

## A "No Holes in Your Building" Antenna Support

N6MW May 2017

The ingredients are a garage with a 23 foot roof peak and some roof overhang, a spare fiberglass spiderpole and a light homebrew 3 element 6 meter yagi, described in another article, in search of a home for the season to, we hope, complete WAS.

A constraint is not wanting to put any holes in a building.

The answer is a vertical wooden mast that is positioned between the ground, next to the building, and wedged into the eave under the peak. The wooden mast consists of a 12' 2X4 and 8' 2X2s, one trimmed at the top, all bolted together end to end with overlap. At the top a short horizontal 2X2 section is added, with a triangulated support, to neatly fit under the eave so the top can't slide out or rotate.

You could use only 2X2s but that would probably be too flexible, while all 2X4s would be pretty heavy. The selected materials seem suitable.

The plan is to strap the spiderpole, or at least the bottom 30' worth of it, to the mast and, of course, mount the antenna on top, at ~ 5' above the roof peak, with two U bolts. This lower portion of the 18m spiderpole is easily strong enough for the task.

Mast construction is not critical using two bolts at each overlap joint. At the bottom a block was constructed at the right height to wedge the top in place in the eave peak. The block was pinned to the ground with a large spike and the mast was attached to the block with screws.

Raising the mast with the antenna on it is a one person job provided you keep the lower end from coming off the ground in the process. In this case a small wooden cage, functioning like a pole vault pit, was constructed. To aid in the final strapping, an L-shaped 2X2 arm was added to the upper portion of the mast to lean the pole against nearly upright temporarily. This allowed climbing a ladder to initially attach the upper strap in place loosely. Then moving the pole upright, the bottom and middle straps can be placed around the mast and pole with a final trip up the ladder to tighten the top strap. The straps are configured to avoid slipping downward. At this point, both the mast and pole are flexed together somewhat and it all seems secure even in typical winds.

Finally the antenna can be turned toward the East where the remaining holdout states are located using multihop Es, propagation willing.

Here are some photos of the project:

Bottom & Lower



Upper and Top



With Antenna

