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# VHF EMERGENCY DEPLOYABLE ANTENNA

Design by Bob Hejl - W2IK

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This is an emergency deployable VHF and UHF antenna that is stored in a pvc sewer tube (which also acts as it's lower base) is under **48 inches** yet expands to a whopping **16 feet plus**. It is UPS and USPS shippable. It is so effective that I've built 15 units but kept only 4 to loan out. Great for EMCOMM deployment. **NO TOOLS NEEDED TO ASSEMBLE IN THE FIELD. A 3 part series. Every EmComm worker needs one of these.**

When you take the antenna kit out of the storage/lower base pvc, it looks like this:



To start you on your way to building my emergency deployable 2 meter antenna system, you'll need...

## LIST OF MATERIALS: (Most can be purchased at "LOWE'S")

(note: the first two items are usually sold in 5 foot lengths at Lowe's)

38 inch length of 1/2 inch CPVC (cream colored, not the PVC white)

38 inch length of 3/4 inch CPVC (cream colored, not the PVC white)

CPVC is used because the two different sizes nestle in each other better than the two different PVC sizes.

1 - 3/4 inch CPVC "T"

1 - 3/4 inch CPVC Coupler

17 inches TV "Twin Lead"

44 inches 14 gauge, stranded/insulated, THHN type wire

4 inches 22 ga stranded, insulated wire

1- 1/4-20 brass nut

1- 1/4-20 brass screw 1 1/2 inches

1- 1/4-20 brass screw 2 1/2 inches

1- 1/4-20 brass wing nut

1- 1/4 inch washer

1- 3 section telescoping pool pole (12 ft. blue colored at Lowes)

3" sewer pipe (PVC, white thin wall) 43 inches long

1 - 3" sewer pipe pvc end cap

1- 3" sewer pipe-screw cap adapter

1- 3" sewer pipe screw cap

18 inches of RG-8X cable

1- female barrel connector (SO-259)

5 minute clear epoxy

2- small self tapping screws size #6x5/8 pan head

5 small scraps of foam rubber

CPVC cement - (all purpose or CPVC, not PVC only)

2- 18 inch bungee cords

electrical tape, sandpaper, soldering iron or light gun, solder, hand tools (wirestrippers, hacksaw and

The assembled antenna and mast looks like this:



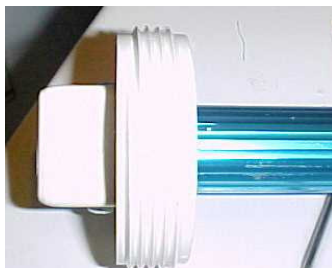
Complete antenna and mast stores as shown below

screwdrivers), etc

Take the 43 inch long x 3 inch pvc sewer pipe and clean off both ends. Coat one end of the pipe with the all purpose cpvc/pvc cement and quickly install the 3 inch end cap by pressing it on to the end. You must do this quickly as the solvent (cement) dries very quickly. Apply the same cement to the other end of the pipe and install the threaded sewer cap adapter in the same manner.



Take the blue, 3 section telescoping pool pole and remove the vinyl handle by slitting it and peeling the handle away. With the pole completely collapsed (handle section will now descend into the rest of the pole, but leave it about 1 inch out), measure from the top (where the handle was) to the wider bottom exactly 41 inches and mark that distance with a line on the wider section. Using a hacksaw, trim off the excess below the mark. You will be cutting through all three telescoping sections at this point. When you have made the cut, extend the top two sections about 3 inches and lock in place. Roughen up the wider end by sanding away most of the blue on the lowest 1 1/2 inches as seen below. This end now needs to be pressed into the "inside" of the 3 inch screw cap as shown. Make sure it fits very snug and that the end of the pole will now "square out" to conform to the square of the cap. Now remove the pole from the screw and roughen up the inner squared section of the PVC screw cap by sanding it. This, plus the rough pole end will allow epoxy to adhere.



Mix a goodly portion of epoxy and coat the inner square of the screw cap and the end of the pole and press the pole back into the squared cap. Put the cap, with the pole, on a flat surface and using a level adjust the pole so it seats vertical to the cap. Then pour the rest of the epoxy around the pole-to-cap gap and allow ample time for the epoxy to set. See below.

When the epoxy has hardened, drill two small pilot holes in the screw cap and install the small self tapping screws size #6x5/8 pan head into the cap as shown below. This adds strength to the bonded pole to cap joint. When you deploy the antenna, this pole/cap combo gets flipped around (pole now outside the tubing) and screwed into the storage tube which now acts as a base for the antenna!



This completes the masting and storage section of the antenna. Don't stop now!  
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