

# RCA VICTOR

AC-DC-Battery Portable Receiver

## MODEL BX57 SERVICE DATA

— 1950 No. 11 —

HOME INSTRUMENT SERVICE DIVISION  
RCA VICTOR COMPANY, LTD.  
MONTREAL, CANADA

### Specifications

Tuning Range.....540-1600 kc.  
Intermediate Frequency.....455 kc.

#### Tube Complement

(1) RCA 1R5.....Converter  
(2) RCA 1U4.....I. F. Amplifier  
(3) RCA 1U5.....Det.—A.V.C.—A. F. Amp.  
(4) RCA 3V4.....Output

A selenium rectifier is used

#### Power Supply Rating

Power Line Operation  
115 volts, d. c. or 50 to 60 cycles a. c.....18 watts  
or

Battery Operated.....VS 050 Battery  
(Average life—100 hrs. intermittent service)

#### Loudspeaker (92577-3 or 971495-2)

Size and type.....4 in. P.M. dynamic  
Voice coil impedance.....3.2 ohms at 400 cycles

Tuning Drive Ratio.....8:1 (4 turns of knob)

#### Power Output

Undistorted—170 milliwatts Maximum—350 milliwatts  
(Output is slightly lower on battery operation)

#### Cabinet Dimensions

Height 8¼ in. Width 10¾ in. Depth 5 in.

#### Weight (Approx.)

5 lb. less battery 8 lb. 2 oz. with battery

### AC-DC Operation

A power cord is stored inside the cabinet. To open the cabinet, pull backwards on the top of the cabinet back. It is secured by means of two spring clips and catches on the inside of the cabinet. Remove the plug of the power cord from its socket on the chassis and insert the plug into a convenient electrical power outlet. A notch in the right side of the cabinet allows the back to be closed with the cord passing through.

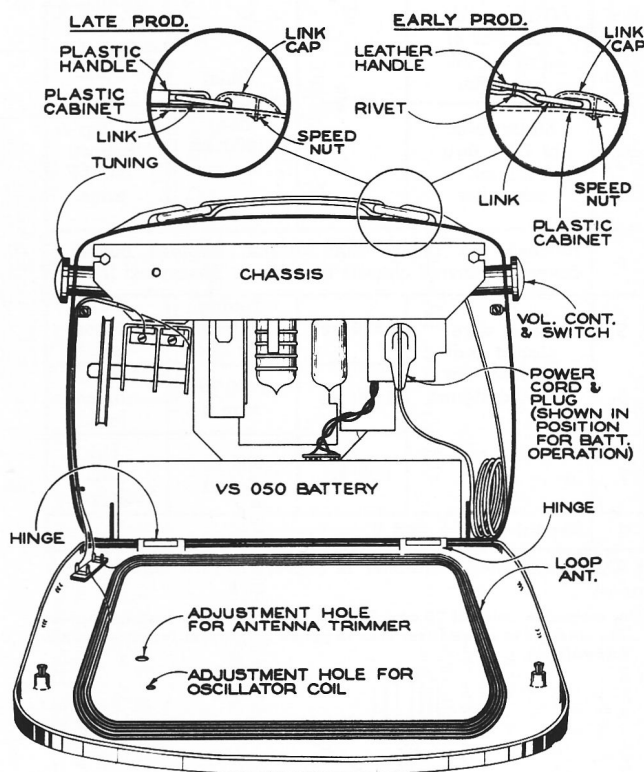
Notes: 1. Maximum performance is obtained with the battery in place. Receiver sensitivity will be lowered if the battery is not in place during AC-DC operation since the battery affects the loop inductance.

2. If reception is not obtained on DC, reverse plug in power outlet. On AC operation, reversal of the plug may reduce hum.

### Battery Operation

Replace the power cord plug in the socket provided on the back of the chassis. Coil up the power cord and place it alongside of the battery. Make certain that it will not interfere with the tuning condenser.

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



### To Remove Carrying Handle

#### Early Type:

1. Remove rivets from handle (if present).
2. Turn link and slip out of handle and cabinet.

#### Late Type:

1. Remove speed nuts holding carrying handle link caps.
2. Remove link caps.
3. Turn link and slip out of handle and cabinet.

### Cabinet Back and Hinges

The cabinet back and hinges may be readily detached from the cabinet. See back page for detailed instructions on their removal.

## Alignment Procedure

**Signal Generator**—For all alignment operations, connect the low side of the signal generator to the receiver chassis and keep the output as low as possible to avoid AVC action.

Battery operation of the receiver is preferable during alignment; on a. c. operation an isolation transformer (117v./117v.) may be necessary for the receiver if the signal generator is also a. c. operated.

**Note:** Battery must be in place for ant. alignment (step 6).

**Dial Pointer Position.**—With the tuning condenser fully meshed the center of the dial pointer should be in line with the score mark on the chassis.

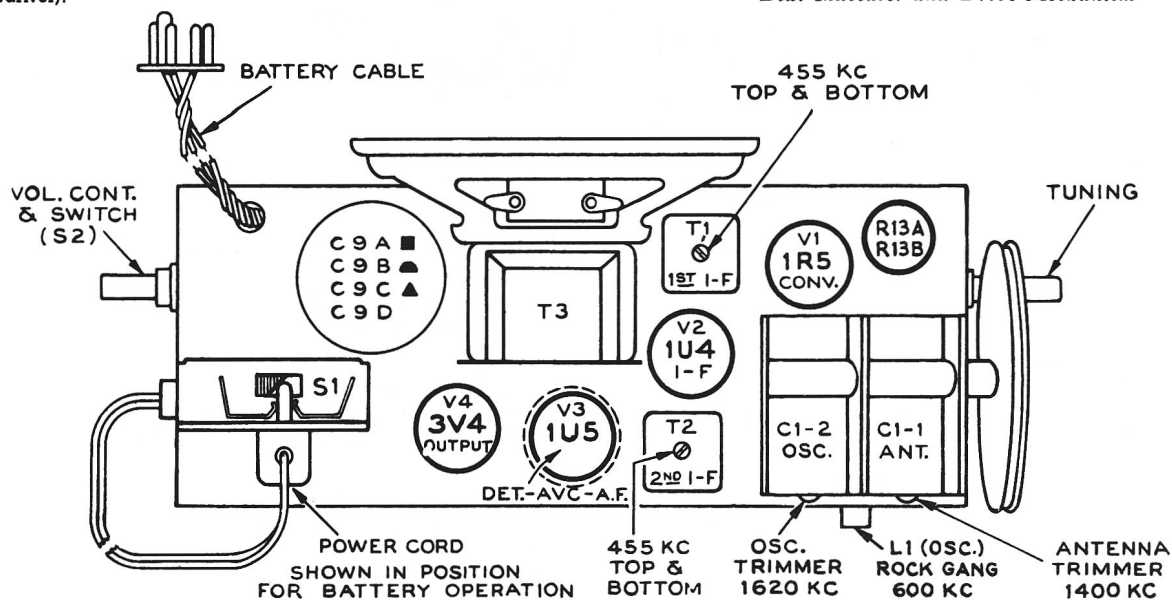
### Alignment Tabulation

| Step | Connect high side of signal generator to—  | Signal generator output | Dial pointer setting        | Adjust for maximum output—        |
|------|--|-------------------------|-----------------------------|-----------------------------------|
| 1    | Disconnect loop — remove chassis — remove bottom plate, connect a 10,000 ohm resistor from C1-1 stator terminal to tuning condenser frame. |                         |                             |                                   |
| 2    | Grid of 1U4 (pin No. 6) thru .01 mf. capacitor   | 455 kc                  | Quiet point near 1600 kc    | T2 (top & bottom) 2nd. I-F trans. |
| 3    | Stator term. of C1-1 thru .01 mf. capacitor  |                         |                             | T1 (top & bottom) 1st. I-F trans. |
| 4    | Remove the 10,000 ohm resistor. Replace bottom cover and install chassis in cabinet. Re-connect loop.                                      |                         |                             |                                   |
| 5    | Short wire placed near receiver (for radiated signal)  | 1620 kc                 | Tuning condenser fully open | C1-2 trimmer (osc.)               |
| 6    |  | 1400 kc                 | 1400 kc signal              | †C1-1 trimmer (ant.)              |
| 7    |  | 600 kc                  | 600 kc signal               | †L1 (osc.) rock gang              |
| 8    | Repeat steps 5 and 6.  |                         |                             |                                   |

† With back closed. Trimmer is accessible thru hole in back.

#### NOTE:

The magnetite cores of T2 and T1 may not have visible adjusting screws. The cores have screwdriver slots to permit adjustment (use non-metallic screwdriver).



Tube and Trimmer Locations

## Critical Lead Dress

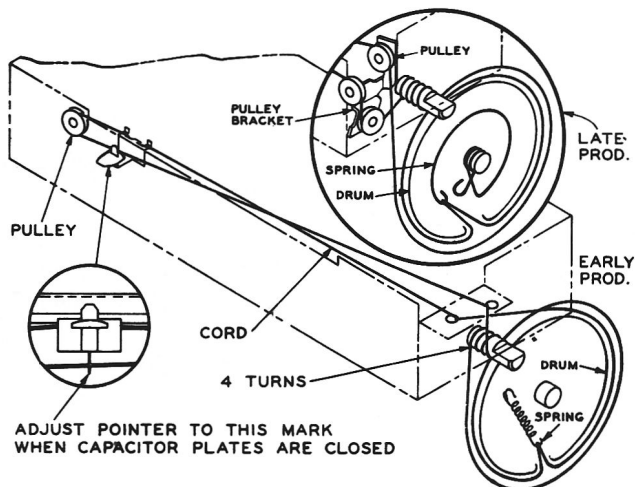
1. Dress antenna loop leads away from adjusting screws on tuning condenser.
2. Dress all capacitors against chassis base.
3. Dress oscillator coil away from chassis and bottom cover.
4. Dress output transformer primary leads against chassis.
5. Dress all leads and components away from selenium rectifier.
6. Dress the 4 mmf. capacitor (C15) down against the .003 mf. capacitor (C14).
7. Capacitor C15 must be connected to the plate terminal of the 1U4 socket with as short lead as possible.
8. Dress loop antenna leads into recesses provided in the side of the cabinet. Leave slack at hinged edge of cabinet.

**Note:** This instrument is designed to be operated with a battery in position inside the cabinet. Reception will be below normal unless the battery is in its normal location.

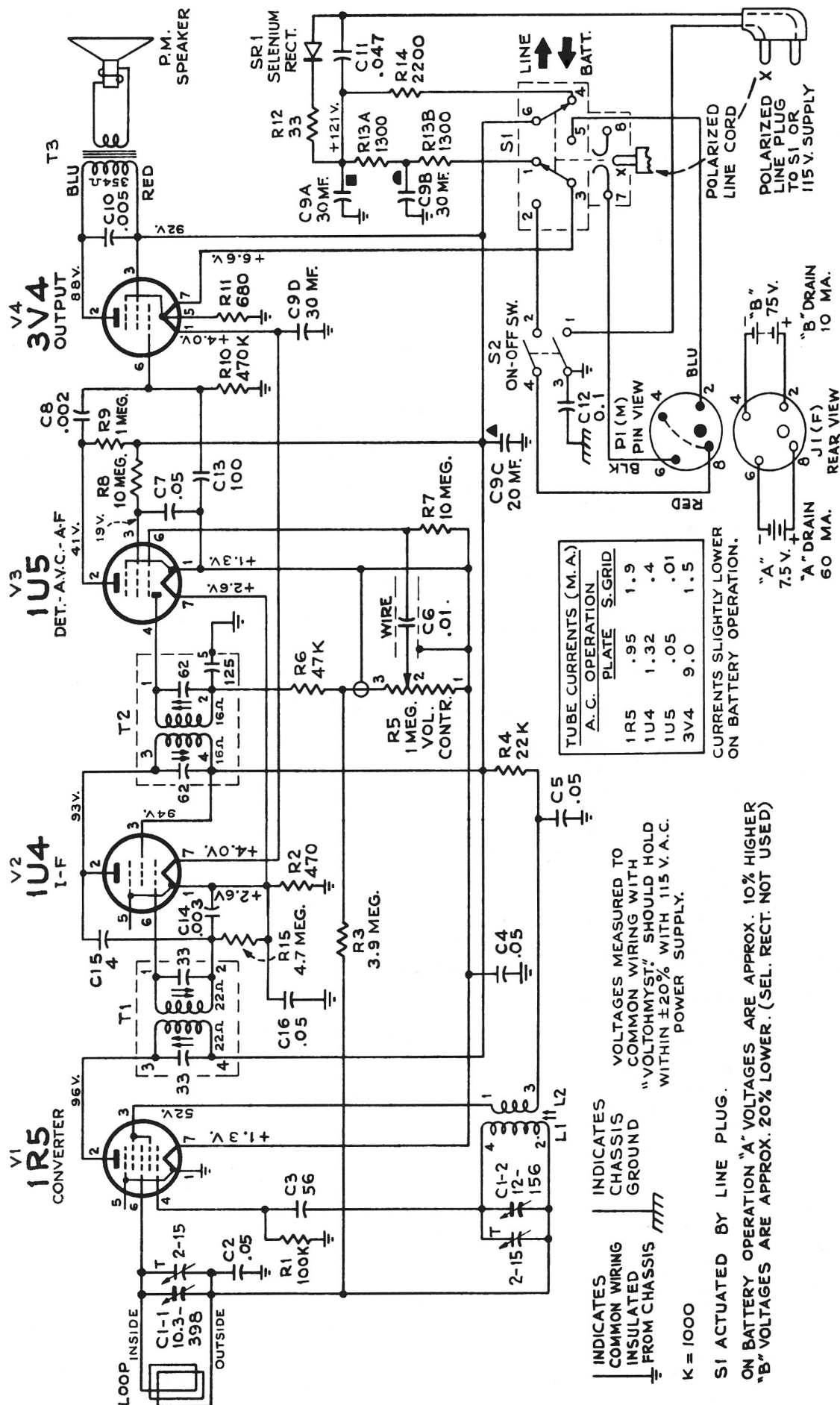
The position of the battery pack affects the loop inductance. Therefore, when the battery is removed, the loop inductance will change (increase) and the sensitivity will be slightly worse because of improper electrical tracking of the loop circuit with the heterodyne oscillator of the receiver.

#### 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.



Dial Indicator and Drive Mechanism



SCHEMATIC DIAGRAM

### Lead Dress:

Capacitor C11 (.047 mf.) must be dressed away from the metal chassis and in such position that inserting the chassis into the case will not change its position.

The side of C11 which may short to chassis is the side which connects directly to the selenium rectifier. If this side contacts the chassis it will place the chassis at power line potential.

### Substitution of Capacitor:

In some instruments section 9D of the four section electrolytic capacitor C9A, C9B, C9C, C9D is not used. A separate 30 mf. capacitor is used instead. This was done because the electrolytic capacitors supplied by certain vendors had common coupling between sections which resulted in excessive hum.

Please note that the separate 30 mf. capacitor is used in place of and not in parallel with the 30 mf. section of the multiple capacitor.

The replacement parts stock of the four section capacitor (Stock No. 74774) has been found to be satisfactory and substitution of section C9D should not be necessary.

## Replacement Parts

| STOCK No.                                | DESCRIPTION   | STOCK No.                     | DESCRIPTION   |
|--|---|-------------------------------|---|
| CHASSIS ASSEMBLIES<br>RC-1088A, RC-1088C |   |                               |   |
| 76404                                    | Bracket—Drive cord pulley bracket including two pulleys (for RC-1088C)  | 73129                         | Transformer—First I.F. transformer..... T1  |
| 75149                                    | Capacitor—Variable tuning capacitor... C1-1, C1-2   | 73130                         | Transformer—Second I.F. transformer..... T2   |
| 73153                                    | Capacitor—Ceramic, 4 mmf..... C15   | 71047                         | Transformer—Output transformer..... T3  |
| 39622                                    | Capacitor—Mica, 56 mmf..... C3  | 33726                         | Washer—"C" washer for tuning knob shaft   |
| 39628                                    | Capacitor—Mica, 100 mmf..... C13  | SPEAKER ASSEMBLIES<br>92577-3 |   |
| 74774                                    | Capacitor—Electrolytic, comprising 2 sections of 30 mfd., 150 volts, 1 section of 20 mfd., 150 volts and 1 section of 30 mfd., 25 volts, C9A, C9B, C9C, C9D | 74165                         | Speaker—4" P.M. speaker (92577-3) complete with cone and voice coil—for RC-1088A                  |
| 72315                                    | Capacitor—Tubular, paper, .002 mfd., 200 volts. C8  | 76402                         | Speaker—4" P.M. speaker (971495-2) complete with cone and voice coil—for RC-1088C                 |
| 73961                                    | Capacitor—Tubular, paper, .003 mfd., 200 volts. C14   | 76401                         | Spacer—Spacers(2) and screws(2) to mount 971495-2 speaker on RC-1088A (not required for RC-1088C) |
| 73920                                    | Capacitor—Tubular, paper, .005 mfd., 400 volts. C10   | MISCELLANEOUS                 |   |
| 73561                                    | Capacitor—Tubular, paper, .01 mfd., 400 volts. C6   | 75080                         | Back—Cabinet back complete with loop  |
| 75071                                    | Capacitor—Tubular, moulded paper, .047 mfd., 400 volts..... C11   | 74787                         | Board—Terminal board—2 contact  |
| 73553                                    | Capacitor—Tubular, paper, .05 mfd., 400 volts, C2, C4, C5, C7, C16  | Y2227                         | Cabinet—Cabinet front including corners and link caps—less dial and plate                         |
| 70617                                    | Capacitor—Tubular, paper, 0.1 mfd., 400 volts. C12  | 75156                         | Cap—Carrying handle link cap (2 required)—early type with wide slot for link                      |
| 73935                                    | Clip—Mounting clip for I.F. transformer   | 76405                         | Cap—Carrying handle link cap (2 required)—late type with narrow slot for links                    |
| 74405                                    | Coil—Oscillator coil..... L1, L2  | 74339                         | Catch—Cabinet back catch (part of cabinet front)  |
| 73275                                    | Connector—5 contact male connector for battery cable  | 74734                         | Clip—Spring clip for knob   |
| 73125                                    | Control—Volume control and power switch. R5, S2   | 74792                         | Clip—Striking clip for catch (part of cabinet back) (2 required)                                  |
| 70022                                    | Cord—Power cord and plug  | 75153                         | Cover—Cabinet corner cover—L.H.   |
| S-4313                                   | Cord—Drive cord (approx. 40" overall length req'd)  | 75154                         | Cover—Cabinet corner cover—R.H.   |
| 72283                                    | Grommet—Rubber grommet to mount tuning capacitor  | 75157                         | Dial—Metal dial scale and bezel   |
| 74838                                    | Grommet—Power cord strain relief grommet (1 set)  | 74782                         | Emblem—"RCA Victor" emblem  |
| 74776                                    | Indicator—Station selector indicator  | 75150                         | Handle—Carrying handle (early type—leather)   |
| 18469                                    | Plate—Mounting plate for electrolytic capacitor   | 76280                         | Handle—Carrying handle (late type—plastic)  |
| 72602                                    | Pulley—Drive cord pulley  | 74790                         | Hinge—Cabinet hinge (2 required)  |
| 74322                                    | Rectifier—Selenium rectifier..... SR1   | 74781                         | Knob—Tuning or volume control and power switch knob   |
| 73237                                    | Resistor—Wire wound (fuse type) 33 ohms..... R12  | 75151                         | Link—Link for carrying handle— $\frac{1}{8}$ " length (early type) (2 required)                   |
| 76006                                    | Resistor—Wire wound, 2600 ohms tapped at 1300 ohms 6 watts..... R13   | 76281                         | Link—Link for carrying handle— $\frac{1}{8}$ " length (late type) (2 required)                    |
| Resistors—Fixed, composition:-           |   | 75152                         | Loop—Antenna loop winding   |
|  | 470 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt..... R2   | 74788                         | Nut—Speed nut to mount terminal board   |
|  | 680 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt..... R11  | 73203                         | Nut—Speed nut to fasten dial, corner covers, decorative plate or link caps                        |
|  | 2200 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt..... R14   | 74783                         | Plate—Decorative plate (satin finish) for cabinet (above dial)                                    |
|  | 22,000 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt..... R2  | 76279                         | Plate—Reinforcing plate for mounting chassis in cabinet (2 required)                              |
|  | 47,000 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt..... R6  | 75448                         | Rivet—Bevel pointed rivet for early type leather handle (2 required)                              |
|  | 100,000 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt..... R1   | 75435                         | Screen—Crimoline screen for speaker grille  |
|  | 470,000 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt..... R10  | 74301                         | Screw—No. 8-32 x $\frac{3}{8}$ " pan head cross recessed screw for chassis mounting (2 required)  |
|  | 1 megohm, $\pm 20\%$ , $\frac{1}{2}$ watt..... R9   | 74791                         | Screw—No. 4 x $\frac{1}{8}$ " pan head cross recessed screw to fasten catch to cabinet front.     |
|  | 3.9 megohm, $\pm 10\%$ , $\frac{1}{2}$ watt..... R3   |                               |   |
|  | 4.7 megohm, $\pm 20\%$ , $\frac{1}{2}$ watt..... R15  |                               |   |
|  | 10 megohm, $\pm 20\%$ , $\frac{1}{2}$ watt..... R7, R8  |                               |   |
| 74773                                    | Shaft—Tuning knob shaft for RC-1088A  |                               |   |
| 76403                                    | Shaft—Tuning knob shaft for RC-1088C  |                               |   |
| 73103                                    | Shield—Tube shield for 1U5 tube   |                               |   |
| 73117                                    | Socket—Tube socket, miniature   |                               |   |
| 74038                                    | Spring—Drive cord tension spring—coil type  |                               |   |
| 76368                                    | Spring—Drive cord tension spring—semi-circular type   |                               |   |
| 71039                                    | Switch—"Line-Battery" change switch..... S1   |                               |   |

APPLY TO YOUR RCA DISTRIBUTOR FOR PRICES OF REPLACEMENT PARTS

## Change in Resistor:

The 2600 ohm 6 watt resistor (R13) now being used in Model BX57 is of improved design. The original resistor was a ceramic type and the type now being used is a flat armored type. When the new type is used to replace the original type, it is necessary to drill a .120" diameter hole in the front apron of the chassis to accommodate a self-tapping screw for mounting purposes.

## To Remove Cabinet Back

Disconnect the loop antenna leads. 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.

## Removal of Cabinet Back

