Zombie Apocalypse HF Antenna.

My son loves the TV show Walking Dead. I was thinking about what if it happened or some national disaster like a deadly pandemic that would quarantine parts of the country causing communication breakdown.

What would you do if you could not go outside your home? You could not have items delivered or go to a store to buy components for your antenna? You need an antenna that is buildable from common household items and one that does not require you to expose yourself to install it.

EH Antenna designs work for this situation. This is my design for a 20 meter EH antenna. The design frequency is 14.225 MHz.

Supplies needed.

1. 11/4 pvc pipe 6 inches long
2. 2 inch pvc pipe splicer (Qt2)
3. 2 inch pvc pipe 6 inches long
4. 17 feet of 12 gauge wire
5. Stud bolts (Qt 2)
6. Stud bolt nuts (Qt 6)
7. Hot glue or epoxy glue
8. Coax 50 ohm
9. Aluminum bottle (Qt 2) (see note below)
10. Terminal wire connectors that fit over stud bolts (Qt 4)
11. Self-tapping screws that fit the terminal connectors (Qt 4)
12. Electrical tape.
13. Alligator clip
14. 11/4 hole saw drill bit or similar product.
15. Zip tie.

**(The Idea / Note:)** **My son loves the TV show Walking Dead and was watching this before the MN Twins ball game came on. I grabbed a Bud Light aluminum heavy 16oz bottle. I like them because they keep the beer cooler longer. While I watch the game I was thinking I could make something out of the empty bottles. I then built an antenna out of two bud light beer bottles and some PVC pipe and wire without leaving my home in about 2 hours. Lots of photos on www.ab0mw.weebly.com**

I am not condoning drinking alcohol or endorsing a particular brand. Many beer companies are offering their product in a heavy aluminum bottle style 16 oz. size. My guess is the thicker bottle keeps the product colder. These bottles make excellent resonators and the thicker wall will hold a self-tapping screw. You could use a similar product that hold energy drinks but this is what I had on hand.

**Assembly.** The 2 inch PVC pipe union connector will fit the base of one bottle. You drill out the bottom of that bottle so wires can be fed through it. The small PVC pipe fits over the neck of each bottle and is the place to wrap the Phasing Coil. The 2 inch PVC pipe holds the power studs and the wrapping area for the tuning coil and source coil. I used hot glue to secure the bottles to the PVC pipe and electrical tape to seal and hold components after you have run all wires.

**Wire connections**. Top bottle, you will connect a wire to the bottom edge before the neck slopes. You need to remove paint for electrical connection and use a self-tapping screw to make the connection being careful not to strip it out while tightening. This wire is wrapped around the small pipe 2 turns and fed through a drilled hole to the center and pushed down to the bottom of the antenna. The same wire is pushed through a drill hole on the bottom of the 2 inch PVC connector and then wrap 12 ½ turns around the top of the 2 inch PVC pipe creating the tuning coil and ends at first stud.

**Bottom bottle**, connect a wire like the top bottle but 180 degrees from the first bottle. Run the wire up to a whole drilled to just clear the top of the bottle neck and push it through a drill hole and feed down the bottom and out a whole near the first stud and connect to the stud.

**Source coil**, Install the second stud ½ inch from the bottom and 180 degrees from the tuning coil stud. Connect a wire to the stud and wrap 5 turns keeping it at least 1 inch below the tuning coil. I drilled a small whole top and bottom of the source coil 90 degrees from the source coil stud and use a wire tie to hold the coil tight and allow enough wire to reach the top of the tuning coil above the source coil stud. Connect the alligator clip to the end of this wire.

**Tuning coil**, above the source coil stud strip ½ inch wide connection on the tuning coil wires. (Strip every wire but keep a one inch separation right and left so they can not touch.) This is where the alligator clip will be attached to tune the antenna.

**Coax connection**. If you have a coax terminal you could drill it into the PVC and make the connections to the studs. I used coax connections by stripping the coax and hooking the ground shield to the tuning coil stud and the center wire to the source coil stud.

**Tuning**. Use an antenna analyzer to tune the antenna. If you do not have an analyzer hook the alligator clip to the 5th wire coil from the top and check with your SWR meter.

**Sealing**. I used hot glue and self-tapping screws to hold items together and electrical tape to seal connections. When you find the spot you want to keep it tuned too you could solder the connection and seal all exposed wires.

**Operation**. An EH antenna should be installed at a safe height for RF concerns I used the second splicer union to hook to a 12 foot PVC pipe and tied it to a post for support. The takeoff angel will be approximately 45 degrees. I would not exceed 200 watts.

**Have fun and keep away from zombies!**

**Testing: I built the antenna and used it during an Ecomm weekend our ham club set up. It performed well. We used to types of antenna analyzers to test the design and both showed 1.1 to 1.2 on the set frequency and no more than a 2 to 1 across the band. We had it on a 10 foot PVC pipe and we made contacts across the country with a 5x9 response at 100 watts from an 857D Yaesu, without a tuner.**

**For photos go to www.ab0mw.weebly.com**