INTRODUCTION:—Single wire antennas ordinarily employed for radio reception on the broadcast band are not satisfactory for short wave reception due to the fact that the impedance of a single wire antenna varies over wide limits at short-wave frequencies. Single wire lead-ins running close to power lines and telephone lines pick up electrical interference from motors, arc-lamps and other apparatus so that the noise level in many localities makes the reception of some signals impossible. The new Northern Electric K-2834 Antenna kit has been designed to provide stronger reception and reduce noise on the short-wave bands.

GENERAL:—A diagram of the K-2834 antenna kit is shown in figure 1. It consists of a double-V doublet antenna of overall length 56 feet, and a spacing of 6 feet between the ends of each of the Vs. The Vs are mounted in a vertical plane which eliminates the need of cross arms on the two antenna masts. On the broadcast band the doublet acts as a non-directive antenna but at higher frequencies the maximum strength of short-wave signal will be received when the 56 feet dimension of the doublet is at right angles to the direction from which the signal comes. It may be desirable, in some localities where electrical interference is very bad, to have the antenna mounted at right angles to nearby power and trolley lines and sacrifice the directive characteristics of the antenna in order to reduce the noise pick-up. In every case the antenna should be mounted as high in the air as possible.

The use of a two wire transmission line, instead of a single wire lead-in, and the electrical circuit of the antenna kit receiver transformer make it possible for the noise impulses picked up by the transmission line to annul themselves without getting into the receiver; this quality of the antenna kit makes the short-wave band noise reduction very marked. The broadcast station signals come down the transmission line and into the set without hindrance. The receiver transformer can should be mounted on the back of the receiving set by a wood screw through the bracket on the can.

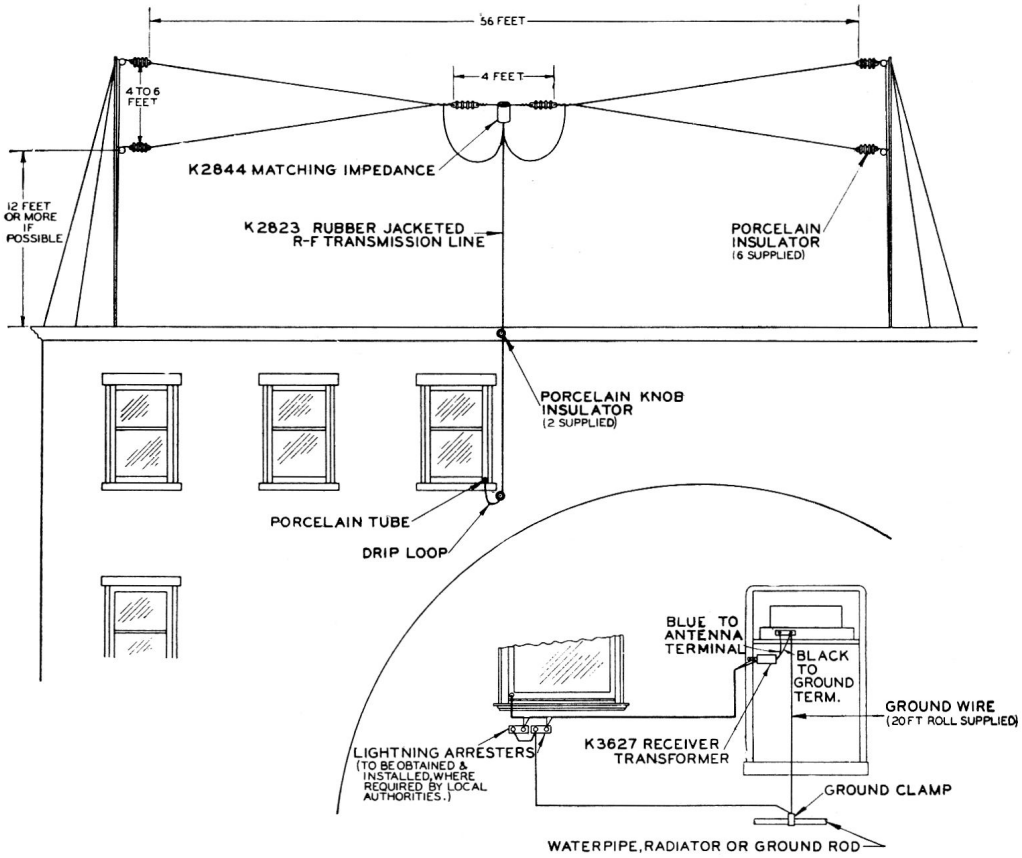

Figure 1.—A Typical Arrangement for the Northern Electric K-2834 Antenna.

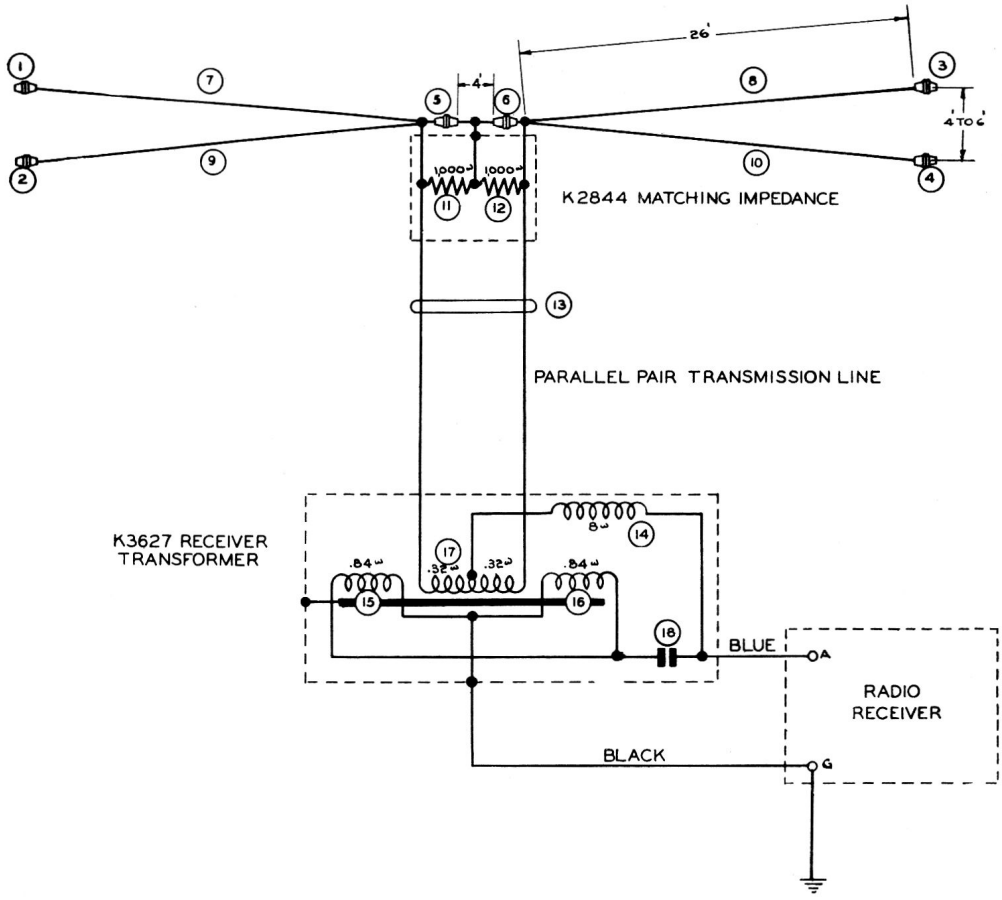

Figure 2.—Schematic Circuit Diagram for K-2834 Antenna Kit.

The Northern Electric K-2834 antenna kit is not limited to use with Northern Electric receivers; it will operate satisfactorily with all makes of receivers. As many as twenty receivers can be connected to the same antenna and transmission line but care must be taken to use one of the antenna kit transformers (part No. K-3627) with each receiver and to use standard K-2823 antenna kit transmission line to connect from the main lead-in transmission line to the antenna kit transformer on the receiver.

In apartment house installations where several receivers are close to one another, interaction among different receivers may occasionally show itself by a whistling noise at odd points on the dial. This is not in any way due to more than one set being operated on the same K-2834 antenna. The whistling would be apparent even if each receiver were connected to its own separate single wire antenna.

NOTES

1. Doublet may be cut to less than 49 feet long where necessary, with some loss of efficiency.
2. As many as 20 receiver transformers and receivers may be connected to one transmission line.
3. Additional 45′ lengths of transmission line (part K-2823) may be obtained if required.
4. Antenna should be erected as far from high-tension or trolley wires as possible, and at right angles to them.

SERVICE

Figure 2 shows the interconnection of the assemblies used on this antenna kit. Little trouble is expected with them. For checking purposes, however, the D.C. resistance of the coils concerned has been given.

REPLACEMENT PARTS LIST

K-2844—Matching Impedance Assembly (Antenna)
K-3627—Receiver Transformer Assembly
K-2823—Transmission Line (45′ lengths)