

"CUTTY SARK"

In accordance with instructions and in company with Mr. J. E. Scott, M.Sc., I examined the above vessel in drydock at Falmouth. Owing to the limited time the drydock was available and the necessity for keeping expenses low, only damaged portions of the copper sheathing, false keel, etc. were removed for survey, and only a small quantity of ballast shifted.

The copper sheathing was found to be broken and torn away from several places particularly from the keel at the fore end. The appearance seemed to indicate that the damage was due to the vessel having touched the ground at some time. At all of the places where the copper was torn away the wood had been entered and badly eaten by mussels or other marine organisms. Clusters of mussels were found at the back of the sheathing in every place where it was holed along the whole length of the keel, there was also evidence of the presence of the Teredo worm. At least three tunnels were found in the false keel at every place where it was broken.

The damaged sheathing was stripped off and the full extent of the activities of the mussels, etc. traced.

Although the false keel was badly eaten away the main keel was found to be very little affected. The planking, however, on the port and starboard bows was eaten completely through in way of the fore deadwood.

The face pieces of the stem and sternpost near the waterline were torn away, probably by the mooring chains.

Except for the defects due to the activities of the mussels, etc., the timber of the Keel, Stem, Sternpost and planking was found to be quite sound. The Oakum and caulking were tested and samplings taken where possible and



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proved to be in a satisfactory condition.

The copper sheathing except where torn or chafed locally at the waterline was of good thickness and was intact over all of the bottom.

When the damaged portions of the false keel were removed, it was found that the main keel bolts, i.e. the bolts securing the wood keel to the iron keel plate, were missing. The cement was cut away from two frame spaces inside and the remains of the bolts were found in the holes of the keel plate, only the nuts and about two inches of the wasted steel bolts were left. All the remainder of fifteen inches had been corroded away, due apparently to action with the copper sheathing.

Several of the metal plank fastenings were driven out and tested, one from above waterline and three from below. The bolt from above and one from below the waterline were sound but the other two bolts from below were brittle.

The vessel was examined and the planking tested where accessible all fore and aft internally.

There was about 420 tons of sand ballast in the hold, but all of the sides above the bilge stringer could be seen.

Quite a number of local soft spots were found in the planking but none of them went more than about $1\frac{1}{2}$ " in from the surface, nor were more than a few square inches in extent.

The iron and steel portions of the ship, i.e. frames, tie plates, etc. were quite good except for local corrosion due probably to uneven distribution of certain elements. These wastages were frequently right through the plate, but were of small area, and the surrounding plate of good thickness.

Where, however, the ceiling was removed for survey, all of the floor plates were found to be completely corroded, but the frames and reverse were quite good.

The decks, main bulwarks, etc. were in fairly good condition, but the port quarter bulwark was torn away by the tug's hawser when docking.

The steel bowsprit, fore lowermast and fore yard, were wasted and holed and several of the wood yards were soft in places. Some of the rigging required renewal as well as parts of the running gear.

There is almost complete suit of sails on board.

The damaged portions of the hull below water were repaired and the copper sheathing made good. It was recommended that the floor spaces be filled with cement up to the underside of the keelson to compensate for the loss of the floor plates and to keep the vessel tight from any leakage that might occur due to the absence of the keel bolts.

(signed) G. Scantlebury.



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