



# RCA VICTOR



BP5

## MODEL BP5 PORTABLE 6 TUBE SINGLE BAND AC-DC SUPERHETERODYNE

### TECHNICAL INFORMATION AND SERVICE DATA

1948 No. 15

GENERAL SERVICE DIVISION

RCA VICTOR COMPANY LTD.

#### Electrical and Mechanical Specifications

Frequency Range ..... 540-1,600 kc  
Intermediate Frequency ..... 455 kc  
Power Supply Rating  
110 to 125 volts, AC 50 or 60 cycles, or DC..18 watts  
Batteries required ..... 1 Eveready Battery Pack W167

##### Tube Complement

- (1) RCA—1R5 ..... Converter
- (2) RCA—1T4 ..... I. F.-Amplifier
- (3) RCA—1U5 ..... 2nd Det. AVC. & A.F.-Amplifier
- (4) RCA—3V4 ..... Power Output
- (5) RCA—117Z3 ..... Rectifier

##### Current Consumption

Battery Operation..... "A" 60 ma., "B" 10 ma.  
(Average life of Eveready W167 Battery  
100 hrs intermittent service.)

Total Rect. Current (117 volt, 60 cycle)..... 60 ma.

##### Power Output (AC Operation)

Undistorted ..... .15 watt  
Maximum ..... .25 watt  
(Output is slightly lower on battery operation)

Loudspeaker ..... 4 in. P.M. 3.4 ohms at 400 cycles

##### To Remove Carrying Handle

1. Pull off the volume control knob.
2. Insert a small knife blade between one side of a spring clip and the cabinet as shown below, push upward on the slip shield to disengage the locking of the slip shield to the spring clip. Repeat this procedure on the other side of the spring clip. The slip shield may then be removed by pushing it upward thus disengaging it from the spring clip.
3. Repeat step 2 for each slip shield.
4. Remove the four screws (2 on each side) which hold the carrying handle to the case.

Caution: When re-assembling make certain that the slip shield and the spring clip is assembled with their locks in the correct relation to each other.

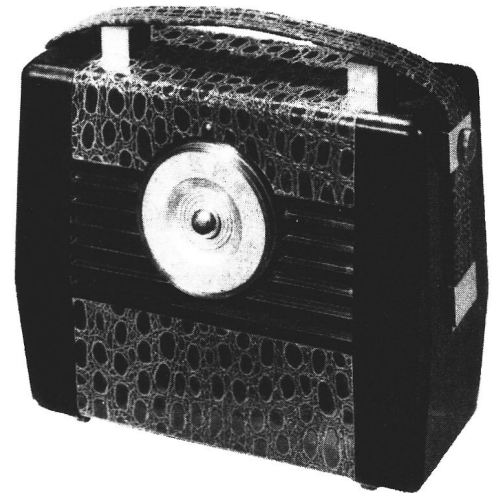
##### To Remove Chassis

1. Pull off the volume control knob.
2. Close tuning condenser (dial at 55) to prevent possible damage to tuning condenser.
3. Remove dial knob by grasping both sides with the tips of the fingers of both hands and pull to the front—or—close the tuning condenser, open the back, reach in and push outward on the hub of the dial knob.

NOTE: When re-assembling press inward on the back of the tuning condenser and on the front of the knob to properly seat the hub on the shaft.

4. Remove the two slip shields on the R.H. side of the cabinet (opposite the volume control) and unfasten the end of the carrying handle using the procedure described under, "To Remove Carrying Handle."
5. Unsolder the loop leads.
6. Remove the two screws holding the bottom edge of the speaker to the cabinet.
7. Remove the plug from the battery.
8. Remove the two screws at the top of the cabinet while supporting the chassis with one hand.

NOTE: When re-installing replace speaker holding screws first but do not securely tighten until the two screws at the top of the cabinet have been tightened.

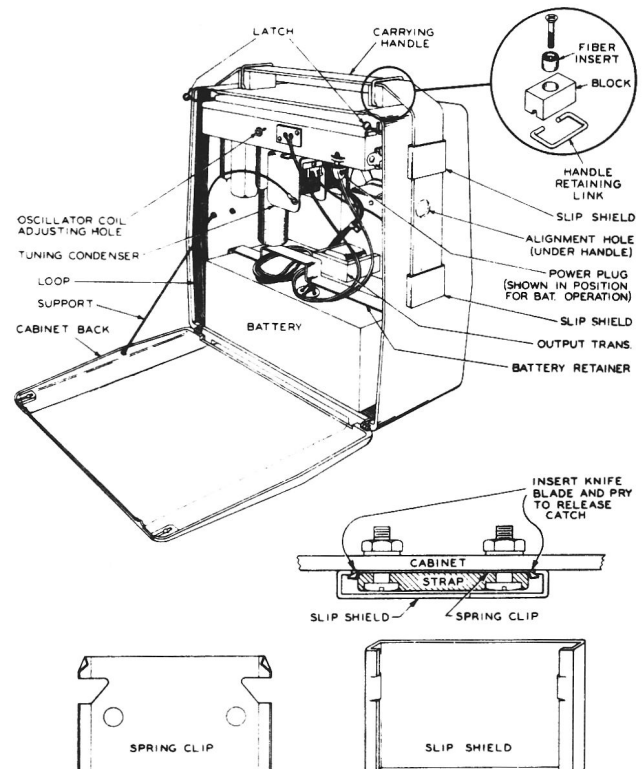


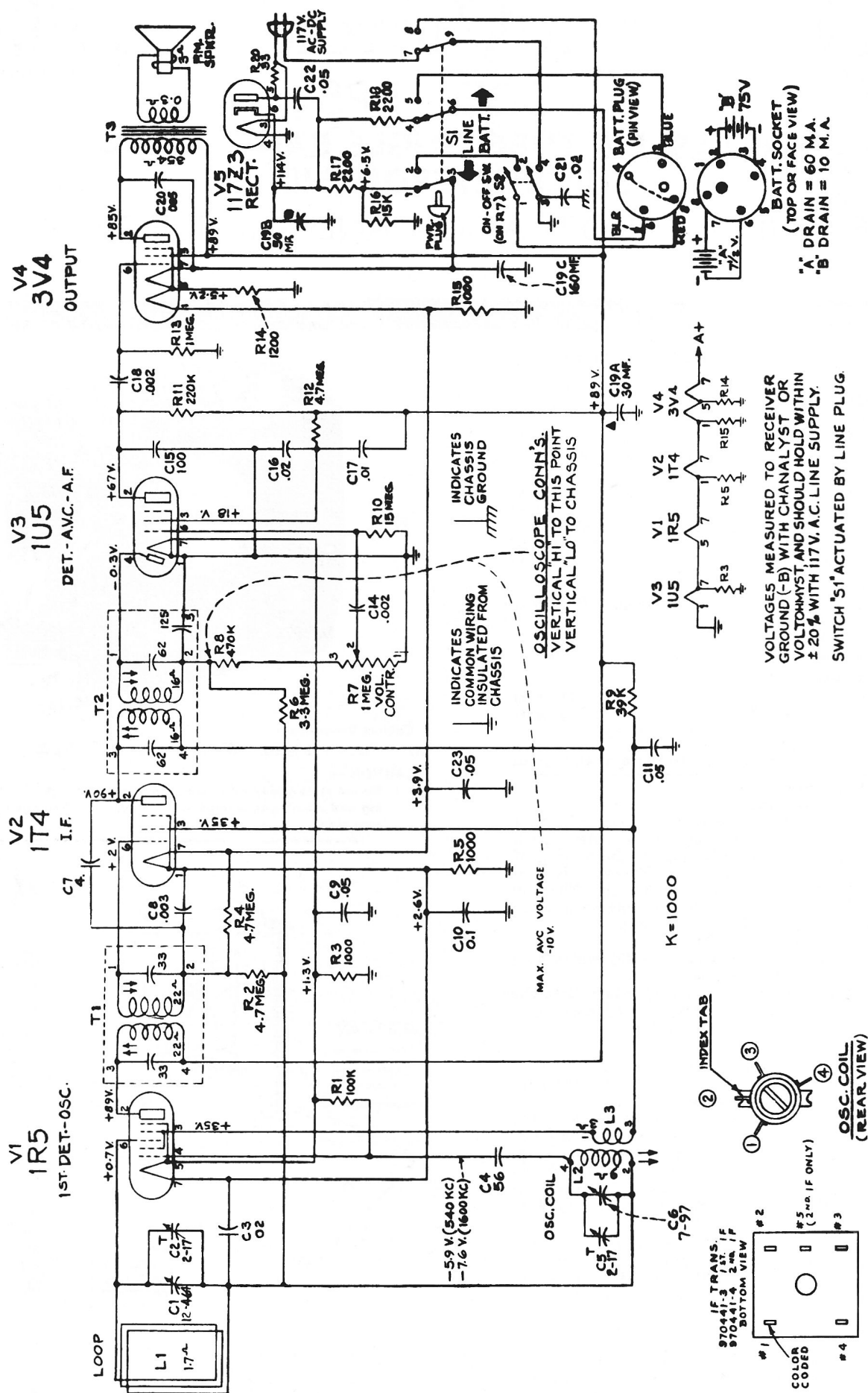
##### Cabinet Dimensions

Height.....9½ in. Width.....11 in. Depth.....5 in.

##### CAUTION.—

Do not remove any tubes from the chassis with the set operating and the plug connected to the power line. Damage to tubes may result.





### SCHEMATIC DIAGRAM

## SERVICE DATA

### AC-DC Operation

This receiver will operate on 105 to 125 volts, AC 25 or 60 cycles, or DC.

A power cord is stored inside the cabinet. To open the cabinet, push upward on the two metal ball catches at the top rear of the cabinet. Remove the plug of the power cord from its socket on the chassis and insert the plug into a convenient electrical outlet. A slot in the bottom of the back cover allows the back to be closed with the cord passing through.

**NOTE:** If reception is not obtained on DC, reverse plug in outlet receptacle. This may also reduce hum on AC operation.

When returning to battery operation replace the plug in the socket provided on the chassis, roll up the

cord and place under the raised portion of the battery holder bracket.

**NOTE:** Make certain that the plug is fully inserted (base of plug touching chassis) to assure proper operation of the Batt-Line switch.

### Insulating Washers:

The tuning condenser is insulated from the chassis with an insulating plate and insulating washers. In servicing make certain that these are in place and properly positioned.

### Cabinet Hinges

The cabinet hinges may be readily removed, they are secured to the cabinet and back by force fit. To remove back from cabinet—pull straight outward on both hinges at the same time.

## Critical Lead Dress

1. Dress output plate bypass C20 capacitor against chassis.
2. Dress output plate lead to output transformer against chassis.
3. Dress audio coupling capacitor C14 (volume control to grid of 1U5) away from chassis, away from audio limiting resistor R8 and to permit adjustment of second I.F. Transformer.
4. Dress all exposed leads away from each other, and away from chassis to prevent short circuits.
5. Dress all filament and ground leads against chassis.
6. Dress filament bypass capacitor C23 and accompanying compensating resistor R15 (volume control to IT4 socket) against volume control.
7. Dress power line cord away from line-battery switch mechanism.
8. Dress all capacitors and wiring away from oscillator coil.
9. Dress 4 mmf. neutralizing capacitor C7 against A.V.C. bypass capacitor C8 (IT4 filament to first I.F. trans.).

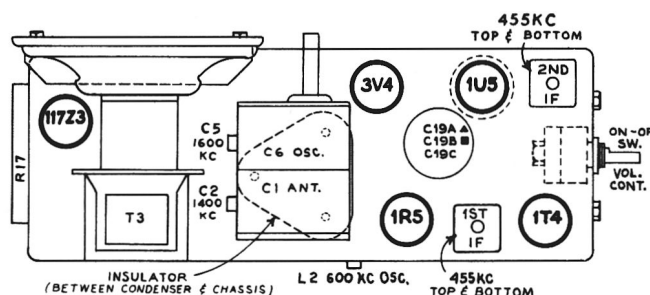
## Alignment Procedure

**Cathode Ray Alignment** is the preferable method. Connections for the oscilloscope are shown on the schematic diagram.

**Output Meter Alignment.**—If this method is used, connect the meter across the voice coil and turn the receiver volume control to maximum.

**Test Oscillator.**—For all alignment operations, connect the low side of the test oscillator to the Common Ground and keep the oscillator output as low as possible to avoid AVC action.

Battery operation of the receiver is preferable during alignment; on AC operation an isolation transformer (117v./117v.) may be necessary for the receiver if the test oscillator is also AC operated.



Tube and Trimmer Locations

Order of Alignment		TEST OSCILLATOR					Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Notes
		Connect "HI" Side To	Connect "LO" Side To	Dummy Antenna	Frequency Setting	Range Selector				
I.F. ALIGNMENT	1	Disconnect loop - remove chassis - remove bottom plate, connect a 10,000 ohm resistor from C1 stator terminal to tuning condenser frame.								
	2	1T4 I.F. Grid	Gnd	.01 mfd	455 Kc		550 Kc	2nd I.F. Trans.	Top & Bottom Cores	Max. output
	3	1R5 Conv. Grid	Gnd	.01 mfd	455 Kc		550 Kc	1st I.F. Trans.	Top & Bottom Cores	Same
	4	Remove the 10,000 ohm resistor. Replace bottom cover and install chassis in cabinet. Re-connect loop.								
S.R. ALIGNMENT	5	SHORT WIRE PLACED NEAR RECEIVER (FOR RADIATED SIGNAL)	Gnd		1600 Kc		1600 Kc	Osc.	C-5	Same
	6		Gnd		1400 Kc		1400 Kc	Ant.	† C-2	Same
	7		Gnd		600 Kc		600 Kc	Osc.	L-2 (Rocking Gang)	Same
	8		Repeat steps No. 5, 6 & 7							

† Adjustable thru hole in side of case which is accessible after unfastening one end of the carrying handle.

# REPLACEMENT PARTS FOR MODEL BP5

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

DESCRIPTION	STOCK NO.	DESCRIPTION	LIST PRICE
<b>RECEIVER ASSEMBLY</b>		<b>SPEAKER ASSEMBLY 4" P.M.</b>	
Capacitor-Ceramic 4 MMF (C7).....	S-3556	Dust Cap (Pkg.3).....	\$.18
Capacitor-Ceramic 56 MMF(C4).....	S-4330	Cone-Cone and Voice Coil Assembly.	1.50
Capacitor-Ceramic 100 MMF(C15).....	S-4333	Output transformer (T3).....	5.75
Capacitor-.002 MFD (C14,C18).....	S-4332	Speaker.....	1.75
Capacitor-.003 MFD (C8).....			
Capacitor-.005 MFD (C20).....			
Capacitor-.01 MFD (C17).....			
Capacitor-.02 MFD (C3,C16,C21)....			
Capacitor-.05 MFD (C3,C11,C9,C22, C23).....	73134		
Capacitor-.1 MFD (C10).....	73147		
Capacitor - Electrolytic (50 MFD - 30 MFD-160 MFD)(C19A,C19B,C19C)..	73136		
Coil-Oscillator coil with core and stud (L2,L3).....	73142		
Condenser-Variable (C1,C2,C5,C6)...	S-4399		
Loop-Antenna loop (L1).....	S-4400		
Resistor-W.W. 33-ohms (R20).....	70425		
Resistor-1000 ohms,1/4 watt(R3,R5, R15).....	73148		
Resistor-1200 ohms,1/4 watt (R14)..	73146		
Resistor-Voltage divider,2200 ohms, 7-watt (R17).....	73143		
Resistor-2200 ohms,1/2 watt (R18)..	73144		
Resistor-15000 ohms,1/2 watt(R16)..	73135		
Resistor-39000 ohms,1/2 watt(R9)...	73138		
Resistor-100000 ohms, 1/2 watt(R1)...			
Resistor-220000 ohms,1/2 watt(R11)..	73459		
Resistor-470000 ohms,1/2 watt(R8)...	73275		
Resistor-1 Megohm, 1/2 watt (R13)...	73139		
Resistor-3.3 Megohm,1/2 watt (R6)...			
Resistor-4.7 Megohm,1/2 watt (R2, R4,R12).....	73140		
Resistor-15 Megohm,1/2 watt (R10)...	30900		
Socket-Tube socket.....	73483		
Switch-Line battery switch (S1)....			
Transformer 1st I.F. (T1).....			
Transformer 2nd I.F. (T2).....			
Volume Control (R7,S2).....			
		<b>MISCELLANEOUS ASSEMBLY</b>	
		Ball-for back cover latch mechanism (Pkg.2).....	.18
		Button-centre button for dial knob	.49
		Button-station selector indicator button (Pkg.2).....	.28
		Cabinet-front.....	6.00
		Cloth-Alligator cloth for cabinet.	1.50
		Clip-spring slip for volume control & power switch knob (Pkg.2).....	.18
		Catch-Spring catch for back cover LH	.18
		Catch-Spring catch for back cover RH	.18
		Handle-Carrying handle.....	2.60
		Hinge-Cabinet hinge.....	.28
		Knob-Dial knob complete.....	1.05
		Knob-Volume control and power switch.....	.21
		Link-Carrying handle link (Pkg.2)..	.20
		Plug-Battery cable plug.....	.21
		Shield-Slip shield for carrying strap(bottom R.H.and L.H.and upper L.H.).....	.21
		Shield-Slip shield for carrying strap (upper R.H.).....	.21
		Spring-Retaining spring for dial knob (Pkg. 5).....	.39
		Support-Flexible loop support for back cover.....	.20

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