

More Stopwaters

I decided to replace the stopwaters as I encounter them during plank repairs. The seventh plank (partially) covers one 3/8" diameter stopwater aft and the next plank will cover three ½" diameter stopwaters forward, so it's time to replace these 4 stopwaters.

The aft stopwater was broken, and I was able to extract most of the stopwater from the starboard side. I tried unsuccessfully to remove the remaining 2" piece by driving it out from the port side, but it wouldn't budge. Alas, I should have dealt with this before I installed the seventh plank on the port side (P7).

The pic below shows the stopwater on the port side (at the intersection of the rudder post, horn timber, and stern rabbet). Only half of the stopwater is visible. The other half is covered by P7.



Unable to remove the broken piece, I decided to drill it out from starboard. I reasoned that since 6" of the 8" hole was clear, I should be able to run a long 3/8" diameter drill through to the port side. This turned out to be a big mistake. Instead of removing the broken piece, the drill exited through the plank! To see what went wrong, I removed about 10 screws from P7 so that I could spring the plank away from the stern rabbet. I could immediately see that my drill wandered off about 1". Using a drift, I was able to drive the broken piece of stopwater from the port side through to exit on the starboard side. With the hole clear, I could see what happened. Evidently the builder started the hole on the starboard side and after drilling about 6" he switch to the port side. The two holes met but not in a straight line. So they were able to drive a stopwater through because it would deflect enough, but maybe that's why this stop water broke? In any case, when I tried to clean out the broken piece by drilling

through from the starboard side, of course my drill followed the old hole straight on through the face of the plank. The pic below shows the two holes on the port side. The hole to the right is the original stopwater hole. The one to the left is where the drill exited.



So now to do it right ... First I had to plug the old holes. I made some long (1.25") 3/8" diameter Amendoin bungs. I epoxied one bung into the hole where the drill exited on the port side and 5 more into the hole on the starboard side. The one plug on the port side filled the bad hole completely and the other 5 almost completely filled the original hole. This left me with a shallow hole on each side (properly located).

The next step is to drill a proper thru-hole, using the jig show below.



I drilled from both sides toward the middle, but the jig insures that the hole is fairly straight.





The replacement stopwaters were made from Western Red Cedar, left over from my kayak-building days. You start with a cedar stick about 9" long and just over 3/8" in diameter. Using a small block plane, you convert the four-sided stick to 8 sides and then 16. Then drive the stick through a 3/8" diameter hole in a piece of steel plate. This leaves you with a nice round 3/8" stopwater.

I also made a couple of Mahogany bungs and epoxied them into the hole in P7.

The following pics show the finished result.

Starboard side ...



Port side ...



With P7 and S7 in place ...



The three $\frac{1}{2}$ " diameter stopwaters forward were much easier. The old ones came out a bit too easily so I drilled the holes $\frac{1}{16}$ " oversize. The new $\frac{7}{16}$ " stopwaters went in without a hitch.

