

ceiling all of which is in Statches except the planks adjoining the Keelsons and some planks forward and aft, were lifted, as also the planks adjoining the Keelsons which were relaid and refastened after cleaning and painting the iron beneath, and most of the floor plates and reverse bars and all the Keelsons were scraped to the bare iron, the cement wash and paint being so damaged and washed off by the salt and water washing over them on the passage out, and the floor plates were recoated with two coats of cement wash and the Keelsons and Keelson angles repainted and the ceiling relaid after the repairs were completed. Many of the fixed planks of the floor ceiling, adjoining the Keelsons and the Cap pieces on the bilge ceiling were washed off and broken and were replaced with 161 running feet of new ceiling. Sixteen of the floor ceiling Statches that were washed up and damaged were taken asunder refitted and rebolted, and thirty Cap pieces on the bilge ceiling were refitted. 180 feet of permanent ceiling aft was lifted to admit of the fractured frame angles being repaired and 60 feet were relaid and refastened, and 120 feet of new ceiling fitted in place of the planks that got broken in lifting and could not be relaid.

All the broken and hollow cement in the bottom and the cement where rivets required to be renewed was cut out and recemented after the rivets were changed, and all the butts of the two strakes of plating immediately above the close ceiling on the bilges have been cemented over with solid cement about  $1\frac{1}{2}$  thick.

The cement in the Gutterway betweendecks on both sides was all removed to get at the defective rivets in the beam ends & stringer angles and the cement in many of the spaces between the frames was cut out to get at the Tweendeck intercostal angle rivets and was recemented after the rivets were changed.

The cement at the sides in the Bridge house being started from the iron in some places was partly removed and replaced with new cement carried higher up.



© 2021

The  
Lloyd's Register  
Foundation

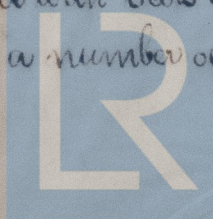
The cement on the top of deck house entirely removed and the house top recemented.

The Steam Winch lifted, the cement under it removed and the iron deck underneath recemented, the cement in the Donkey Boiler room repaired and recemented round the Boiler and in other places where required.

Bottom — The cement over the dented plate on the port side forward was cut out and ten defective rivets changed and the spaces between the Frames recemented. — All the keel rivets examined and twenty six rivets in the fore foot and four rivets in other parts of the keel were taken out, the holes re-drilled and counter sunk and sound rivets put in. — The fracture in the forward end of the fifth length of Garboard strake from the Sternpost, Starboard side, which is five inches long was puttied and caulked, and a tapped bolt put into the end of the fracture to prevent it from extending further into the plate. — The fracture (3 long) in the ninth length repaired in the same way, and the fracture in the fifteenth length of Garboard strake on the same side, which is 6 1/2 inches long, had a tapped bolt put into the end of the fracture, the fracture caulked and covered over with a steel plate patch fastened with nine tapped bolts, the heads counter sunk into the plate and the patch caulked and made watertight. — Captain Atkinson accepts this as a temporary repair only to serve until the vessel reaches home when he may have the fractured plates removed and replaced with sound ones.

The Butt straps of the two after lengths of plating on each side on the third strakes from the keel (C Strake) were taken off and fitted close on the plates, the holes drilled fair and re-riveted and the butts and laps caulked and made watertight.

All the butts of the Garboard strakes on each side were examined, puttied and caulked, and a large number of the butts under the bottom and on and above the bilges, specially on the Starboard side, were puttied or filled with Seals cement as required and some of them caulked, and a number of rivets, the points of



which were fitted, were also covered with Seals Cement, and a large number, hereafter specified, of Frame and other rivets in the bottom and Bilges were changed.

Lower Hold—The butts of the Stringers throughout the hold have been examined and a large number of slack rivets changed and some of the Bottom angle straps taken off and refitted and some renewed.

All slack rivets in the Tweendeck stringers and intercostal angles, and all slack Frame rivets throughout the vessel have been taken out, the holes drilled fair and sound rivets put in. The number of rivets changed in the different parts of the vessel are as follows:—

### Between decks

Starboard side. (63) Sixty three Frame rivets. (17) Seventeen Butt strap rivets.

Port side. (33) Thirty three ——— S. ——— (10) Ten ——— S. ——— S. ———  
and one Beam arm rivet.

### Horizontal Rivets

through Tweendeck Stringer angle & reverse bars & through  
intercostal angle and outside plating.

Stringer Angle.

Intercostal Angle.

Starboard side. (38) Thirty eight rivets. (13) Thirteen rivets.

Port side (35) Thirty five ——— S. ——— ——— none ———

### Vertical Rivets

in Tweendeck Stringers

	Stringer. Angle	Watertight Angle	Beam Angle	Intercostal Angle.	Stringer Butts
<u>Starboard side</u>	252.	122.	25	119	—
<u>Port side</u>	187	8	3	136	13

and seven Beam arm rivets.

### Lower Hold

from Tweendeck Stringer to 1<sup>st</sup> Stringer Angle

Horizontal rivets through Shell plating

	Frame Rivets.	Butt Rivets	Intercostal Angle Rivets.
<u>Starboard side.</u>	107	1	3

Port side

Frame Rivets.  
17

Butt Rivets  
—

Intercoastal angle rivets  
17

Between 1<sup>st</sup> & 2<sup>nd</sup> Stringers  
Horizontal Rivets through Shell plating.

Starboard side

Frame Rivets  
18

Butt Rivets  
14

Intercoastal angle.  
2

Port side

6

—

—

From 2<sup>nd</sup> Stringer to Cement  
Horizontal Rivets through Shell plating

Starboard side

Frame Rivets  
62

Butt Rivets  
57

Intercoastal angle.  
—

Port side

30

59

14

Below Cement  
Through floor Skin plating & bottom Butts.

Starboard side

Frame Rivets  
48

Butt rivets  
3

Intercoastal Rivets.  
—

Port side

20

1

8

Lower Hold Stringer Rivets  
1<sup>st</sup> Stringer below tween decks

Through Stringer angle  
and  
Reverse bars.

Butt & Stringer  
angle

Intercoastal  
angle.

Horizontal Rivets.

Vertical

Vertical Rivets.

Starboard side

26

199

24

Port side

10

70

9



© 2021

Lloyd's Register  
Foundation

Second Stringer

<u>Starboard side.</u>	36	132	8
<u>Port side</u>	43	202	4

Third Stringer

<u>Starboard side</u>	8	69	_____
<u>Port side</u>	10	69	_____

In all 2518 two thousand five hundred and eighteen small rivets and thirty keel rivets changed exclusive of the rivets in the new work aft.

Six new panting Beams fitted aft immediately below the after end of the Stringer above the bilge. The beams are composed of two angles  $5\frac{1}{2} \times 3\frac{1}{2} \times \frac{9}{16}$  riveted back to back with a bracket plate  $\frac{1}{16}$  at each end fitted between the angles and riveted to the Frame angles. A stringer plate 21 inches broad by  $\frac{1}{16}$  thick extending from the breast plate at the after end to the fourth frame forward as the forward ( $6^{th}$ ) beam riveted to the beam angles and connected to the reverse bars of the Frame with angle bars  $5\frac{1}{2} \times 3\frac{1}{2} \times \frac{9}{16}$  riveted to the Stringer plate and to the reverse bars and lug pieces with two rivets in each Frame, and the Stringer plate supported at the ends projecting past the forward beams with three brackets on each side riveted to the Frame angles and two Bracket between the fifth and sixth beams on each side, also Gussit plates fitted on each end of the two forward beams  $4.6 \times 2.6$  riveted to the Stringer plates and beams. The four forward beams supported in the middle with centre stanchions 3" diameter, riveted to the beams and to the rider plate of centre keelson. The Stringer angles stand right aft and are connected to a Breast plate at the after end to which the ends of the Stringer plates are connected with a solid ~~strip~~ butt strap extending from angle

angle to angle and under the Breast plate is fitted an extra angle iron Breast hook, extending from the after end forward, taking two frames and riveted through the breast plate and stringer angle and to the reverse bars of the two frames on each side.

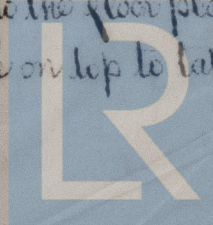
The buckled breast plate of the stringer above the nailing beams has been strengthened with angle bar on the forward part. The breast plate of the stringer above that, the one next to the tween decks also strengthened with an angle bar, and the after end of tween deck stringer has been strengthened with an extra breast plate extending to the after tween deck beam. Fourteen deck planks had to be removed for this work and were replaced and fastened.

The second side keelsons which originally terminated forward of the jigger mast has been carried right aft as recommended in my former report and connected at the after end with a breast plate  $\frac{1}{8}$ " thick, extending forward about ten feet, composed of two plates connected by a gore and aft bull strap.

The Breast plate of the lower stringer has been extended four feet further forward with a plate  $\frac{1}{8}$ " lap butted to the old Breast plate and riveted to the stringers.

All the cement in clew spaces between the frames in the after end of the vessel was cut out and recemented after the repairs were completed.

The third and fourth frame angles forward of the floor plate at the after end of centre keelson, on both sides, which were fractured at the top of floor plates were strengthened with fish plates 3 feet long each  $\times 6 \times \frac{1}{8}$ " closely fitted into the bosom of the frame and riveted to the frame with six rivets in each, and the fifth to the ninth frame inclusive, fractured at and below the top of floor plates, two of which, the 8<sup>th</sup> and 9<sup>th</sup> were fractured in two places, and also in the reverse bars, were compensated with bracket plates extending down on the floors and up on the frame angles to take three rivets above the fractured parts and riveted to the floor plates and frame angles and fitted with a reverse angle on top to take the permanent



ceiling). A similar bracket plate has also been fitted on the tenth frame on each side, & all the new iron work has been well coated with three coats of good paint.

The three damaged tween-deck scupper pipes on the Starboard side have been replaced with new piping and flanges under the tween-deck stringer, and a piece of new piping 2 feet long attached to the lower end of the pump in forward hold.

The fastening bolts of the Dollards on upper deck have been tested with water and made tight. All the ring bolts stay bolts spar bolts and eye bolts in the upper deck have been tested with water and made tight, and all the slack bolts of deck fastenings have been set up tight and the main deck has been caulked throughout. The main pumps overhauled and the Chambers found uninjured, new leathers valves and packing fitted, and the pumps put in good & working order. New wedges for the running gear leading block bars on the gaff rails round the Masts. Two fractured rigging setting-up screws repaired, and the steering gear repaired as recommended in my report. The Donkey Engine also repaired as recommended and the materials used for Donkey Engine and Boiler and for stopping leaks have been replaced as recommended. A lift block and two snatch blocks repaired and the guards for skylight replaced. A new brass plunger fitted in Donkey Boiler feed pump. Five rivets changed in the shell plating of Donkey Boiler under the furnace door and eight rivets changed in the shell plating back part of boiler. New stay fitted for fresh water tank.

I would recommend that when the ship arrives at a home port she be surveyed by the Society's Surveyors to ascertain how the repairs done here, have stood the test of the voyage.

Surveyed by  
Sw 224/-



© 2021

Lloyd's Register  
Foundation

