

W3EDP Antenna

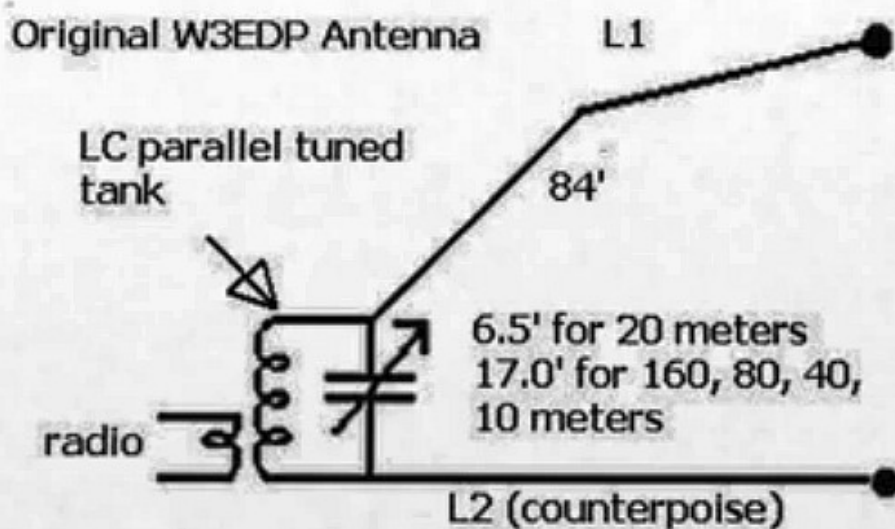
John Painter WB6V

The W3EDP antenna is a design developed in 1936 and has found recent popularity with the Summits on the Air group and also Qrp enthusiasts. It was first written up in the March 1936 QST. A good technical description is also found in *Practical Wire Antennas* [pp. 33-34] by John D. Heys, G3BDQ.

On 20m it is 1.5 wavelengths long
On 40m it is 5/8 wavelength long
On 80m it is slightly less than 3/8 wavelength long

W3EDP might have patterned his design after the much publicized Zepp(elin) antenna that was patented in 1909 by Hans Beggerow. Early Zepp antennas were 1/2 WL long (or multiple) and fed with a 1/4 WL (or multiple) open wire feed line which uses only one of the wires. The feed line acted as a matching section for the transmitter. The antenna was typically connected to the transmitter with a tuned link coupled network. The HF antenna on the dirigible Graf Hinden-

Original design diagram:



Construction:

Below is a common method of construction for the W3EDP antenna today. The design uses one half of a 17' length of 450 ohm balanced line for element L2. The other half of the 17' balanced line is connected to a 67' length of wire to complete the 84' L1 element. L2 is left unconnected at the top but is connected at the bottom to the source.

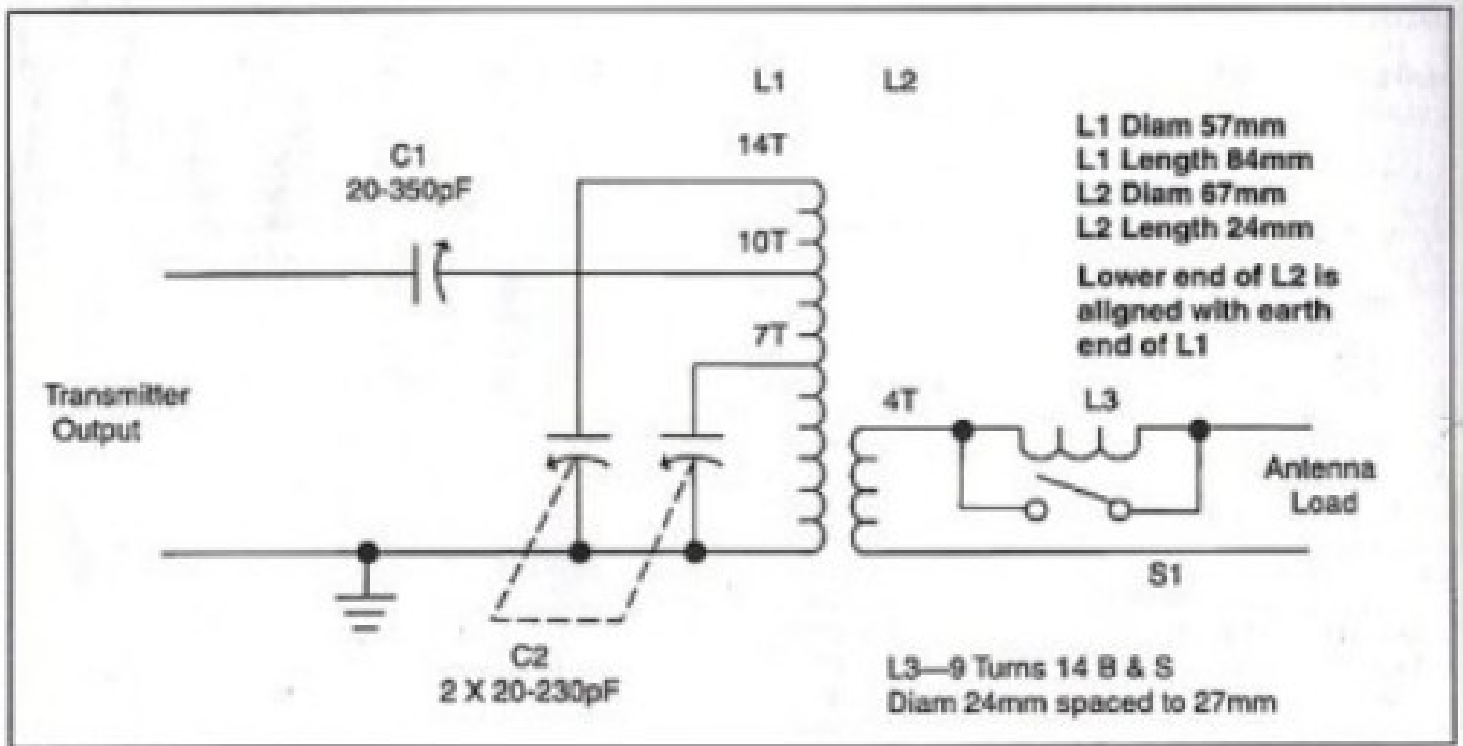
Band	Avg SWR with L2	Avg SWR with L3 & L4
40m	16	4
20m	16	13
17m	10	6
15m	7	6
12m	6	6
10m	13	3
6m	9	5

In closing, you can find more information on the W3EDP antenna by doing a search. In general your success will be contingent upon the installation and working conditions. The radiation pattern and take off angle will depend on how the parts of the antenna are deployed (ratio of the vertical vs. horizontal). A longer vertical portion will mean a lower takeoff angle with mostly a omni directional pattern and good DX. A lower antenna with less vertical and longer horizontal is good for NVIS and local contacts.

Notes:

- 1) QST article reprinted w/ permission
- 2) Diagrams courtesy of NC4FB
- 3) A good technical analysis can be found at www.ok1rr.com/index.php/antennas/19-the-w3edp-antenna
- 4) Another site for analysis is: <http://www.nc4fb.org/wordpress/w3edp-multi-band-antenna>
- 5) An excellent site for construction tips is: <http://www.qsl.net/w5rin/Projects/Antennas/ae5vv/W3EDPAntenna.pdf>
- 6) A great link for operating QRP is the site for QRP-L archive and articles: <http://wd8rif/archives.htm> Page down and you'll find a list of links to messages that have appeared on QRP-L that discuss the W3EDP antenna.





De quoi s'inspirer: <https://www.qsl.net/vk5br/ZMatch/SingleCoilZMatch.htm>

<https://rsgb.org/main/get-started-in-amateur-radio/antennas/end-fed-wire-antennas/>

<http://zs6rsh.blogspot.com/2013/12/w3edp-antenna.html>

<https://www.nonstopsystems.com/radio/pdf-ant/w3edp-4fba.pdf>

<http://www.w5usj.com/zmatch.html>

<https://www.dj0ip.de/antenna-matchboxes/symmetrical-matchboxes/>

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