

Portable operating seems to go hand-in-hand with QRP, since many low-power rigs are lightweight and battery-powered. One challenge can be finding a way to support a temporary antenna, especially if you're in an area without trees or other natural supports. QRP Editor KA8SMA checks out one solution to this problem — a lightweight but sturdy collapsible mast from SOTABEAMS.

CQ Reviews:

SOTABEAMS Tactical 7000hds Portable Antenna Mast

BY R. SCOTT ROUGHT,* KA8SMA

Recently, I had the opportunity to try the SOTABEAMS Tactical 7000hds, a fully collapsible, portable antenna mast designed for the ham on the go. As a ham who enjoys portable operation, a mast or other support structure is necessary for the successful deployment of a wire antenna when in the field, especially if operating in an area void of trees and other supports. I put the Tactical 7000hds through the rigors of portable operation and used it as my primary support during several portable operations last fall. I deployed the mast under windy conditions, during periods of light rain, and at times when there was a flake or two of snow in the air. Each adventure was different, and for good reason, as I wanted to see how the mast performed under a variety of conditions.

About SOTABEAMS

If you are not familiar with SOTABEAMS, it is a company based in the United Kingdom that offers a variety of products designed specifically for amateur radio. After reading the SOTABEAMS website, I learned that the company's CEO, Richard Newstead, G3CWI, has a genuine passion for portable operation and understands that the right accessories and equipment are imperative for successful field operations, especially when

* CQ QRP Editor
e-mail:

ka8sma@cq-amateur-radio.com



Photo A. The SOTABEAMS Tactical 7000hds portable antenna mast.

venturing into the wilderness. G3CWI is also the co-founder of the well-known Summits on the Air (SOTA) program, which has been incorporated into his company's name.

SOTABEAMS offers a line of telescopic masts, multi-band dipole and end-fed antennas, radio accessories (audio filters, DC power and RF cables), and more. The most unique item offered by SOTABEAMS may be the SOTAKite, a kite designed to lift wire antennas in wind speeds between 5 and 18 miles per hour.

The entire line of products offered by SOTABEAMS can be purchased via their website and shipped directly to you from their facility in the United Kingdom, or purchased in the U.S. from DX

Engineering, SOTABEAMS' stateside partner / overseas agent that stocks most of their product line, including the Tactical 7000hds.

The Tactical 7000hds

The Tactical 7000hds is a heavy-duty telescopic mast that extends to 23 feet and collapses to 23 inches for easy transport into the field. The letters hds in the product's name stand for "heavy duty short," as this mast was designed to be more rugged than other masts available in the marketplace, yet short enough for ease of portability. Its compact size makes slipping this mast into a backpack, go-bag or similar carry bag a cinch. It can also be placed diagonally in a travel-sized carry-on suitcase for



Photo B. Extending and locking pole sections.

air travel. The mast is constructed of 14 fiberglass pole sections that collapse inside each other for easy deployment and takedown. Each pole friction-locks firmly in place by twisting it during deployment. Twisting each pole in the opposite direction allows each section to collapse inside one another during takedown. The mast is nonconductive and is made from heavy glass-fiber composite (fiberglass) that provides strength and balance. For those who desire a low profile when operating portable, the mast is military olive in

color and comes with a camouflage carry bag.

The mast weighs 3.64 pounds and its 14 pole sections range in diameter from 2.05 inches (base) to 0.16 inches (top). The bottom base has a screw cap that measures 2.4 inches in diameter and supports a rubber shock absorber that helps prevent the poles from cracking or breaking when collapsing the mast. In the event a pole needs to be repaired or replaced, the bottom cap can be unscrewed allowing the sections to be removed. In the unlikely event replace-

ment parts may be necessary, SOTA-BEAMS offers these for purchase on its website.

Performance in the Field

The Tactical 7000hds arrived at my doorstep from the United Kingdom packed firmly in a heavy cardboard cylinder. An instruction sheet was packed with the mast. Although the mast comes ready for deployment, I perused the instructions and went online to YouTube to watch a short video made by SOTABEAMS about the Tactical 7000hds and a second SOTABEAMS video showing their method for erecting a collapsible mast in the field. Since the Tactical 7000hds does not come with a guy kit, I was concerned about how the mast would stay upright since it is not designed to be driven into the subsurface, but instead the base of the mast stands freely on the ground. After watching the video, I learned that only three supports (guy lines) are necessary to keep the mast upright. If I used a dipole antenna in an inverted-V configuration only one additional support line (comprised of masonry cord or light rope) would be necessary since the dipole's legs would serve as two of the three support (guy) lines. I was happy when I learned this information since the inverted-V is my favorite antenna for portable operation. There are several tips in the SOTA-BEAMS videos that beginners and more experienced users of collapsible

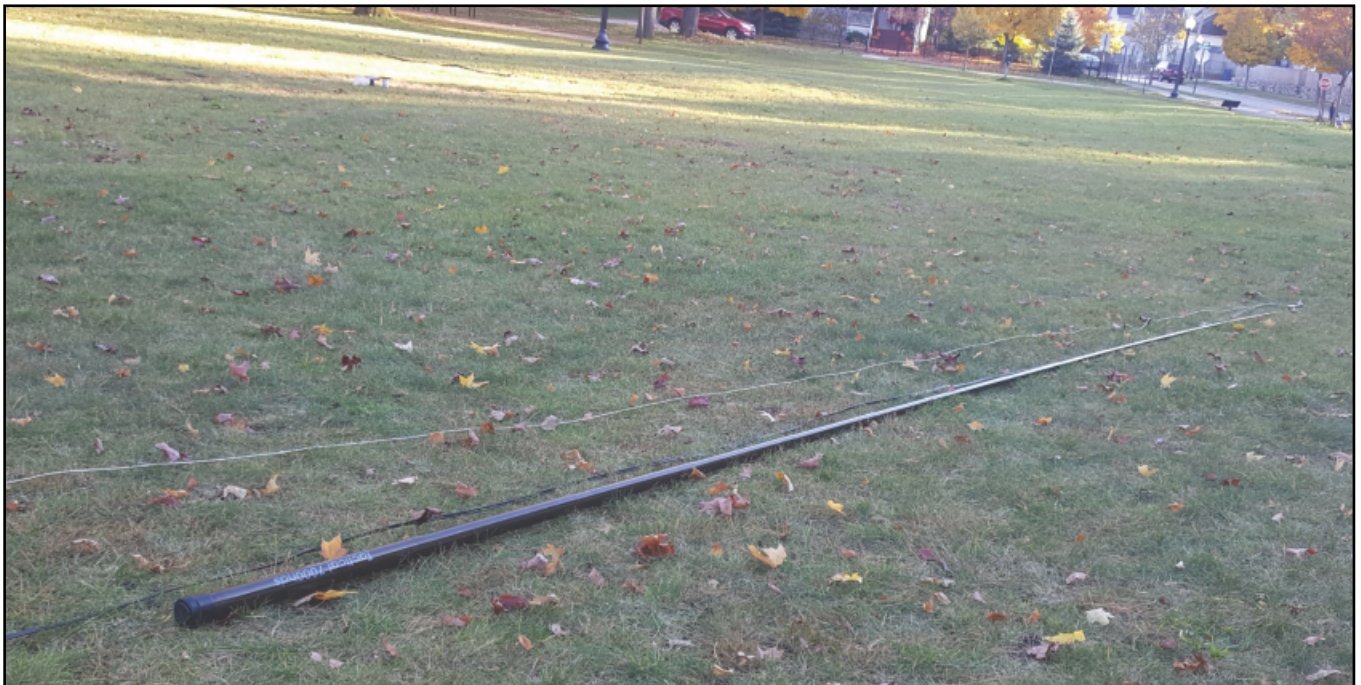


Photo C. Ready to be put into position.



Photo D. Up and supporting an inverted-V dipole.

masts may find helpful. These videos can be seen online by searching for "Tactical 7000hds Heavy Duty Antenna Mast" and "Erecting a SOTABEAMS HF Dipole" on YouTube.

It is important to note the if the mast will be used to support an end fed antenna, three guy lines will be necessary. I used masonry cord as guys to support the mast when using it with this type of antenna. SOTABEAMS offers a variety of mast guying kits and other products to support the mast, including drive-on car stands and suction cup mounts for securing it to the side of a motorhome or RV.

A Walk in the Park

My first outing with the Tactical 7000hds was at a local park. I followed the guidance provided in the SOTABEAMS YouTube videos for deploying the mast and, within minutes, it was freestanding and supporting a 20-meter inverted-V dipole. The only items needed in addition to the mast were my dipole, masonry cord, and three ground stakes for securing support lines. The dipole I used was constructed of 22-gauge stranded wire with 300-ohm twin lead for the feedline (same antenna setup I use for portable operations). I then tried to support an end-fed wire with the mast. I used masonry cord to support the mast (three guy lines). After the mast was standing, I tugged and pulled on the end-fed wire that I had attached near the top of the mast to check stability.

Surprisingly the mast stayed erect with no swaying. Even Mother Nature with her gusty winds could not topple it. I found the top of the mast flexed nicely with no indication it would fall over as I tugged and pulled on the end-fed wire. Closer inspection after collapsing the mast confirmed that there was no damage or stress to the smaller diameter poles near the top after I had tugged hard on the antenna.

After deploying and collapsing the mast a few times, I was able to set up the mast and antenna (whether using the Inverted V or end-fed antenna) in about three minutes. Takedown (collapsing the mast and rolling up the antenna) took about the same amount of time.

Likes and Dislikes

The small size of this mast when collapsed is truly amazing. After multiple uses, I still find it difficult to believe that SOTABEAMS packed the strength and durability of this mast in such a small package. In the past, I have homebrewed by own masts for use in the field and the finished products are several feet in length, heavy, and not nearly as robust as the Tactical 7000hds. Since discovering the Tactical 7000hds, I have retired my other homebrew masts and made a permanent home in my backpack for this little gem.

One item that I believe should be included with the mast is a ring or insulator that slips over the top pole to attach the antenna. I attached the antenna to the mast by wrapping several turns of masonry cord approximately one foot below the top of the mast and securing the cord to the pole with electrical tape. I then tied the masonry cord to my antenna wire. It was not until later that I discovered SOTABEAMS offers a laser-cut insulator (Versatile Top Antenna Insulator) that is designed to slide over the top pole for securing a wire antenna. The insulators are sold in packs of five and are relatively inexpensive. I would like it if SOTABEAMS included one of their Versatile Top Antenna Insulators with each mast sold as this is an item that many hams may overlook until they are in the field and have no way to attach their antenna to the pole. Although my masonry line idea works for attaching the antenna to the mast, I believe the insulators will do a much better job in securing this connection.

Lastly, I found the pole sections to be slippery which made it difficult (for me) to twist each section when locking them into place. I need to point out that this is not a dislike, but rather an observation. The second time I took the mast into the field I packed a pair of latex gloves (the same type of gloves you can purchase at home improvement and hardware stores for pennies on the dollar) in my backpack. The latex gloves provided me with all the grip necessary to twist the poles together.

Final Comments

The Tactical 7000hds hits the mark for a portable, telescoping mast and has the strength necessary to support a variety of wire antennas. I can report the poles easily collapsed and pulled out during cold, wet, and hot conditions (temperatures ranging from 30° to 85° Fahrenheit) and I never had any issue in erecting or collapsing the mast. Whether you are a serious portable operator or get into the field only once or twice a year, you owe it to yourself to add the Tactical 7000hds to your portable setup. The Tactical 7000hds retails for \$74 U.S. (plus international shipping) direct from SOTABEAMS or \$105.99 via DX Engineering. Additional information and product ordering is available via the SOTABEAMS website <www.SOTABEAMS.co.uk> or via DX Engineering at <www.dxengineering.com> or you can call (800) 777-0703.