OFF THE AIR

Antennas and Shortwave Listening

Continuing with our discussion of simple antennas for shortwave listening, I want to describe two variations of the basic dipole antenna that we discussed in the last issue. Before we do that, however, let's talk about **directivity.** The dipole antenna will provide a certain amount of directional effects broadside to the way it is installed. That is, if you hang the antenna with the wire running north to south, signals from the east or west will be stronger than those emanating from north or south. If you are interested in receiving signals from South and Central America, for example, string your antenna east to west. To receive signals from Europe and Africa, run the antenna from north to south. Your antenna will receive signals from **both** directions, so that the Europe-Africa antenna will also pull in signals from Australia and the Pacific.

Two other configurations of dipoles are available, one with omnidirectional characteristics, the other being very directional. The omnidirectional antenna is called an inverted Vee dipole. It requires only one tree or pole for erection. You make this antenna just like the regular dipole, but you hang the center insulator as high as possible, and slant the ends of the antenna to the ground at an angle of about 45 degrees. This antenna receives equally well from all directions, and has the advantage of not requiring two poles or trees from which to hang both ends. (See Figure 1).

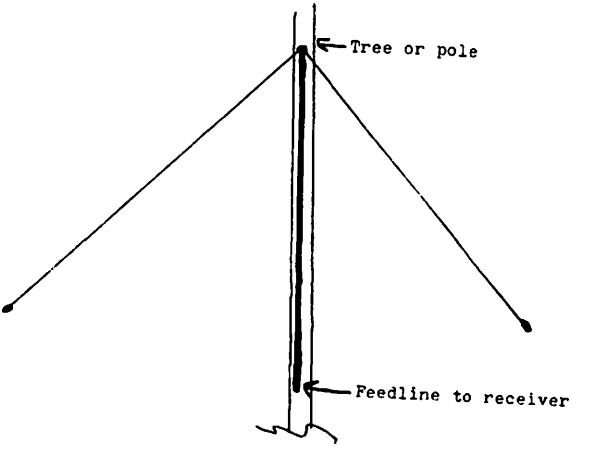

Figure 1: Inverted Vee Antenna

The more directional dipole is the sloping dipole. One end is hung high as possible, and the other end is brought toward the ground as a 45 degree angle and tied off to a convenient point. This antenna can be sloped toward that part of the world whose broadcasts interest you the most. (See Figure 2).

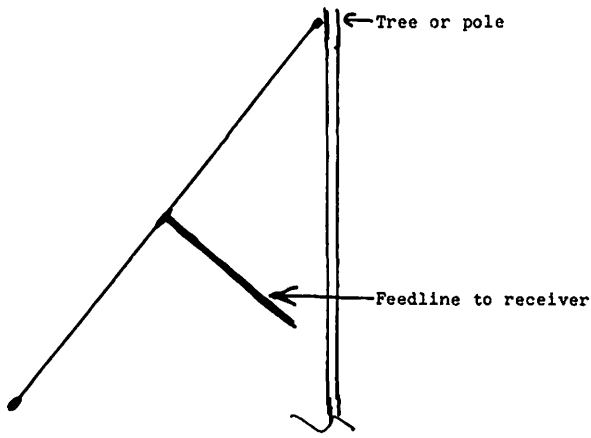

Figure 2: Sloping Dipole

Last issue, I described the general coverage dipole. This month I'm going to give you the antenna lengths for specific frequencies. If you are interested in receiving signals in a particular waveband, these antennas are for you. Table I gives you the shortwave band and the corresponding length for a dipole cut for the center of that band. These lengths are calculated from the formula

$$\text{length (in feet)} = \frac{468}{f}$$

where f is the frequency in Megaherz.

Next month, we'll talk more about directivity and the best band to use for a particular location at a particular time of the day and year. Until then, good listening!

Table I

Dipole Length for Specific Frequencies

Meter Band	Center Frequency	Antenna Length (feet)
49	6.0	78.0
31	9.6	48.8
25	11.8	39.7
19	15.2	31.0
16	17.8	26.2
13	21.6	21.7

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