

Chainplates

The bow and stern chainplates showed signs of crevice corrosion, so I ordered 57" of 2" x 3/8" 316L stainless to fabricate new ones.



The starboard forward chainplate showed signs of corrosion and cracking, too. So I borrowed some ideas from Memory Rose (thanks Ron) and designed new external plates.

I'd made up a drawing ([Files/chainplates drawing.pdf](#) [Files/CHNPLTS.DXF](#)) and sent it out for quotes for both laser cutting and waterjet cutting. The more I talked to folks, waterjet sounded like the way to go - no heating of the part, no contamination (carbon = rust) and low cost. Al at Excell Aerofab in Arlington, WA. was very helpful and their cost (\$35/part) was pretty easy to swallow. I purchased the stainless from Alaska Copper and Brass - they're a metal supplier in Seattle - and had it drop shipped to Excell Aerofab.

I don't know if there is a competitive waterjet cutting thing going on here in the northwest due to lots of shops that support Boeing, or if waterjet cutting is just that economical. I know there are waterjet cutters all across the country, and it's a MUCH easier/faster process than machining, plus the square holes for carriage bolts are easy. They will have to ream the 5/8 holes for the clevis pins, but can waterjet cut them slightly undersize first so it's not too tough.

Removing the backstay plate is the easiest if you don't mind someone sitting on top of you working the outside bolts while you're in the aft deck locker holding the nuts. (I'm doing this with the boat in the water, and the mast standing)

Access to the bolts for the forestay chainplate required a VERY tight squeeze in the fwd anchor locker. I'm pretty sure they installed that and the anchor roller tray before they joined the hull and deck. I eliminated the topmost bolt hole in the forestay plate because it seemed like that was an area likely to flex (and I didn't want to have to reach it). I softened the radius of the

bend where the plate passes thru the anchor tray, too. After installing, I poured epoxy thickened with short glass strands from the top to make sure that the plate had very good compression support/load transfer to the hull/deck/anchor tray.

The lower bolts on the side chainplates required removing the bronze rubrail and digging out about 2" of filler/gunk to get to the slotted flatheads (If you try this, buy a BIG high quality flat blade screwdriver - I broke 3 of Craftsman's biggest in less than 15 minutes...). The bolts were in good shape, but the nuts were a mess with crevice corrosion. Some came off easily, and I ended up grinding several of them off (parallel to the bolt just missing the threads, cut one "side" of the nut off, then broke the rest away with a chisel). The top bolt is under the 2" teak trim below the toerail and the nut is up in the raised bulwhark making it hard to reach. I had to drill the head off it (lots-o-fun!) to get it out. The remaining part of the bolt was still captured by the chainplate inside the bulwark, which gets narrower at the bottom... ended up Sawzalling the nut side of the bolt off after wiggling it as low as possible for access. Drilling was easy in comparison, and if I'd just drilled 1/4" more of the bolt away it would have come right out.

The others will be a similar process, except the port forward one will require disassembling the bookshelf for access. The aft ones may require cutting a little of the bulkheads away to be able to pull them out.

I plan to complete one before moving on to the next, so the mast stays supported. I'm really looking forward to no more leaks! (that, and not worrying about the mast coming down due to failures!)

Pictures of the installation forthcoming...

Update 9-23-04

All the chainplates are done now (finally getting time to put up the pictures). I ended up using a nut breaker (from Sears) which helped immensely in removing the old chainplates. Polishing them was a BIG job. Dad and I spent 10 hours using progressively finer grits to get a mirror finish. Dad also found time to flame-cut some 3/4" plate into a prop puller - just need some threaded rod and nuts. The starboard side toerail needed rebedding, so I cut the slots for the chainplates while it was off. I did the port side with the toerail in place and used a drill, jigsaw and file to cut the slots. The old chainplate holes were filled with glass-filled epoxy and a woodblock plug epoxied into the toerail cap to fill the old chainplate exit holes.



