Installing the Radio Set

By CARLISLE SHANNON

MANY people who would like to enjoy the pleasure of a Radio Receiving Set hesitate on the matter for several reasons. Foremost among them is the fear of lightning. The sooner everyone gets over the idea that lightning will be attracted by an aerial, the better it will be for all concerned. There is no more danger from a properly installed Radio Set than there is from the telephone or electric light wires. Furthermore, statistics show that the majority of lightning discharges occur between two clouds and not between clouds and the ground as is popularly imagined. However, certain precautions should be observed in the installation of a Radio outfit and in the following text will be found the proposed revisions to Rule 86 of the National Electric Code as suggested by the Standing Committee on Signal Systems, Wireless and Lighting at Chicago.

These revisions will doubtless become part of the National Electric Code in 1923 and those contemplating the installation of a Radio Set would do well to heed them.

CORRECTED FINAL REPORT

The following requirements are submitted as proposed revisions of Rule 86 National Electrical Code:

86 Radio Equipment.

Note: These rules do not apply to Radio Equipment installed on ship-board.

In setting up Radio Equipment all wiring pertaining thereto must conform to the general requirements of this Code for the class of work installed and the following additional specifications:

FOR RECEIVING STATIONS ONLY.

Antenna:—

(a). Antennas outside of buildings shall not cross over or under electric light or power wires of any circuit of more than six hundred (600) volts or railway trolley or feeder wires nor shall it be so located that a failure of either antenna or of the above mentioned electric light or power wires can result in a contact between the antenna and such electric light or power wires.

Antennas shall be constructed and installed in a strong and durable manner and shall be so located as to prevent accidental contact with light and power wires by sagging or swinging.

Splices and joints in the antenna span, unless made with approved clamps or splicing devices, shall be soldered.

Antennas installed inside of buildings are not covered by the above specifications.

Lead-in Wires

(b). Lead-in wires shall be of copper, approved copper-clad steel or other approved metal which will not corrode excessively and in no case shall they be smaller than No. 14 B. & S. gage except that approved copper-clad steel not less than No. 17 B. & S. gage may be used.

Lead-in wires on the outside of buildings shall not come nearer than four (4) inches to electric light and power wires unless separated therefrom by a continuous and firmly fixed non-conductor that will maintain permanent separation. The non-conductor shall be in addition to any insulation on the wire.

Lead-in wire shall enter building through a non-combustible, non-absorptive insulating bushing.

Protective Device

(c). Each lead-in wire shall be provided with an approved protective device properly connected and located (inside or outside the building) as near as practicable to the point where the wire enters the building. The protector shall not be placed in the immediate vicinity of easily ignitable stuff, or where exposed to inflammable gases or dust or flyings of cumbustible materials.

The protective device shall be an approved lightning arrester which will operate at a potential of five hundred (500) volts or less.

The use of an antenna grounding switch is desirable, but does not obviate the necessity for the approved protective device required in this section. The antenna grounding switch if installed shall, in its closed position, form a shunt around the protective device.

Protective Ground Wire

(d). The ground wire may be bare or insulated and shall be of copper or approved copper-clad steel. If of copper the ground wire shall be not smaller than No. 14 B. & S. gage and if of approved copper-clad steel it shall be not smaller than No. 17 B. & S. gage. The ground wire shall be run in as straight a line as possible to a good permanent ground. Preference shall be given to water piping. Gas piping shall not be used for grounding protective devices. Other permissible grounds are grounded steel frames of buildings or other grounded metallic work in the building and artificial grounds such as driven pipes, plates, cones, etc.

The ground wire shall be protected against mechanical injury. An approved ground clamp shall be used wherever the ground wire is connected to pipes or piping.

Wires Inside Buildings

(e). Wires inside buildings shall be securely fastened in a workmanlike manner and shall not come nearer