

# REPORT ON MACHINERY.

No. 18960

Port of Hull

Received at London Office JUES. 14 MAY 1907

No. in Survey held at Selby & Hull Date, first Survey Nov 27/06 Last Survey Apr 23<sup>rd</sup> 1907  
 Reg. Book. 784 on the Screw Steamer "Carlton" (Number of Visits 27)  
 Master Selby Built at Selby By whom built Cochrane & Sons When built 1907  
 Engines made at Hull By whom made Charles D. Holmes & Co. when made 1907  
 Boilers made at do By whom made do when made 1907  
 Registered Horse Power \_\_\_\_\_ Owners J. G. & F. Moss Port belonging to Grimsby  
 Nom. Horse Power as per Section 28 68.8 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

**ENGINES, &c.**—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 12 1/2", 22", 35" Length of Stroke 24" Revs. per minute 112 Dia. of Screw shaft 7 1/8" Material of screw shaft Iron  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight in the propeller boss yes If the liner is in more than one length are the joints burned yes If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes If two liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 31"  
 Dia. of Tunnel shaft 6 1/4" Dia. of Crank shaft journals 6 7/8" Dia. of Crank pin 7" Size of Crank webs 13 3/4" x 4 1/2" Dia. of thrust shaft under collars 7" Dia. of screw 8 7/8" Pitch of Screw 11-0" No. of Blades 4 State whether moveable No Total surface 28 sq. ft.  
 No. of Feed pumps 1 Diameter of ditto 2 1/8" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 1 Diameter of ditto 2 1/8" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines One Sizes of Pumps 2 3/4" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps Two 2" dia.  
 In Engine Room Two 2" dia. In Holds, &c. Two 2" dia.

Ejector suction from all bilges & discharge on deck. Is a separate Donkey Suction fitted in Engine room & size 2 1/2" ejector  
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump yes Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible None  
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the Discharge Pipes above or below the deep water line Above  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel yes Are the Blow Off Cocks fitted with a spigot and brass covering plate yes  
 What pipes are carried through the bunkers Hold suction How are they protected Wood casing  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes  
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes  
 Dates of examination of completion of fitting of Sea Connections 5.12.06 of Stern Tube 5.12.06 Screw shaft and Propeller 5.12.06  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door yes worked from yes

**BOILERS, &c.**—(Letter for record (5) Manufacturers of Steel The Steel Coy of Scotland Ltd.  
 Total Heating Surface of Boilers 1115 sq. ft. As Forced Draft fitted No No. and Description of Boilers One S. E. Cyl. Multi.  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 15.3.07 No. of Certificate 1550  
 Can each boiler be worked separately yes Area of fire grate in each boiler 33 sq. ft. No. and Description of Safety Valves to each boiler Two spring Area of each valve 3.9" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 6" Mean dia. of boilers 13-0" Length 10-0" Material of shell plates Steel  
 Thickness 1 3/32" Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR Lap  
 long. seams DR S. 5 Rivets Diameter of rivet holes in long. seams 1 3/32" Pitch of rivets 7 1/2" Lap of plates or width of butt straps 17 1/8"  
 Per centages of strength of longitudinal joint rivets 85.25 Working pressure of shell by rules 190 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring 7" x 1 3/32" No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 3-7"  
 Length of plain part 5-8 1/2" Thickness of plates 1 3/32" Description of longitudinal joint Welded No. of strengthening rings 1  
 Working pressure of furnace by the rules 187 Combustion chamber plates: Material Steel Thickness: Sides 13/16" Back 11/16" Top 13/16" Bottom 13/16"  
 Pitch of stays to ditto: Sides 9" x 10" Back 9 1/2" x 8 1/2" Top 8 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 204 lbs  
 Material of stays Steel Diameter at smallest part 1 5/8" Area supported by each stay 90" Working pressure by rules 207 End plates in steam space: Material Steel Thickness 1 3/32" Pitch of stays 17 1/2" x 17 1/2" How are stays secured Dr + W Working pressure by rules 185 lbs Material of stays Steel  
 Diameter at smallest part 6.2 Area supported by each stay 306" Working pressure by rules 202 Material of Front plates at bottom Steel  
 Thickness 29/32" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 19" Working pressure of plate by rules 180 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 5" x 4 3/4" Material of tube plates Steel Thickness: Front 29/32" Back 7/8" Mean pitch of stays 9 3/4"  
 Pitch across wide water spaces 15" Working pressures by rules 180 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9" x 1 3/4" Length as per rule 2-8 3/8" Distance apart 8 3/4" Number and pitch of stays in each 3 @ 8 1/2"  
 Working pressure by rules 206 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately yes Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet holes yes Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yes  
 If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes  
 Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with casing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_

Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_

Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_

Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_

Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

**SPARE GEAR.** State the articles supplied: *Two top + two bottom-end connecting rod bolts + nuts. Two main bearing bolts + nuts. One set of coupling bolts + nuts. One set of feed + bilge pump valves. Main + donkey feed check valves. Assorted bolts + nuts re.*

The foregoing is a correct description,  
**PER PRO CHARLES D. HOLMES & Co.** Manufacturer.  
*H. Dillon*

Dates of Survey while building: During progress of work in shops - *1906: Nov 27 Dec 5. 6. 17. 1907: Jan 4. 15. 22. 30. Feb 5. 19. 28. Mar 12. 15. 20. Apr 5. 9.*

During erection on board vessel - *Apr 13. 16. 17. 18. 20. 23.*

Total No. of visits *22* Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *5.2.07* Slides *20.3.07* Covers *5.4.07* Pistons *12.3.07* Rods *12.3.07*

Connecting rods *12.3.07* Crank shaft *5.4.07* Thrust shaft *5.4.07* Tunnel shafts *✓* Screw shaft *23.11.06* Propeller *23.11.06*

Stern tube *23.11.06* Steam pipes tested *17.4.07* Engine and boiler seatings *5.12.06* Engines holding down bolts *13.4.07*

Completion of pumping arrangements *20.4.07* Boilers fixed *16.4.07* Engines tried under steam *20.4.07*

Main boiler safety valves adjusted *20.4.07* Thickness of adjusting washers *F 1/4" A 5/16"*

Material of Crank shaft *Iron* Identification Mark on Do. *301 J.K. 5.4.07* Material of Thrust shaft *Iron* Identification Mark on Do. *301 J.K. 5.4.07*

Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *Iron* Identification Marks on Do. *301 J.K. 23.11.06*

Material of Steam Pipes *Solid drawn copper* Test pressure *360 lbs* *✓*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

*The Engines and Boiler of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Rules. They are now in good working condition and in my opinion eligible to have the notation of +LMC 4.07 in the Register Book.*

It is submitted that this vessel is eligible for **THE RECORD. + LMC 4.07**

*J.P.R.*  
*14/5/07*

The amount of Entry Fee... £ *10 7* : : When applied for. *13/5/07*

Special ... £ *10 7* : : When received. *31/5/07*

Donkey Boiler Fee ... £ *8 2* : : *16/5/07*

Travelling Expenses (if any) £ *8 2* : : *16/5/07*

*J.P.R.*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 17 MAY 1907**

Assigned *H.M.C. 4.07*

Certificate (if required) to be sent to Shell



MACHINERY CERTIFICATE WRITTEN.