

Lloyd's Register of R & S Shipping

788

Port of Calcutta.

12<sup>th</sup> August 1892.

This is to certify that  
\_\_\_\_\_ J. D. McKellar \_\_\_\_\_ the  
undersigned Surveyor to this Society did at the  
request of Messrs Turner Morrison & Co., Agents, and Captain  
Calvert, Commander, attend from time to time at the s.s. Waverley  
while undergoing extensive repairs in the Caledonia dry Dock at  
Howrah, and that the repairs to the bottom have been carried out in a  
substantial and satisfactory manner by the Firm of Messrs John  
King & Co. of Howrah, and supervised, under Captain Calvert's  
instruction, by his Chief Engineer, Mr. Garmey, and I would  
specially mention the good services rendered by him during the  
most trying months of the year when the weather was so hot that  
it was with difficulty the native workmen were kept at work in  
the tanks.

The work of laying an entire new upper deck, Bridge  
deck and Forecastle head deck and other items of repairs was  
executed in a satisfactory manner by the Caledonia Dock staff.

The "Waverley" has returned to Calcutta after making  
a coasting voyage to Bombay and back, and is reported to  
be perfectly tight and staunch.



© 2021

Lloyd's Register  
Foundation



# Repairs Bottom Plating Starboard Side.

Plates condemned <u>replaced with new.</u>	Plates taken off, gaired <u>and riveted</u>
<b>A</b> Strake, Garboard strake. None	None
<b>B</b> " Two plates renewed.	Ten plates taken off, gaired and riveted, viz:- The 2 <sup>nd</sup> 3 <sup>rd</sup> 7 <sup>th</sup> 9 <sup>th</sup> 10 <sup>th</sup> 11 <sup>th</sup> 12 <sup>th</sup> 14 <sup>th</sup> 15 <sup>th</sup> & 16 <sup>th</sup> lengths from the Stern post.
<b>C</b> " None	Nine. — 22 — 22 — 22 viz:- The 1 <sup>st</sup> to the 15 <sup>th</sup> lengths from the Sternpost. 3 Frame rivets in the 16 <sup>th</sup> plate renewed.
<b>D</b> . Seven plates condemned and replaced with new plates, viz:- the 7 <sup>th</sup> 9 <sup>th</sup> 10 <sup>th</sup> 11 <sup>th</sup> 12 <sup>th</sup> 13 <sup>th</sup> 14 <sup>th</sup> & 15 <sup>th</sup> lengths from the Stern post.	One plate only, viz:- The 15 <sup>th</sup> length of plating forward of the Sternpost.
<b>E</b> " None.	One plate under the after part of Engine room.

A plate on the Bow on the 6<sup>th</sup> Strake from the Gunwale, inside  
strake, dented and fractured by the anchor, has been doubled with



with an outside plate.

Under the forward part of Fore Hatchway the lap of **D + E** Strake is slightly dented and under the after part of same Hatchway the lap of **E + F** Strakes slightly dented, but no repairs were done.

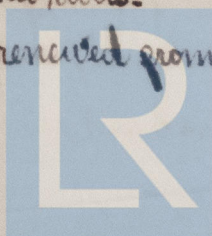
A new brass Flange fitted on the Donkey blow-off Pipe.

Port side.

<b>A</b> Strake	None.	None.
<b>B</b> "	None	Two lengths, viz: the 6 <sup>th</sup> and 7 <sup>th</sup> lengths from the stem.
<b>C</b> "	One plate, the 6 <sup>th</sup> length from the Stem.	One. The 7 <sup>th</sup> length from the Stem
<b>D</b> "		Four plates. One the 5 <sup>th</sup> length from the stem, another under after end of boiler, one under the Engine room and another in the after hold
<b>E</b> "	None.	None.
<b>F</b> "	None	Two plates, the 4 <sup>th</sup> and 5 <sup>th</sup> lengths from the stem.
<b>G</b> "	None.	One plate, the 5 <sup>th</sup> length from the Stem

Slack rivets in the lap, forward length of Garboard strake, taken out and new rivets tapped in, and all slack rivets in the plates aft from the Sternpost forward about sixteen feet from the Keel up to the stern bush taken out and replaced with sound rivets.

Twenty five Stern and Keel rivets removed from the 8 feet water mark down.





Frame Angles, Floor or Division Plates  
and Girders under Water ballast Tanks.  
Aster Hold. Starboard side.

There are three Longitudinal Girders on each side, numbered 1-2-3 from the centre Girder out towards the margin plates of Tank. The No. 3 Girder terminates at the 14<sup>th</sup> Frame abast the cross bulkhead dividing the Engine space from the after hold. The Frame angles are numbered 1-2-3 &c. from the bulkhead ast, the Frame abast the bulkhead is No. 1 Frame. There are Floor, or division plates between each Longitudinal Girder on every alternate Frame and Bracket plates connecting the margin plate to the Frame angles on the Frames that have no division plates.

Two strakes of Tank top Plating were removed on this side from the bulkhead ast to between the 11<sup>th</sup> and 12<sup>th</sup> frames abast the bulkhead, and the cement in the bottom was cut out in twenty spaces between the Frames from the margin plate down to the No. 1 Girder.

1<sup>st</sup> Frame angle abast the Engineroom bulkhead cut 18" outside of the 2<sup>nd</sup> longitudinal Girder and replaced with a new frame angle same size as the old one from where cut out to the margin plate of tank, where all the Frame angles inside the tanks terminate, and the Butt strengthened with a Bosom angle 3 feet long, having five rivets in each end.

The Bracket plate connecting the Frame angle to Margin plate taken out, straightened and riveted.

2<sup>nd</sup> Frame angle drawn down to shape and the Floor plate, or division plate between margin plate and the No. 3 Girder taken out straightened and replaced, and all the slack and broken rivets replaced with sound ones.

3<sup>rd</sup> Frame angle cut 18" out from the No. 1 longitudinal Girder and renewed out to the margin plate with an angle same size as the old one.

4<sup>th</sup> Frame angle drawn down to shape and the floor plate between the No. 3 Girder and Margin plate taken out straightened



- replaced and riveted.
- 5<sup>th</sup> Frame angle drawn back to shape and the margin plate Bracket taken out straightened and riveted.
  - 6<sup>th</sup> Frame angle drawn back to shape and the floor plate between the 2<sup>nd</sup> girder and the margin plate removed and replaced with a new plate.
  - 7<sup>th</sup> Frame angle cut 18 inches from the Keel or centre Girder and removed in one piece out to the margin plate and the Bracket at the margin plate replaced with a new one.
  - 8<sup>th</sup> Frame angle. The fractured part strengthened with an angle bar on the after side, same size as the frame angle, riveted to the frame & to the bottom plating, and the floor plate between the No 1 and 2 Girders taken out and replaced with a new plate.
  - 9<sup>th</sup> Frame angle cut near the Keel and removed out to the margin as tank in one length and the margin bracket plate taken out straightened and replaced.
  - 10<sup>th</sup> Frame angle cut 18 inches outside of the 2<sup>nd</sup> girder and removed out to the margin plate. The floor plate between the 1<sup>st</sup> and 2<sup>nd</sup> girders taken out, straightened and replaced.
  - 11<sup>th</sup> Frame angle drawn down to shape and the Bracket at margin plate taken out, straightened and replaced.
  - 12<sup>th</sup> Frame angle cut 20 inches out from 2<sup>nd</sup> girder and removed to the margin plate, a short length.  
Floor plate between 2<sup>nd</sup> girder and margin plate taken out and replaced with a new plate.
  - 13<sup>th</sup> Frame angle drawn back to shape, bracket plate taken out straightened and replaced.
  - 14<sup>th</sup> Frame angle drawn down in place and the fractured part strengthened with an angle bar on the back riveted to web of frame and to the outside plating.  
Floor plate between the 2<sup>nd</sup> girder and margin plate straightened and riveted.



15<sup>th</sup> Frame angle drawn down to shape and the Bracket plate taken out straightened and replaced.

16<sup>th</sup> Frame angle cut 2 feet out from the 1<sup>st</sup> Girder and renewed out to the margin plate.

Floor plate between the margin plate and No 2 Girder removed and replaced with a new plate.

17<sup>th</sup> Frame angle drawn back to shape and the Margin bracket plate straightened and riveted.

18<sup>th</sup> Frame angle slightly fractured between the 2<sup>nd</sup> Girder and margin plate and compensated by riveting an angle bar on the back over the fractured part and through the bottom plating.

19<sup>th</sup> Frame angle drawn to shape. Margin Bracket taken out straightened and replaced.

The 3<sup>rd</sup> longitudinal Girder taken out from the Bulkhead to the 4<sup>th</sup> Frame angle where it terminates and replaced with a new plate 8 feet long.

The 2<sup>nd</sup> Girder cut between the 4<sup>th</sup> and 5<sup>th</sup> Frames abt the Bulkhead and taken out to the original butt between the 7<sup>th</sup> and 8<sup>th</sup> Frames and the length abt that taken out to the original butt between the 13<sup>th</sup> and 14<sup>th</sup> Frames and renewed in two plates.

The bottom recemented and the two strokes of tank top plating replaced and riveted and the tank tested and made watertight.

### Port side.

There are no damages to Frame angles or Girders under the tanks on this side, but a plate of the tank top was removed at the forward end of the hold on the margin stake to admit of the outside plating being riveted, in taking the plate off it was fractured at the rivet holes and had to be replaced with a new plate.

Two plates of the bulkhead dividing the after hold from the Engine room, on the two strokes of plating above the tank top, were



found to be buckled and the Frame angle on the after side of the bulkhead slightly fractured about twelve inches above the first stringer above the Idige. one plate was removed and the other straightened. The fractured part of the Frame angle was strengthened with a Fish plate. Some pump gear and tanks fitted against the damaged part of the Bulkhead, in the Engine room, had to be removed to admit of the repairs being done and were refitted and fastened.

In the Water Ballast Tanks  
Under the Engine & Boiler spaces.  
Starboard side.

The Frames are numbered from the after bulkhead of the Engine room forward, No. 1 being the Frame forward of the bulkhead.

1<sup>st</sup> Frame angle cut between the centre and the 1<sup>st</sup> side Girder and renewed out to the margin plate and three Floor plates renewed.

2<sup>nd</sup> Frame angle cut between the 1<sup>st</sup> and 2<sup>nd</sup> longitudinal Girders and renewed out to the margin plate, and the three Floor Plates, or division plates, between the Girders taken out and replaced with new plates.

3<sup>rd</sup> Frame angle cut at the first longitudinal Girder and renewed out <sup>to the margin plate</sup> and three Floor plates renewed.

4<sup>th</sup> Frame angle drawn back in place and strengthened where slightly fractured with an angle bar 3 feet long, same size as the Frame angle, placed on the after side of Frame and riveted to the Frame and bottom plating. The Floor plate between the 2<sup>nd</sup> and 3<sup>rd</sup> Girders taken out and replaced with a new plate, and the Floor plate between the 3<sup>rd</sup> Girder and the margin plate taken out straightened and riveted.

5<sup>th</sup> Frame angle drawn back to shape and all the Floor plates straightened and riveted.

6<sup>th</sup> 7<sup>th</sup> 8<sup>th</sup> Frame angles and Floor plates ————

9<sup>th</sup> Frame angle drawn back to shape and compensated where slightly fractured between the 1<sup>st</sup> and 2<sup>nd</sup> Girders by an



angle bar on after side of Frame riveted to the Frame angle and to the bottom plating, and the three Floor plates between the 1<sup>st</sup> Girder and Margin plate straightened and riveted.

- 10<sup>th</sup> Frame angle. Rivets in floor plates taken out and replaced with sound rivets.
- 11<sup>th</sup> Frame angle compensated where fractured by an angle bar on after side of Frame over the fractured part, riveted to Frame angle and bottom plating.
- 12<sup>th</sup> Frame angle drawn back to shape and strengthened where slightly fractured between the 1<sup>st</sup> and 2<sup>nd</sup> Girders by an angle bar on back of Frame. Two floor plates between the 2<sup>nd</sup> Girder and the margin plate riveted.
- 13<sup>th</sup> Frame angle drawn back to shape and the Girder, Floor plate and Margin plate Bracket rivets renewed.
- 14<sup>th</sup> Frame angle and Floor plates riveted.
- 15<sup>th</sup> Frame angle, under the Boiler. Floor plate between the 1<sup>st</sup> and 2<sup>nd</sup> Girders straightened in place and doubled on the upper part with a  $\frac{3}{8}$ " plate.
- 16<sup>th</sup> Frame angle, under after end of boiler, cut between the 1<sup>st</sup> and 2<sup>nd</sup> Girders and renewed to the Margin plate. New Floor plates between the 1<sup>st</sup> and 2<sup>nd</sup> Girders and between the 3<sup>rd</sup> Girder and the margin plate.
- 17<sup>th</sup> Frame angle cut between the Keel and the first longitudinal girder and renewed to the margin plate and the three Floor plates between the 1<sup>st</sup> Girder and Margin plate renewed.
- 18<sup>th</sup> Frame angle drawn down to shape. Floor plate between the 3<sup>rd</sup> Girder and margin plate renewed and the other Floor plates straightened in place.
- 19<sup>th</sup> Frame angle slightly fractured between the 1<sup>st</sup> and 2<sup>nd</sup> Girders and strengthened in the fractured part with an angle bar on the back of Frame riveted to the Frame angle and the bottom plating.



© 2021

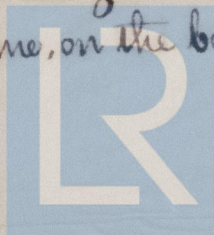
Lloyd's Register  
Foundation



- 20<sup>th</sup>. Frame angle very slightly set up. Floor plates straightened in place and riveted and doubled on the upper part with  $\frac{3}{8}$ " plates on account of being slightly pitted.
- 21<sup>st</sup>. Frame angle also slightly set up and the floor plates buckled. Floor plate between the 2<sup>nd</sup> and 3<sup>rd</sup> girders renewed and the floor plate between the 3<sup>rd</sup> girder and margin plate doubled with  $\frac{3}{8}$  plate.
- 22<sup>nd</sup>. Frame angle drawn down to shape and the margin plate & Bracket renewed.
- 23<sup>rd</sup>. Frame angle slightly fractured between the 1<sup>st</sup> and 2<sup>nd</sup> girders and compensated with an angle bar on the back of frame. Floor plate between the 1<sup>st</sup> and 2<sup>nd</sup> girders renewed, and the floor plates between the keel and 1<sup>st</sup> girder and between the 2<sup>nd</sup> and 3<sup>rd</sup> girders doubled on the upper part with  $\frac{3}{8}$  plates.
- 24<sup>th</sup>. Frame angle drawn down to shape. Floor plate between the 1<sup>st</sup> and 2<sup>nd</sup> girders renewed.
- 25<sup>th</sup>. Frame angle drawn to shape and riveted.
- 26<sup>th</sup>. Frame angle and floor plates straightened in place and riveted.
- 27<sup>th</sup>. Frame angle drawn down to shape.
- 28<sup>th</sup>. Frame angle not damaged. The two floor plates between the 1<sup>st</sup> and 3<sup>rd</sup> girders, slightly buckled, were straightened in place and riveted.
- 29<sup>th</sup>. Frame angle. Bulkhead Frame no damage.
- All fittings removed from the Bulkhead dividing the Stokelhold from the No 2 Hold were taken down to examine the bulkhead which appeared to be buckled in line of orlop deck, but no serious damage was found and no repairs done, fittings put up again.

### Port side.

- 1<sup>st</sup>. Frame angle forward of the after Bulkhead of Engine room, cut between the 1<sup>st</sup> and 2<sup>nd</sup> girders and renewed out to the margin plate, and the Butt joined with a three feet angle, same size as the frame, on the back of frame.





and riveted to the Frame angle and bottom plating with five rivets in each end through the old and new Frame angles and riveted to the bottom plating.

2<sup>nd</sup> Frame angle drawn down to shape and three Floor plates renewed and one doubled with a  $\frac{3}{8}$  plate.

3<sup>rd</sup> Frame angle drawn down to shape. Floor plate between the Centre girder and the 1<sup>st</sup> girder doubled with  $\frac{7}{16}$  plate. The three Floor plates between the 1<sup>st</sup> girder and Margin plate renewed on account of being pitted and thin.

4<sup>th</sup> Frame angle drawn down to shape.

11<sup>th</sup> Frame. At this Frame the Floor plates between the 1<sup>st</sup> and 2<sup>nd</sup> and the 2<sup>nd</sup> and 3<sup>rd</sup> longitudinal girders were doubled on the upper parts with  $\frac{7}{16}$  plates.

15<sup>th</sup> Frame. Floor plate doubled between the 1<sup>st</sup> and 2<sup>nd</sup> girders.

17<sup>th</sup> Frame. Floor plates doubled between the centre and No 1 girder and between the 2<sup>nd</sup> and 3<sup>rd</sup> and the 3<sup>rd</sup> girder and Margin plate, and a new plate between the 1<sup>st</sup> and 2<sup>nd</sup> girders.

18<sup>th</sup> Frame. At this Frame the Floor plates were doubled and renewed same as Frame 17.

19<sup>th</sup> Frame. No floor plates on this Frame. The Bracket plate connecting the Frame angle to Margin plate renewed.

20<sup>th</sup> Frame. Floor plates doubled between the centre and the 1<sup>st</sup> girder, and between the 3<sup>rd</sup> girder and Margin plate and renewed between the 1<sup>st</sup> and 2<sup>nd</sup> and between the 2<sup>nd</sup> and 3<sup>rd</sup> girders.

21<sup>st</sup> Frame. Floor plates doubled between the centre and No 1 girder and between the 1<sup>st</sup> and 2<sup>nd</sup> and the 3<sup>rd</sup> girder and Margin plate and a new plate between the 2<sup>nd</sup> and 3<sup>rd</sup> girders.

22<sup>nd</sup> New Margin Bracket plate.

23<sup>rd</sup> Floor plates doubled between the centre and 1<sup>st</sup> girder and between the 3<sup>rd</sup> girder and the Margin plate, and two new plates between the 1<sup>st</sup> and 2<sup>nd</sup> and 2<sup>nd</sup> and 3<sup>rd</sup> girders.



24<sup>th</sup>

Floor plates doubled between the centre and the 1<sup>st</sup> Girdle and between the 1<sup>st</sup> and 2<sup>nd</sup> and between the 3<sup>rd</sup> Girdle and margin plate, and renewed between the 2<sup>nd</sup> and 3<sup>rd</sup> Girders.

All floor plates from the 11<sup>th</sup> to the 21<sup>st</sup> Frame angles were doubled and renewed on account of being pitted or wasted.

The 3<sup>rd</sup> Longitudinal Girdle, Port side, was buckled and fractured from the after bulkhead of engine room to the 5<sup>th</sup> Frame angle forward of the Bulkhead and was cut between Frames 14 & 5, and replaced with a new plate from where cut to the bulkhead, about 9.6 long.

On the Starboard side, the 3<sup>rd</sup> Girdle was renewed from the bulkhead to between the 5<sup>th</sup> and 6<sup>th</sup> Frame angles on account of damages and doubled between the 10<sup>th</sup> and 11<sup>th</sup> Frames on account of a slight fracture, and again doubled between the 23<sup>rd</sup> and 24<sup>th</sup> Frames on account of being slightly wasted.

The 2<sup>nd</sup> Girdle fractured and buckled between the bulkhead and the first Frame and was straightened in place and the fractured part compensated with a doubling plate from the Frame angle to the bulkhead.

The whole of the Tank top plating under the Boilers was removed, except the centre plate between the two boilers. On the Port side some of the plates extended under the Engines and were cut in places to make good shifts of bulks and renewed as follows, viz:-

Strake next to margin plate 24 <sup>th</sup> long in 3 lengths of new plate			
Second	"	26 "	" 8"
Third	"	30 "	" 8"
Fourth	"	30 "	" 8"

On the Starboard side the tank top plating was removed from the forward bulkhead to the after bulkhead, and most of them replaced and riveted.

The two lower strakes of plating of the Bulkhead between the Engine room and boiler space were renewed from side to side.



© 2021

Lloyd's Register  
Foundation



The whole of the cement in the bottom under the Engineer's boiler on both sides was cut out and the plates recemented after the repairs were completed, and all the girders, floor plates and the under side of tank top plating was coated with cement wash, and the upper surface of the Tank top plating covered with solid cement about half inch thick.

Six cast iron stoke hold plates were renewed, the original plates being broken.

The Tank top man hole doors were repaired with new studs, many of the studs having got broken during the repairs.

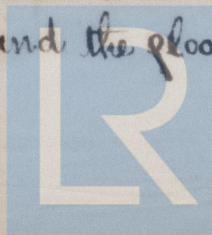
#### No. 1 Hold.

On the Port side abreast of the Forward Hatchway. On the 3<sup>rd</sup> strake of plating above the tank, the side was set in and the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Frame angles about the forward beam of Hatchway were bent inwards and fractured from the edge of the web to the reverse bar rivet holes. Three lengths of plating were removed and the bent Frame angles drawn back as much as possible, but could not be got back to the original shape, and liners had to be fitted between the Frame angles and the plates. The fractured Frame angles were strengthened with Bosom angles three feet long with five rivets on each side of the fractures.

The plates which were removed, gaired and replaced are included in the list of outside plating.

The bottom cement was cut out from eighteen spaces on the Port side, viz: from the second space forward of the Hatchway aft to the Well at the after end of tank and was recemented after the repairs were completed. The cement in the Well chambers on both sides was also cut out and recemented, and the cement in places on the Starboard side where broken was cut out and recemented and the inside of Tanks coated with a fresh coating of cement.

The Flooring on the tank top was removed and the thick cement on the plates cut off, and after the vessel went out of Dock the tank was filled with water and tested with a head of water the height of the light draft mark, and the flooring relaid, and





some of the planking which had got broken in handling when up was replaced with new planks.

The iron chain locker in this hold was sealed outside and inside, after the chain cable was taken out and ranged in the bottom of the dock, and coated with paint, the wooden flooring in the bottom of chain locker on top of water ballast tank was lifted and the top plating of tank under it thoroughly sealed and covered with cement about one and half inches thick, and the flooring relaid on top of the cement.

The two upper sparring battens in the lower Hold were removed to examine the beam ends and were replaced. All the plates and angles, stringers beams and Pillars in the lower Hold, ~~on top~~ part and ~~of~~ tweendecks, were coated afresh with paint, the old paint being blackened and destroyed by the smoke from the riveters' fires.

### No. 2 Hold

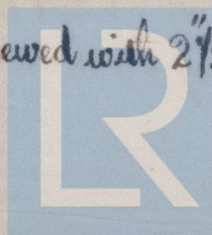
The cement was broken in several places under the tanks in both sides of this Hold, and was cut out where broken and replaced with fresh cement and the Tank's cement washed.

The tank top flooring was taken up and the cement cut off, and after the vessel went out of Dock the tanks were filled with water and tested with a pressure equal in height to the light draft of the vessel and found perfectly tight, the Tank top recemented and the ceiling laid and a portion of it renewed. The two upper sparring batten in this Hold were also removed for examination of the Beam ends and were replaced, and the plates and angles beam stringers and Pillars were recoated with a fresh coating of paint on account of the smoke and dust caused by the riveters' fires when executing repairs.

All the pipe casings and all fittings on the Forward and after bulkheads of the Engine and boiler spaces and on the bulkheads between the Engine room and boiler space were removed on account of the repairs and replaced, and some parts broken in taking them down were replaced with new.

### Decks

The upper deck was entirely renewed with 2½ inch oakwood from



© 2021

Lloyd's Register  
Foundation

W35785-0020 1/18



the after end of Bridge House aft to the front of Poop, and from the forward end of Bridge House to the front of Topgallant Forecastle, also the planks in the passage to the Windlass under the Forecastle and in the passage under the Bridge. The Forecastle head and Bridge deck were removed, and the beams and Stringer underneath sealed and painted, and new three inch teakwood decks laid.

The chart room and Wheel House on the Bridge deck was lifted and the iron deck underneath renewed from the steam steering gear aft to the Biddle.

The spindle of the Windlass Purchase Capstern on the Forecastle head was found to be bent and was taken out and straightened.

The cast iron mooring Bollards on each side on the upper deck at front of Topgallant Forecastle were cracked and broken and were replaced with two pair of new Bollards.

The after mooring pipe on the Starboard side renewed in Bombay was too small for the shackles of the chain cable to go through, and as the vessel is always moored in this Port with the chain cables, the Pipe was useless and was taken out and replaced with a larger Pipe.

The new Hawse pipe on the Starboard side hurriedly put in at Bombay was not a proper fit, and was taken out and replaced with a new cast iron Hawse pipe properly moulded to fit the side.

The waterway cement on the Port side put on at Bombay was cracked and not adhering to the iron, and the old Cement on the Starboard side was also defective. The whole of the Cement was cut out on both sides and the Waterways or Gutters re-cemented.

The Cement on top of Fore Peak Waterballast tank being broken was cut off the iron tank top sealed and re-cemented, the tank was sealed inside and coated afresh, filled with water and tested with a head of water eight feet above the crown of tank and the tank made watertight.



© 2021

Lloyd's Register  
Foundation

W35785-0020 1/18



All the Mast wedges removed and the Masts sealed and painted in the partners.

The Masts yards and Rigging examined and found in good condition.

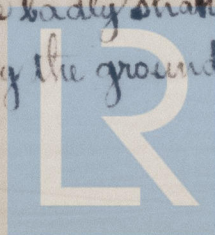
### Stern Post

The inner Sternpost, which is broken about two feet two inches below the centre of shaft, was temporarily repaired to enable the vessel to retain her class in the Lloyd's Register, and to serve for the term of her present Charter running in the Indian Coasting trade, say for about two years, subject to annual survey, or to be surveyed when the vessel is put into dry Dock for cleaning and painting the bottom, and when she goes to a Port in the United Kingdom the repair should be surveyed and dealt with as may then be considered necessary. Repairs as follow

Moulds made to fit the Sternpost over the broken part on each side and Gunmetal slabs cast from the mould and fitted on each side of the Sternpost, extending six feet below and four feet above the centre of shaft. The slabs or Fish plates are twelve inches broad and about four and half inches thick in the part that covers the break in the post and tapered at the ends to about 3 inches, and fastened through from side to side with Fifty one turned and fitted metal bolts set up with heavy nuts, and when completed the nuts and bolt heads were covered with cement and triangle bracket pieces were fitted on the forward side of the slabs and cemented from the surface of the slab tapering down to the plating to prevent the water from acting on the slabs when the vessel is underway.

The lower part of the stern Frame appeared to have been fractured under the Propeller, and heavy iron slabs had been fitted on each side extending from the outer stern post, or rudder post, along the keel to about five feet forward of the inner stern post with arms extending up on the inner and outer sternposts and riveted through. The fastenings of those slabs were badly shaken and started, some of them broken, apparently by the grounding at Madras, and

M35785-0020 1/16





all slack and defective fastenings were removed and the holes drilled out and refastened with new bolts turned and fitted and driven in tight, and the points heated with a blow pipe and riveted.

The Rudder was lifted and the 2<sup>nd</sup> and 1<sup>st</sup> Portable Pintles from below were taken out, the sockets bushed and the pintles driven tight into the sockets and new pins fitted. All the pintles examined and found in sound condition. A Disk about one inch thick put into the heel socket to keep the rudder up off the Gudgeons and washers fitted on the Pintles between the shoulders and the Gudgeons. The stuffing Box on Poop deck relined with Segnumvitae, and the steering gear overhauled and put in good working order. The steam steering gear leading to the Bridge overhauled and put in good order. New steel plates fitted at the Stem of Rudder post and counter in lieu of the two old plates broken by the grounding.

#### Propeller & Shafting

The Propeller was taken off, the Sail shaft drawn and the Stern Tube removed to repair the broken sternpost.

The Key Bed on the outer end of Sail shaft was damaged and was fairied and a new key fitted. The corresponding Key Bed in the Propeller Boss was also chipped and fairied to fit the new key and a new nut made for the outer end of shaft in lieu of the old one which was broken.

The Stern Tube was taken to the workshop and bored out in the Lathe and new Segnumvitae lining fitted and all the shafting overhauled, the Propeller shipped and the blade coupling bolts cemented over. The shafting, Propeller and the Engines and boilers and the steam steering gear were surveyed by the Engineer Surveyor, Mr. Mcintosh. The non-conducting felt, or covering, and part of the sheet iron lagging of the boilers being damaged and broken when supporting the boilers to admit of the Tank top plating being removed for repairs was all taken off and replaced with new non-conducting material and the Lagging repaired.



© 2021

Lloyd's Register  
Foundation



The coal Bunkers were again examined on account of -  
Special Periodical Survey No. 1.

The Comings of all the Hatchways were doubled on the lower  
part in way of the steam winch piping on the Port side.

The whole of the bottom fore and aft on both sides was sealed to  
the bare iron and coated a fresh.

### Chain Cable.

The whole of the chain cable was taken out of the lockers and  
ranged in the bottom of the Dock for examination. The following  
are the sizes of the chain measured in the smallest link of each length.

#### Starboard side.

1 <sup>st</sup> Length.	$1\frac{13}{16}$	$\times 1\frac{15}{16}$	circumference $6\frac{1}{4}$
2 <sup>nd</sup> "	$1\frac{7}{8}$	$\times 2$	gull
3 <sup>rd</sup> "	$1\frac{7}{8}$	$\times 2$	
4 <sup>th</sup> "	$1\frac{3}{4}$	$\times 2$	
5 <sup>th</sup> "	2	$\times 2\frac{1}{16}$	
6 <sup>th</sup> "	2	$\times 2\frac{1}{16}$	
7 <sup>th</sup> "	$1\frac{15}{16}$	$\times 2$	
8 <sup>th</sup> "	$1\frac{7}{8}$	$\times 2$	circumference $6\frac{1}{2}$

#### Port side.

1 <sup>st</sup> "	$1\frac{7}{8}$	$\times 2$	gull
2 <sup>nd</sup> "	2	$\times 2$	
3 <sup>rd</sup> "	2	$\times 2$	
4 <sup>th</sup> "	$1\frac{15}{16}$	$\times 2$	
5 <sup>th</sup> "	$1\frac{7}{8}$	$\times 2$	
6 <sup>th</sup> "	$1\frac{15}{16}$	$\times 2$	
7 <sup>th</sup> "	$1\frac{7}{8}$	$\times 2$	
8 <sup>th</sup> "	$1\frac{7}{8}$	$\times 2$	

Sixty fathoms new  $2\frac{1}{16}$  Stud link chain cable sent from  
England specially for the vessel was put on board in lieu of the  
chain said to have been lost when aground at Madras, accompanied  
by Proof Certificate No. 5546 from Lloyd's Proving House, Chester,  
dated the 30<sup>th</sup> January 1892. Certificates for the old chain are also  
on board.



© 2021

Lloyd's Register  
Foundation



There are on board three Bower anchors, one steam, and two kedge anchors, all in good condition, and a test certificate for each, one of the Bower anchors is new.

The Hull of the vessel, masts, spars and rigging ~~are~~ examined for Special Periodical Survey No. 1, and all requirements of the Rules for that survey fulfilled.

Survey Fee  
Rs 89/-

*J. M. Williams*

*[Handwritten signature]*

W35785-0020 13/18



© 2021

Lloyd's Register  
Foundation