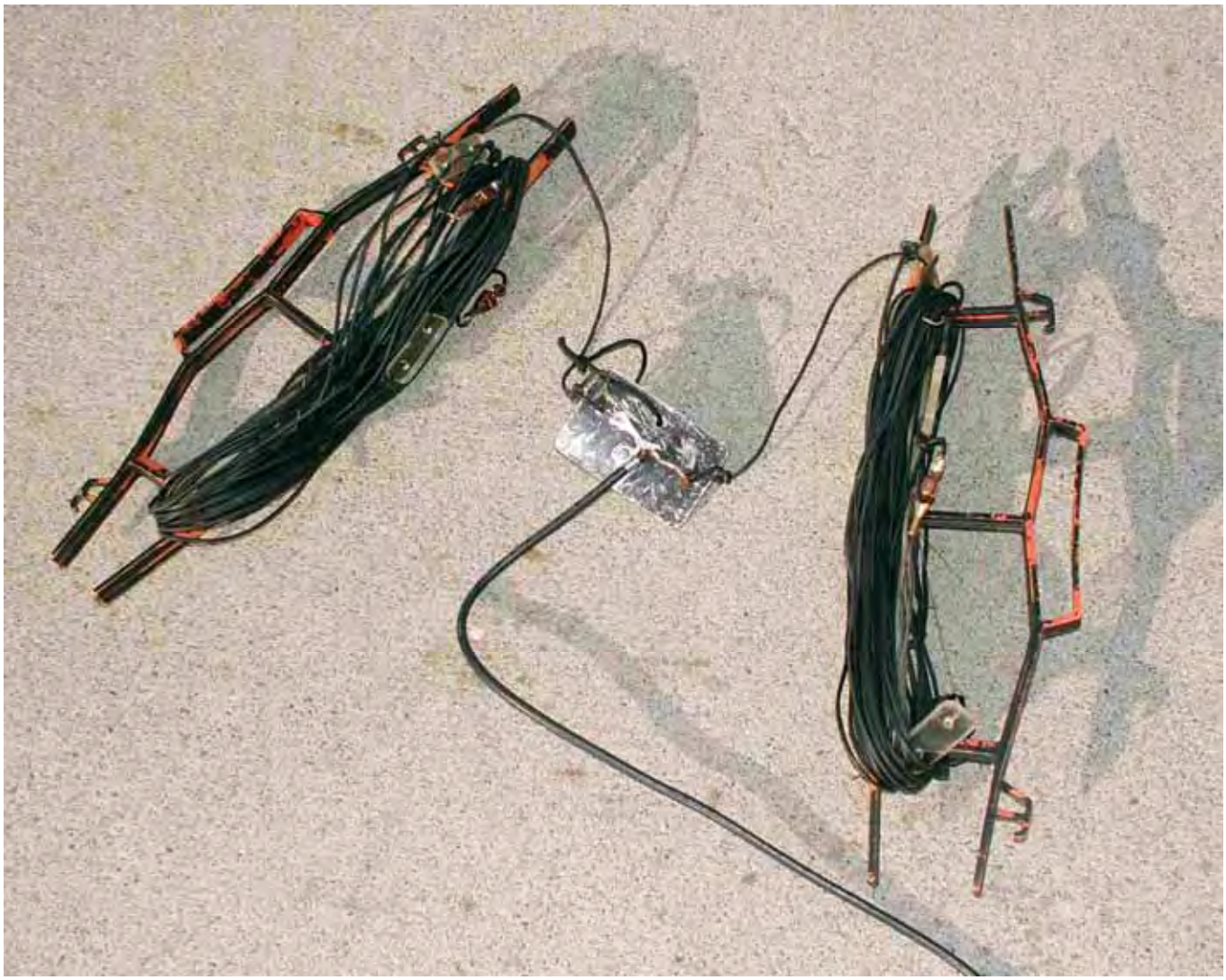
Portable Dipole for High Frequency Operation



The need for an “all band” portable antenna which performs well, and is easy to use, led to the development of the following wire antenna. It works, without needing a tuner, on the 80, 75, 40, 30, and 20 meter bands.

Construction
The antenna is a full size dipole on each band. A 65 foot piece of 16 gauge zip cord is split into two identical pieces of insulated wire, one for each side of the dipole. A 50 foot length of RG8X coaxial cable, with attached PL-259, is the feedline.

The center insulator is a piece of 1/8 inch thick masonite, approximately 5 x 3 inches. The coax is attached to the center insulator with a small metal clamp, bolted to the insulator. Each side of the antenna is looped through a hole drilled in the insulator, and secured with a knot. All connections are soldered.

Each identical side of the antenna is composed of lengths of wire, separated by five small plastic or nylon insulators, approximately 2 inches in length, each with a single hole in each end. The insulators are cut from any available appropriate scrap material. Wires are inserted through the holes in each end of the insulator, and secured with a simple overhand knot. One of the wires terminates with a bare, soldered conductor. The other end of the insulator terminates with a soldered alligator clip (except for the end insulator, which has no clip). Copper coated clips are best; steel is ok, but should be checked for corrosion.

Each length of each segment is measured, cut, and installed sequentially; resulting in the following lengths from the middle of the center insulator to the MIDDLE of each insulator. Allow about 1 extra inch of wire for the securing knot.

20 meters (14150 KHz)	16 feet, 3 inches
30 meters (10130 KHz)	22 feet, 5 inches
40 meters (7100 KHz)	32 feet, 3 inches
75 meters (3950 KHz)	56 feet, 4 inches
80 meters (3600 KHz)	61 feet, 7 inches

About 30 feet of light cord or heavy fishing line is attached to the end insulator. This line is tied to an "extension cord winder" available at most hardware stores.

If black zip cord is used, and the insulators and winders are painted flat black, the antenna is mostly "invisible" in a campground. Highly visible flagging should be attached for safety, if necessary.

Installation

The antenna is always suspended from the center insulator by attaching a rope to the cord loop. Sometimes a tree limb is used as the support. Other times a telescoping fiberglass pole is used. The usual center height is 10-30 feet. The ends are supported by whatever is available (tree limb, bush, fence, etc). The ends should be as high as possible, but the antenna has been used with the ends as low as 5 feet (marked for safety with flagging material). The winder is normally kept attached to the antenna. It is not necessary to unwind the entire antenna or end supporting cord, depending on the frequency band needed and the end support locations.

Use

Depending on the frequency band needed, the proper alligator clip is opened for each side of the antenna. When all clips are closed the antenna will work on 80 meters (about 3600 KHz). When all clips are opened the antenna will work on 20 meters (about 14150 KHz). The clips and bare wire ends should be checked periodically for corrosion, and sanded if necessary.

Storage

Lower the center of the antenna, being careful to not get it tangled in any stray tree branches! Starting at the end of one side of the antenna, begin winding the support line and wire onto the winder. A "figure-8" pattern will keep the wire from getting twisted. Continue until all of one side is on the winder. Repeat for the other side. Then, holding both sides together (on top of each other), wind the feedline around BOTH winders. Conclude by wrapping the entire package with a few turns of light nylon cord.

If the antenna has gotten wet during its use it should be dried as soon as possible to prevent corrosion.