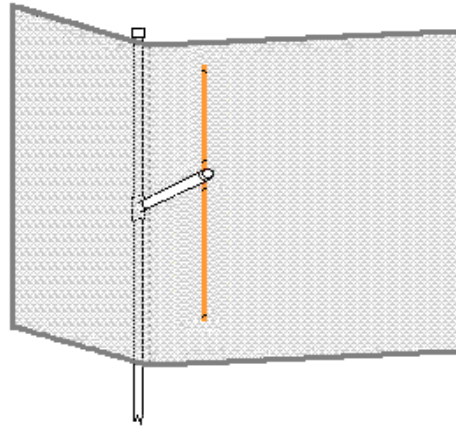


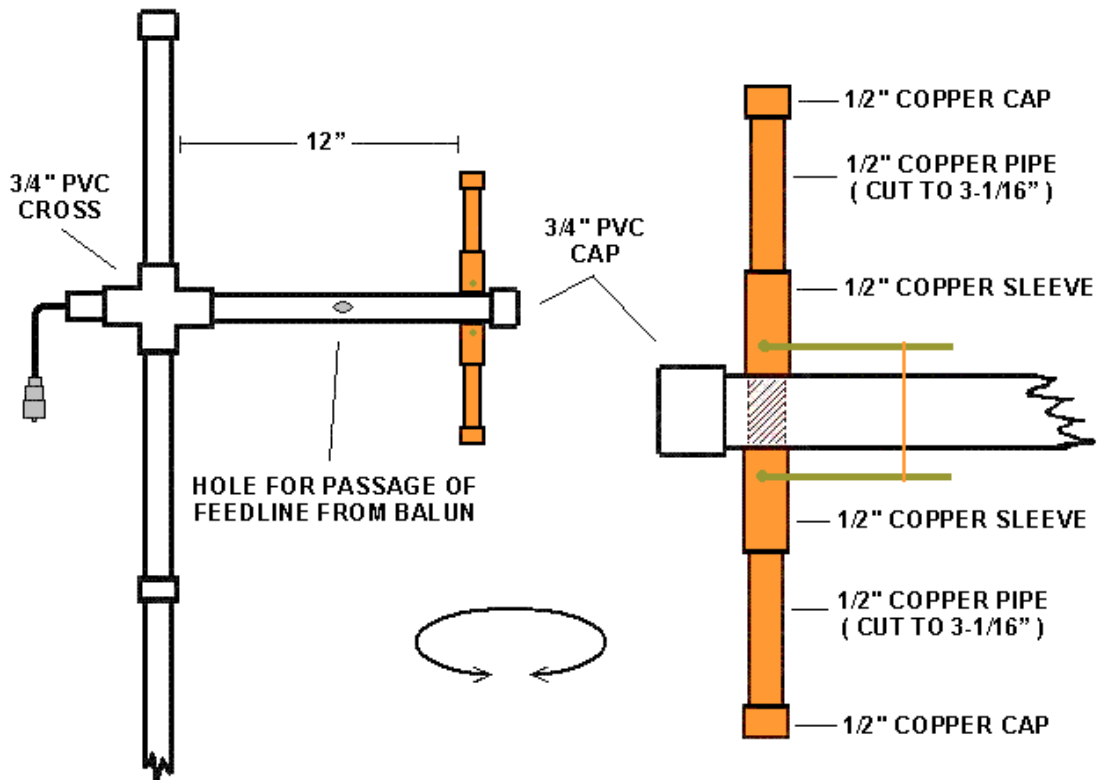
70 Cm Corner Reflector

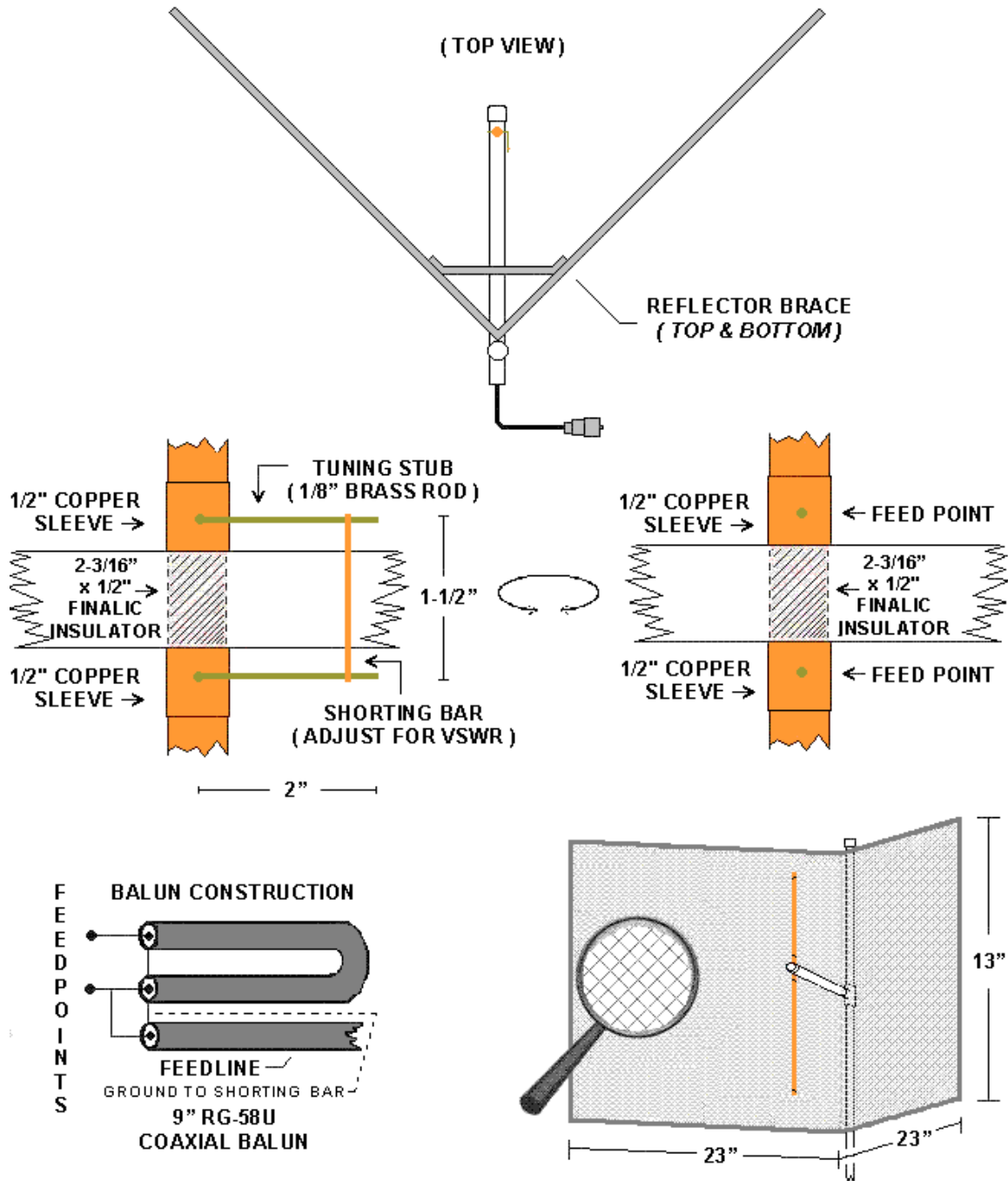
8 Db Forward Gain

DESIGN BY K6WXA



ALL SUPPORT PIECES ARE OF 3/4" PVC





The 70 Centimeter Corner Reflector

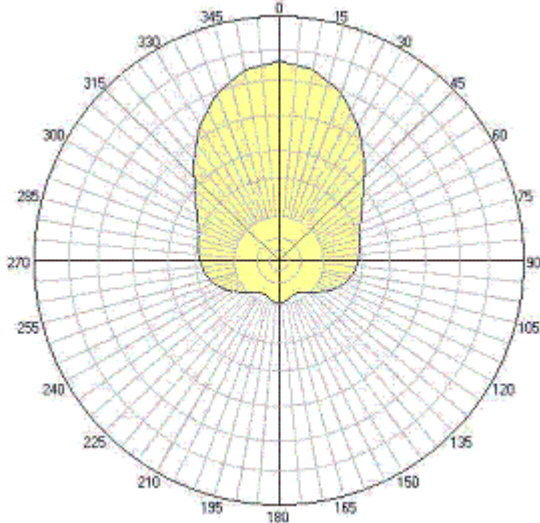
This antenna concept design was developed after stumbling across an advertisement from a major amateur radio antenna distributor, advertising a corner reflector for 70 Centimeters, with an asking price of \$129.00.

The reflector measures a total area of 46" by 13" bent to 90° and is made from heavy gage aluminum screening; the kind pet owners put over their sliding screen doors. A like material similar to the type of screening that is used in garage or attic vents could be used. To keep its shape, the screen is surrounded by a "U" shaped aluminum frame and bolted at the corners. An additional cross member piece is bolted in place at the top and bottom of the reflector for additional support. The reflector screen is then secured to the support mast, another length of 3/4" PVC pipe with hose clamps.

The dipole is constructed from elements of 1/2" copper plumbing pipe, tuned through an open "hair-pin" tuning loop and is mounted to a length of 3/4" PVC pipe as the support boom. The boom slides through a 3/4" PVC cross, the interior horizontal stops of which have been milled away to allow the boom to slide all the way through the horizontal opening of the cross. This is done to allow determining the focal point of maximum gain of the antenna while using a field strength meter.

One of the aspects of the advertised antenna was its broad-banded ness, along with its high gain capability. Set up and testing found the antenna to have 8 Dbd of gain across the 70 Centimeter Band, with an unchanging VSWR of 1.3:1 from 440 to 450 MHz. Additionally, the VSWR never exceeded 1.7:1 from 429 MHz, to 468 MHz.

At lower left is the computer predicted, theoretical radiation pattern of the corner reflector. During testing, no lobes coming off the back of the antenna were detected while using a field strength meter. It was also noted that the antenna had a roughly 45° radiation beam-width pattern while turning the antenna towards and away from, the field strength meter.



You can go out a purchase one of these antenna's from a reputable dealer for roughly \$129.00, or you can build it yourself, build it to perform just as well as a commercially made model, and you can build it for a fraction of the cost using simple materials readily available through any home improvement store.

- K6WXA