Chapter 1: Hull and Deck Structure
Section 3: Replacing the Skeg
Neal Musto, #31 Abraxas

I came to the realization that the skeg on our T37C was missing when I dove to clean the prop from barnacles. When I say missing I mean in its entirety. There was nothing left but a small section under the pintle/shoe. We Tartan owners are lucky in that Tartan still supports its older models and I was able to purchase a replacement skeg and this past spring I was able to refit the skeg to Abraxas. Since this was nowhere near a simple bolt on procedure I decided to document the process in this article.

When I got the skeg from Tartan and held it in place on the boat, it was clear that major surgery was going to be needed before I could attach it to the boat. The picture to the right shows the skeg as delivered. The dimensions of the top labeled T and the dimension of the skeg labeled L were far too big, which resulted in the skeg being positioned too far forward of the rudder to match up with the stub on the boat. To further complicate the problem, the opening dimension labeled O was significantly narrower than the forward face of the rudder. In fact, instead of flaring out, the aft most section of the skeg flared inward.

It was clear that I was going to have to do some cutting here, but, having not really looked at my old skeg before its departure, I was flying blind. I called up another T37C owner and asked if I could take a look at his boat, which was on the hard. From this I learned that I needed to remove 3 inches from the aft portion of the skeg and then fabricate thin fairing strips to add to the aft end to adjust the flair.

First the cuts on the skeg: as shown below, I cut 3 inches off the aft end (left picture below), then 2 more inches off the top plate where the skeg mates with the boat (right picture below). This was to match the footprint of the boat attachment flange and prevent interference with the rudder.

My next concern was to fabricate fiberglass extensions that would eventually be attached to the aft edge of the skeg to fair it to the rudder. From the measurements I took on my friends boat I needed the fairing to extend 2 ¾ inches beyond the aft end of the modified skeg and I felt I needed an inch and a half overlap with the skeg. With the height 32 inches I needed two panels 32 by 4 ¼ flat panel around 1/16th thick. To accomplish this I needed a large flat surface to lay up the FRP. For this I used one of the sides of the plywood shipping box in which the skeg came by filling the imperfections sanding it smooth and coating it with 2 coats of polyurethane. After the polyurethane dried, I waxed the surface with paste wax followed by 2 coats of cheap hair spray, which acted as a mold release. On this platform, using epoxy, I laid up 1 layer of #1708 [which is E-glass Biaxial (+/-45 degree) cloth with 3/4 oz mat backing] with the dimension of 8 ½ by 34 inches (available from Jamestown Distributers). After curing, I peeled it off the plywood and cut it into two sections 4 ¼ wide by 32 long (1 inch off each long end). The resulting two panels are shown below in the left picture. The mold release and epoxy blush were washed off with soap and water and then these fairing strips were attached to the skeg with the cut long edge aft and the smooth mold side out. The skeg was prepared by sanding the primer paint off the trailing edge then temporarily screwing the fairing strips in place such that they extended 2 ¾ inches past the aft edge of the skeg allowing a 1 ½ inch overlap. **See picture on next page.**

Let me take a minute to tell you how I made the final attachment of the fairing strips. I did so by mounting the skeg to the boat in the position it would finally rest. Then I removed each fairing strip, buttered the skeg where the strip attached and the fairing with a substantial layer of thickened epoxy, and screwed the strip back on with a narrow piece of cardboard as a spacer between the fairing strip and the rudder taking care to only screw down enough to seat the forward edge of the strip and NOT substantially deflect the aft end. This was to insure that once the cardboard was removed, the strips would be clear of the rudder about the thickness of the cardboard. (Note: the screws were along the forward edge of the strip). These steps were repeated on the other side. Once the epoxy cured, the screws were removed (made easier if they were first sprayed with hair spray), then faired the forward edge of the fairing strip and the skeg with micro balloon thickened epoxy.

One last chore I encountered was that once the skeg was dry fitted, I found that the rudder was binding and would not turn easily. This was because the thickness in the top plate that marries skeg to the boat was too thin and this caused the pintle to push up the top of the rudder and bind on the bottom of the boat. It turns out that the thickness of the old skeg top was close 3/8 and the new one was approximately 1/8, so I ended up adding 4 layers of 1708/epoxy to the inside of the skeg to build it up. I ran the first layer around the corner to the side of the skeg to reinforce the junction between the top and side of the skeg. I didn't want to lose another skeg to Neptune. I also found at this time that I broke one of the welds that held the bolt on the pintle, so I had it re-welded and made sure that all else was in order before I finally attached the skeg. After all this was done it was time to prime, install and bottom paint.

Behold the finished product pre and post installation.

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