

Some Hard-to-Spy Antennas

Hidden in a deserted farmhouse located deep in enemy territory, headphones clamped tight to your ears, you are risking your life or even worse, using your tiny shortwave station to send back vital information about enemy troop movements. As you tap out your message in Morse code there is a loud banging at your door. Your heart stops — then races wildly. Quickly you stuff your miniature station into its secret hiding place. And no one will guess that that old telephone line which runs only between the house and barn was just now serving as your antenna. Trying to look like some down-on-your-luck drifter who just came in from the cold, you cautiously open the door...

Luckily we're just pretending here, but there *are* real-life situations where we may want to have antennas which are not visibly obvious; antennas that the gestapo, KGB, or even your neighbors or landlord won't see. Or maybe you would like to have the view in your own yard free of any visible wires and

towers.

On the other hand, who knows? Your expertise in radio operation *could* lead to a spy assignment someday when your country needs you. We hope that isn't too likely, but just the same let's take a look at some antennas that could come in handy for a variety of reasons.

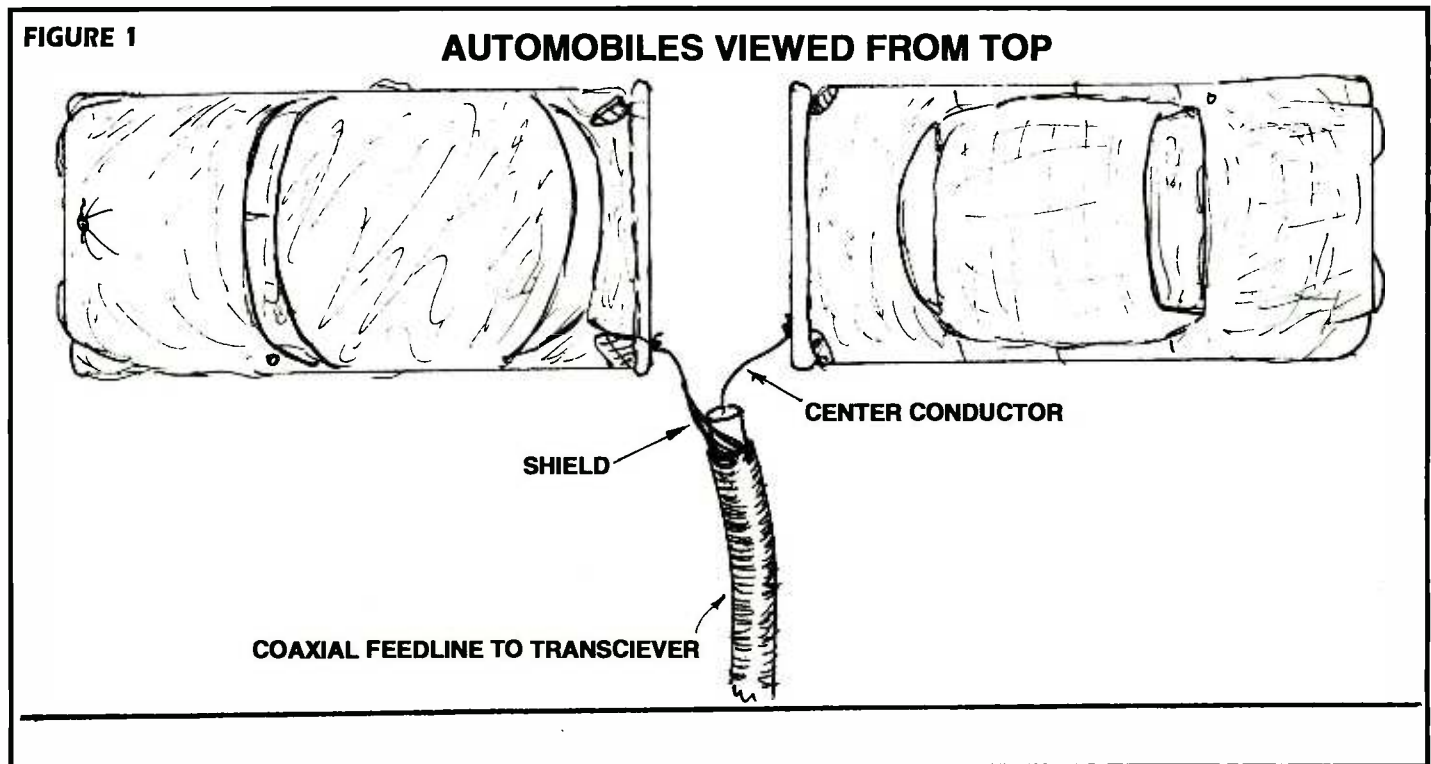
■ Ordinary antennas in non-ordinary places

Some types of wire antennas will fit full-sized into the attic of a home, the crawl space above the ceiling of a room, or even in an unused chimney. Sometimes they must be bent a bit to fit, but they still work. Halfwave dipoles shortened by as much as half their length still work surprisingly well. Some people have had success putting wire antennas under rugs, around the baseboard of a room, or under the eaves of their roof. Unused chimneys can house base-fed vertical antennas, although putting radials out for them can

be a problem. In some cases a couple of radials run out to each side of the antenna during operation (and rolled up and kept in the chimney when not using the antenna) can give good results. Or a center-fed dipole might fit your chimney if fed through a flue on your second story.

■ Non-obvious antennas just waiting for you

Obviously we should mention antennas like telescoping whips, active antennas and desk-top loops as among those with a low visible impact on the environment, but there are many even less-obvious antennas which operators have found useful in the past. These include metal window frames, metal porch awnings, lawn chairs, grocery carts, rabbit cages, clothes lines, dog-run cables, bed-springs, flagpoles, aluminum ladders, metal gutters, wire fences, and even automobile bodies (fig. 1). As a matter of fact the *human*



A center-fed dipole antenna utilizing the metal bodies of two parked automobiles as its elements. Good two-way communication was reported using this antenna.

body makes a fair antenna at times! Items such as lawn chairs or ladders must be insulated from the ground. Setting them on a piece of dry wood is one way. The grocery cart and automobile are automatically insulated from ground by their rubber tires.

Unused electric appliances often work well as antennas. Be sure they are not plugged into the power mains! Actually the appliance's unplugged power cord can be used as the feedline when using the antenna for reception. To utilize these various objects as antennas you simply run a short wire from the center connection of the antenna input socket on your receiver, and connect it to the metal case of the object.

Believe it or not trees make decent antennas. Connect your coax feedline center-connector to a nail driven into the tree a few inches above the ground, and the coax shield to a rod in the ground below. Speaking of the ground, insulated wires laid on the ground, or just under the ground, can be used as antennas when received-signal strength is strong.

Although it is important to avoid utilizing for an antenna any appliance that is plugged into the electric power lines, you can utilize your entire house wiring as a receiving antenna! Do not, I repeat, *do not* connect any antenna directly to the household power lines, and never use this antenna for transmitting. To couple to the wiring wrap a few feet of insulated wire tightly along the length of an extension cord. *Do not* connect this wire to the wires of the extension cord. It doesn't matter if there is something plugged into the extension cord or not, but the extension cord must be plugged into an outlet. The free end of the insulated wire runs to your receiver's antenna terminal.

■ Transmitting, too!

Non-obvious antennas which are insulated from everything but your antenna lead-in wire should be OK for transmitting as well as for receiving. You need to use common sense, however (i.e., no one should be sitting in the lawn chair when it's being used to transmit, forget using the human body as a transmitting antenna, etc!). Don't use an appliance's power cord as a feedline when transmitting. As a matter of safety there should be no one near an antenna when it's transmitting. Very low power should be used for in-house antennas unless the antenna is well away from any other objects. Never use a transmitting antenna near a fuel storage tank.

For transmitting you're almost sure to need an antenna tuner to get any worthwhile radiation from the antenna. Non-obvious antennas

used for reception usually do not have a high level of output, and in some cases an antenna tuner may be useful in bringing the received-signal level up.

■ And so....

In case you think that the antennas described here are suggested only in jest, let me say that I have received reports from readers and friends who have enjoyed themselves with one or more of these antennas. The infamous Kurt N. Sturba frequently writes about his exploits using only a lawn chair, or some such unusual item, as an antenna. He makes many DX contacts with such a setup. Perhaps the most impressive small-antenna stunt that's come to my attention is that of a reader who reported that he had made a contact several states away using only a straightened paper clip as an antenna on the 10-meter amateur band!

It is usually true that putting a half wavelength receiving antenna outside, in the clear, and as high as practical gives better reception than is obtained from the antennas we've discussed here. But not everyone has the space, time, finances or desire to put up a more ideal antenna. The antennas described here have brought many listeners a lot of pleasure over the years. They are not difficult to try, and you can have yourself some fun in the process.

RADIO RIDDLES

■ Last Month:

I asked: "What was the first antenna?" The answer to this question depends on how you interpret the question. Hertz, who discovered electromagnetic waves about 1888, utilized loops, dipoles, parabolic reflector antennas, and dielectric antennas in his laboratory research. Marconi utilized a horizontal dipole in his early wireless work around 1896. But before these pioneers there were pre-pioneers like Henry, 1842; S. Thompson, 1876; Hughes, 1879; and Dolbear, 1882, who utilized various antennas in successfully sending and/or receiving wireless signals. E. Thomson (1871) even utilized a metal table top and a tin still as antennas. And he wasn't even a spy.

■ This Month:

Where did we get the name "antenna?"

You'll find an answer for this month's riddle, and much more, in next month's issue of *Monitoring Times*. Til then Peace, DX, 73

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