



RCA VICTOR

MODEL 50



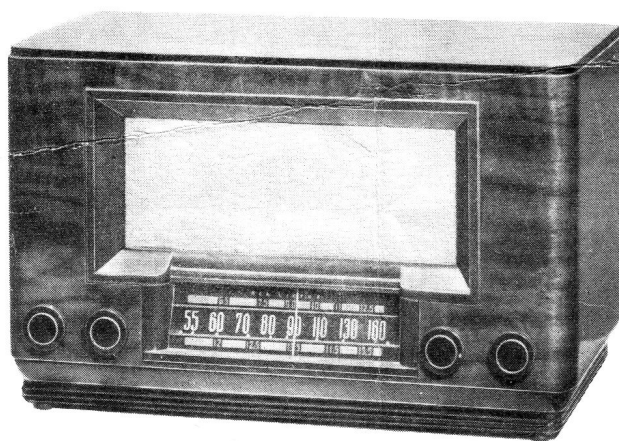
FIVE-TUBE, THREE-BAND, A-C, SUPERHETERODYNE RECEIVER

TECHNICAL INFORMATION AND SERVICE DATA

—1947 No. 9—

GENERAL SERVICE DIVISION

RCA VICTOR COMPANY LTD.



Electrical and Mechanical Specifications

FREQUENCY RANGE

Standard Broadcast S.B.	540—1600 k.c.
Short Wave 49—31 M.	5.7—13.0 m.c.
25—19 M.	11.6—16.0 m.c.
Intermediate Frequency	455 k.c.
Tuning drive ratio	12 to 1

RADIOTRON COMPLEMENT

(1) Type 6BE6	Converter
(2) Type 6BA6	I.F. Amplifier
(3) Type 6AT6	Det. A.V.C. & 1st A.F.
(4) Type 6K6GT/G	Power Output
(5) Type 5Y3GT/G	Rectifier

POWER OUTPUT

Undistorted	2 Watts
Maximum	3 Watts

LOUDSPEAKER

Type	4 x 6 inch elliptical P.M.
Voice coil impedance	3.4 ohms at 400 cycles

POWER SUPPLY RATINGS

Rating A	105—125 volts, 50-60 cycle, 50 watts
Rating B	105—125 volts, 25-60 cycle, 55 watts

CABINET DIMENSIONS (Inches)

Height	9 $\frac{7}{8}$ "
Width	17"
Depth	8 $\frac{1}{4}$ "

General Description

The Model 50 is a five tube, three band, table type superheterodyne receiver, designed to cover the broadcast band and two short wave bands. Features of the design include: Built-in loop antenna for broadcast band reception; Powdered iron core I.F. transformers, R.F. and

oscillator coils; Automatic volume control; Two position tone control; Edge lighted straight line dial; Phono input socket with PHONO position on range switch; 4 x 6 inch dustproof elliptical P.M. loudspeaker.



Fig. 1 --- Schematic Diagram

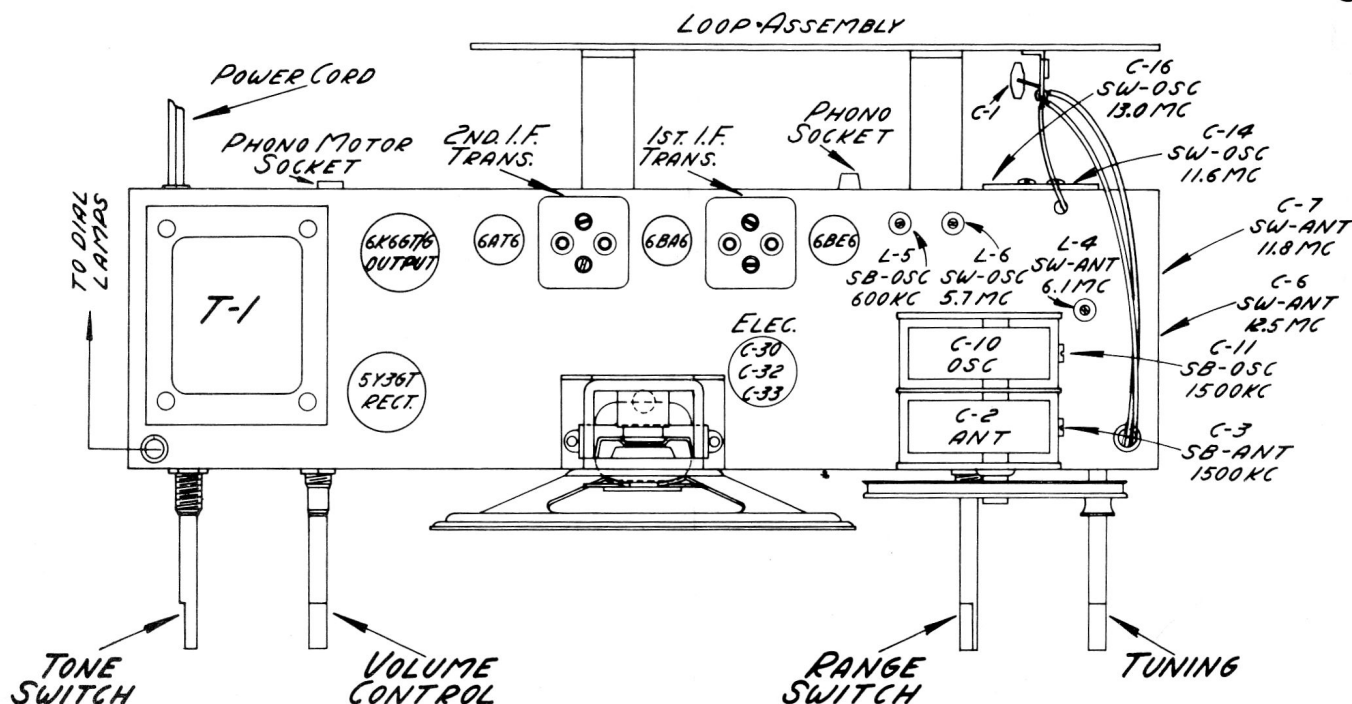


Fig. 2—Chassis Layout and Alignment Adjustments

ALIGNMENT PROCEDURE

Before aligning set, completely mesh the gang and set the dial pointer on the calibration point at the extreme left hand end of the dial.

When making a complete alignment follow in proper sequence the tabulated form below.

If only a portion of the circuit is to be aligned select the portion required, followed by the remaining steps in the chart.

For "S.B.", 49-31M and 25-19M band alignment use output meter across voice coil keeping Test Oscillator output as low as possible to prevent AVC action.

Cathode-ray oscilloscope and sweep signal generator alignment of the 455 kc. A.M. I.F. transformers is the preferable method. Connect oscilloscope across the volume control. If the required equipment is not available use the method outlined below.

ALIGNMENT CHART

Order of Alignment	TEST OSCILLATOR				Range Selector	Receiver Dial Setting	Circuit To Adjust	Adjustment Symbols	Notes		
	Connect "HI" Side To	Connect "LO" Side To	Dummy Antenna	Frequency Setting							
A.M. I.F. ALIGNMENT	1	6BA6 1st I.F. Grid	Ground	.01 mfd.	455 K.C. 30% mod. 400 Cy. A.M.	S.B.	High freq. end of dial	2nd I.F. Trans.	C22, C23	Adjust for max. A.C. voltage across voice coil.	
	2	6BE6 Converter Grid	Same	Same	Same	Same	Same	1st I.F. Trans.	C20, C21	Same	
S.B. ALIGNMENT	3	"A" on Ant. Ter. Board	Ground	200 m.m.f.	1500 K.C. 30% mod. 400 Cy. A.M.	S.B.	1500 K.C. on dial	Oscillator	C11	Adjust for max. A.C. voltage across voice coil	
	4	Same	Same	Same	Same	Same	Same	Ant.	C3	Same	
	5	Same	Same	Same	600 K.C. 30% mod. 400 Cy. A.M.	Same	600 K.C. on dial	Oscillator	L5	*Same	
	* NOTE:- Rock Oscillator in to loop at 600 K.C.										
	6	Repeat steps 3 to 5 for maximum output									
49-31M ALIGNMENT	7	"A" on Ant. Ter. Board	Ground	300 ohms	5.7 Mc. 30% mod. 400 Cy. A.M.	49-31M	Low freq. end of dial	Oscillator	L6	Adjust for max. A.C. voltage across voice coil.	
	8	Same	Same	Same	13.0 Mc. 30% mod. 400 Cy. A.M.	Same	High freq. end of dial	Oscillator	C16	Same	
	Repeat steps 7 and 8 for maximum output.										
	9	Same	S	Same	6.1 Mc. 30% mod. 400 Cy. A.M.	Same	Tune in test osc. signal	Ant.	L4	**Same	
	**NOTE:- Rock antenna circuit in to oscillator. Do not readjust osc. circuit.										
	10	Same	Same	Same	11.8 Mc. 30% mod. 400 Cy. A.M.	Same	Tune in test osc. signal	Ant.	C7	**Same	
25-19M ALIGNMENT	11	Repeat steps 9 and 10 for maximum output.									
	12	"A" on Ant. Ter. Board	Ground	300 ohms	11.6 Mc. 30% mod. 400 Cy. A.M.	25-19M	Low freq. end of dial	Oscillator	C14	Adjust for max. A.C. voltage across voice coil.	
	13	Same	Same	Same	12.5 Mc. 30% mod. 400 Cy. A.M.	Same	Tune in test osc. signal	Antenna	C6	***Same	
	***NOTE:- Rock antenna circuit in to oscillator. Do not readjust osc. circuit.										
14 Check at high freq. end of dial. Receiver should tune to 16 Mc. approx.											

RADIOTRON SOCKET VOLTAGES

Type	Plate	Screen Grid	Control Grid	Oscillator Grid		Cathode	Heater
					Freq.		
6BE6 Converter	250	46		-8.0 -9.5 -2.75 -6 -6	600 K.C. 1500 K.C. 6.1 M.C. 11.8 M.C. 15.8 M.C.		6.3 A.C.
6BA6 I.F.	250	46				1.0	6.3 A.C.
6AT6 Det. & 1st A.F.	62						6.3 A.C.
6K6GT/G Output	300	240				15	6.3 A.C.
5Y3GT/G Rectifier	310 A.C. (Pin 4) 310 A.C. (Pin 6)						5.0 A.C.

"B" voltage measured from rectifier fil. to ground - 310 volts.

Note:—All the above values hold within plus or minus 20% when measured with a RCA Voltohmyst or equivalent, on a line voltage of 117 volts. All voltages are measured to chassis.

REPLACEMENT PARTS FOR MODEL

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK NO.	DESCRIPTION	LIST PRICE	STOCK NO.	DESCRIPTION	LIST PRICE
RECEIVER ASSEMBLIES			S-3939	Shaft-Drive Shaft.....	\$.65
12930	Board-Ant.Terminal Board.....	\$.28	S-3728	Switch-Range Switch (S1,S2).....	2.25
S-3717	Capacitor-Trimmer (C14,C16).....	.58	S-3732	Transformer-1st I.F.(L7,L8,C20,C21)	\$3.00
S-3718	Capacitor-Trimmer (C6,C7).....	.80	S-3733	Transformer-2nd I.F.(L9,L10,C22, C23).....	3.00
39616	Capacitor-33 MMF Mica (C8).....	.56	S-3730	Transformer-Power(60 Cycle)(T1)...	4.50
39622	Capacitor-56 MMF Mica(C4,C5,C17)...	.56	S-3729	Transformer-Power(25 Cycle)(T1)...	7.50
12725	Capacitor-150 MMF Mica(C15).....	.60	S-3727	Volume Control (R9,S3).....	2.31
39646	Capacitor-560 MMF Mica(C27).....	.56	S-3938	Tone Control (S4).....	1.54
14498	Capacitor-680 MMF Mica(C9).....	.70	SPEAKER ASSEMBLIES		
39668	Capacitor-4700 MMF Mica(C13).....	1.05	S-3656	Dust Cap (Pkg.3).....	.18
S-3644	Capacitor-.0025 Mfd. (C28).....	.20	S-3867	Cone-Cone & Voice Coil Assembly (L13).....	1.85
S-3646	Capacitor-.005 Mfd. (C26,C31)....	.42	S-3734	Speaker.....	5.75
S-3653	Capacitor-.050 Mfd. (C12).....	.25	S-4025	Output Transformer (L11,L12).....	2.00
S-3648	Capacitor-.010 Mfd. (C29).....	.20	MISCELLANEOUS ASSEMBLIES		
S-3658	Capacitor-.25 Mfd. (C18).....	.30	S-4232	Cloth-Grille Cloth.....	2.00
S-3731	Condenser-Variable(C2,C10,C3,C11)	4.50	S-4233	Decal.....	.35
S-3720	Capacitor-Electrolytic(C30,C32, C33).....	2.35	32634	Cord-Drive Cord (Universal 50")....	.18
S-3712	Coil-Antenna coil Short Wave (L3,L4).....	1.35	S-3467	Cord-Power Cord.....	.53
S-3715	Coil-Oscillator coil Short Wave (L6).....	1.16	35814	Knob (Range).....	.39
S-3716	Coil-Oscillator coil Standard Broadcast (L5).....	1.16	35776	Knob (Volume-tuning-tone).....	.39
S-3940	Indicator-Station Selector Pointer.....	.35	11766	Lamp-Pilot lamp (Mazda 51).....	.51
S-3900	Loop-Antenna Loop (L1,L2).....	2.00	31418	Spring-Drive Cord Tension (Pkg.2).....	.18
34765	Resistor-100 ohms 1/2 watt(R15, R3).....	.20	S-2824	Socket-AC.....	.46
30499	Resistor-470 ohms 1/2 watt(R13)...	.20			
34768	Resistor-18,000 ohms,2 watt(R7)...	.20			
30492	Resistor-22,000 ohms,1/2 watt (R4,R8).....	.20			
30648	Resistor,470,000 ohms,1/2 watt (R5,R11,R12).....	.20			
30649	Resistor-2.2 Meg. 1/2 watt (R6)...	.20			
30992	Resistor-10 Meg. 1/2 watt (R10)...	.20			
S-3521	Resistor-3000 ohms, 5 watt W.W. (R14).....	.52			
S-4210	Scale-Dial scale.....	.80			
14278	Socket-Phono Socket.....	.23			
36600	Socket-Tube Socket(Less centre Shield).....	.23			
31319	Socket-Tube Socket(Octal).....	.39			
36069	Socket-Tube Socket(Miniature Centre Shield).....	.31			

All parts and prices subject to change or withdrawal without notice.