

SCOUT Projects: *Bow Awning*

m/v SCOUT (Great Harbour N37)

Ray Henry

Description

Create a removable awning for shade on the bow. Must be completely removable with no holes drilled anywhere on the boat.

Parts Ordered

1. Truss Clamps (8)



<https://www.parts-express.com/open-box-talent-lcsc-c-tuv-certified-heavy-duty-stage-lighting-clamp-swivel-coupler-for---86-243-288>

2. 10x13 Awning



Love Story 10'x 13' Rectangle Sand Waterproof Sun Shade Sail Perfect for Outdoor Patio Garden

Sold by: [Youngforyou](#)

Return window closed on Aug 14, 2018

\$33.98

Buy it again

3. Nylon cleats (4)



Mizugiwa Nylon Cleat 4" Black 4 Pack

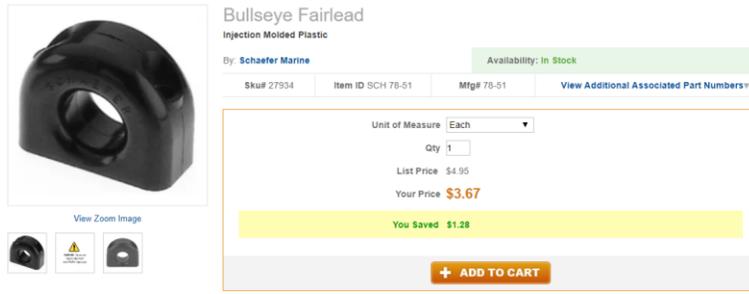
Sold by: [MIZUGIWA](#)

Return window closed on Aug 13, 2018

\$10.99

Buy it again

4. Nylon fairleads (4)



5. PVC pipe caps (8) – Local Lowes Hardware Store

6. Schedule 40 aluminum tube, 6ft (4) <http://www.onlinemetals.com>:

4 pieces @ \$33.24/piece

Aluminum 6061-T6 Bare

Pipe Schedule 40

1.5" nom. (1.9" OD x 0.15" Wall x 1.61" ID)

Cut to: 72"

Design

I wanted all aluminum components to make things rust-free (mostly) and thought that 1-1/2" schedule 40 pipe would be the best tradeoff between cost, strength, and weight. I really wanted to be able to crank down on the awning corners to get a taught shape.

The plan was to make everything removable with no holes drilled anywhere. I thought that some sort of clamping mechanism to several of the existing bow rail upright stanchions would allow for quick setup and removal. After searching for various tube clamps online, I came across some aluminum clamps with various configurations, called truss clamps. These looked like they would do the job. I initially thought about having someone weld some attachment points to the tubes for a single-sided clamp version, but I thought using a double clamp would be faster, not depend on anyone else, and would allow me to experiment more with the attachment points. I ordered a top and bottom set for each pole. Placement of these on both the poles and the boat's stanchions would allow some adjustment of height.

To attach the shade-sail, I needed a fairlead at the top and a way to create a lot of tension. I thought some nylon fairleads on top and a corresponding cleat on the side of the pole would work for that. I would though-bolt the cleat and use some sort of pipe cap to mount the fairlead onto.

The awning/sail-shade was a 10 x 13 rectangle. It needed to be more of a trapezoid to become more narrow at the bow. We cut the sides to the right taper, and after 2 attempts, got the draft curve right in order that it stretched tight when pulled.

Assembly

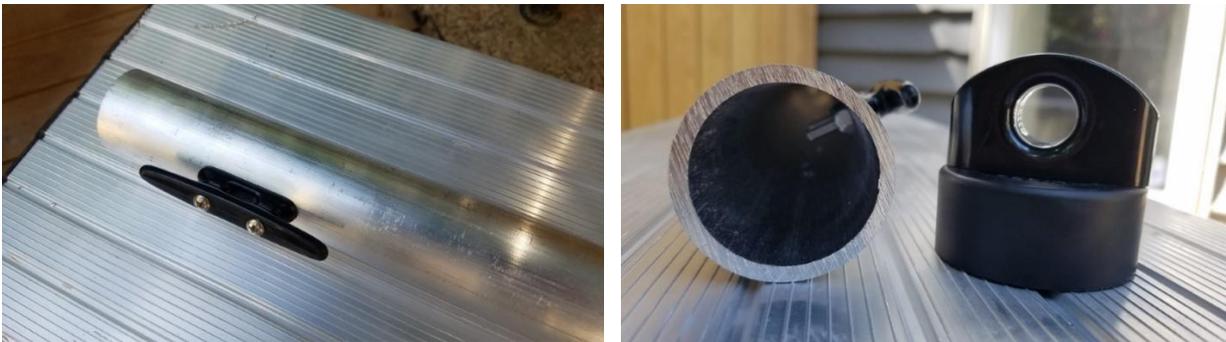
The 6ft pipes I ordered just needed a bit of cleaning up from machining. I left the length as is. First, I mounted the fairleads to a black PVC pipe cap by bolting it through the cap. It didn't occur to me at the

time, but the nuts inside the cap just did barely clear the inside thickness of the pipe in the circumference (whew!).



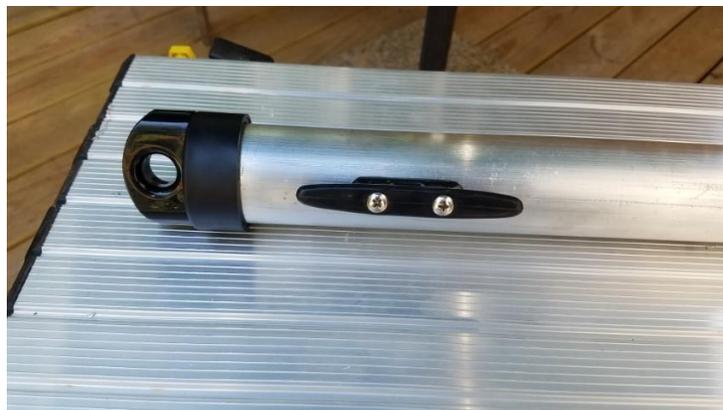
Top of pole fairlead assembly

Next, I drilled the pipes for the cleat bolts and made them as far from the top end as I could reach inside the tube with a nut taped to my box-end wrench.



Cleat and fairlead mounting to pole

I glued the fairlead/pipe cap to the end of the tube with 5200. It was already a tight fit, and all of the force would be pressing down on the pipe cap when in use since the tie-off point is the cleat below.



Top of pole with tie-down cleat

On the bottom end of the pipe, I glued another black pipe cap just to protect the boat from banging around on deck. I drilled a weep hole in the cap in case any water or condensation got inside.

Next I attached two clamps to each pole. The clamps came with wing nuts on both clamps. I changed the wing nut on the pole-side clamp to a fixed nylock nut, since it was mostly permanent. I left the other clamp with the wingnut for the removable attachment to the rail stanchion.

I located the two clamps so that they spanned as much of the vertical stanchion as possible, but allowed some room for moving it up and down a bit for headroom under the sail-shade.



Completed poles

Completion

Here is a photo of one of the poles clamped to the stanchion. I like the fact that there is nothing on the boat when they are not up. The poles stack in the cockpit lazarette locker when not in use. I was worried about them being unwieldy, but this is not the case.



Pole installed

The awning, after finally getting the side curves correct, pulls nice and tight and looks good on the boat.



Do-Overs and Comments

If the awning turns out to be useful, I will probably weld on some sort of mounts to the permanent pole-side of the dual clamps. This would allow the use of a one-side-only clamp and would reduce the weight of the poles a bit and make them less cumbersome to be stowed.

I was concerned with buying the right size pipe, both diameter and thickness, so that I could really pull the shade tight. The SCH40 appears to be just right in this respect.