

Weekly work updates from February 2004 through December 2004 on the restoration of the 1895 lumber schooner *C. A. Thayer*

March 29 – April 2, 2004

Work toward the replacement of the framing got underway in earnest this week. The contractor has decided to remove the rotten timbers in every fifth frame on either side.



These are being called “station frames.” Frames # 20, 25, 30, 35, 40, and 45 are now out. In each of these frames, at least the lower timbers - the floors and first futtocks - are being retained. The floors are the forward members of the two timbers that make up each frame, and extend unbroken across the keel. The first futtocks butt on the centerline, and run up on each side a bit higher than the ends of the floors. Overall they are not rotten because they have been soaked in salt water throughout the ship’s life. Some of the upper ends of the first futtocks are a bit soft and will have to be cut off short. In some cases, the second futtocks, which butt against the floors, will be saved. Right amidships even some of the higher futtocks can be reused.

The idea is to make these station frames solid and only then begin to address the intervening frames. This should hold the shape of the hull throughout the rebuild process. The new frame timbers will be laid against the remaining ceiling planking in the upper hull, and in the turn of the bilge area, the shape for the timbers will be picked up using the remaining timbers on either side.



A pattern of light plywood will be made for each futtock to guide sawing out each new section. In general, the butts in the new frames will be in the original locations, except where an original futtock has been cut short to eliminate soft material.

The first of the timber for the new frames was to be delivered Friday afternoon. This is all 10 inches thick, straight-grained fir. No curved or crooked material was used in the original structure. It was all just sawn to shape. The new material is partially kiln-dried and is pressure-treated with sodium borate as a preservative. The water-soluble borate will continue leaching into the timber over the coming months until there is total

penetration. The cut surfaces of the material will get additional coats of borate. The sides of the timbers will not be shaped and will be heavy with borate from the pressure treatment. The initial shipment of timber should be at least enough to do the station frames. The next batch is now being ordered, based on our now almost complete survey of the hull condition.

Additional diagonal bracing has been installed around the station frame locations to help hold the shape of the hull. This runs from the temporary cross-spalls installed under the deck down to the hanger floor. With the lower strakes of the interior thick ceiling out, and the outer planking removed in the turn-of-bilge area, the structure is a bit shaky. Without the additional bracing, the sides of the hull would be held only by the largely rotten frame timbers over much of the length.

With these braces in place, however, we cannot do anything about the final settling down of the keel. We will wait to do another round of tweaks until the new station frames are in place, making the structure a bit firmer. The station frames will not lock any distortion into the structure. We should be able to do the final bit of reshaping without problems.

A number of the hanging knees, which tie the deck beams to the clamps and the sides of the hull, have now been removed.



We are gratified to see that these are generally in quite good shape – better than we could have imagined. In some cases, there is a bit of softness on the outboard vertical face, but so far, nothing that we can't repair. These pieces, cut from the particularly dense roots of fir trees, are relatively resistant to rot. We haven't yet tried to pull any of the heavy drift fastenings running through the knees. This may prove to be tricky, but hopefully, through the magic of hydraulics, we will be able to get them out. We have been able to get some new knees as replacements, but thus far none of them look quite as good as the originals. It is worth quite a bit of trouble to be able to reuse the originals.

We looked carefully at the deck beams, prior to their upcoming removal. One question is the extent of the designed crown in these beams. Just how much were they raised in the middle of the hull, and in what pattern? It looks like they rise by about six inches in the middle of the deck amidships. Most of the curve is sawn into the upper face, with the bottoms staying straight, except that they seem to have been sprung a bit over the vertical stanchions rising from the keelsons on the centerline. It looks like a bit more than an inch was sprung into the timbers, so that the arc sawn-in would be about five inches at the widest part of the hull.

Next week we will get a definitive look at the layout of the stern deadwood, as some additional bottom planking come off on the port side. The preliminary reading is that the centerline longitudinal timbers, the keel, the keelson, and the rider keelson, are in good shape. The only rot we see so far is in the upper two diagonal deadwood timbers. We will keep our fingers crossed.