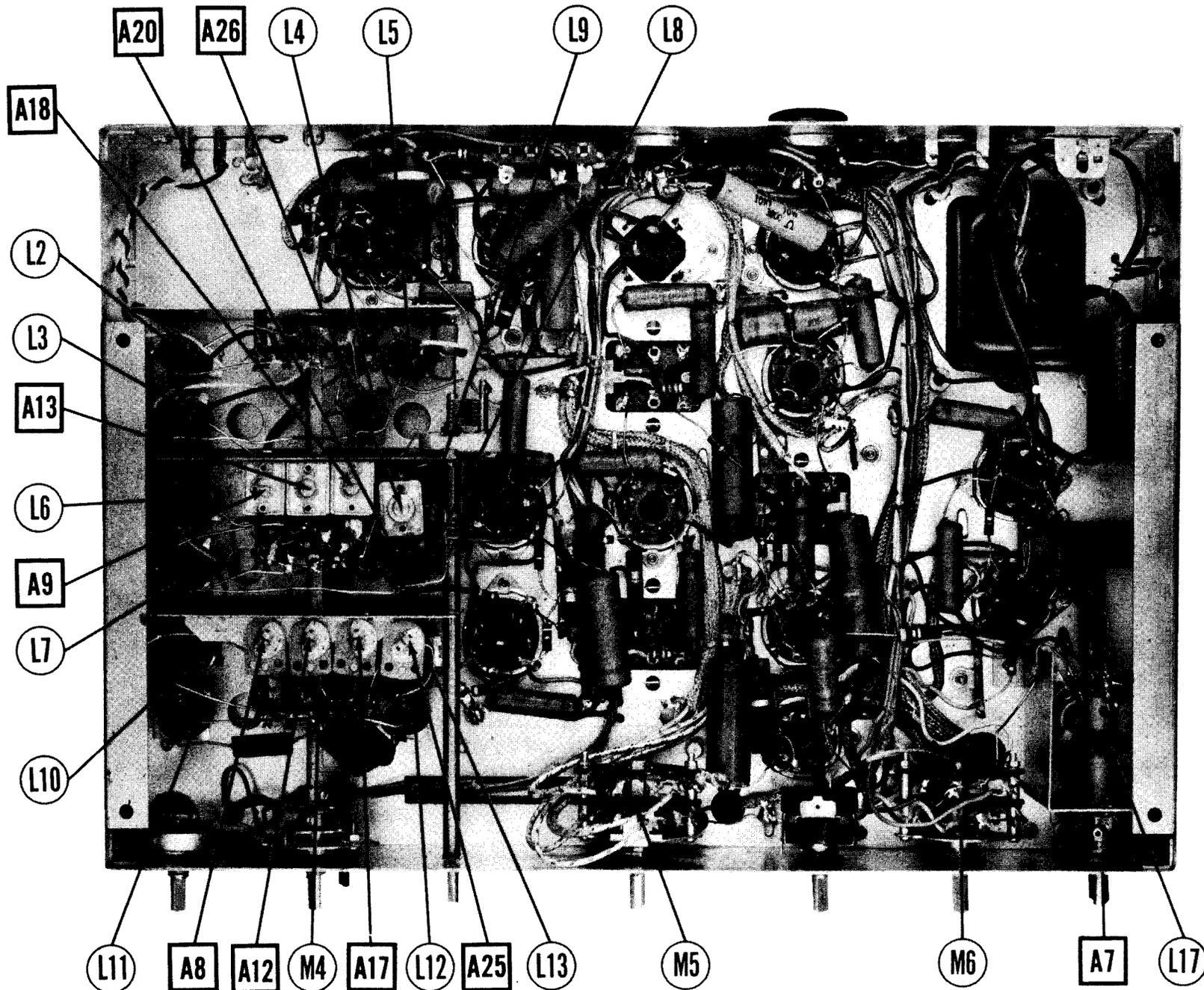
§ TAKEN WITH VACUUM TUBE VOLTMETER

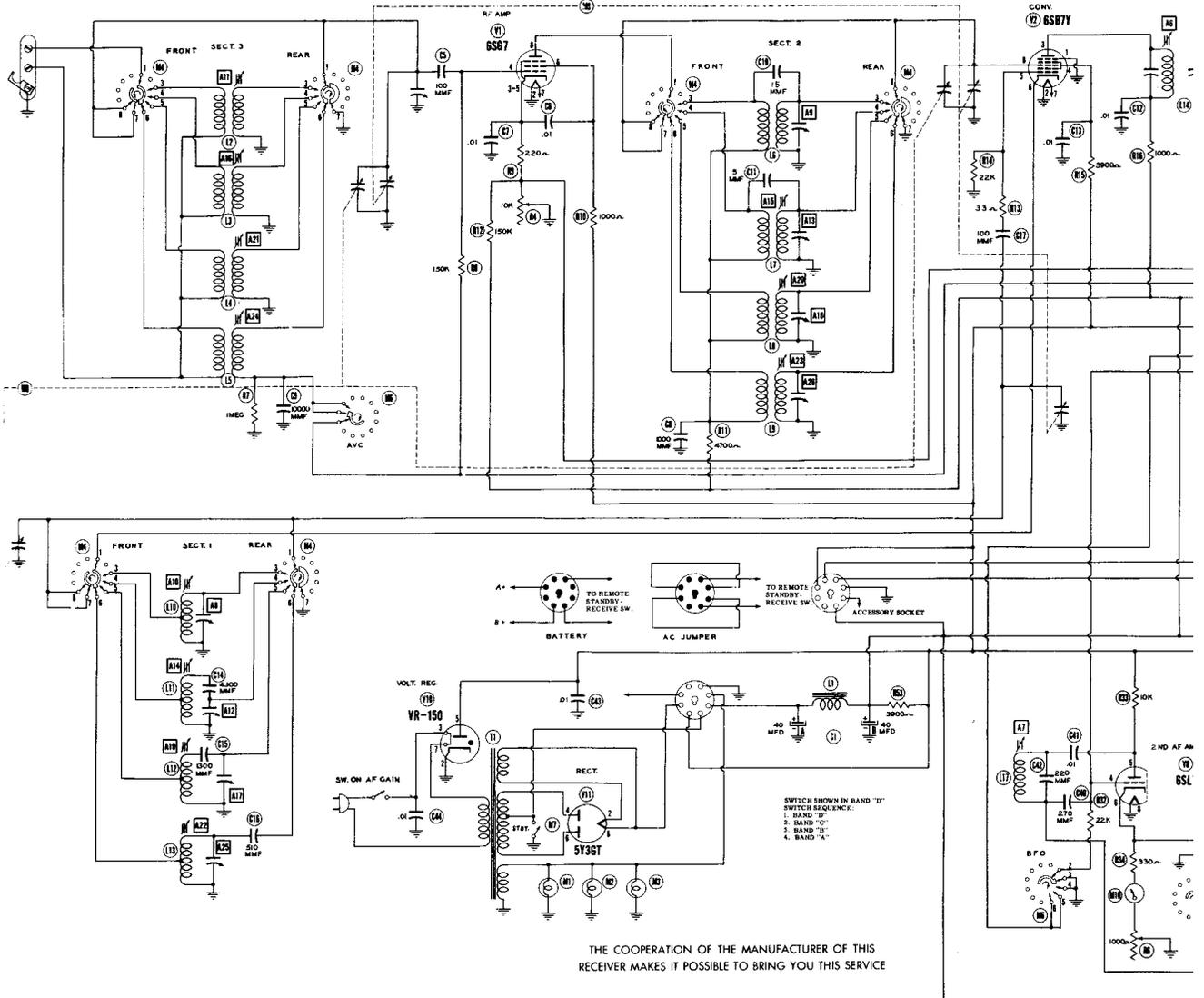
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	0Ω	0Ω	10KΩ	1Meg	10KΩ	†5.5KΩ	.1Ω	†5KΩ
V 2	65B7-Y	0Ω	0Ω	†1.4KΩ	†8.2KΩ	22KΩ	.2Ω	.1Ω	5Ω
V 3	6SG7	0Ω	0Ω	10KΩ	1.3Meg	10KΩ	150KΩ	.1Ω	†1.3KΩ
V 4	6SG7	0Ω	0Ω	10KΩ	1.3Meg	10KΩ	6.5KΩ	.1Ω	†250Ω
V 5	6H6	0Ω	0Ω	200KΩ	190KΩ	270KΩ	†100KΩ	2Ω	0Ω
V 6	6SL7GT	1Meg	†22KΩ	1.8KΩ	11KΩ	†28KΩ	3.9KΩ	.1Ω	0Ω
V 7	6SL7GT	4KΩ	†46KΩ	6KΩ	15KΩ	†46KΩ	5.5KΩ	.1Ω	0Ω
V 8	6SL7GT	0Ω	†100KΩ	2.7KΩ	22KΩ	†13KΩ	0Ω	.1Ω	0Ω
V 9	6V6GT	0Ω	.1Ω	†1KΩ	†280Ω	470KΩ	Inf.	0Ω	330Ω
V 10	VR-150	†4.3KΩ	0Ω	Inf.	Inf.	†4.3KΩ	Inf.	Inf.	Inf.
V 11	5Y3GT	35KΩ	35KΩ	Inf.	75Ω	Inf.	80Ω	Inf.	35KΩ

† MEASURED FROM PIN 8 OF V11

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common negative.
- Line voltage maintained at 117 volts for voltage readings.
- Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
- Volume control at maximum, no signal applied for voltage measurements.





THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

