

RCA

Radiola 17

REG. U.S. PAT. OFF.

"AC" Socket-Powered



INSTRUCTIONS IB-17

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RCA

Radiola 17

REG. U.S. PAT. OFF.

"AC" Socket-Powered 50 to 60 Cycles, 105
to 125 Volts

**IMPORTANT—Read Part I of these Instructions Carefully before Proceeding with the
Installation or Operation of this Radiola.**

Part I—Installation and Operation

INTRODUCTION

RCA-Radiola 17 is a socket-powered, batteryless, antenna type radio receiver, utilizing the new "AC" Radiotrons introduced by the Radio Corporation of America. It employs the well known and perfected tuned radio frequency circuit, with three stages of radio frequency amplification, a detector, and two stages of audio frequency amplification.

"AC" Radiotron, Model IIX-226, is used in the first audio-frequency and in all radio-frequency stages. "AC" Radiotron, Model UY-227, functions as a detector. Fine quality of reproduction and ample volume are insured by the use of Power Amplifier Radiotron, Model UX-171, in the final audio stage.

RCA-Radiola 17 may be connected to any alternating-current circuit within the limits of 50 to 60 cycles and 105 to 125 volts. The socket-power unit, contained within the Radiola cabinet, furnishes alternating current to all filaments, as well as "B" and "C" supply for all Radiotrons in the receiver. "B" and "C" rectification is accomplished by the new RCA-Radiotron, Model UX-280.

This Radiola is of the Uni-Selector type, insuring the utmost in simplicity of operation. A pilot lamp illuminates the Selector Dial and indicates when the power is "on". Excellent sensitivity and selectivity are provided over the range from 550 to approximately 1400 kilocycles (545 to 214 meters, respectively).

EQUIPMENT

RCA-Radiola 17 is furnished with detached parts as follows:

1. One pilot lamp, type T-3 Mazda, miniature base, 0 volts, 0.15 ampere (Packed in the instruction book envelope).
2. One pilot lamp canopy. (Packed in the instruction book envelope).

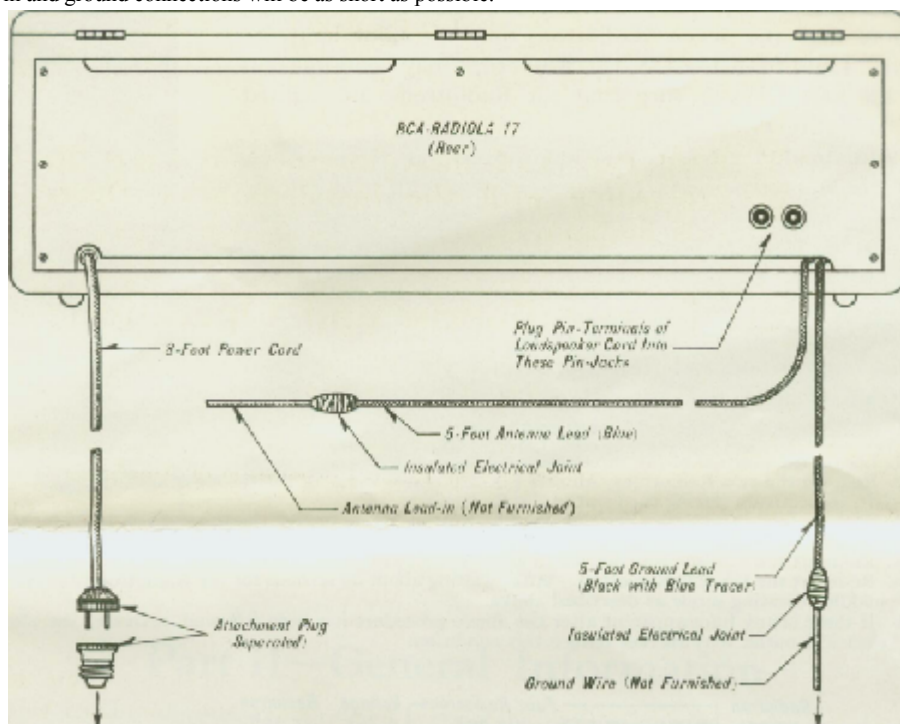
• It is necessary to provide the following equipment:

1. Four RCA-Radiotrons, Model UX-226.
2. One RCA-Radiotron, Model UY-227.
3. One RCA-Radiotron, Model UX-171.
4. One RCA-Radiotron, Model UX-280.
5. Loudspeaker (RCA-Loudspeaker Model 100-A is recommended for best reproduction).
6. Antenna and ground equipment. (Refer to page (6)).

INSTALLATION

Preliminary—After removing RCA-Radiola 17 from the shipping container, take off the rear panel, secured by screws. Unwrap the power cord and the antenna and ground leads. Remove the cardboard insert, being careful not to disturb the plates of the variable condenser unit underneath this insert. Replace the rear panel, allowing the power cord and the antenna and ground leads to project through the bottom openings as shown in Fig. 1.

Locate the Radiola convenient to an electrical outlet of the proper rating, preferably where the antenna lead-in and ground connections will be as short as possible.



Connect to J05/125 Volt,
60-Cycle A-C. Socket or
Convenience Outlet

To Ground Clamp

Fig. 1—External Connections of RCA-Radiola 17

Pilot Lamp—Screw the pilot lamp securely into the socket and plug the pilot lamp canopy into the curved groove above the Selector Dial. (See Figs. 2 and 4).

Antenna and Ground—RCA-Radiola 17 will operate satisfactorily from any good antenna and ground, the essentials of which (including both outdoor and indoor antennae) are described on page 6.

Connect the antenna lead (blue) of the Radiola to the lead-in wire, and the ground lead (black with blue tracer) to the ground wire (see Fig. 1). Both connections should be soldered and insulated.

Radiotrons—The Radiotrons should always be handled carefully. Before inserting them in the sockets, make sure that the power cord is not connected to the supply circuit.

Insert the seven Radiotrons in the proper sockets, as shown in Fig. 3. Be sure that the "UX" Radiotrons are faced so that the two large prongs enter the large holes, and that the base of each Radiotron rests squarely against the socket.

Care should be taken not to insert a UX-22G Radiotron in the UX-171 socket, as the higher filament voltage would burn out the UX-226 Radiotron.

Power Supply—RCA-Radiola 17 should never be connected to any circuit supplying other than alternating current, within the limits of 50 to 60 cycles and 105 to 125 volts. Failure to observe this may result in damage to the Radiola. If there is any doubt about the rating of the house lighting circuit, consult the Electric Light and Power Company before connecting the Radiola.

See that the Voltage Switch, Fig. 3, is set at the "120 V." position. Then insert the attachment plug of the power cord in an electrical outlet of the proper rating, as indicated in Fig. 1. Set the Power Switch (Fig. 4) to the "on" position, downward, and note that the seven Radiotrons and the pilot lamp are lighted. Light from the UX-171 Radiotron may be visible only near the base. When sure that all Radiotrons are lighted, snap "off" the Power Switch.

Loudspeaker—Locate the loudspeaker at a convenient place. If the loudspeaker cord is equipped with a radio plug, remove it and insert the two pin-terminals of the cord, either way, into the pin-jacks (see Fig. 1). Since this Radiola is equipped with an output transformer, reversal of the pin-terminals will have no effect.

After the loudspeaker is connected, turn the Power Switch to the "on" position and turn the Selector to a position where no broadcast signal is heard. If there is any hum present, it may be minimized by the following procedure:



Fig. 2—Selector Dial Showing Canopy Removed and Pilot Lamp in Place

1. Locate the position of the three adjusting screws (Fig. 3).
2. Remove the two Radiotrons, Models UX-226 and UY-227 in the second and third sockets from the left, respectively (facing the front of the Radiola).
3. With a screw-driver, turn the right-hand adjusting screw (facing the front of the Radiola) slightly in either direction to the position where the hum is least.
4. Re-insert the UX-220 Radiotron and turn the left-hand adjusting screw as described above.
5. Re-insert the UX-227 Radiotron. After waiting about 30 seconds for the Radiotron to heat, turn the middle adjusting screw as described above.
6. If there is any hum apparent after the above procedure has been followed, reversing the plug at the electrical outlet may further reduce this condition.

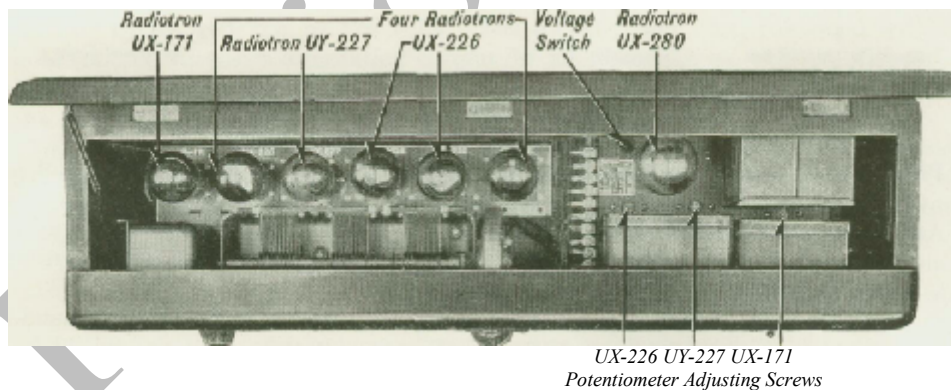


Fig. 3—Top View of RCA-Radiola 17 with Cover Raised and Radiotrons Installed

Whenever one of the three Radiotrons at the left end (facing the front) of the receiver is renewed, it may be necessary to re-adjust one or more of the adjusting screws, in which case the procedure outlined above should be followed.

Connection to a different "AC" supply circuit may necessitate re-adjustment in a similar manner.

OPERATION

To operate RCA-Radiola 17, refer to Fig. 4 and proceed as follows:

1. Set the Power Switch to the "on" position, downward. The pilot lamp should light. An interval of approximately 30 seconds is required for Radiotron UY-227 to heat before satisfactory reception is possible.
2. Turn the Volume Control to the extreme clockwise position, for maximum volume.
3. Turn the Selector slowly in either direction until a station is heard, and adjust this control for maximum signal strength.
4. Adjust to the desired volume by means of the Volume Control.
5. When through operating, snap the Switch to the "off" position, upward.

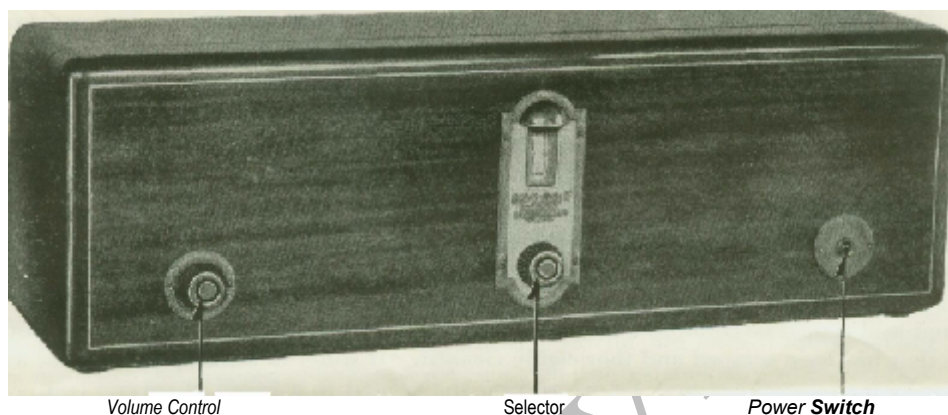


Fig. 4—RCA-Radiola 17

Part II—General Information

The following suggestions are offered to assist the user in obtaining the best performance from RCA-Radiola 17.

Radiotrons The life of the Radiotrons will be prolonged if the Voltage Switch, Fig. 3, is set at "120V⁷." Where the supply is below 115 volts, however, improved reception with normal life of the Radiotrons will be obtained if the Voltage Switch is set at "110 V." To determine whether the supply is below 115 volts, consult the RCA Authorized Dealer or the Electric Light and Power Company. *Before changing the position of the Voltage Switch, set the Power Switch in the "off" position, upward.*

Improved results may sometimes be obtained by rearranging the Model UX-226 Radiotrons, all other Radiotrons remaining in their respective sockets. While interchanging these Radiotrons, switch "off" the power. After such rearrangement, it may be desirable to re-adjust the left-hand potentiometer adjusting screw for minimum hum.

Volume—Reduction of volume should be accomplished by adjustment of the Volume Control, rather than by the Selector. The use of the Selector to reduce volume will result in a sacrifice of quality, except for local reception when the volume may still be greater than desired with the Volume Control in the extreme "soft" position.

Selector Dial—The dial scale is arbitrarily graduated from "0" to "100". The shorter wave (higher frequency) stations are received toward the zero end of the scale. The dial settings may be recorded on the Station Log, page 8.

Antenna

(a) *Outdoor Type*—In general, best results will be obtained by using a single-wire outdoor antenna. It should be from 50 to 100 feet long, including the lead-in and ground connections, which should be short **and direct**. The antenna should be isolated from other objects and as high as possible. It should be erected at right angles to all electric light and power lines and should not cross either above or below such lines. The antenna and lead-in should be supported by high-grade glass or glazed porcelain insulators, and the lead-in should be a foot or more from the building. All splices should be soldered.

The lead-in wire should preferably be a continuation of the antenna itself and where brought through the wall or window frame should be insulated therefrom, preferably by means of a porcelain tube.

An outdoor antenna should be protected by means of an approved lightning arrester, in accordance with the requirements of the Underwriters.

(b) *Indoor Type*—Where the installation of an outdoor antenna is not practicable, satisfactory results may be obtained by using about 30 to 50 feet of insulated wire inside the building. The size of the wire is not particularly important, though No. 18 bell wire is suggested. In buildings with metal lath, satisfactory results are not always possible with this type of antenna. Under such conditions, various arrangements of the indoor antenna may be tried. An indoor antenna is not as effective as a properly installed outdoor antenna.

Ground- A good connection to ground is as important as a well constructed antenna. Definite instructions cannot be given, as conditions vary in different locations. Water pipes or steam pipes generally make good grounds. Gas pipes should be avoided. The ground lead should be connected by means of an approved ground clamp to a section of the pipe that has been scraped and thoroughly cleaned. If water or steam pipes are not available, a pipe or metal rod may be driven into the ground to a depth of several feet. The success of this type of ground depends upon the moisture present in the soil.

Part III—Maintenance

Radiotrons -When inserting or removing Radiotrons, always be sure that the current is "off", the Power Switch being in the upward position.

The contact pins of the Radiotrons should be kept clean.

It is a good plan to have available at least one new RCA-Radiotron of each type. Periodically, the condition of each Radiotron in use should be checked by substituting a new one and comparing results in reception, both local and distant.

Power Supply-Should the pilot lamp and Radiotrons fail to light with the Power Switch in the "on" position, downward, it is probable that the Radiola is not properly connected to the power supply. Make sure that the attachment plug is properly inserted in the receptacle and that the current is not switched off at any point. If the attachment plug is screwed into a socket, try substituting an electric lamp to make sure that current is available at the socket.

Antenna and Ground—A decrease in receiving range and volume may be caused by loose or corroded connections in the antenna and ground circuit, or by an accumulation of dirt or soot on the antenna insulators.

Loudspeaker - If reproduction has become unsatisfactory and the above suggestions have been followed without locating the difficulty, the loudspeaker should be checked by replacing it with another loudspeaker.

Pilot Lamp—Renewal bulbs (see "Equipment", page 2) may be purchased from any RCA Authorized Dealer.

RCA Authorized Dealer—If further service is necessary, the RCA Authorized Dealer from whom the Radiola was purchased should be consulted.

NOTICE

The apparatus and devices which, or the use of which, are covered by patents are sold only under certain specified licenses set forth in a notice attached permanently to the said apparatus and devices, or if this is impracticable on account of size, then on tags or wrappers attached to the said apparatus and devices or on the cartons containing the same. This license notice is as follows:

"In connection with devices it sells, Radio Corporation of America has rights under patents having claims (a) on the devices themselves and (b) on combinations of the devices with other devices or elements, as for example in various circuits and hook-ups.

"The sale of this device carries a license under the patent claims of (a), but only for (1) talking machine uses, (2) radio amateur uses, (3) radio experimental uses and (4) radio broadcast reception; and only where no business features are involved.

"The sale does not carry a license under patent claims of (b) except only (1) for legitimate renewals and repairs in apparatus and systems already licensed for use under such patent claims on combinations, (2) for assembling by amateurs and experimenters, and not by others, with other licensed parts or devices, or with parts or devices made by themselves, but only for their own amateur and experimental radio uses where no business features are involved, and not for sale to or for use by others, and (3) for use with licensed talking machines and licensed radio broadcast receiving devices; and only where no business features are involved."

RADIO CORPORATION OF AMERICA

