

A "Short-Yard" Antenna for 40/75

— fits where others won't

The problem of space in which to erect an antenna is, I suppose, as old as ham radio itself. My first antenna consisted of four wires strung between two sixty-foot telephone poles two hundred feet apart—but that was in 1920, and I just happened to live on a farm with plenty of space.

Few city lots today will accommodate a half-wave horizontal antenna for seventy-five meters, however; some even have trouble with forty meters.

Being in that category myself, I began looking around for some way to operate on seventy-five that didn't include running a wire over to my neighbor's TV tower. The first solution that comes to

mind, of course, is a ground-mounted vertical. That's fine and I enthusiastically recommend that method, but a base-insulated tower is not easy to manage and an aluminum tube sticking up in the air sixty-odd feet is not the easiest thing in the world to keep up there.

Having a forty-meter vertical already in operation, I came up with the following idea, requiring only about thirty feet of horizontal space. Fig. 1 is self-explanatory, perhaps, but here is a simple verbal explanation.

I ran a copper wire up alongside the forty-meter aluminum tubing, insulated

from the tubing at both extremities, and tied the bottom point to the inner conductor of the coax cable at the same place it is connected to the aluminum tubing. The coax braid is already strapped to the ground for the forty-meter vertical, of course. The horizontal part can be tied off, with an insulator at the end of the wire, to anything that is available—a house, shed, barn, or favorite tree. Actually, it really does not have to be exactly horizontal. The outer end can be higher or lower than the end fastened to the forty-meter antenna. I tried several different angles, and, except for affecting the resonant length, it didn't seem to make any difference.

The length of the forty-meter tubing may have to be altered somewhat to bring it back into resonance where you want it, but I found very little difference after I put up the wire alongside. Of course, the horizontal portion will have to be trimmed to the portion of the seventy-five-meter band where you wish to work; you'd want to do that anyway.

I found the performance of the forty-meter vertical unaffected and that of the seventy-five-meter wire as good as any half-wave horizontal I've ever used.

This is an ideal "short-yard," combination forty-

and seventy-five-meter antenna, but if you don't operate forty—or perhaps have a forty-meter beam—this same arrangement can still be used for seventy-five meters with slight modification. In that case, the horizontal wire is electrically fastened to the tubing at the top, eliminating the insulators and the wire running down to the bottom of the tubing. The coax remains connected in the same manner as with the two-antenna combination.

Another method might be to use your beam tower to support the seventy-five-meter wire. In this case, the inner conductor of the coax would be connected to the wire only and not to the tower—the vertical portion of the wire would have to be insulated from the tower as it was in the first instance. You would want to fasten the horizontal portion of the wire at about the thirty-foot level of the tower, give or take a few feet, remembering that the higher on the tower you go, the shorter the horizontal portion will have to be (the idea being that from the coax connection to the far end of the wire, the electrical length should be a quarter wave of the operating frequency). Like most antennas, it should be trimmed to the frequency you mean to operate on. ■

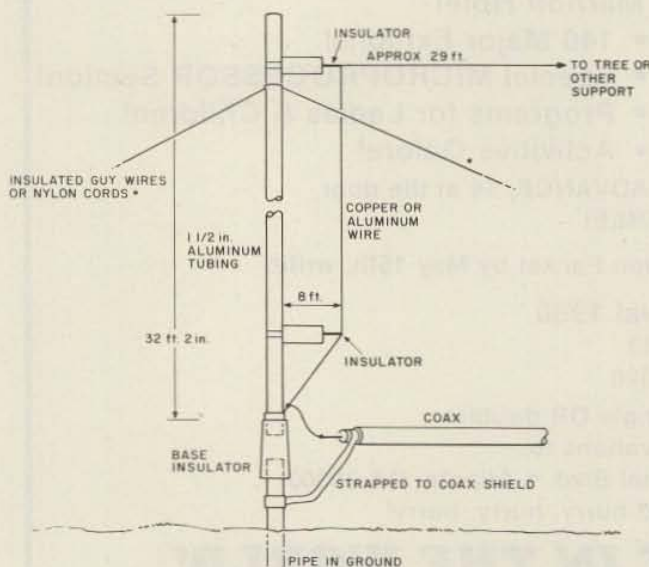


Fig. 1. A "short-yard" 75-meter antenna.