



MODEL BP61X



RCA VICTOR



AC-DC BATTERY PORTABLE RADIO

MODEL BP61X
SERVICE DATA

—1952 No. 11—

HEAD OFFICE SERVICE DEPARTMENT
RCA VICTOR COMPANY, LTD
MONTREAL, QUE.

ELECTRICAL AND MECHANICAL SPECIFICATIONS

TUNING RANGES

Standard Broadcast ("A" Band)-----520-1605 kc. (576-186 m.)
 Medium Wave ("B" Band)-----2.3-7 mc. (131-42.8 m.)
 Short Wave ("C" Band)-----7-22 mc. (42.8-13.7 m.)

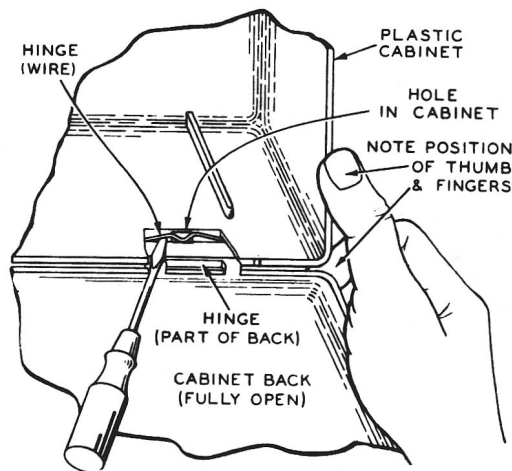
INTERMEDIATE FREQUENCY -----455 kc.

TUBE COMPLEMENT

(1) RCA 1T4 ----- R.F. Amplifier
 (2) RCA 1L6 ----- Converter
 (3) RCA 1T4 ----- I.F. Amplifier
 (4) RCA 1U5 ----- Det.-A.V.C.-A.F. Amp.
 (5) RCA 3V4 ----- Output
 One selenium rectifier is used.

POWER SUPPLY RATINGS

POWER LINE OPERATION-----105/125 v. d.c. or 50/60 cycles a.c.
 Power Consumption -----117 v. a.c.--10 watts, 117 v. d.c.--7 watts



Removal of Cabinet Back

TO REMOVE CABINET BACK

With the back fully open, grip the cabinet as illustrated. Insert a screwdriver under one hinge and pry the center of the hinge out of the opening in the cabinet while maintaining pressure on the back with the fingers and on the cabinet with the thumb. Repeat this procedure with the other hinge. Pull the back straight to the rear using both hands.

TO REMOVE HINGES

Remove back from cabinet as described above. Spread the hinge apart to remove it from the cabinet back.

BATTERY PACK OPERATION:

Battery pack-----Eveready #756
 Current consumption-----"A" (9 v.) 50 ma.; "B" (90 v.) 14 ma.
 Average battery life-----100 hrs. intermittent service

POWER OUTPUT

Maximum-----270 milliwatts----With 10% distortion—150 milliwatts

LOUDSPEAKER

Size and type -----4" (10.2 cm.) P.M. dynamic
 Voice coil impedance -----3.2 ohms at 400 cycles

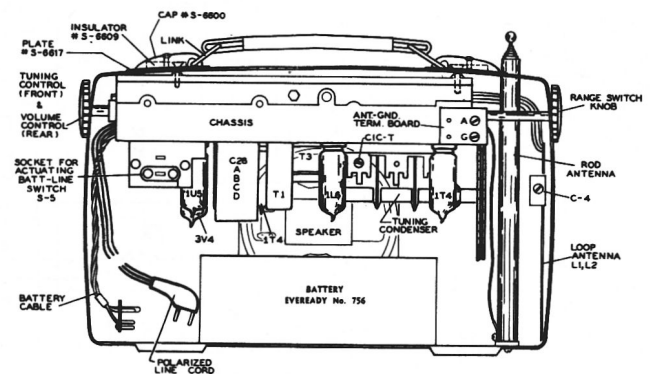
DIMENSIONS (overall)

Height-----8 1/4" Width-----12 3/4" Depth-----5 1/2"
 Weight -----7 lbs. less battery
 10 3/4 lbs. with battery

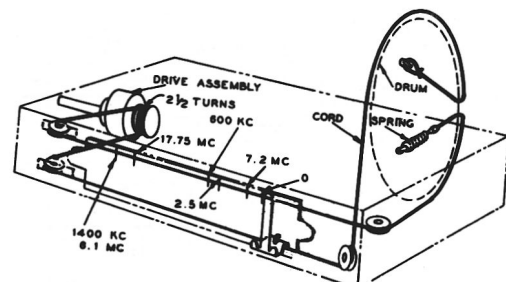
ANTENNAS

This receiver has a built-in loop antenna for "A" band reception and a telescoping rod antenna for "B" and "C" bands. The telescoping rod antenna should be extended to its full height for best short wave reception.

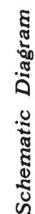
An external antenna and ground may be connected to the ANT and GND screws at the end of the chassis. This may improve reception on all bands.



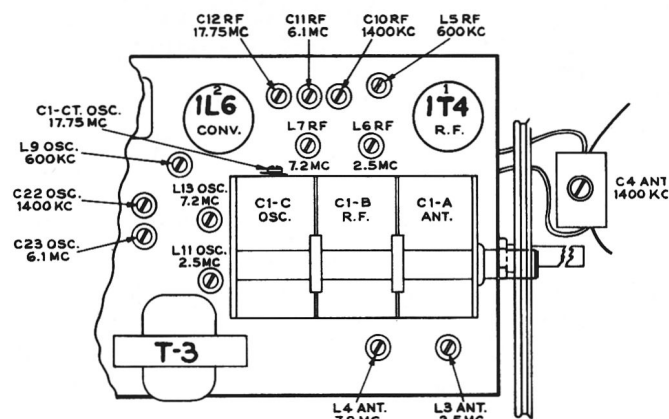
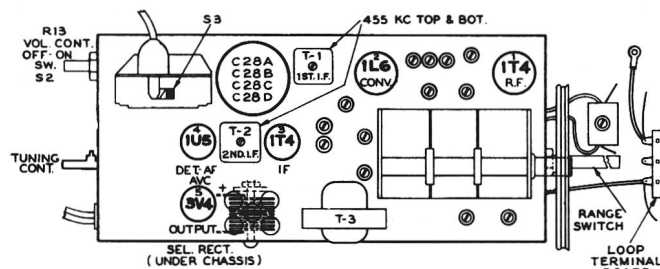
Receiver Assembly (Back View)



Dial Indicator and Drive Mechanism



Schematic Diagram



Chassis Layout and Alignment Adjustment

CRITICAL LEAD DRESS

1. Dress all filament leads close to the chassis.
2. Dress 33 ohm fuse resistor (R-18) up and away from all wiring.
3. Dress R-21 up and away from chassis.
4. Dress five section ceramic capacitor (C-27) close to chassis.
5. Keep "hot-side" lead of neutralizing capacitor (C-18) as short as possible and dress capacitor away from IF tube socket.
6. Dress C-19 up and away from IF transformer.
7. Dress all leads away from "C" oscillator coil.
8. Dress C-25 away from "B" oscillator coil.
9. Keep leads on R-3 as short as possible and dress close to 1L6 socket.
10. Dress R-1 and R-2 close to chassis base.

11. Dress loop leads away from tuning drum.
12. Dress lead from oscillator grid of 1L6 (pin #6) with $\frac{1}{4}$ " to $\frac{1}{8}$ " spacing from capacitor-resistor assembly C-14/R-6

ALIGNMENT PROCEDURE

NOTE—If the test-oscillator is also a.c. operated it may be necessary to use an isolation transformer for the receiver during alignment and to connect the low side of the test oscillator to common wiring—reversal of the plug may reduce hum.

Dial Indicator—With tuning condenser in full mesh, the indicator should be set to the position shown in the illustration "Dial Indicator and Drive Mechanism" on page 1.

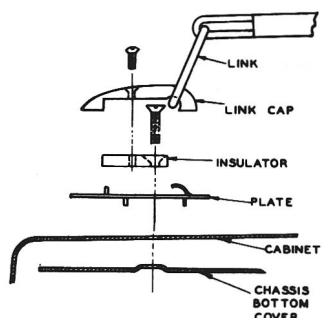
Oscillator tracks above signal on all bands. Use minimum capacity peak on oscillator trimmer adjustments and maximum capacity peak on ant. and R.F. trimmer adjustments

ALIGNMENT CHART

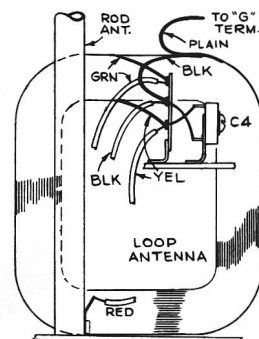
ORDER OF ALIGNMENT	TEST OSCILLATOR				RECEIVER				
	CONNECT "HI" SIDE TO	CONNECT "LO" SIDE TO	DUMMY ANTENNA	FREQUENCY SETTING	RANGE SELECTOR	DIAL SETTING	CIRCUIT TO ADJUST	ADJUSTMENT SYMBOLS	NOTES
I.F. ALIGNMENT	1 1T4 (V-3) Grid, Pin #6	Gnd.	.01 Mfd.	455 Kc	"A" Band	"HI" End	2nd I.F. Trans.	T-2 Top & Bottom Cores	Max. Output
	2 1L6 (V-2) Grid Cap Pin #6	Same	Same	Same	Same	Same	1st I.F. Trans.	T-1 Top & Bottom Cores	Same
	3 Repeat Steps 1 & 2.								
"C" Band ALIGNMENT	4 To Rod Ant. Lead	Gnd.	33 Ohms in Series with 18 muf	17.75 Mc	"C" Band	17.75 Mc	Osc. R.F.	C1-C T C-12	Same
	5 Same	Same	Same	7.2 Mc	Same	7.2 Mc	Osc. R.F. Ant.	L-13 L-7 L-4	Same
	6 Repeat Steps 4 & 5.								
"B" Band ALIGNMENT	7 To Rod Antenna	Gnd.	33 Ohms in Series with 18 muf	6.1 Mc	"B" Band	6.1 Mc	Osc. R.F.	C-23 C-11	Same
	8 Same	Same	Same	2.5 Mc	Same	2.5 Mc	Osc. R.F. Ant.	L-11 L-6 L-3	Same
	9 Repeat Steps 7 & 8								
"A" Band ALIGNMENT	10 Yellow Lead on Loop Ant.	Gnd.	.01 Mfd.	1400 Kc	"A" Band	1400 Kc	Osc. R.F.	C-22 C-10	Same
	11 Same	Same	Same	600 Kc	Same	600 Kc	Osc. R.F.	L-9 L-5	Same
	12 Repeat Steps 10 & 11.								
	Assemble receiver, connect loop ant. leads, install rod antenna, install and connect battery.								
	14 Radiate Signal			1400 Kc	"A" Band	1400 Kc	Loop	C-4	Same
	15 Same			7.2 Mc	"C" Band	7.2 Mc	Ant.	L-3	Same
	16 Same			2.5 Mc	"B" Band	2.5 Mc	Ant.	L-4	Same

* Rock gang, use maximum capacity peak.

† Extend rod antenna to full height. Oscillator tracks above signal on all bands.



Chassis Mounting



Loop Antenna Connections

REPLACEMENT PARTS FOR MODEL BP61X

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
CHASSIS ASSEMBLY			
S-6561	Board-ANT-GND terminal board	S-6585	15,000 ohms, 1 watt (R19)
S-6562	Bracket-Dial cord pulley bracket complete with two pulleys-(tuning drum end.)	S-6395	22,000 ohms, 1/2 watt (R8)
S-6563	Capacitor-Trimmer capacitor, 4-20 mmf. (C11, C12, C23)	S-6173	68,000 ohms, 1/2 watt (R11)
75189	Capacitor-Trimmer capacitor, 7-30 mmf. (C10, C22)	S-6586	180,000 ohms, 1/2 watt (R3)
S-5128	Capacitors-Fixed	S-5647	220,000 ohms, 1/2 watt (R15)
45233	Ceramic, 4 mmf. (C18)	S-6240	1 megohm, 1/2 watt (R16, R26)
S-5131	Ceramic, 100 mmf. (C2)	S-5175	3.3 megohm, 1/2 watt (R12)
S-6724	Ceramic, 120 mmf. (C9, C13)	S-6587	3.9 megohm, 1/2 watt (R10)
S-5136	Mica, 430 mmf. (C25)	S-5176	4.7 megohm, 1/2 watt (R1, R2)
S-5942	Mica, 1800 mmf. (C26)	S-5177	5.6 megohm, 1/2 watt (R7)
S-6564	Mica, 4700 mmf. (C24)	S-6588	10 megohm, 1/2 watt (R14)
S-4853	Ceramic, .0022 mf. (C3)	S-6589	Shaft-Tuning control drive shaft assembly
S-9371	Molded paper, .0033 mf., 600V. (C17)	S-6322	Socket-Tube socket for V1 (1T4) or V2 (1L6)
S-5469	Ceramic, .0047 mf. (C21)	S-6590	Socket-Tube socket for V3 (1T4)
S-6326	Molded paper, .0047 mf., 600V. (C30)	S-6591	Socket-Tube socket for V4 (1U5) or V5 (3V4) tubes
75877	Ceramic, .01 mf. (C19)	S-4511	Spacer-Metal spacer for mounting tuning condenser (3 req'd)
S-6565	Ceramic, dual, two sections of .01 mf. (C5A, C5B)	S-4485	Spring-Drive cord tension spring
S-4706	Ceramic, five sections, (.002 mf. C27A)(150 mmf. C27B)(.005 mf. C27C)(100 mmf. C27D)(.005 mf. C27E)	S-6592	Switch-Tuning range switch (S1-A, S1-B, S1-C)
S-5144	Molded paper, .047 mf., 400V. (C6, C16, C31, C32, C33)	S-5186	Switch-Battery-line switch assembly (S3)
S-5145	Molded paper, .047 mf., 600V. (C34)	S-5229	Transformer-First I-F transformer (T1)
S-5146	Electrolytic, 10 mf., 150V. (C20)	S-5230	Transformer-Second I-F transformer (T2)
S-4523	Electrolytic, comprising one section of 40 mf., 25V., one section of 60 mf., 150V., one section of 160 mf., 25V., and one section of 20 mf., 150V. (C28A, C28B, C28C, C28D)	S-6593	Transformer-Output transformer (T3)
S-4454	Capacitor and Resistor-Assembly comprising 56 mmf. capacitor and 33 ohm resistor (C14, R6)	SPEAKER ASSEMBLY	
S-6567	Coil-"A" band oscillator coil complete with adjustable core (L8, L9)	S-6597	Speaker-4 inch PM speaker complete with cone and voice coil
S-6568	Coil-"B" band oscillator coil complete with adjustable core (L10, L11)	MISCELLANEOUS	
S-6569	Coil-"C" band oscillator coil complete with adjustable core (L12, L13)	S-6598	Antenna-"A" band loop antenna (L2)
S-6570	Coil-"A" band R-F coil complete with adjustable core (L5)	S-6599	Antenna-Telescoping rod antenna
S-6571	Coil-"B" band R-F coil complete with adjustable core (L6)	S-6622	Back-Cabinet back-GREY
S-6572	Coil-"C" band R-F coil complete with adjustable core (L7)	S-6623	Back-Cabinet back-RED
S-6573	Coil-"B" band ant. coil (L3)	S-6600	Cap-Carrying handle link cap (2 req'd)
S-6574	Coil-"C" band ant. coil (L4)	S-6601	Capacitor-Trimmer capacitor and bracket assembly (C4)
S-6575	Condenser-Variable tuning condenser (C1-A, C1-B, C1-C)	S-6732	Case-Plastic case (front only) GREY-less handle, grille and loop antenna
S-6576	Control-Volume control and on-off switch (R13, S2)	S-6733	Case-Plastic case (front only) RED-less handle, grille and loop antenna
S-6577	Cover-Chassis bottom cover	S-6604	Catch-Metal catch (on case front) to hold cabinet back (2 req'd)
S-6578	Cord-Tuning indicator drive cord (41 inches required)	S-6605	Clip-Metal clip (on case back) to hold cabinet back (2 req'd)
S-5149	Cord-Power line attachment cord	S-6606	Grille-Perforated metal grille
S-4464	Grommet-Rubber grommet to mount tuning condenser (3 req'd)	S-4463	Grommet-Rubber grommet for speaker mounting (4 req'd)
S-6579	Indicator-Tuning indicator pointer	S-6607	Dial-Plastic dial scale
S-6580	Pin-Axle pin for drive cord pulleys (tuning control end)	S-6355	Emblem-"RCA Victor" emblem
S-6581	Plate-Dial back plate	74790	Hinge-Cabinet hinge (2 req'd)
18469	Plate-Insulating plate to mount electrolytic capacitor	S-6608	Handle-Carrying handle-less links
S-5159	Plug-Five pin plug for battery cable	S-6609	Insulator-Insulating plate (under link caps)
S-5123	Pulley-Drive cord pulley (tuning control end) (2 req'd)	S-6610	Knob-Tuning knob-GREY
S-6582	Rectifier-Selenium rectifier (SR1)	S-6611	Knob-Tuning knob-RED
S-6583	Resistor-Armored wire wound, 2300 ohms, 7 watt (R20)	S-6612	Knob-Range switch knob-GREY
S-6584	Resistors-Fixed Composition	S-6613	Knob-Range switch knob-RED
S-6723	33 ohms, 1 watt (R18)	S-6614	Knob-Volume control knob-GREY
S-5163	82 ohms, 1/2 watt (R5)	S-6615	Knob-Volume control knob-RED
S-5164	1500 ohms, 1/2 watt (R24)	S-6616	Link-Carrying handle link (2 req'd)
S-5166	1800 ohms, 1/2 watt (R9, R21, R22, R25)	S-6617	Plate-Decorative plate for top of cabinet (under link caps) (2 req'd)
S-5167	2700 ohms, 1/2 watt (R23)	S-6618	Screw-#6-32 x 5/8" hex head machine screw for mounting speaker (4 req'd)
36714	15,000 ohms, 1/2 watt (R4)	S-6619	Screw-#4 self tapping screw to hold clip catch to cabinet front (2 req'd)
		S-6620	Screw-#6 self tapping oval head screw to hold dial to cabinet (2 req'd) or link caps to insulator plate (2 req'd)
		S-6621	Spacer-Metal spacer for speaker mounting (4 req'd)
		S-6086	Spring-Retaining spring for knobs

Only items listed under stock numbers are available as Replacement Parts.

All parts subject to change or withdrawal without notice.