SCOUT Projects: *Removable Sea Chest Strainer–Generation 3*

m/v SCOUT (Great Harbour N37) *Ray Henry*

Description

We have been enjoying the ease-of-use and easy cleaning of the removable sea chest strainer. All has worked really well. Previous versions and "do-over" comments are described in the previous write-ups, *RemovableSeaChestGrate.pdf* and *RemovableSeachestGrate-Generation2.pdf.*

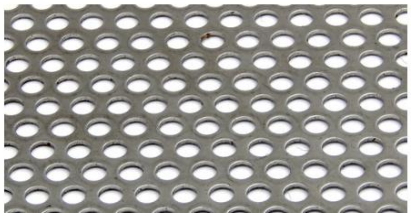
The latest version is working fine, but rust is a constant problem, even with the ***supposed*** '316 Stainless' parts. We have been using rust converter regularly, but it continues to be a problem.

This project is to update the grates using materials that will not rust – aluminum, nylon, plastic, and fiberglass.

Parts Ordered

1. ***ALUMINUM*** Perforated Sheet (*onlinemetals.com*)

   0.125" Thick x 0.125" Hole x 0.1875" Stagger Aluminum Perforated Sheet 3003-H14-Round Hole **12.0"x12.0"** **1** **$23.72** **$23.72**

2. Fiberglass Rods (*tapplastics.com*)

   Fiberglass Round Rod

   Enter Specifications

   3/16 in x 6 ft Round Fiberglass Rod - $2.95

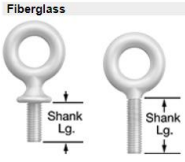
   Length: Cut @ 3 ft. lengths

   Quantity: 4

   Price $2.95 Add To Cart

   Available in 6' lengths. 65%-75% glass content for maximum strength. Cut with a hack saw or tilesaw.

3. Fiberglass eye bolts (http://www.mcmaster.com)

Size	Lg.	Lg.	Dia.	Range, °F	Lg.		Each
Closed Eye							
1/4"-20	1"	1"	7/16"	-20° to 200°	2"	30295T22	$5.66

   Product Detail

   Fiberglass Routing Eyebolt with Shoulder-Not for Lifting, 1/4"-20 Size x 1" Long Thread

   Each

   ADD TO ORDER

4. Nylon Padeye (http://www.mcmaster.com)

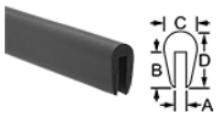
Nylon Plastic

For Max. Rope Dia.	Lg.	Inner Ht.	Overall Ht.	Thick.	Mounting Fasteners Included	No. of	Dia.	Ctr.-to-Ctr. Lg.	Color		Each
For 1 Line											
1/2"	1 7/8"	3/8"	9/16"	3/16"	No	2	3/16"	1 3/8"	Black	8860T11	$0.47
1/2"	1 7/8"	3/8"	9/16"	3/16"	No	2	3/16"	1 3/8"	White	**8860T12**	.57

Product Detail

Rope Guide for 1/2" Maximum Rope Diameter, Nylon Plastic, White — Each

5. Edge trim (http://www.mcmaster.com)



Inside Wd. (A)	Inside Ht. (B)	Outside Wd. (C)	Outside Ht. (D)	Flexibility	Nonmarking	For Use Outdoors	Hardness Rating	Hardness	Temperature Range, °F	Color	Available Lengths, ft.		Per Ft. 1-99	Per Ft. 100-Up
EPDM Rubber														
1/32"	1/4"	13/64"	3/8"	Very Flexible	No	Yes	Hard	Durometer 70A	-40° to 210°	Black	10, 25, 50, 100	8693K19	$1.05	$0.75
1/16"	3/8"	1/4"	1/2"	Very Flexible	No	Yes	Hard	Durometer 70A	-40° to 210°	Black	10, 25, 50, 100	**8693K21**	1.27	.91

Product Detail CAD

EPDM Rubber Trim, 1/16" Wide x 3/8" High Inside — Each

6. Aluminum bolts

uxcell 5Pcs M6 Aluminum Alloy Hex Socket Head Motorcycle Bolts Screws Nuts Silver Tone

Brand: uxcell

Price: $6.75 prime & FREE Returns

7. Epoxy, fiberglass cloth

Design

I wanted to find a way to make everything from materials that would not rust.

I started with 1/16” aluminum perforated sheet, but it seemed quite thin and flexible. I was worried about the stress of the push-rod over time, so I switched to 1/8” thick material. This seemed a little bit too thick and rigid for the angle of the hull, but I went ahead with it and planned for a thicker trim to absorb more of the shape. Something in between these two, about 3/32”, would be the best thickness, I think.

I switched to nylon pad eyes and aluminum bolts.

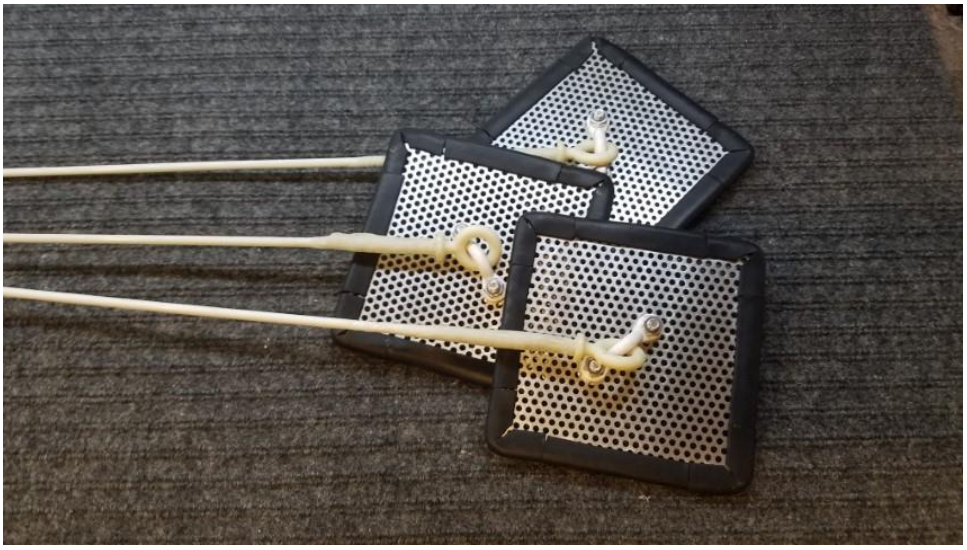
For the rods, I used the same fiberglass sticks, but found some fiberglass eye bolts to mate with them. They were nearly the same diameter, and I thought I could wrap some thin fiberglass over the joint and connect them together. I started by coarse-sanding the threads of the eyebolt and mating the two pieces together.

Then I spiral-wrapped a fiberglass cloth strip soaked in epoxy over the joint and built it up for strength. The result was sanded smooth and appeared to be very strong.

I had to ease the corner-sides of the pad eye legs with sandpaper in order to push them through the eye bolt circle, but they snapped in securely.

Finally, I used a slightly thicker rounded trim with a more round shape than the previous version to try to improve the seating on the hull flange and glued it (sloppily) around the edge of the aluminum.

Completion



Again, I made three screens so that they can be quickly changed out for cleaning as well as having a spare.

There is no material in any portion of these that will rust!

Do-Overs and Comments

I forced the pre-purchased trim pieces around the edge of the 1/8” thick aluminum even though the “slot” was only 1/16” thick (original plan for perforated aluminum thickness). If doing again, I would order new trim with 1/8” gap to fit the perforated sheet better.