

## Making my own Mast Climber

**Note:** The author accepts no liability or responsibility for any injuries caused by anyone attempting to replicate the climber described in the following article. This document simply explains how the author made a devise for climbing the mast of his boat and anyone attempting to create a similar climber does so at their own risk.

I wanted to create an inexpensive mast climber that would alleviate my reliance on gathering a group of strong fellow sailors to help me up my mast to fix a burned out bulb or similar job. My wife certainly could not lift me and I am not much more than 170lbs and I even found lifting her at 140lbs difficult. The resulting climber has cost me less than \$140 Cdn. (\$125 US\$ at the time) although the price would increase if I had not been able to sew the webbing myself and I had to buy the couple of shackles.

Since I already had a Boson's Chair I decided to start from there. After researching how mountain climbers and Splunkers (mountain climbers who specialize in climbing in caves) climb a rope I devised a system using 2 ascenders (Petzl brand for 10-13 mm ( $\frac{1}{2}$ " ) rope- one left and one right), about 15 feet of one inch tubular webbing and 18 inches of  $\frac{3}{4}$ " flat stainless strapping. It is remarkably simple and took only a few hours to create.



The ascenders are remarkably simple and light weight devices that grip a rope when released and allow movement of the ascender up or down the rope when squeezed. They have a large comfortable hand grip which allows the user to pull themselves and the ascender up or pull down the rope. The squeezing motion is not one that might occur in a panic situation so the operator is safe from accidentally releasing themselves and their weight tightens the grip on the rope. The rope is captured in the ascender in such a way so that it cannot fall out without a conscious effort of the operator.

You will need a good sewing machine capable of sewing through three layers of the tubular webbing and using a heavy UV resistant thread. I used a Sailrite Ultrafeed. If you don't have one or question your sewing ability ask someone who can sew it for you. If you pre-cut the webbing and pin it together the cost should be minimal. When cutting the webbing either use a hot knife or seal the ends like you would any synthetic rope to stop fraying.

The main difference between my climber and an ATN Top Climber is the foot straps. I did not wish to have pressure on my feet such that there was an uncomfortable squeeze on the sides of my feet from them supporting my weight in a closed loop so I created stirrups. Using two pieces of  $\frac{3}{4}$  inch wide by 9" long flat stainless strapping I fashioned 5" wide by 2" high U shaped pieces and ground the ends smooth so that when they are encased in the webbing they would not wear through.



Example of Zigzag stitching



Using a 10' piece of the tubular webbing I inserted each stirrup inside the webbing such that each was centered 18" from each end. The webbing was then sewn back on itself using zigzag pattern (not a zigzag stitch) for a distance of 6 inches. PLEASE REFER TO THE DIAGRAMS as this may seem very complex and it is not. I then folded the entire piece of webbing in half and sewed it together at 18" up from the bottom of the stirrups. Insert a small 6" loop of webbing just above this. The loop is important as it keeps the stirrups close to rope and helps balance you. At the folded end sew another zigzag pattern to create a small loop for a shackle to connect to one of the ascenders. I sewed a shackle here rather than connecting directly to the ascender as I was not sure whether I would be using my left or right hand for my feet. I could change it if required.

The other piece I needed was a 2' loop of webbing to connect my Boson's chair to the other ascender. I used four and a half feet of webbing with a 6" overlap and I then sewed it to create two smaller loops at the ends. I have probably over sewn the webbing but I think my life is worth it. If one loop fails there is always another to take the strain.

I tried my completed climber out on a tree where I could only fall a few feet and perfected my technique of climbing. You need a good quality low stretch  $\frac{1}{2}$ " double braid and it is much easier if the line is taught with bottom secured. In fact I would venture to say that if climbing a mast the bottom must be secured as you would swing about too much and could injure yourself on the rigging.

The climbing is fairly easy. Attach the ascenders to the rope with the chair one below the foot one and the small loop shackle attached to the rope. Sit in the chair and place your feet in the stirrups. Now adjust the foot ascender so that your legs are bent slightly at the knees. Stand in the stirrups and raise the chair ascender about 6-12". Sit in the chair and repeat. Up I went. At first this is awkward but I got the hang of it soon enough and can now climb up my Tartan's mast in about 8 minutes. (see [www.sailrite.com](http://www.sailrite.com) to see climbing video with ATN Top Climber)





Getting down is slower, believe it or not, as you reverse the process but the ascenders are made to not release under pressure and you cannot over extend the decent or you will find your knees too tight to your chest to release the ascender. Descend slowly and it is easier.

I must say that I error on the side of caution and I have an extra safety line attached to an industrial safety harness that I put on prior to getting into the chair. If all else fails my wife has this attached to a halyard and through a winch. She takes up the slack or releases line as required so if my climber fails she can lower me safely.

Note: The dimensions used are for me and I am about 6 feet tall weighing 170 lbs.

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