

Don't Overload Your Antenna Structure:

Oh boy, you have a nice new tower and am going to put a Super Colossal 28 Element wide spaced all band HF beam on it. So, you went to Wade and bought a nice new DMXHD-48N tower. That ought to do it. So, you determine the kind of soil you are using by getting it tested and follow all the rules and put the required amount of concrete into the ground and mount this popular self-supporting tower. You put the right size rotator on the tower and install a suitable thrust bearing to alleviate any chance of destroying the rotator because of side loading. And you mount the antenna.

Then you look at the wind load of your antenna... Oops! Let's look at what the spec says. The tower has a maximum wind load of 9 square feet. Hey, that's not very much, is it? What is the wind load of the Hy Gain TH-7DX? 9.4 square feet. At the top of the tower the maximum wind load is 9.0 square feet. But you put 5 feet of pipe over the top to hold the antenna and the strain relief lines that are part of it. Now the tower is at 55 feet and the wind load is reduced substantially into the danger zone. The antenna is too big for that tower as it stands. Of course, you could guy it and increase the wind load to the tower to some degree.

So, what other considerations should you think about in terms of the best antenna to use for DX communications on the upper bands of HF and still be within the specs of your tower? How about a TH-5MK2 which has a wind load of 7.4 square feet and has an average gain of 6.1 dBi. That would do nicely too. How about a Cushcraft A4S with 6.8 db gain with a wind load of 5.5 square feet, or the popular antennas of this day with an average gain of 5.5 dBi with a wind load of less than 5 square feet are hex beams. The one I own is from NA4RR and it has been up for over 5 years and works well on all upper bands 20, 17, 15, 12, 10 and 6 metres. It would fit on your brand-new tower without any worry of it overloading it. In fact, if you are going use a hex beam, it works perfectly at about 30 feet which means you can save yourself a bundle on the cost of the tower too.

So, there are solutions you can use that will keep you in compliance with the wind load specs of your towers. You may not get the minimal increase in gain that you would get from a huge beam, but you will get peace of mind in knowing that you did your due diligence and didn't let big boy enthusiasm with big things take over when it comes to safety. When in doubt, do your homework first before spending the money and I strongly encourage you to think about guying your tower regardless. By the way, guy lines can make great inverted V antennas if you use good insulators and the right wire. Put your thinking caps on and get it figured out as to how to do it

right. Also, all antennas need to be maintained from time to time. Before putting them up, think about how to maintain them in the future.

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