W3EDP Antenna

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W3EDP Antenna Overview

In the 1936 March issue of QST, Yardley Beers, W3AWH, described an antenna designed by his friend, Mr. H. J. Siegel, **W3EDP**. The design is based on the end-fed zep antenna as once trailed from Zeppelin Airships. The original design called for a 17 ft wire to act as a counterpoise and an 84 ft long wire as the radiator.

W3EDP Antenna Design/Materials

Materials:
17 ft of 450 ohm ladder line at $0.28 per ft – $4.76
68 ft of 16 or 18 gauge wire at approximately $0.08 per ft. - $5.44
Misc. (junk box supplies) – small piece of heat shrink tubing and an 8 inch piece of ½ inch CPVC pipe
Total - $10.20

W3EDP Antenna Assembly

1. Cut a piece of 450 ohm ladder line 17 ft long.
2. Cut a piece of 16 or 18 gauge wire 67 ft, 4 inches long.
3. Strip ½ inch of insulation from both ends of the ladder line and one end of the 16 gauge wire. Slip a piece of heat shrink tubing onto the 16 gauge wire. Solder the wire to one leg of the ladder line. Slide heat shrink tubing over solder connection and heat to shrink. For this project, I used white heat shrink tubing. It shows up better in a photograph. (Figure 2)
4. Cut the CPVC pipe into 2 pieces each 4 inches long.
5. Take one of the 4 inch pieces of CPVC pipe and drill a 3/16 inch hole through the pipe 1/2 inch from one end. (Figure 5)
6. Cut a slit in the pipe centered between the hole you drilled approximately 2 3/4 inches long. (Figure 4)
7. Take the other 4 inch piece of CPVC pipe and drill a 3/16 hole through the pipe 1/2 inch from each end. Both insulators have now been completed. (Figure 6)
8. Insert the CPVC pipe with the slit into the ladder line (working from the bottom up where you soldered the 16 gauge wire) as illustrated in the photograph. (Figure 3)
9. Take the unfastened end of the 16 gauge wire and insert 4 inches through the holes on one end of the remaining CPVC pipe. Wrap the wire around itself. Assembly is now complete. (Figure 1)

Deploy the antenna and attach the feed line to a 4:1 balun making sure the long wire is connected to positive side of the balun. Connect balun and antenna with coax to your tuner. The length of coax is not critical.

A detailed analysis was not made of this antenna, only general considerations and observations. As with all antenna's, your station and working conditions must be taken into consideration. The radiation pattern and the take off angle depend on how the portions of the antenna are deployed (ratio of the vertical vs. horizontal). Generally, a longer vertical part means lower take off angle with nearly omni-directional pattern and good DX properties. A lower antenna with less vertical and longer horizontal part results in nearly NVIS radiation which is good for local communication.

Figure 1

Figure 4

Figure 2

Figure 5

Figure 3

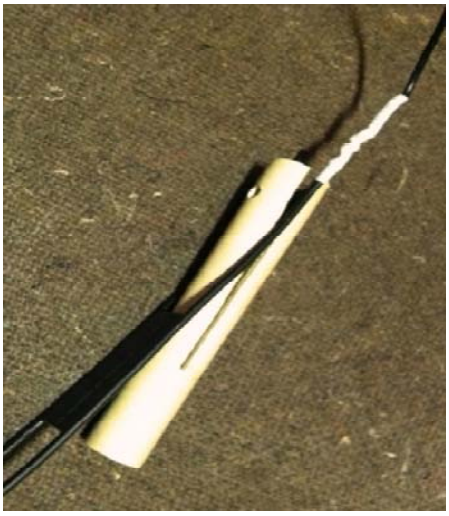

Figure 6