

6

Sailing ship "Ellen Stuart" of 1572 tons  
built at Liverpool in 1854 and formerly  
classed A. 1. in the Register Book.

This vessel has now been submitted to the  
requirements of Special Survey No. 3, and has  
received a large repair, and is now recommended  
to be classed 90 A. 1.

Dimensions as follows:—

Length per Register 233.7 feet

Breadth — 36.7

Depth of Hold  $\left. \begin{array}{l} 21.2 \\ 28.8 \end{array} \right\}$

Numbers for Scantlings 76.5 and 16830.

She has had a Spar deck fitted to her  
since she was built, and has also had additional  
strengthening applied in the hold.

The frames amidships for a length of 50 feet are  
 $5" \times 3" \times \frac{8}{16}"$ , and for a further length of 100 feet they  
are  $4" \times 3" \times \frac{8}{16}"$  and from thence to the ends of the  
vessel they are  $4" \times 3" \times \frac{7}{16}"$ , the rules requiring  
 $5" \times 3" \times \frac{8}{16}"$  amidships to  $\frac{7}{16}"$  at the ends. The frames  
are spaced 18 inches apart the rules admitting  
24 inches. The reverse frames are heavier than required  
by the rules, being  $3\frac{1}{2}" \times 3\frac{1}{2}" \times \frac{8}{16}"$  instead of  $3" \times 3" \times \frac{8}{16}"$ .

The Keel stem and Stern-post are heavier than required.  
The Garboard strakes are  $\frac{13}{16}"$  thick the rules  
admitting  $\frac{10}{16}"$  plates, the bottom plating is  
 $\frac{11}{16}"$  thick the rules requiring  $\frac{9}{16}"$  and  $\frac{10}{16}"$  plates alternately  
with an addition of  $\frac{1}{16}"$  on three bilge strakes. The  
wales are  $\frac{11}{16}"$  and the topside strakes are  $\frac{8}{16}"$  the  
rules requiring  $\frac{9}{16}"$  plating. The main sheerstrake  
is  $\frac{12}{16}"$  as required by the Rules, and there is one  
strake of plating at the bilge doubled its entire  
length. Above the main sheerstrake, the Spar  
deck sheerstrake is  $\frac{2}{16}"$  less than required but the  
strake below it is  $\frac{8}{16}"$  the rules admitting  $\frac{7}{16}"$ .

The frames of the Spar deck are fitted with



Strong bracket plates on the main deck stringer at every frame, and are still further strengthened by four <sup>cross</sup> bulkheads and 5 partial bulkheads on each side in the 'tween decks. The spar deck stringer plate is in accordance with the rules, the main deck stringer plate is  $24 \times \frac{8}{16}$  the rules requiring  $31 \times \frac{10}{16}$ , and the lower deck stringer plate is  $24 \times \frac{8}{16}$  the rules requiring  $23 \times \frac{9}{16}$ . The beams of the spar deck and the hold beams are heavier than required the main deck beams being lighter than required but they are spaced closer, and in addition to the 5 partial bulkheads on each side in the 'tween deck there are 4 complete iron bulkheads extending from the spar deck to the floors which impart great transverse rigidity to the structure. The floor plates are  $\frac{1}{16}$  of an inch thin and the keelson angle irons are  $3 \times 3 \times \frac{8}{16}$  the rules requiring  $5 \times 4 \times \frac{9}{16}$ , but there is a plate keelson fitted at the bilge  $12 \times \frac{8}{16}$  with double angle irons on the outer and inner edges, and attached to the outside plating, and below the bilge there are three intercostal keelsons fitted, two of which are in addition to the rules and extend the whole length of the ship with continuous plates standing above the floors having double angle iron on the upper and lower edges, and the remaining intercostal keelson extends as far forward and aft as practicable.

It is respectfully submitted that considering the thick bottom plating, close spacing of frames and the heavy keelsons, together with the unusual number of iron bulkheads and partial bulkheads this vessel appears to be worthy of the favorable consideration of the Committee to be classed 90 A.1 spar decked as recommended, and marked S.S. No. 3. 74.

J. B. M.

W. J. 14/10/74