

RCA-VICTOR CO., INC.

World Wide Antenna Installation Data

Mounting Procedure

The actual set-up of the antenna system is very simple and can be performed by practically anyone. Since the means of supporting the antenna will necessarily be different in almost every case, that portion of the installation will not be discussed herein. General recommendations in this respect, however, are contained in Figure 1. Insofar as possible, the intent of such recommendations should be observed, even for different forms of mounting.

Assembly—As shown in Figure 1, the two doublet antennas which comprise this system are formed by the two stranded wires supplied with the kit. By means of the porcelain crossover insulator, these wires are crossed to produce two horizontal sections, each 29 feet in length, and two angularly-displaced sections, each 16½ feet in length. An extra length of six inches is afforded at each end of both continuous wires for connection to the porcelain strain insulators, both (as noted under "Equipment") being 46½ feet long. In assembling these wires to the crossover insulator, be careful that the actual cross occurs on opposite sides of the insulator.

The transmission line finally should be connected to the antenna wires as indicated by the detail illustration of the crossover insulator in Figure 1. A tinned spot on each wire is provided to identify the points at which the transmission line should be attached. Make certain to insert the piece of cambric tubing at the insulator and to use only rosin-core solder for the connections as recommended. The antenna now may be suspended between the masts or intended points of support.

Connection to Receiver—The opposite end of the transmission line should be led to the receiver, using the porcelain insulator knobs (if required) and the porcelain entrance-tube insulator. Then install the coupling transformer upon the antenna-ground terminal board of the receiver, as shown in Detail A of Figure 1, and attach the transmission line to this transformer. A metal cleat and wood screw are provided to secure the transmission line to the receiver cabinet.

NOTE—For models having no terminal board, it is very important that the transformer be installed as near to the chassis as possible. To insure best noise elimination, this connection should be no longer than one inch. The connection should be made in such a manner that the proximity of this wire to grid terminals of the receiver tubes.

Connection to Ground—A ground clamp is applied for securing a tight and permanent connection of the ground wire from the receiver to a water pipe in the basement or to an external metallic stake driven from five to eight feet into the soil. The ground wire should be No. 14 or larger (rubber-covered) and should follow as short and direct a route as possible. Since the length and direction of the ground wire will be different for each installation, this wire is not furnished with the kit, but may be obtained locally.

General Considerations

To insure the greatest possible benefits from the RCA "World-Wide" Antenna System, three important considerations should be observed during its installation:

- (a) Height above ground.
- (b) Distance from local sources of noise interference, such as power lines, street railroads and automobile highways.
- (c) Direction of span.

Height above Ground—This consideration probably is the most important since it directly affects the strength at which signals will be received. Ordinarily, the antenna will be erected either upon the roof of a building or suspended between that roof and a nearby tree or pole. For the usual dwelling having a roof and framework of non-metallic materials, the height will be measured with respect to the actual surface of the earth. However, if the opposite condition exists, as in the case of a modern apartment house or hotel, effective ground should be assumed as at the metal roof. For good results, the horizontal wires of the antenna should be at least 30 feet above the effective ground.

Distance from Sources of Interference—Since the antenna system excludes from the receiver all interference signals "picked-up" by the transmission line, the antennas should be erected as far as possible from sources of interference in the immediate locality. The antenna proper may be located up to 500 feet distant from the receiver, adding one or more lengths of transmission line to the length furnished, as required. To maintain the correct electrical matching, any excess length of transmission line should not be removed unless two or more full lengths have been added. Where the required length of line is less than one or two full lengths, the excess line should be coiled up neatly at the end nearest the receiver.

Direction of Span—This antenna system exhibits a slight directional effect—that is, the geographical position of the span may have some effect upon the intensity of incoming signals. Wherever possible, therefore, the antenna should point in a direction at right angles to that of the transmission path from favored broadcasting stations. If the antenna must be located near a street railroad or a much-traveled highway, direct "pick-up" of interference signals on the doublets can be minimized by erecting the span to point toward the source of interference.

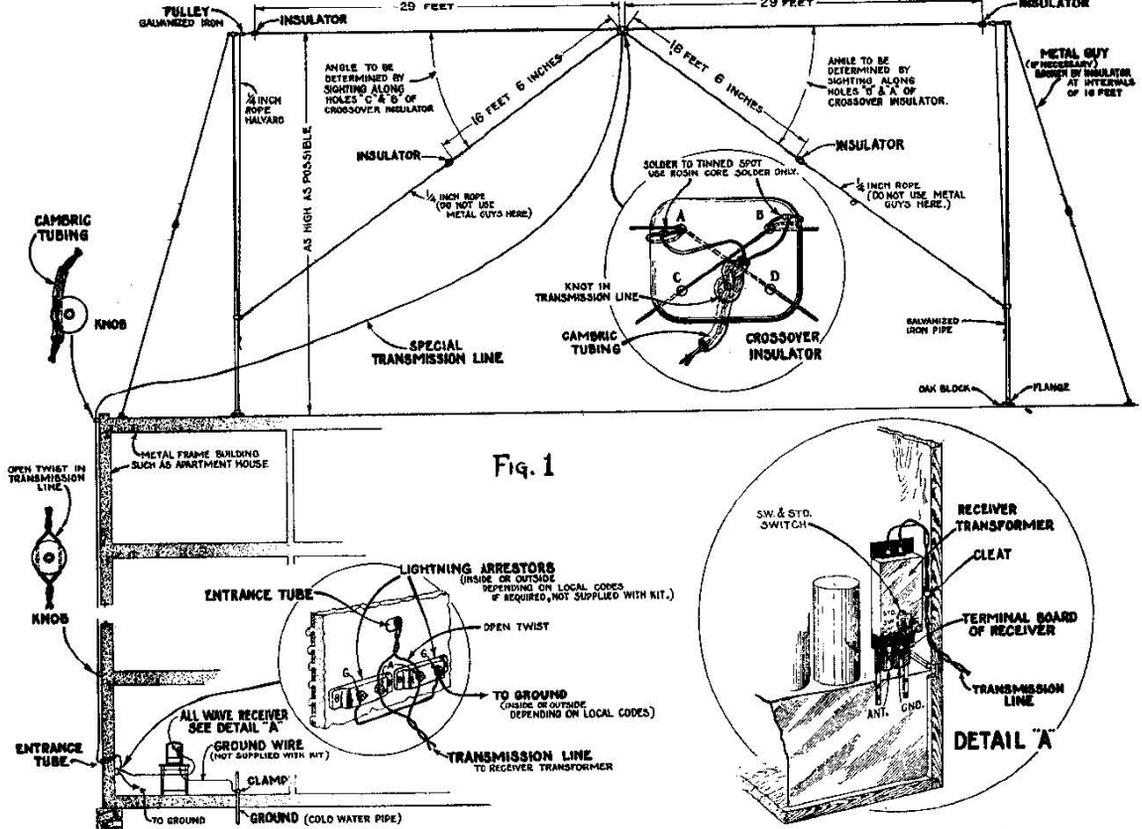


Fig. 1

DETAIL "A"

World Wide Antenna
Notes
Parts List

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ALTERNATIVE ANTENNA ARRANGEMENTS

In certain installations, space limitations may prevent the use of the full antenna span—approximately 60 feet. Three alternative arrangements, listed in order of preference, are possible:

- (a) Reduced overall length through the use of loading coils.
- (b) Reduction of the horizontal angle from a straight line span (180 degrees) to any other of not less than 90 degrees.
- (c) Vertical suspension.

The first arrangement (a), in which loading coils are inserted to replace lengths removed from the horizontal sections of the antenna as illustrated by Figure 2, is recommended as the preferred alternative. In this manner, the overall span is reduced to approximately 34 feet, without impairing the original tuning characteristics of the system except in the region of 31 meters. The loss encountered within the broadcast band at this wavelength, however, will not be serious.

Using the second alternative (b), the length of

the antenna span is decreased by reducing the horizontal angle between the halves of the system (as viewed from above), rather than by shortening the lengths of the horizontal sections. While loading coils are not required, a third support for the antenna at the crossover insulator must be provided, the installation therefore being usually more difficult than for either *straight-line* arrangement. The antenna efficiency naturally will be lowered as the angle is decreased, resulting in a signal-strength loss on all bands of approximately 30 percent at an angle of 90 degrees.

If vertical suspension (c) is employed, much less ground space than for any horizontal form of antenna is necessary. Although somewhat inferior in noise ratio to the horizontal type, the vertical system enjoys an additional advantage of being practically non-directional. Such an installation, however, is usually both difficult and expensive, but can be simplified to a large extent through the use of loading coils.

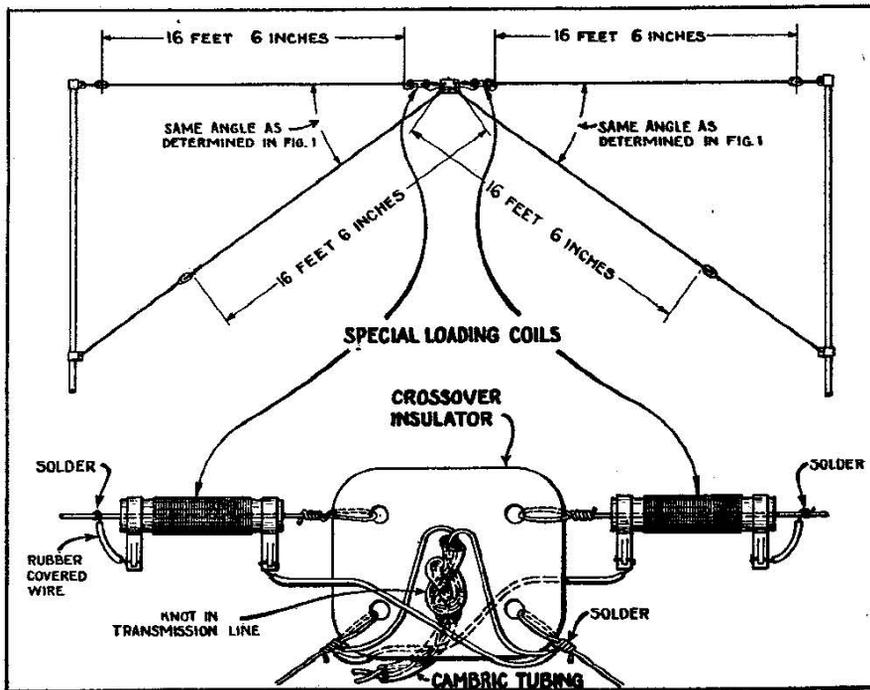


Figure 2

REPLACEMENT PARTS

Insist on genuine factory-tested parts, which are readily identified and may be purchased from authorized dealers

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
4324	Transformer (Coupling transformer and switch assembly) —For replacement purposes only; item to be replaced must be returned with order.	\$2.50	4327	Insulator (Crossover insulator)—For replacement purposes only; item to be replaced must be returned with order.	\$0.10
4325	Knob (Switch knob)—Package of 5.	1.00	4328	Transmission line (special lead-in—110 feet long)	3.72
4326	Wire (2 rolls stranded wire, each 46 1/4 feet long)	1.16	4329	Transmission line (special lead-in—220 feet long)	7.44
			4330	Transmission line (special lead-in—330 feet long)	11.16