

RADIOLA V

MODEL AR-885

RADIOLA V, when used with an average antenna, will receive radio telephone and telegraph signals of any wavelength between 180 and 700 meters. By the use of the easily installed longwave coil system (Model UL-1340), the set can be changed to receive wavelengths of from 650 to 1150 and 1450 to 2800 meters. A regenerative tuning system, vacuum tube detector, and two stages of audio frequency amplification are provided. For head telephone reception from nearby broadcasting stations, a sensitive mineral detector is supplied.

For a complete equipment, the following items are required:

RADIOLA V.

One UV-200 Radiotron (Detector).

Two UV-201 Radiotrons (Amplifiers).

Batteries:

One 6-volt 40- to 80-ampere-hour storage battery.

Two 22½-volt "B" batteries (one with 18-volt tap).

Antenna Equipment (ask for G-E Model AG-788).

One Pair of Head Telephones with Plug (Model UD-824).

A loud speaker may also be used if desired.

ANTENNA SYSTEM

The accompanying drawing shows the correct arrangement of the antenna. A span of from 75 to 100 feet is desirable and should be 25 feet or more above the ground. Reception improves with increased height. If the suggested length and height cannot be secured, approach them as nearly as possible. The antenna should be at right angles to electric light, power, and telephone wires, and, if practicable, at least 15 feet distant from them. It must not be touched by any object except insulators. The same precautions apply to the lead-in wire, which should be a continuation of the antenna wire without any joints and run as directly as possible to the receiver. In receiving nearby stations, an indoor antenna even as short as 20 to 30 feet will usually give satisfactory results and will have considerable selectivity. The indoor antenna may consist of a wire run the length of the attic or just below the ceiling of an ordinary size living room.

Ground connection is a necessary part of every antenna. The ground wire (rubber covered No. 14 gauge) should be connected as directly as possible to the house water pipes by means of a ground clamp. If water pipes are not available, use a pipe driven deeply into moist ground and as near to the set as practicable. The ground wire and the pipe should be well scraped and cleaned at the point of connection. For a protector use Model UQ-1310 or some other approved device. Install it where the lead-in wire enters the house and connect as shown in the diagram. The installation described and shown in this diagram is in accordance with National Electric Code standards.

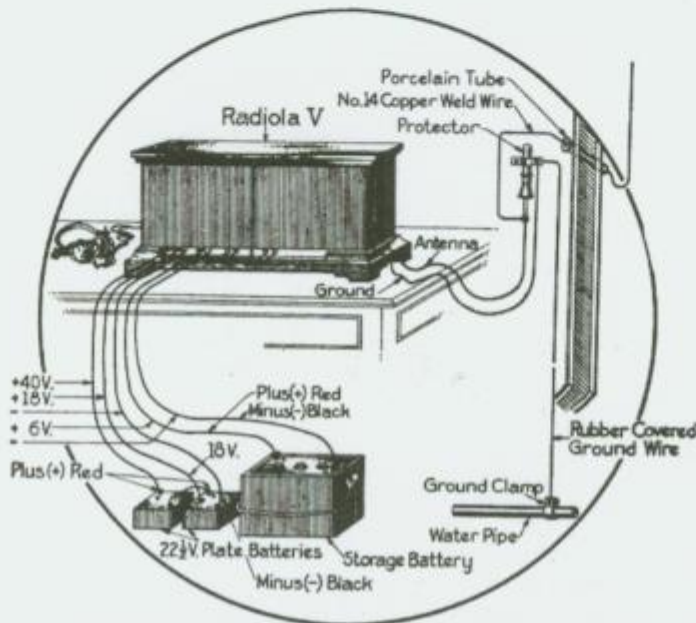
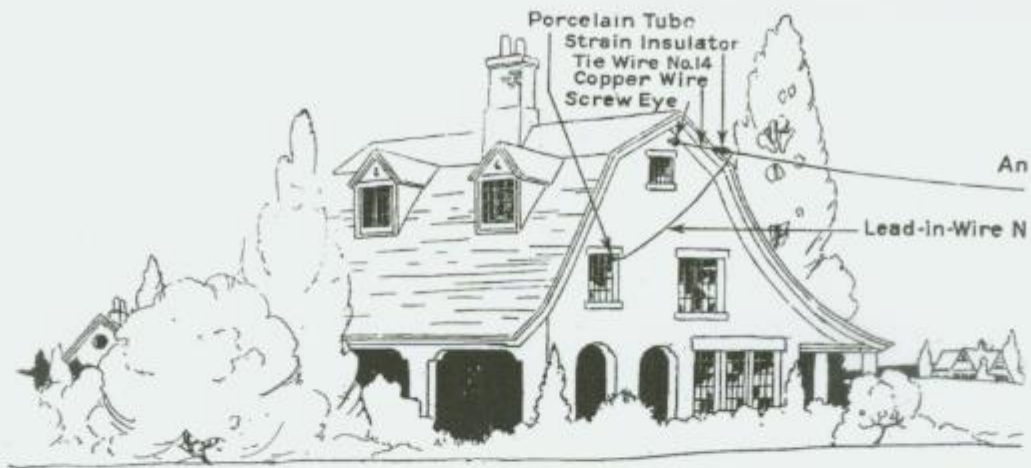
INSTALLATION

Locate RADIOLA V near the lead-in and protector. Lift the mahogany top and remove the covers of the units by pushing upwards on the catch and lifting the covers backward and up.

When making connections to the receiver, use a long screw driver. Insert the wire in the hole in the terminal before loosening the screw inside the case. Then loosen the screw until the wire can be pushed all the way in, after which tighten the screw.

Run a wire from the antenna terminal of the protector to the antenna terminal on the left end of the receiver. Connect the ground terminal of the protective device to the ground terminal on the left end.

Locate the storage battery in any convenient place. If this is at any considerable distance from the set, use heavy leads. Locate the plate "B" batteries as near the



receiver as possible. When using Radiotron UV-200 as a detector, make the battery and other connections as indicated on the diagram. When Radiotron UV-201 is used as a detector, omit the lead from the 18-volt terminal of the battery and connect together the "+18 V." and "+40 V." terminals on the rear of the receiver.

When using Radiotron UV-200 as a detector, better results are sometimes obtained by very accurate adjustment of the plate voltage. This can easily be accomplished by connecting the outside terminals of the Model PR-536 Potentiometer (purchased separately)

across the 6-volt storage battery and the middle terminal to the negative (-) of the 40-volt plate battery, omitting the connections from the "-40 V." terminal of the receiver to the plate battery.

The terminals on the right end of the receiver are for use in connecting a loud speaker, which will be automatically disconnected when a telephone plug is inserted in any jack.

Before inserting the tubes, be sure that the filament knobs are set at "OFF." Place the tubes in the sockets as indicated in the cut and turn into place. The grid leaks should be in position in the clips as shown.

After the covers and top have been replaced, the illumination of the tubes can be observed through small holes in the front.

Radiola V is now ready for operation.

OPERATION

Adjust the telephones snugly to the ears and see that the telephone plug is properly connected to the cord from the phones.



USE OF CRYSTAL DETECTOR

Leave the filament knobs in the "OFF" position and bring the two detector minerals into contact, using the lower thumbscrew to adjust the pressure, and the upper knob to move the arm. Do not touch the metal parts. If there is any dirt or dust on the minerals, clean them by scraping lightly with a penknife. Insert the telephone plug in the left-hand jack.

Move the "WAVELENGTH" knob slowly over the scale until signals are heard and let it remain at the point where they are loudest. The final adjustment for wavelength is made with the Vernier knob in the lower left corner. The detector may be readjusted in search of a more sensitive point. This completes the wavelength adjustment. Signals from 180 to 400 meters will be found between 0 and 100 on the dial, and from 380 to 700 meters between 100 and 200.

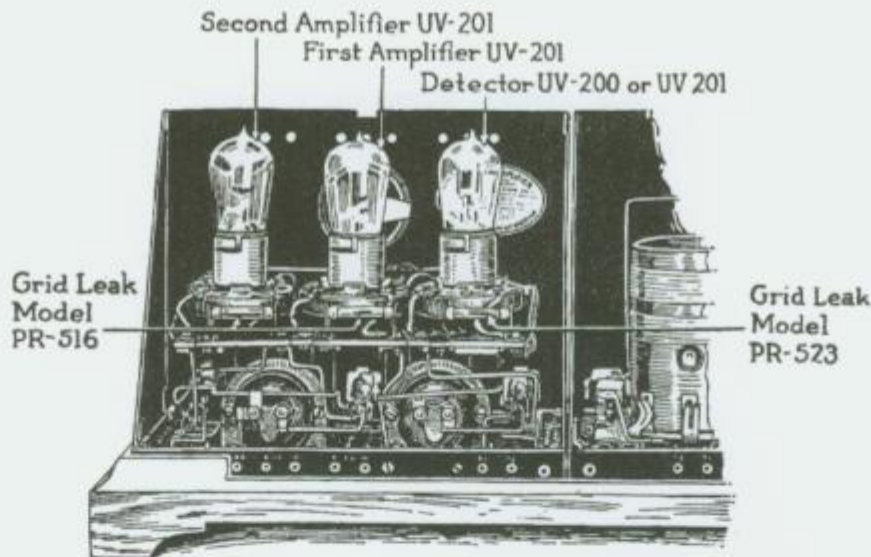
Always separate the minerals when they are not being used for crystal detector reception.

USE OF VACUUM TUBES

Turn the filament knobs counter-clockwise to bring the tube filaments to proper brilliancy. This is a little less bright than the ordinary incandescent lamp with UV-200 and UV-201 Radiotrons.

Plug the telephones into the second jack from the left. A click should be heard in the telephone when the plug is inserted or withdrawn.

Set the "INTENSITY" knob at "0." Turn the "WAVELENGTH" knob slowly



until a signal is heard, and leave it at the point where the signal is loudest. If no signals are heard, or if they are very weak, slowly turn the "INTENSITY" knob clockwise, still searching for signals with the "WAVELENGTH" knob.

When signals are heard, turn the "INTENSITY" knob still farther to increase the signal strength. Should it be advanced too far, a click will be heard in the telephones and then all signals will have a "mushy" sound. At this point the receiver becomes a transmitter and seriously interferes with neighboring radio receivers. This condition of oscillation must be avoided, but if it does occur, immediately turn the "INTENSITY" control backward until the signal clears up.

Move the telephone plug to the next jack at the right. The signals will now be much louder, and slight readjustment of the "INTENSITY" and "FILAMENT" controls may be necessary, particularly the detector tube filament, to get maximum sensitivity. The second stage of amplification can then be added by moving the telephone plug to the last jack.

If a loud speaker is to be used, pull out the telephone plug and readjust the set in accordance with signals from the loud speaker.

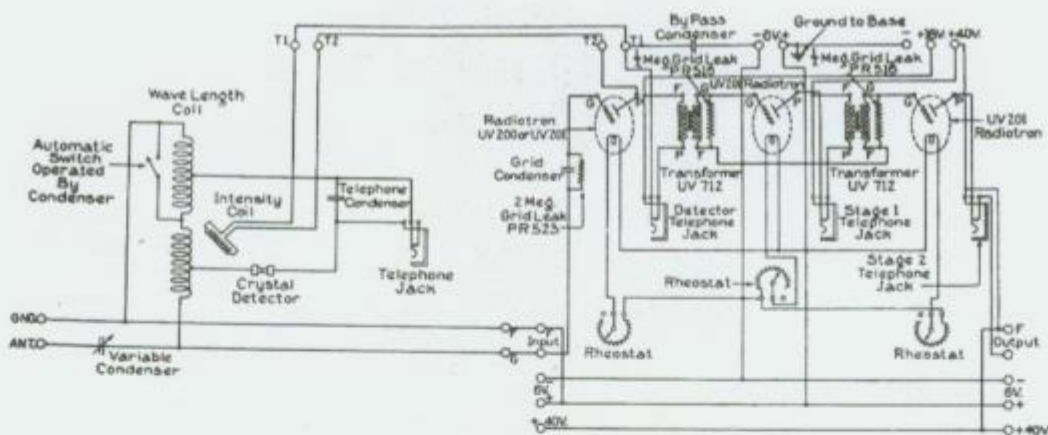
In some cases it may be possible to use both amplifying stages on the head telephones, but ordinarily the signals from the second stage will be too loud for comfort: The filament controls for tubes that are not in use should be turned to the "OFF" position.

If the loud speaker signals are not as loud as desired, they can be intensified slightly by removing the $\frac{1}{2}$ megohm grid leaks from the clips in the rear of the two amplifier tubes. The purpose of these grid leaks is to improve the quality of the signal.

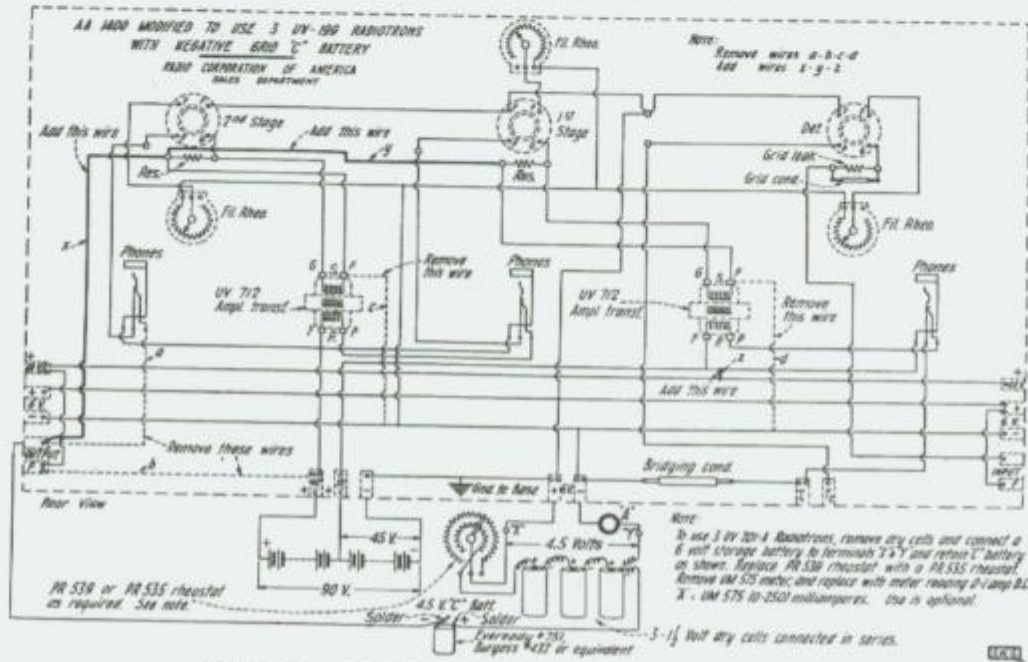
When the receiver is not in use, disconnect the batteries by turning all the filament knobs to the "OFF" position.

POSSIBLE CAUSES OF FAULTY OPERATION

- (1) Poor or broken connections in antenna or ground wires, or defective insulation of antenna.
- (2) "FILAMENT," "INTENSITY," or "WAVELENGTH" knobs improperly adjusted.
- (3) Batteries exhausted (indicated by low filament brilliancy, or weak signals and noisy operation).
- (4) Battery connection improperly made, or broken.
- (5) Poor or broken connections in telephone cord or plug.
- (6) Grid leak omitted.
- (7) Coil system not properly seated in contacts.
- (8) Inoperative vacuum tubes.



How to Add "C" Battery to Radiola V



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