

Your neighbors will never know if they can't see your skyhook!

By Steve Bacon, W2CJR

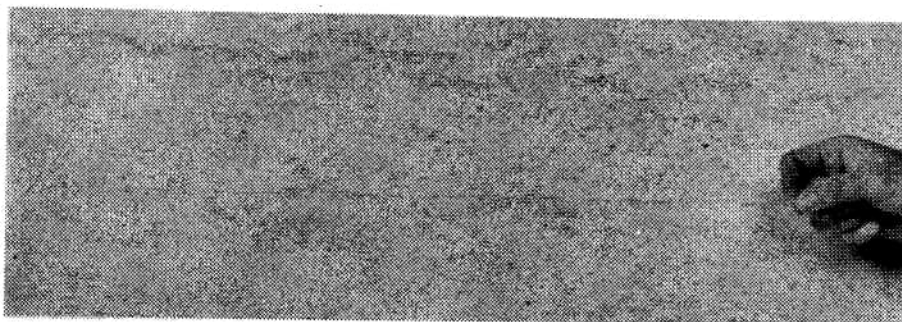
SUPPOSE you are the world's most enthusiastic ham or short-wave listener. You can hardly wait to try out that new rig—except for one thing: an antenna. Those fortunate enough to live in more rural areas can simply string a wire betwixt house and barn. But the inmates of those concrete-and-steel apartment jungles have a more serious problem.

One frustrated ham we know solved it by loading up the steel beams of the elevator shaft. Sitting over his rig in the wee hours, he found his vertical antenna worked well enough for local contacts. Unfortunately, the janitor got suspicious when his fingers started drawing arcs from the control panel of the elevator. Our friend, now at a new QTH, at last report was experimenting with the fire escape.

Fine-wire antennas are a more orthodox solution. Using any magnet wire from No. 18 on down, you can construct an antenna that is virtually invisible. The main consideration is how fine a wire you can use and still expect the antenna to support its own weight.

One chap, a ham, used a strand of No. 24 to erect a half-wave antenna for 40 meters (about $65\frac{1}{2}$ feet from the formula) and found that enameled wire blended perfectly with surrounding brick buildings. Minor complications aside (he put the thing up on Halloween and was mistaken for a prankster), the antenna works well and the secret is safe—unless the landlord gets fantastically sharp-eyed or lucky.

It's senseless to put up a fine-wire antenna and then load it down in both weight and visibility with large glass or ceramic insulators. Quarter-inch styrene tubing, available at your local radio supply emporium, is the answer. For end insulators, saw off pieces about $2\frac{1}{2}$ inches long. Drill a $\frac{1}{16}$ -inch hole in each end for the wire and you have a miniature, almost transparent, insulator (see photos). To fasten the ends of the antenna, use ordinary TV lead-in insulators of the screw or masonry nail type. Besides holding well, these make the whole assembly look less suspicious because you see such stand-offs everywhere.



VIEW FROM 5 FEET— Just how hard-to-see a fine-wire antenna can be is demonstrated by this photograph. Directly to the left of the thumb is an antenna of No. 32 wire with a plastic-tube insulator in center. Can you see it?

If your primary interest is in short-wave listening you can merely drop the end of the antenna wire down from the near insulator and attach it to the antenna post of your receiver. The styrene tubing makes an excellent feed-through insulator. Drill a small hole through the window sill or other convenient spot and line it with tubing before threading through the wire.

If you intend to use the antenna for transmitting, a few more problems are involved. Pi-network coupling is a boon in matching fine-wire antennas properly, and the size of wire you select will depend on how much power you intend to run. As a rule of thumb, *any* size wire capable of supporting itself will take up to about 30 watts. After that, it's a matter of experimentation involving actual output of your transmitter and how well your antenna is loading.

A Brooklyn ham hooked his 90-watt CW rig to an antenna made of No. 24 wire. His first couple of test dits left a plume of smoke in the air and his wire in two pieces on the ground. Obviously, he needed heavier wire. And just as obvious is the fact that fine-wire antennas are for low-power operation only.

Reactance rises sharply as wire gauge goes up (and the wire itself becomes smaller). The smaller the wire, the more problems you'll have in trying to make an impedance match. Tuned small-wire antennas are likely to be sharp at one frequency but way off at others. Single-band operation probably is best and presents fewer troubles.

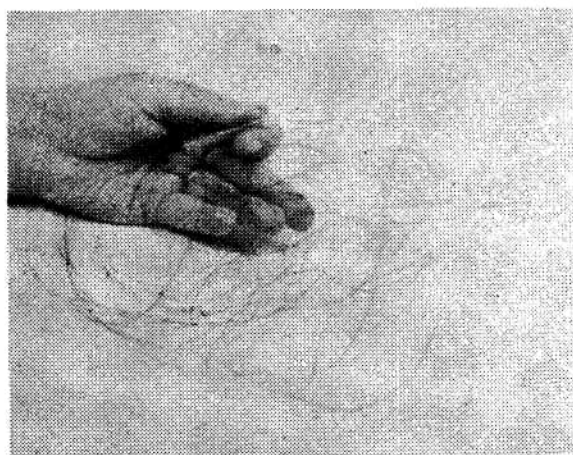
There are other counterspy-type antenna gimmicks, of course. If you live on a fairly high floor you can dangle a wire out the window in the evening and then reel it in before dawn and the probing eyes of the TVI-nervous nellies start

darting around in their morning search of the premises.

We know of several hams who have taken a sudden patriotic turn—buying a flagpole and mounting it in a bracket centered on the window sill. How were the neighbors to know that the pole also served as an antenna radiating element? Another way of doing it is to stretch a wire “brace” from the end of the pole to a screw eye in the top of the window frame. The wire then becomes the radiator. Various types of window-sill antennas are easy to devise for the higher frequencies—10, 6 and 2 meters, the Citizens Band, etc.—because of the small size.

If your friendly landlord permits the mounting of TV antennas on the roof, so much the better. Put up a beam and tell him that it's a new kind of TV antenna.

A word of caution: don't try to feed RF from your transmitter into a master TV antenna—that is, unless you happen to be in the TV repair business or want to hear your neighbors talking about the night lightning struck. ⚡



A HANDFUL—A complete 50-foot antenna with one insulator; the antenna runs directly to the rig.