

## RAISING A 60-FOOT TOWER

The materials include 60 feet of 2-5/8 inch (chain link fence thin wall tubing) that comes in 24-foot lengths and also 24 feet of 1-1/2 inch tubing for the gin pole. Also, 400 feet of #12 galvanized wire (guy wires). You can buy this material anywhere they sell chain link fences.

### Tools:

- 1 Come-along winch with 70 feet of 1/8-inch cable.
- 2 Gas or wire welder
- 3 Nine solid black heavy bungee cords (to keep guy wires taught)
- 4 Six anchor stakes (7 foot metal fence posts cut in half)
- 5 Vicegrips
- 6 Six eyelets (fencing staples)
- 7 Two feet of 2-5/8 pipe (Weld to bottom of tower to keep from sinking)

The best location is on flat ground without buildings, fences and tall trees, otherwise, the job is more difficult.

The tower should have 2 sets of guys. Lay the tower out in the direction you want to pull it up and attach a pulley on top with a pull rope for pulling up your antenna after the tower is up. Drive three stakes in an equilateral triangle about 35 feet from the base of the tower. One of them will be used to pull the tower up with. Drive two temporary stakes 35 feet out, perpendicular to the base. This is your temporary guy points while raising the tower. Drive a stake at the base to keep the bottom of the tower from moving.

For the gin pole, I drive a round metal stake in the ground, then bend it over and then slip the base of the gin pole over it. It acts as a hinge as you pull the tower up. Now, lay your gin pole 90 degrees out from the base of the tower. Tie two sets of the tower guys to the temporary stakes. Tie the third set to the top of the gin. Make another set of guys for the gin pole. Attach the pull winch to the pull stake and take out all of the slack. Put a stepladder under the end of the gin pole. With one gin pole guy attached to the temporary stake, pull the gin pole by hand to the vertical position and attach to the other temporary stake. You may have to move the stepladder closer to the center of the gin pole to make the pull less difficult.

When raising the tower, you should always use rubber bungee chords on one side of the tower and gin pole to keep the guys taught. The best kind is the solid black rubber ones about 18 inches long.

If the ground is not very level you had better check the tension frequently as the tower goes up. There is not much stress on these guys while raising the tower because everything is balanced. It can become unbalanced when the ground is not level or when the wind is blowing hard or a guy wire is snagged on something.

Now, start pulling the tower up a few feet. If the tower is sagging in the middle, let it down and adjust the guys until it lifts fairly straight. As you are going up, watch the

bungee cords. If the ground is flat, they won't change much, but otherwise, they will change a lot.

When you get the tower up to about 75 degrees, even less if the wind is blowing, move the bungee cords guys one at a time to the back guy anchor. It's better to use at least three cords on each guy wire. Don't stretch these cords too much because if one of these cords breaks, the tower might fall. The tower will fall in the direction it is leaning and some times it folds up and comes straight down assuming a guy wire came loose. So, stay out at least 35 feet from the base. Also, put the stepladder under the gin pole to keep the weight of the gin pole from pulling the tower forward when it gets in the near vertical position.

When the tower is nearly vertical, remove the bungee chords one at a time and tie the guy wire directly to the permanent anchor. This is VERY important. If you try to move the other guys back to the anchor position with the bungee chords on, the tower will become very unstable and more than likely fall. Now that the back guys are tied, transfer the tower guy wires from the gin pole to the front anchor. Remove the gin pole and its guy wires. Now you can loosen and tighten guys till the tower is straight up.

When you pull your long wire antenna, vee beam, rhombic or Sturba curtain, the down pull wire should not require more than 100 lbs. of pull. The tower might take up to 200 lbs., but your antenna wire might not.

It is a lot easier to pull a tower up than to let it one down. If you have to let it down, I recommend cutting it down. It's safer, faster and will suffer a lot less damage than if it falls while letting it down. When it's going up, you can see a mishap coming but going down, once it starts, it's too late.

To straighten pipe, use a metal cutting saw and cut about halfway thru and that makes it easy to bend. When you have it straight enough, weld up the cuts.

You can use this same procedure with heavier towers. You have to use heavier guy wire and gin poles. I have pulled up 200-foot towers using a 90-foot gin pole all by myself. Having help leads to possible mishaps. So, fear not. You can do this by yourself and it's not any where near as dangerous as putting up a large beam antenna.

It helps to have a wife that will put up with such extreme and time consuming projects.

Good luck and good DX from W7YRV, Roy Callison (Age 80).