

The Flower Pot Special

Plant your antenna!

by David Cassidy N1GPH

The Hidden Antenna Dilemma

People who live in apartments or condos are constantly searching for new ways to get out an HF signal. There are several ways to solve this problem, if the landlord is willing to let you string wires outside the building, but more often than not the problem is simply that no antennas are allowed . . . period.

The typical suggestions for "invisible" antennas are usually not very invisible, especially over a period of time. An HF vertical disguised as a flagpole is pretty good, if you own the space (including the space for underground radials) and are allowed to erect the flagpole. Magnet wire antennas work fairly well, but it's only a matter of time before the feedline is discovered—and then not only do you have to take the antenna down but you risk the wrath of your landlord. Indoor antennas are truly invisible to the outside world, but you're bathing yourself (and your neighbors) in potentially harmful RF radiation, not to mention the TVI problems incurred. Roll-up antennas are OK, but very few locations can accommodate them, and it's a nuisance to have to erect your antenna every time you want to check out band activity.

What we really need is a truly invisible antenna, one that can stand up to long-term scrutiny and still allow for easy operation with a decent signal.

Flower Power

With the abundance of high-quality mobile antennas available, all that is needed for a decent HF signal is a mounting arrangement . . . and a clever disguise. Enter the Flower Pot Special—the clandestine antenna mount that even the KGB would be proud of!

The solution proposed here will be of special interest to hams who have the most difficulty in getting on HF—city dwellers. Although this arrangement can be set up in the corner of a room, if you have access to a balcony (especially a balcony on a high floor), you'll be amazed at the results this invisible antenna can produce. If you're stuck on the ground floor don't worry. I've seen ground-mounted flower pots work Europe consistently when the band is open.

Take a look at the photos; the flower pot antenna mount is almost self-explanatory. The photo shows a Flower Pot Special that was put together by Don Arnold WD4FSY of Outbacker Antenna Sales. Don is the one who

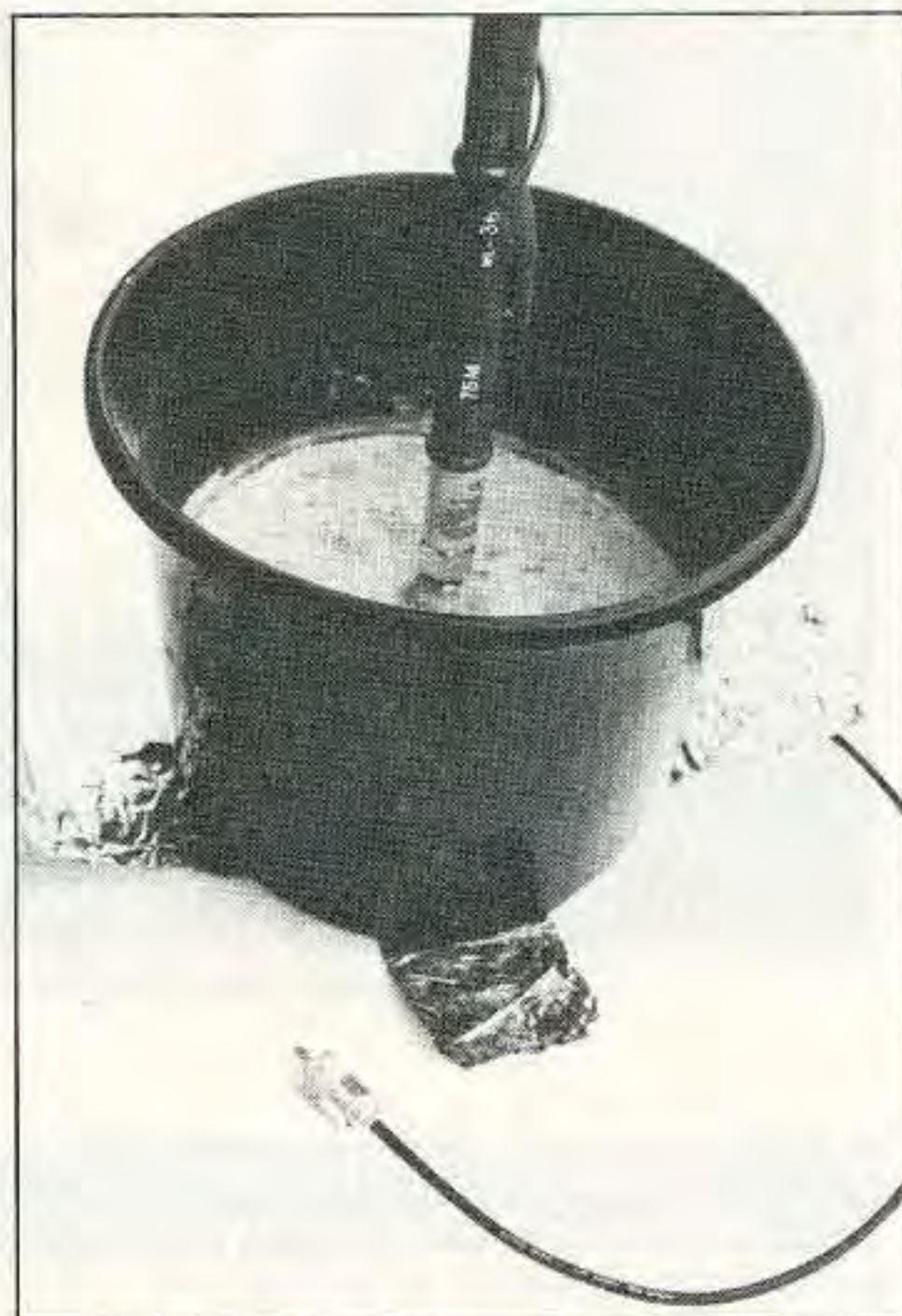


Photo A. The Flower Pot Special.

actually came up with this unique arrangement, and he uses the Flower Pot Special to demonstrate the Outbacker all-band HF antennas at hamfests. The Outbacker is especially suited for operating from an apartment or condo because it offers multiband capabilities from a single element—all you have to do to change bands is plug the wire that wraps the antenna into the appropriate plug on the antenna—but as long as you match the mount to the type of antenna you're using, the Flower Pot Special will work with any type of mobile antenna.

Construction

To build the Flower Pot Special you will need:

- 1 flower pot. The one in the photo is 9" tall and 10" across at the top.
- 1 metal junction box. These are used to mount AC outlets in your walls. They are usually covered with knock-out plugs for running wire through. If you can't find one that has a hole in the center, you'll have to drill a hole to accommodate your antenna mount.
- 4' of 3" copper foil. If you can't find this at your local hardware store, you can get it at Ham Radio Outlet. The stock number is GW0065, and you can get 50 feet for less than

30 bucks. Don't worry, you won't have too much. You'll use most of the roll for your ground plane.

- 1 roof-mount assembly. This is the kind of mount you install by drilling a hole in the roof of your car. Mine has a standard 3/8 x 24 thread mount.
- 3' RG-58 coax, wired with appropriate connectors. One end of this will be attached directly to your mount, just as if you were installing it on your car.
- 1 bag (8–10 lbs.) of anchor cement. You can get this at a hardware store or home center. It sets up in about 10 minutes, and is less brittle than normal cement.

The first thing you want to do is cut four slits in the bottom of your pot. The slits should be long enough to allow the copper foil to pass through (about 4"), and far enough from the sides so you can totally hide the ground plane (if necessary). One to two inches should be sufficient.

Next, prepare your mount. Punch out or drill a hole in the center of your junction box. Cut your copper foil into two 2' sections, cross them over the hole in your junction box, poke a hole in the copper foil and fasten the antenna mount to the junction box according to the manufacturer's instructions (with the crossed foil/junction box taking the place of the car roof).

Snake one end of your coax through one of the slits in your flower pot. (If ultimate disguisability is not a factor, you can drill a hole in the side of the pot at the bottom to let the coax through. Passing the coax through one of the bottom slits will allow you to hide the feedline under the carpet, behind other potted plants, etc.) Attach the coax to your mount according to the manufacturer's instructions (some mounts are hard-wired, others require a PL-259 or other connector).

Place the junction box/antenna mount inside the pot, and snake the copper foil out through the four slits cut in the bottom. Remember, the mount will be elevated 2"–3" from the bottom of the pot, so don't pull the foil too tight. Once you're happy with the placement, tape up the holes with duct tape so the cement won't pour out.

Attach your antenna to the mount, then pour in your pre-mixed cement. Pull the mount up as you pour so that you don't cover it up with cement. Keep pouring until the pot is about half full of cement and make sure the mount is sufficiently submerged. Shake the

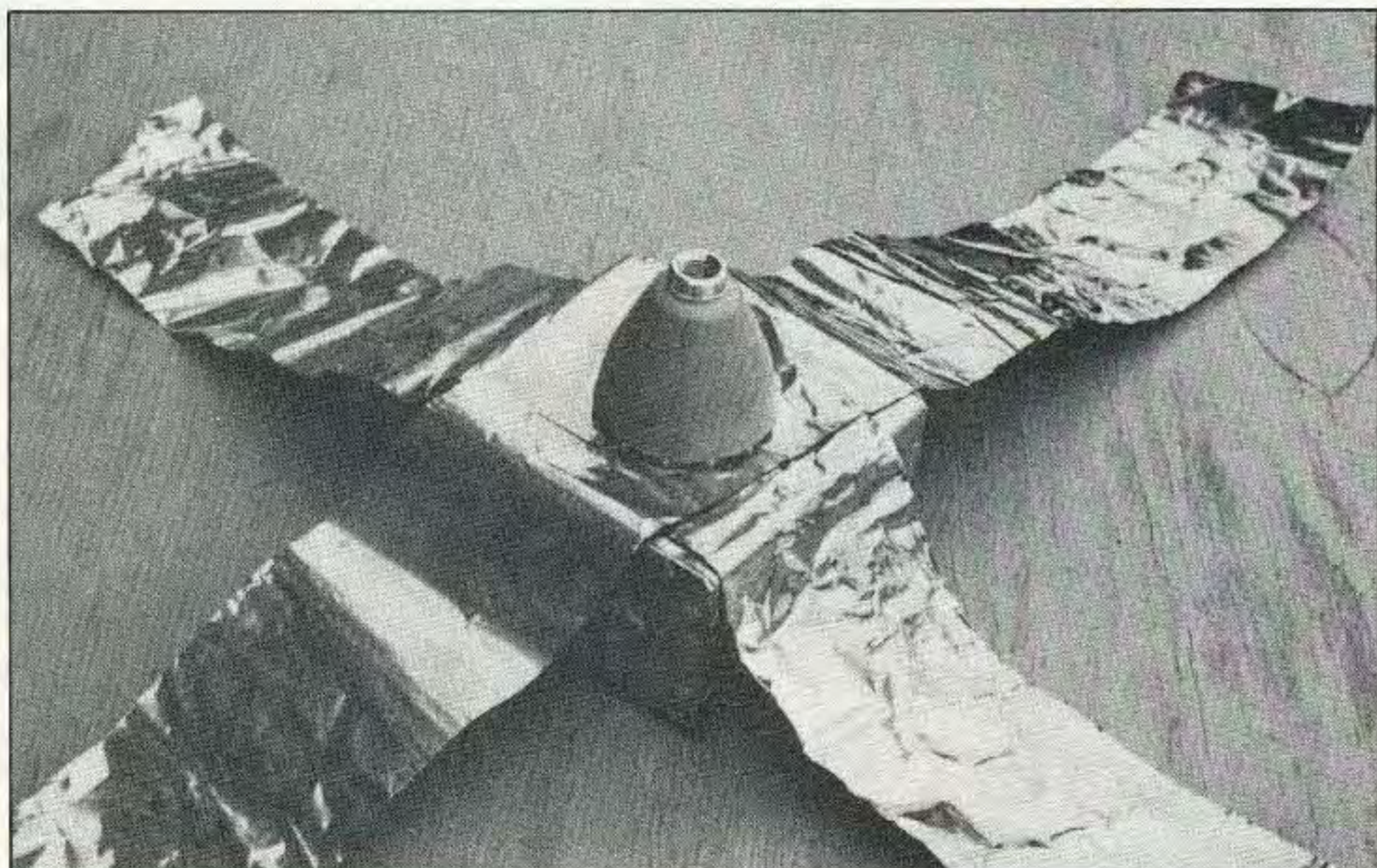


Photo B. Junction box, copper foil and antenna mount assembled and ready for "planting."

pot back and forth to make sure there are no air pockets, then hold the antenna vertical for five to 10 minutes until the anchor cement firms up.

Your Flower Pot Special is now complete. As soon as the cement thoroughly dries you are ready to hide your handiwork.

Camouflage

Once the cement is dry, you can attach your antenna to the mount and conceal it with plastic greenery. If you check out florists, home centers and craft shops, you will find a vast array of amazingly real-looking plants. The only caveat here is: Make sure that the fake plants you use to disguise your antenna are not built around a wire core. This will play havoc with your antenna's SWR and signal. You should be sure to only use non-conductive materials to disguise your antenna. While you're picking up your disguise plants, be sure to get a bag of sphagnum moss or wood chips to cover and conceal the cement. With enough greenery, even your ham friends won't recognize your home decoration as an antenna.

Grounding

The reason you went through all the trouble to install that copper foil is that this antenna absolutely must have a ground plane. If you want to prove this for yourself, hold a fluorescent tube near the antenna while transmitting a carrier. With the pot resting on a ground plane, the tube will light brightly. Lift the flower pot off of the ground plane and the light will immediately go out. Remember, the antenna you're installing is designed to use a car body as a ground, so you must provide an equivalent or you won't get out any kind of a signal.

There are many possible ways to provide a ground plane for your flower pot, all of them dependent on where the antenna will be placed. If you are going to place the disguised antenna in a corner of an apartment balcony, look for a metal railing to attach to the copper ground strips. If nothing else is available, you could run a length

of the copper tape around the balcony. If you are going to leave the flower pot indoors (grouped with other plants, you'll soon have to remind yourself that it's an antenna), you could run copper foil and transmission line under the carpet or behind the baseboard. With a little time and imagination, the flower pot can be installed so that it is totally undetectable.

You need a total of five to six square feet of copper foil to provide an adequate substitute for a car body. Really put some thought into how you can provide a ground plane, and it will pay off with a better signal.

With Power Comes Responsibility

It is important for those hams who are forced to operate from apartments or condos to remember that just because they have come up with an ingenious way to conceal their antenna, it is all for naught if every telephone, stereo and television in the building makes weird noises each time you transmit. You could probably hide the fact that it is you who is causing all the interference, but sooner or later you will be discovered as the culprit. Not only will that make you very few friends, but it will give all of your neighbors a bad impression of amateur radio forever.

I'm not suggesting that you advertise that you are operating a ham station from the 14th floor, but for the sake of hams everywhere, make sure that you are acting as a responsible amateur as well as a good neighbor.

I'd appreciate hearing from anyone who decides to build a Flower Pot Special. I'm sure many of you will see other ways of putting together a similar antenna mount. I'd like to hear about your results, and any ways to improve the basic construction methods given here.

Good luck, and happy planting! **73**

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