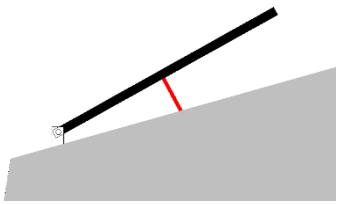
A Rugged Bipod, Version 1.1

By R. G. Sparber

Once a year I join a team of guys that carry this mast and other parts up a mountain. This beast is 4 inches by 4 inches and 20 feet long. Although composed of 3/16 inch thick aluminum, it is heavy.



Upon arrival, one end of the mast (black) is anchored to a hinged receiver. We all help lift it up to rest on a 2 foot tall support (red). More parts are then bolted on. This is where I come in.

The terrain uphill of the mast is rugged rock, sloped at about 30°. Since people are crawling under the mast during assembly, safety is of prime concern. Complicating this requirement, the support has to be carried up to the site by me so I want it light. Of equal importance is that no parts can fall off. Just beyond the hinge is a cliff. Murphy's law is very clear on this matter: all loose parts will fall off the cliff.

My solution was to build a bipod.
A pin in the top engages a hole drilled into the mast. This prevents the bipod from sliding yet enables it to drop away as the mast is lifted vertically. The legs can be independently extended in increments of ½ inch.

You are looking at the supports with the legs fully extended.

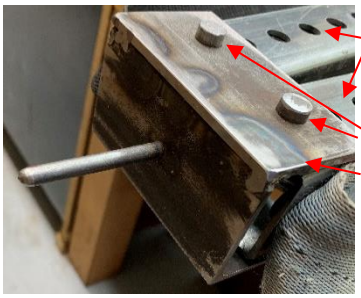
Once engaged into the mast, it plus the mast forms a tripod that is stable.

The bipod is built of square tubing designed to nest.

On each leg, a strap runs from the top of the larger size top tube to the bottom of the smaller size bottom tube. That strap prevents the bottom tube from falling out.

The rounded pins in the bottom of each leg fit into crevices in the rock to prevent slipping.

Securing each leg is a 3/8 inch diameter pin with a washer welded on top. Epoxied under the washer is a neodymium magnet that reduces the chance of the pin falling out. The ball chain is braised on. Place the pin through a hole in the larger tube and the legs are adjusted in steps of 1 inch. Place the pin through a hole in the smaller tube and the 1 inch steps are offset about ½ inch. In this way, each leg can be independent adjusted to the nearest ½ inch.



The legs are

pinned to a
welded up channel so they can pivot independently.

By adjusting the overall length of each leg, I am able to adjust the amount of slack in the straps. Here you see the legs fully collapsed which give the most slack.

This lets me put the bipod on as a backpack. My hands are then free to carry a few light parts up the mountain.

Acknowledgement

Thanks to Marv Klotz for improving the clarity of this article.

If you wish to be contacted each time I publish an article, email me with just "Article Alias" in the subject line.

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