

30 Minute Antenna For Two Meters

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Having worked out the design and construction details in my mind and having all materials needed at hand, the assembly to the final coupling to the Viking 6N2 transmitter was a matter of 30 minutes.

The antenna was designed primarily for indoor and portable use. The coaxial antenna design was chosen for its inherent characteristic of having the lowest angle of radiation of any of the vertical antennae. Physical design made it quite suitable for easy mounting and ease of portability.

The Viking 6N2 operates with an input of 75 watts on two meters. The results using this antenna have been very gratifying and power transfer losses from transmitter to antenna are nil due to direct coupling.

Losses occur, of course, from indoor locations and vary from one point to another. However, due to the low angle of radiation, from the antenna and nil power transfer loss, we compensate for location loss.

I cover the Greater Miami area on two meters and consistently receive reports that are better than I had when using an outdoor vertical with a 50 foot feed line. (No doubt line losses must have been high.)

For test purposes I ran a power extension out doors and set up the 6N2 transmitter, with this antenna, on a three foot box. This put the radiating portion of the antenna about six feet above ground surface.

The results were most gratifying. Reports far exceeded any expectations and indicated the antenna should be an excellent addition to a portable transmitter.

In the design I have used a right angle coax coupling to fit coax receptacle on back of the 6N2 transmitter. In transmitters where the coax receptacle is mounted on top of the case, a straight coupling can be used in antenna construction.

Photographs show parts and construction of the antenna while the sketch gives the dimensions. These dimensions can be altered slightly to suit the materials at hand.

Construction

1. The $\frac{5}{8}$ " I.D. piece of tubing is cut to a length of 19 inches. One end is slightly crimped inward so as to allow the coax coupling to be threaded inside tubing.

2. The insulating ring or grommet is then fitted over this end of the tubing acting as a spacer for the inner conductor. I used one half of a 1" diameter feed through insulator with a layer of tape to insure a snug fit. (See

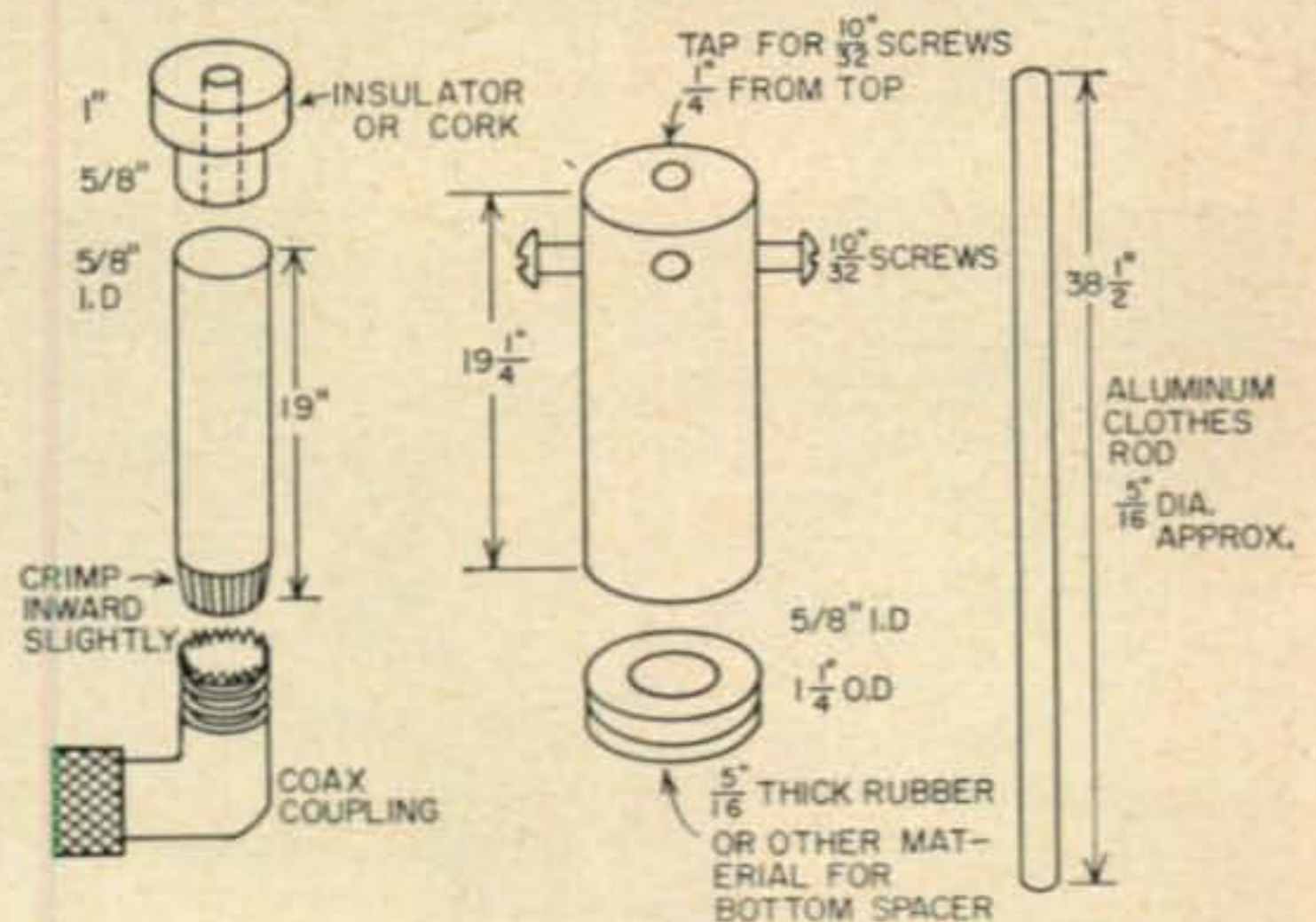
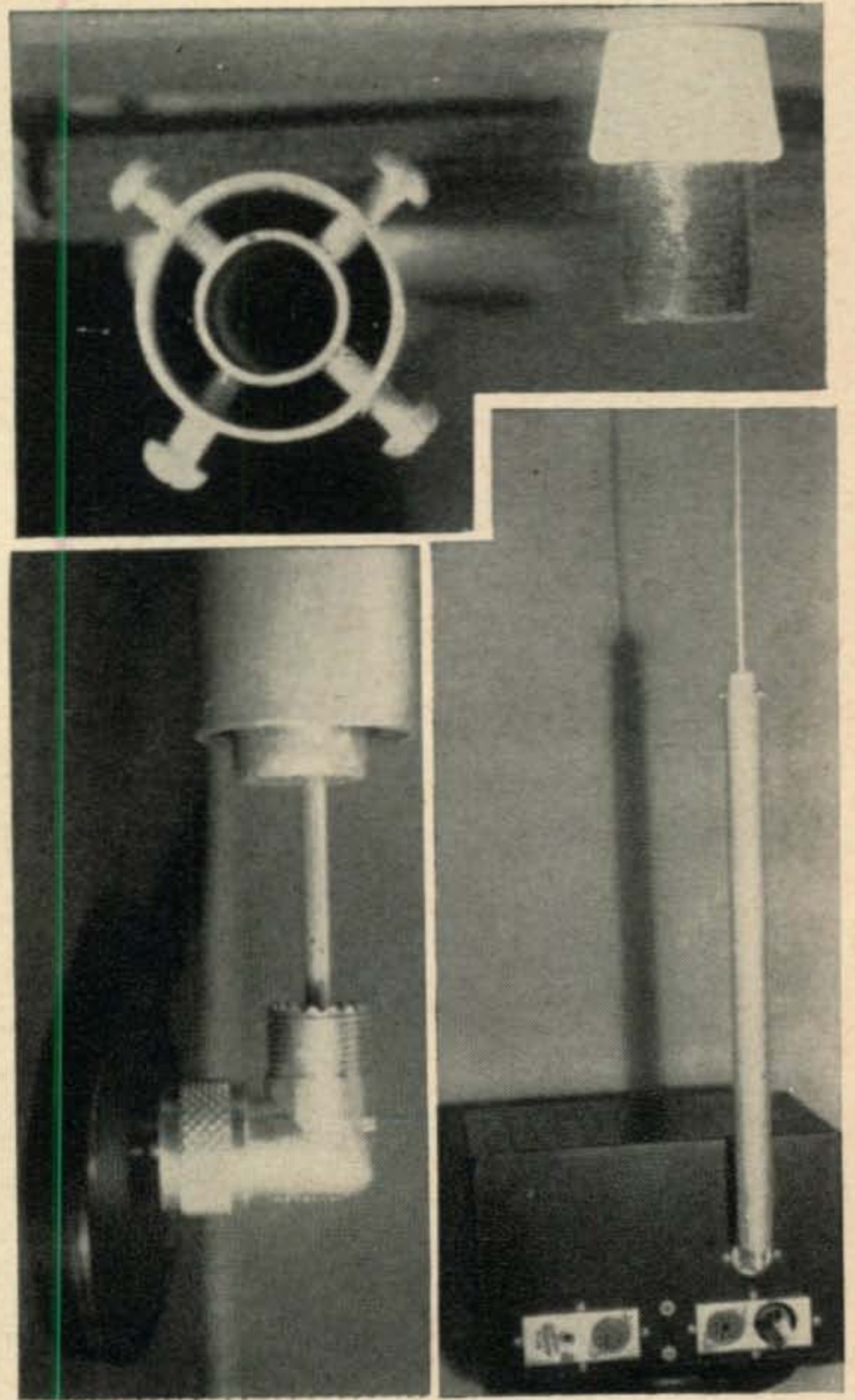


Fig. 1—Construction details and photos of the finished antenna for two meters.

photo.) If the insulator is not available a cork or wood plug will also do. After insulator is fitted put it aside until step 5 is reached.

3. The coax coupling is then threaded into the tapered end of the tubing.

4. The 38 $\frac{1}{2}$ inch length of aluminum
[Continued on page 104]

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2 M. ANT. [from page 57]

clothes line (wire) is then fitted into the coax coupling through center of 5/8" tubing. (The wire fits snugly in center of coupling.)

5. The insulator made in step 2 is now passed over the wire and fitted in the top of the 5/8" tubing.

6. The 1¼" I.D. x 19¼" length of tubing is drilled and tapped ¼" from one end to receive four 10/32 screws.

7. Insert the four 10/32 screws. These should be at least ½" long.

8. This tube is then slipped over the smaller tube assembly and the screws tightened. It will be necessary to sight center the two tubes so inner tube is close to exact center as shown in the photographs.

9. Mount the assembly on transmitter and you are in business. ■

75A-2 [from page 63]

the calibration signal as before in the AM position with the selectivity on "2". Switch to CW and turn the pitch control toward the "—1" position, about one third of the way. You should now be hearing a single audio tone of about 400 cps. Tune the receiver higher in frequency (which will make the audio tone go lower) past zero beat until you hear the same 400 cps pitch on the other side of zero beat. The kilocycle dial scale should have moved a little less than one kc during this operation. With the phasing control reject this 400 cps tone now coming from the speaker. Now the tricky part. Adjust the bfo pitch for zero beat. This is difficult because you have just eliminated the signal you are supposed to zero beat! However, you can bring it in for this last operation by moving the phasing control slightly. Be sure to put the phasing control back where it was after you finish zero beating. Now the receiver is set up. The bfo pitch control should be near the "—1" position and the phasing should be a little to the right of the center mark.

Try tuning in an AM signal now. Tune to zero beat the carrier. As the carrier approaches zero beat it falls into the rejection notch of the crystal filter and is eliminated. AM signals now tune like SSB signals. To make sure you have the phasing control in the right position, momentarily switch to AM after you have an AM signal tuned to zero beat. It should sound very distorted. If not, adjust the phasing control slightly until severe distortion results. Then when you switch the receiver to cw, it will sound normal. Slight readjustment of the bfo pitch may be necessary.

For frequency reading, follow the same procedure as with SSB. ■

For further information, check number 32 on page 126.