

A Quick Antenna for 1296

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This is the easy way to get started on 1296 and give you an array with a 12 to 15 db gain. All you need is a couple of bucks, a little shopping at the lumberyard, hardware store or junk yard, and you are ready to go. The tools should be available in any good radio shack. If not, borrow from your neighbor.

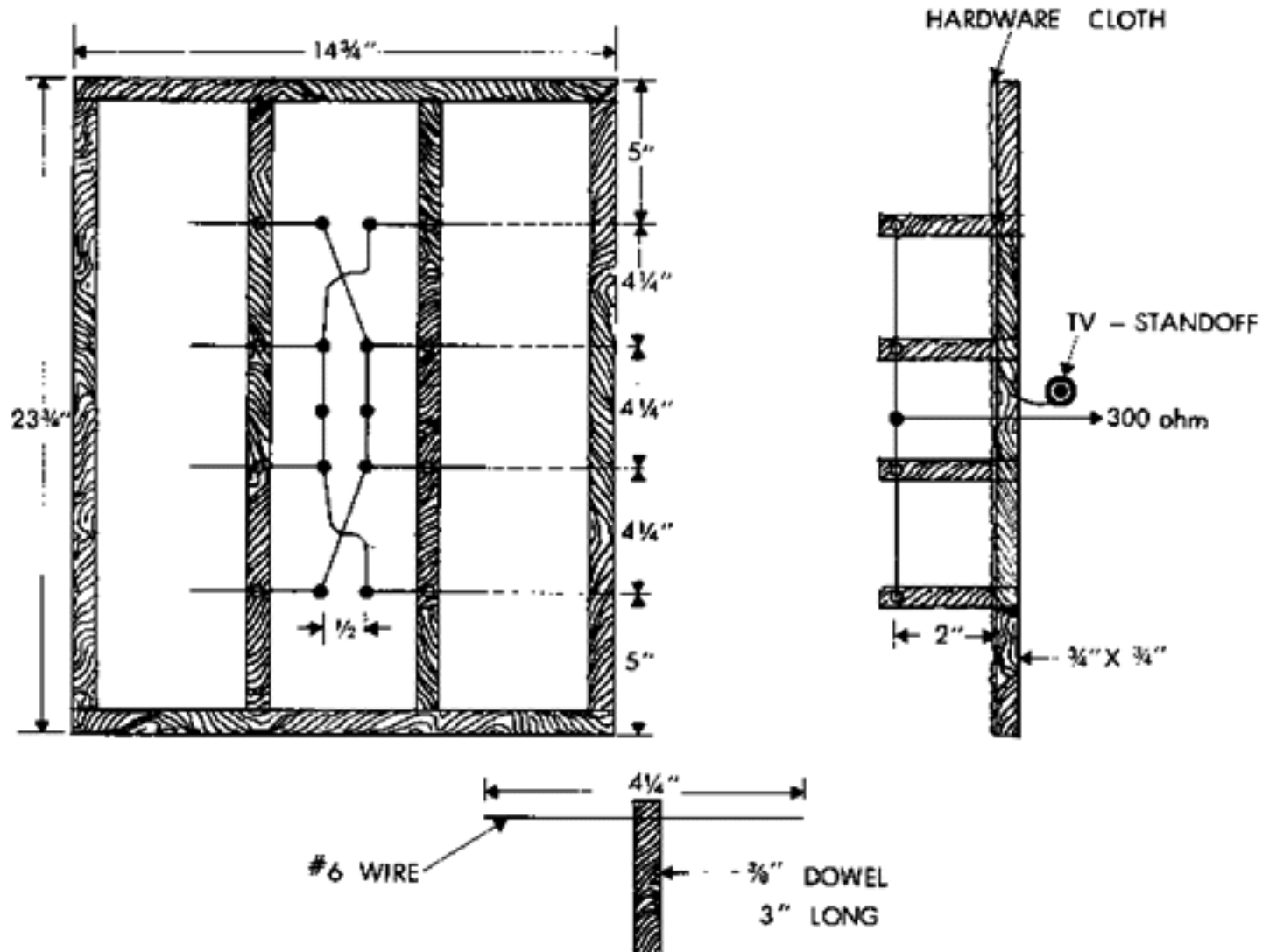
Assuming you have the two bucks, let's go to your nearest lumberyard and buy 10-feet of $\frac{3}{4} \times \frac{3}{4}$ pine, 3-feet of $\frac{3}{8}$ inch dowel and a piece of $\frac{1}{4}$ inch hardware cloth, 15x24. You will need some insulated staples; a quarter pound will do. Next, we need some $\frac{1}{8}$ inch copper tubing or No. 8 copper wire; three feet will do. Either of these items can be found in a junk yard. Better buy a can of good wood sealer on your way home, you will need it for the wood frame you are about to construct.

First item for construction will be the wood frame, to be known later as the re-

flector. Cut two pieces of the $\frac{3}{4} \times \frac{3}{4}$ pine, 14 $\frac{3}{4}$ inches and four, 22 $\frac{1}{4}$ inches. See Figure 1 for layout of frame. Next cut eight pieces of the dowel, 3 inches long. These are to be used for the standoffs. At this point, use sealer on all wood parts and let dry well before your next step. When dry, assemble frame and use a good weatherproof glue for added strength. The hardware cloth is next and should be fastened to the frame, after $\frac{3}{8}$ inch holes have been drilled in two center supports to take the standoffs (dowel).

While you are at it, you might as well cut out small holes in the hardware cloth, at the standoff points, to allow assembly. Use the insulated staples to fasten hardware cloth. This completes the assembly of the reflector and you can give it a coat of aluminum paint (rustproof) for better looks and weatherproofing.

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You are now ready to assemble the antenna parts. First, drill 1/8 inch holes in the eight standoffs, 1/4 inch in from end. Next cut eight pieces of the 1/8 inch copper tubing or No. 8 wire, 4 1/4 inch long. Insert them in the 1/8 inch holes in the standoffs and center. To make secure, insert small amount of glue in holes, before placing tubing or wire in standoffs. Fit and glue the standoffs into 3/8 inch holes on reflector. The antenna elements should be 2 inches, center, from hardware cloth surface. It is suggested that a coat of Krylon be sprayed on the antenna and reflector, after phasing wires have been soldered in place.

The next step is the phasing lines. Use No. 16 wire and space 1/2 inch on centers as per figure. If you have some polystyrene, teflon or plexiglass, 1/8 to 1/4 inch thick, cut 4 spacers (1x1") and use them for keeping phasing lines from sagging and shorting. Good solder connections with the phasing wire and the antenna elements is a **MUST**. Solder joints should be covered with liquid spaghetti (ne-o-prene) for protection against corrosion. At this QTH, weatherproofing this and other antennas has paid off considerably. Our 1296 collinear array was taken down from the mast, recently, for servicing and all that was necessary, after a year with all weather conditions, was a coat of Krylon.

Your antenna now completed, the next step is to attach the feedlines. 300 ohm line is your best impedance match and get the best. It will pay off in the long run. The feedline should be soldered in place as shown and run to the rear of the reflector through a hole cut in the hardware cloth at the point where soldered to the phasing lines. Mount TV standoff at rear of reflector to keep feedlines in position. As stations have horizontal polarization in this area, the TV standoff was positioned best for our purpose. If you are vertically polarized, change position of TV standoff to suit your purpose.

This array has given excellent results with stations 70 to 100 miles away being copied S9. Equal favorable reports were given on our signals at these points. A future project is to stack four of these arrays for more gain.