

# The "Cobra" Antenna

*It's got a more powerful bite than the "Rattlesnake."*

Raymond A. Cook W4JOH  
606 Georgia Avenue  
Valdosta GA 31602

Gene Rhodes W4FNY, my friend for more than fifty years, has striven all the time I've known him toward the ultimate antenna. For the past several years, he had used what he called his "Rattlesnake" antenna, which transmitted an excellent signal from De Leon Springs, Florida. Recently he moved to Orange City, about seventeen miles from his previous QTH. Inexplicably, his "Rattlesnake" did not perform as well as it had at De Leon Springs.

He said he thought the ground system there was better, so I suggested that he run a heavy-gauge ground wire back to his old QTH. After some reflection, that solution was deemed impractical.

After weeks of frustration, he told me he wished that he could dream up something better. He likes to operate 160 meters, as well as the other bands, but

his support poles were only 140 feet apart. Then one night, about 2:00 a.m., I awoke from a fitful dream with an idea buzzing around in my brain: Why couldn't the extra footage needed for 160m be made up by using *in series* the three wires (one white, one bare, one black) in Romex™ cable, the non-metallic-sheathed cable used in house wiring?

I chose 14-gauge wire because of its lightness and low profile against the background of sky and trees.

This arrangement gives a flattop length of 420 feet, certainly ample for 160m. I had no idea exactly what would happen regarding impedance and frequency with the leads folded back upon themselves, but in our desperation, it seemed worth trying. The flattop dimensions and lead-in length were simply dictated by the limitations at Gene's QTH.

With the help of two fellow hams, Gene got busy acquiring the components and getting the antenna up. The following day he fired up on 75 meters for our regular schedule, after determining that his antenna gave him a 1:1 standing wave ratio on all bands. Lo and behold! His signal now was very strong (S9+) in spite of the fact that he was running only his exciter. Switching back and forth, he got greatly improved reports over the "Rattlesnake" from all who called in. I urged him to try the antenna using his linear amplifier, but he was afraid the high power might puncture the insulation of the flattop leads lying so close together. Finally, after several days, he held his breath and turned on the high power. What a beautiful signal—S9+30—and no arc-over! He immediately started calling the antenna the "Cobra," because it had a much more powerful "bite" than the "Rattlesnake."

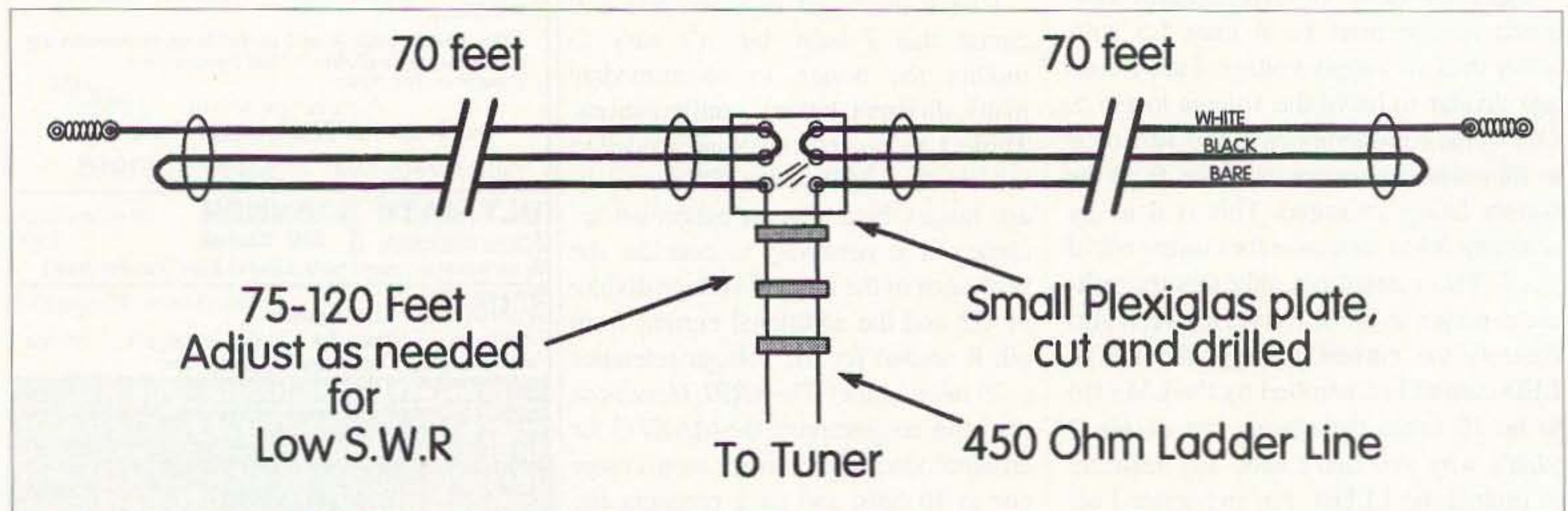


Fig. 1. The configuration for the "Cobra."



I then erected a "Cobra" at this QTH, using an Alpha linear, with the same results—because I, too, wanted to get on 160m. My previous antenna flattop was 108 feet long using traps. Emmett Bishop W4JVI of Athens GA, who regularly calls in, became excited about trying the "Cobra." He had been using two separate antennas of standard design, but his signal was often so weak (even with the linear) that Gene and Lloyd Goodwin W4FFD, in central Florida, could hear him faintly, or not at all, at that time of day on 75 meters.

After a few days, Emmett called in using his new "Cobra." His signal was S-9 with the exciter only, a far stronger signal than he previously had using both exciter and linear. Gene and I had checked the antenna out on other bands with excellent results, but Emmett had not yet had the opportunity to do so. This setup, of course, requires the use of a tuner for low SWR and efficient operation on all bands.

Some of our more skeptical, and perhaps knowledgeable, friends have expressed concern about impedance, power rating, wave-cancellation, etc. All that we can offer as an answer is the slogan used for many years by the Packard Motorcar Company: "Ask the man who owns one."

For years I have used the individual wires in three-wire conduit for antennas. At ten cents a foot, it's three hundred feet of antenna for ten dollars, or three cents per foot for the separate wires. Why not try this antenna? As Gene says, "I'm just tickled pink with the 'Cobra.'" Perhaps you will be, too.

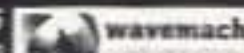
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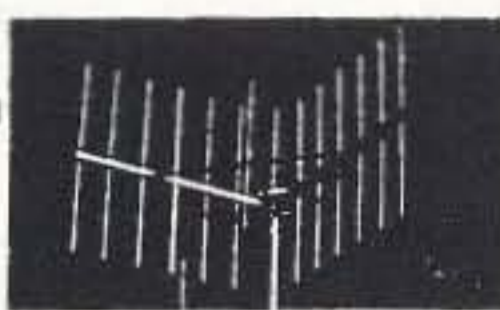
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