RCA

Radiola 64

Super-Heterodyne

AC Lighting Circuit Operated

Instructions

IB-64

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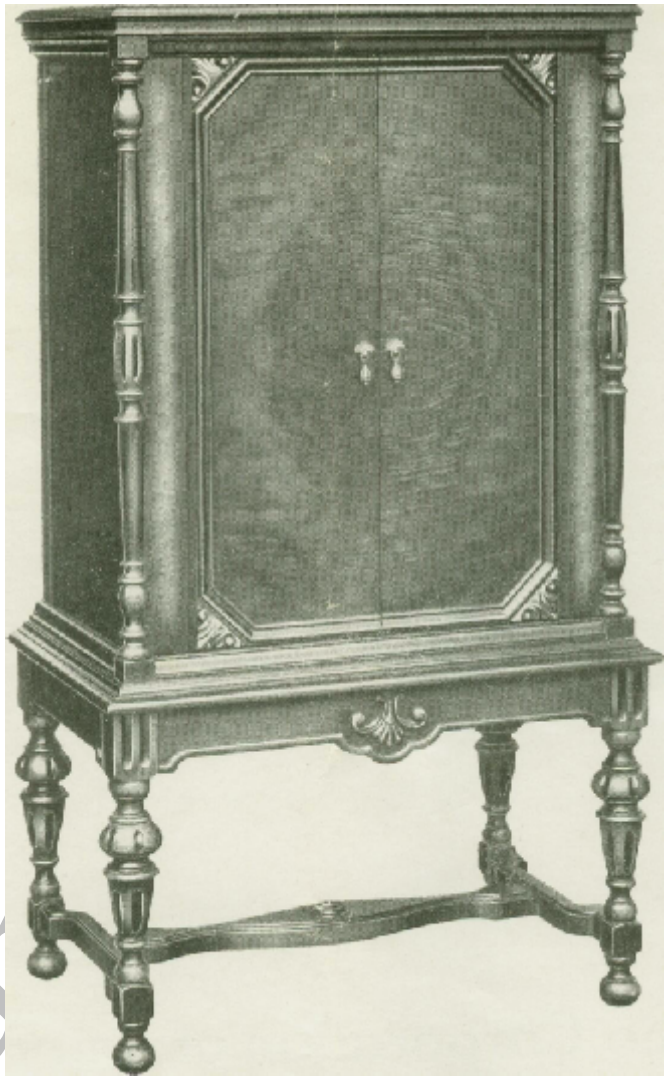


Fig. 1—RCA Radiola 64

RCA
Radiola 64

REG. U.S. PAT. OFF

Super-Heterodyne

AC Lighting Circuit Operated 50 to 60

Cycles, 105 to 125 Volts

INTRODUCTION

RCA Radiola 64 Super-Heterodyne is a radio receiver combining beauty with outstanding performance. Into the attractive walnut cabinet has been placed a receiver possessing the characteristics of greater sensitivity and selectivity which distinguish the improved RCA Super-Heterodyne. Greater volume when desired, with tone fidelity, is made possible in this Radiola by the large electro-dynamic cone speaker operated from a powerful UX-250 Radiotron.

This Radiola is provided with a single tuning control and an automatic volume control which automatically maintains the volume at the desired level. The latter is a new feature which eliminates manual adjustments of the volume control, frequently found necessary during a program because of "fading" or other variations in volume. All local and powerful distant stations give substantially the same volume for the same setting of the control knob. A tuning meter indicates whether a station is correctly tuned, thereby making it unnecessary to rely entirely upon the ear.

All the power supply necessary for Radiola 64 is obtained from a lamp socket. Alternating current is used to heat the filaments of the eight UY-227 Radiotrons and one UX-250 Radiotron. The super-heterodyne circuit is arranged as follows: two stages of radio frequency amplification and detector, oscillator, two stages of intermediate frequency amplification, second (power) detector, and one stage of audio amplification. Two UX-281 Radiotrons furnish the necessary rectified current for the plate and grid supply of all the Radiotrons.

This is an antenna-operated receiver, covering the broadcast band, 550 to 1500 kilocycles (545 to 200 meters).

Part I—Installation and Operation

EQUIPMENT Furnished—

1. One complete set of Radiotrons, as follows:
   Eight RCA Radiotrons UY-227
   One RCA Radiotron UX-250
   Two RCA Radiotrons UX-281.
2. One pilot lamp, Type T-3 Mazda, miniature base, 6 volts, 0.15 ampere (packed in the instruction book envelope).

To Be Provided—

1. Antenna and ground equipment. (Refer to pages 8 and 9).

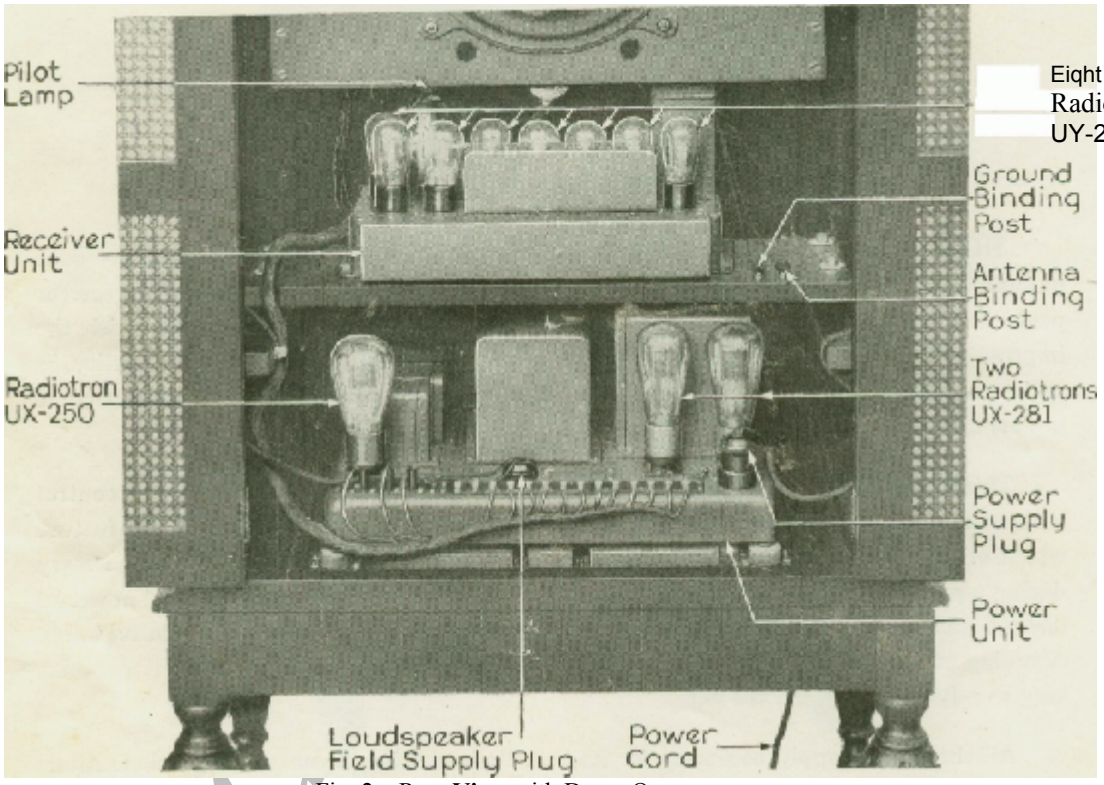


Fig. 2—Rear **View** with Doors Open

INSTALLATION

Preliminary—When RCA Radiola 64 has been removed from the shipping container, unfasten the burlap packing and remove the carton holding the Radiotrons. Open the back of the cabinet and unwrap the power cord, bringing it out through the hole provided for it in the bottom of the cabinet.

Shipping Accessories—The following accessories, which protect the Radiola during shipment, should be removed to assure proper operation, as follows:

Loudspeaker— Remove the two bolts which hold the "U" clamp and wooden block. Next remove the loudspeaker shipping support (to which the clamp bolts were fastened) by loosening the bolts near the ends of the support.

Receiver—Unscrew the wing nuts at each end of the receiver shelf and take out the bolts and washers. Remove the four small wooden blocks between the receiver shelf and the shelf supports. See that the receiver shelf rests on the rubber cushions, also that the receiver unit is clear of the front of the cabinet.

Power Unit—Take out the two square-headed clamping bolts, the heads of which are underneath the cabinet. Remove the two thin wooden strips, between the unit base and the blocks secured to the floor, by sliding them toward the center of the unit and pulling them outward. Save all packing material for use in the event of shipment at a later date.

Location—Locate the Radiola near an electrical outlet, preferably where the antenna lead-in and ground connections will be as short as practicable.

Antenna and Ground—Run the wires from the antenna and ground through the hole in the bottom of the cabinet and connect to the proper binding posts as shown in Fig. 2. Insulated wires only should be run inside the cabinet. Satisfactory reception is dependent upon proper installation of the antenna and ground. (See pages 8 and 9.)

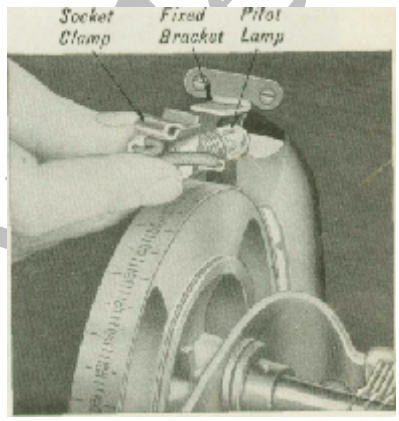


Fig. 3—Pilot Lamp Mounting
Showing Method of Installing Pilot Lamp. Socket Clamp Slides **Over** Fixed Bracket

Pilot Lamp—The pilot lamp socket is located within the cabinet above the Selector scale as shown in Fig. 2. Remove the socket clamp from the fixed bracket (see Fig. 3) and screw the pilot lamp securely into the socket. Replace the socket clamp on its bracket. Always switch off the power before removing the pilot lamp.

Important—*Never apply power to RCA Radiola 64 unless all Radiotrons are in the sockets.*

Radiotrons—The Radiotrons should be handled carefully.

Insert the UY-227 Radiotrons in their proper sockets as shown in Fig. 2. Place the UX-250 Radiotron and the UX-281 Radiotrons in their proper sockets by following the markings on the power unit. (See Fig. 4.)

Power Supply—RCA Radiola 64 should never be connected to any circuit supplying Other than alternating current, 50 to 60 cycles and 105 to 125 volts. Failure to observe this requirement 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.

The Voltage Switch (see Fig. 4) has been set at the "120 V." position and should not be changed unless it is definitely known that the supply is below 115 volts. (See "Voltage Switch", Part II.)

Make sure that both the loudspeaker field supply plug and the power supply plug are inserted in their respective places on the power unit as indicated in Fig. 4.

Insert the attachment plug of the power cord in an electrical outlet. Pull the Power Switch, found on the left-hand side of the cabinet (Fig. 1), outward to the "on" position. Examine all Radiotrons and the pilot lamp to see if they are lighted. A few seconds are required for the UY-227 Radiotrons to heat. (If they are not lighted, refer to "Power Supply", page 9, for further instructions.) When sure that all Radiotrons are lighted, push the Power Switch to the "off" position.

Radiotron	Two Radiotrons
UX-250	UX-281

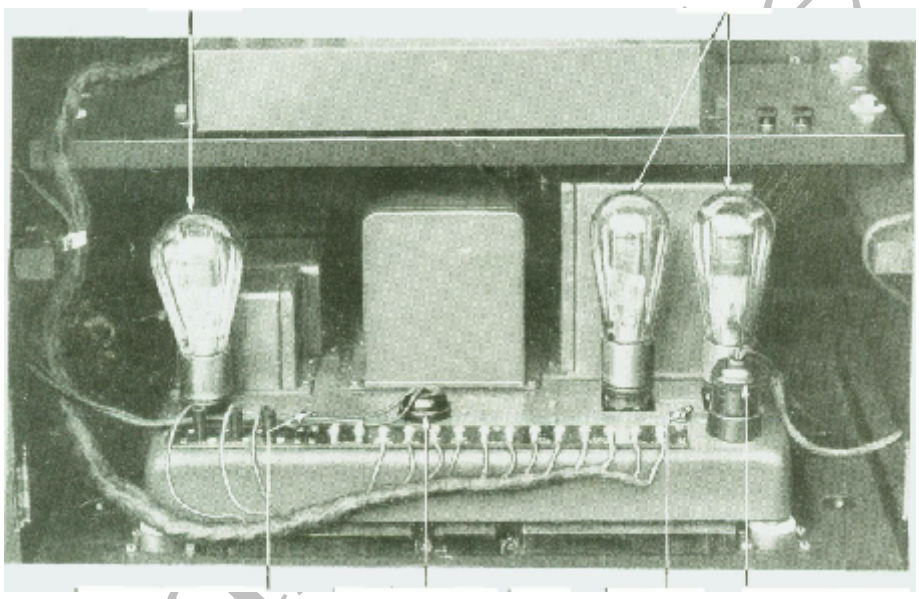
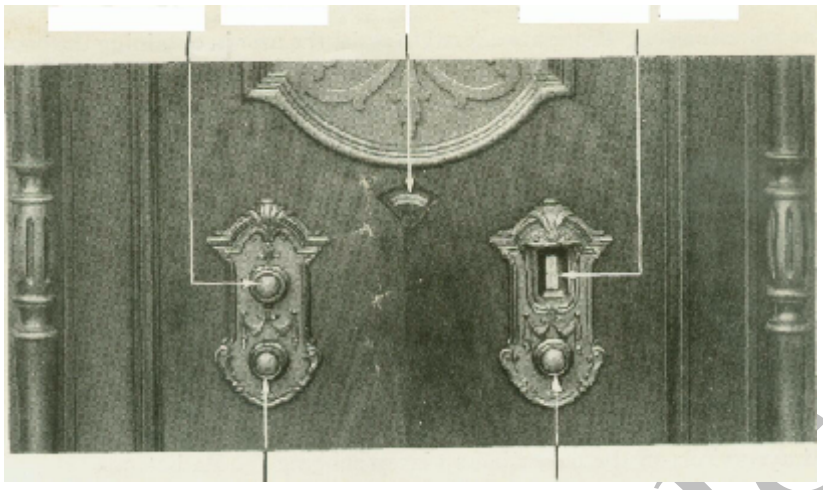


Fig. 4—Power Unit—Showing Potentiometer Adjusting Screw and Voltage Switch

Tuning Meter
Sensitivity Control | Selector Scale



Volume Control Selector Fig. 5—Panel and Controls

OPERATION

To become familiar with the controls of Radiola 64 refer to Fig. 5. To operate this receiver proceed as follows:

1. Pull out the Power Switch to the "on" position. The pilot lamp should light at ' once, but about30secondswill elapse before the UY-227 Radiotrons reach their operating temperature.
2. Set both the Volume Control and Sensitivity Control in approximately their mid-' positions (with the marks on the knobs upward). Turn the Selector slowly in either direction. If no station is heard, advance both the Volume Control and Sensitivity Control clockwise, and again rotate the Selector.
3. After a station is heard slowly vary the Selector while watching the Tuning Meter. The reading of this meter will increase and then decrease as the receiver is brought into and out of tune with the station. The proper adjustment of the Selector is that which gives the highest reading of the Tuning Meter.
4. Adjust to the desired volume by means of the Volume Control.
5. The Sensitivity Control can be left at its mid-position while becoming familiar with the operation of the receiver. This control is provided so that the great sensitivity of Radiola 64 can be reduced to meet varying local receiving conditions at times when static, power-line disturbances and the like, produce an undesirable background of noise. To set the Sensitivity Control: With the Volume Control at maximum, turn the Selector to some position where no broadcast station is heard and where the background noise seems loudest. Starting at maximum, slowly decrease the Sensitivity Control, by turning counter-clockwise, only far enough to satisfactorily reduce the noise. This control probably will not have to be touched again during several hours of operation.
6. To turn off the receiver, push the Power Switch inward.

Part II—General Information

The following suggestions are offered to assist the user in obtaining the best performance from RCA Radiola 64:

Voltage Switch—Where the line voltage is below 115 volts, improved reception with normal life of the Radiotrons will be obtained if the Voltage Switch is set at the "110 V^ position To determine if the voltage rating of your line is 115 volts, or lower, consult the RCA Authorized Dealer or the Electric Light and Power Company.

Power Supply-Reception may possibly be improved by reversing the attachment plug at the electrical outlet.

Radiotrons—The characteristics of the circuits connected with sockets No. 2 and 7 (Fie 6) are such that they have an important bearing upon the operation of the Radiola. It ?s therefore advisable, when installing, to interchange the UY-227 Radiotrons in sockets No. 2 and 7 with the others until best reception is obtained. This arrangement, once made, should not be changed.

Always switch off the power before interchanging the Radiotrons.

Control of Volume and Sensitivity—Reductions of volume should be made by adjustment of the Volume Control rather than by the Selector; the Selector should always be tuned for the highest reading on the Tuning Meter. Rely on the eye rather than the ear.

It will be noticed that the loudspeaker volume is not appreciably affected by the Sensitivity Control except when this control has been decreased considerably below its mid-position. For distant reception, when there is little background noise, the Sensitivity Control should be set at maximum.

Selector Scale—This scale is divided into 100 arbitrary units. The higher frequency (shorter wavelength) stations are received toward the "0" end of the scale.

Antenna—

(a) *Outdoor Type—A* single wire outdoor antenna 25 to 50 feet long will usually provide good reception. Bare copper wire, No. 14, is recommended. A shorter antenna is preferable In a locality near high-power broadcast stations. A longer antenna may give improved results in a locality distant from broadcast stations.

Erect the antenna as high as possible and at right angles to any electric light and power lines It must not cross either above or below such lines. The antenna and lead-in should be supported by glass or glazed porcelain insulators, the lead-in being kept a foot or more from the building.

Arrange the lead-in and ground wires as short and direct as practicable. They should be kept separated, not run side by side. It is preferable that the lead-in wire be a continuation of the antenna wire itself, and where brought through the wall or window framed should be insulated by some means such as a porcelain tube. All splices should be soldered.

An outdoor antenna must be protected by an approved lightning arrester in accordance with the requirements of the National Board of Fire Underwriters.

(b) *Indoor Type—An* indoor antenna is not as effective for distant reception as a properly installed outdoor antenna. Where the installation of an outdoor antenna is not Practicable, good results may be obtained by using about 20 to 40 feet of instated wire Inside the building. The kind or size of the wire is not particularly important; No. 18 bell wire is suggested. In buildings with metal lath, an indoor antenna may not give satisfactory reception In this case, try various arrangements of wire near or in front of the windows.

Ground—A good connection to ground is as important as a well-constructed antenna. Water pipes or steam pipes generally make good grounds. Gas pipes, for this purpose,
should be avoided. After a portion of the pipe has been scraped clean the ground wire should be connected by means of a ground clamp. If water or steam pipes are not available, a pipe or metal rod may be driven into moist earth to a depth of several feet.

Part III—Maintenance

Radiotrons—Before inserting or removing Radiotrons, always be sure that the current if off at the Power Switch.

It is advisable to have at least one new spare RCA Radiotron of each type. The condition of each Radiotron then can be checked occasionally by substituting the new one for it 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, it is probable that the Radiola is not obtaining power from the lighting circuit. Make sure that the attachment plug is properly inserted in the electrical outlet and that the current is not switched off at any point. If the attachment plug is screwed into a socket, substitute an electric lamp to make sure current is available.

Volume Control—If the operation of the Volume Control or Sensitivity Control should at times produce a grating sound in the loudspeaker, this may be remedied by turning the knob back and forth between the extreme positions a few times in order to remove any foreign material which may have collected on the control resistance.

If the Volume Control does not appear to function properly change the volume control Radiotron in Socket No. 8, Fig. 6.

Adjustment for Hum Suppression-Hum from the loudspeaker, if noticeable, can be reduced to a minimum by adjusting the potentiometer screw, located near the UX-250 socket on the amplifier unit. (See Fig. 4.)

After the Radiotrons have attained operating temperature set the Selector where no signal is heard. Adjust potentiometer screw, by means of a screw driver, for minimum hum.

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

Pilot Lamp—Renewal lamps may be purchased from any RCA Authorized Dealer. See **"EQUIPMENT . . . Furnished",** page 4. Before removing the pilot lamp socket from its bracket, always switch off the power.

RCA Authorized Dealer—The RCA Authorized Dealer is required to test this Radiola and assure himself that it is in satisfactory operating condition when installed.

This Radiola is guaranteed to be free from defects as outlined on the guarantee tag accompanying the instrument. Should any part become defective within the guarantee period, the RCA Authorized Dealer will furnish a new part to replace the defective one. A reasonable charge may be made for installing such parts.

If any service on this Radiola is needed, either before or after the expiration of the 90-day guarantee, the RCA Authorized Dealer from whom it was purchased should be consulted If this Dealer cannot be reached because of change in location, or other reasons, the nearest RCA Authorized Dealer should be consulted. RCA Authorized Dealers are organized to handle customers' service needs either by their own service department or by arrangement with their distributors.

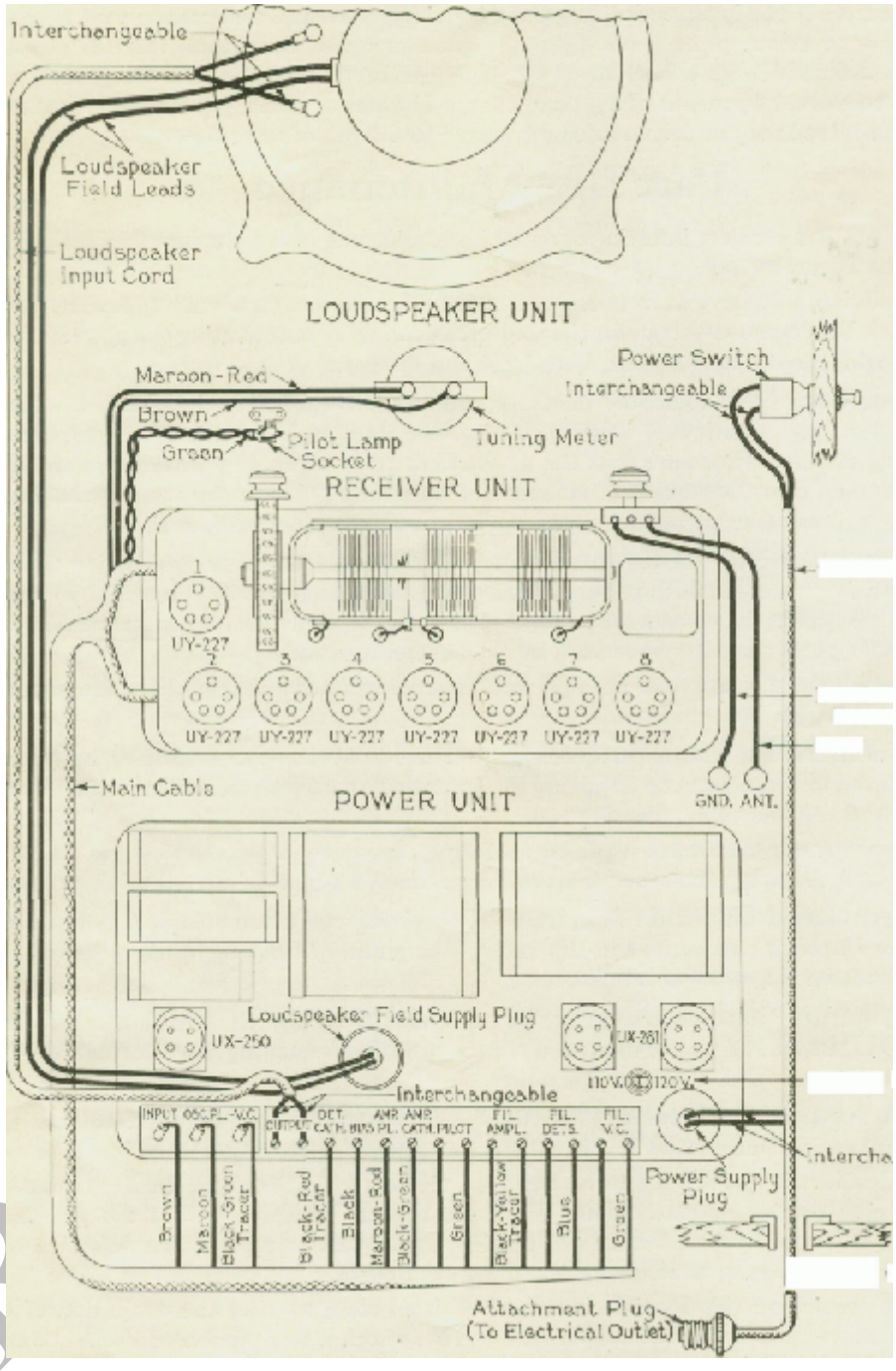


Fig. 6—Radiola 64 Cabinet Wiring

IMPORTANT

The RCA 90-day guarantee on this Radiola is not effective unless the RCA Guarantee Tag is countersigned and dated at time of sale by the RCA Authorized Dealer from whom it was purchased. If you have not received the signed Guarantee Tag, be sure to have the RCA Authorized Dealer give it to you immediately.

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.

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