

# REPORT ON MACHINERY.

No. 24864

Received at London Office

SAT. APR. 20. 1912

Date of writing Report 19 18.4.12 When handed in at Local Office Port of Hull

No. in Survey held at Silby & Hull Date, First Survey Dec. 11<sup>th</sup> Last Survey Apr 11<sup>th</sup> 1912

Req. Book 53 Supper the Sc. K. "GAROLA" (Number of Visits 28)

Master Silby Built at Silby By whom built Messrs. Cochran & Sons Tons { Gross 248 Net 134

Engines made at Hull By whom made Messrs. Charles R. Holmes & Co. Ltd. when made 1912

Boilers made at Hull By whom made Messrs. Charles R. Holmes & Co. Ltd. when made 1912

Registered Horse Power 44 Owners Frank & Baker S. F. Co. Ltd. Port belonging to Grimsby

Nom. Horse Power as per Section 28 44 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 12 $\frac{3}{4}$ " - 22" - 36" Length of Stroke 24" Revs. per minute 110 Dia. of Screw shaft 4 $\frac{1}{2}$ " as per rule 4 $\frac{1}{2}$ " as fitted 4 $\frac{1}{2}$ " Material of screw shaft Steel

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 No If two liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 36"

Dia. of Tunnel shaft 6 $\frac{1}{2}$ " as per rule 6 $\frac{1}{2}$ " as fitted 6 $\frac{1}{2}$ " Dia. of Crank shaft journals 6 $\frac{1}{2}$ " as per rule 6 $\frac{1}{2}$ " as fitted 6 $\frac{1}{2}$ " Dia. of Crank pin 4 $\frac{1}{2}$ " Size of Crank webs 13 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ " Dia. of thrust shaft under collars 4 $\frac{1}{2}$ " Dia. of screw 9 $\frac{1}{2}$ " Pitch of Screw 11 $\frac{1}{2}$ " No. of Blades 4 State whether moveable No Total surface 29 $\frac{1}{2}$  sq ft

No. of Feed pumps 1 Diameter of ditto 2 $\frac{1}{2}$ " Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 1 Diameter of ditto 2 $\frac{1}{2}$ " Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 1 Sizes of Pumps 5" x 2 $\frac{3}{4}$ " x 5" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 2" - forward & aft. In Holds, &c. Three 2" - each well & main hold & fore hold 2" suction suctions from all bilges with discharge on deck.

No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 2 $\frac{1}{2}$ "

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 Yes

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 suctions 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 3.2.12 of Stern Tube 3.2.12 Screw shaft and Propeller 3.2.12

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from No

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Messrs. Phoenix & Co. Ltd. & Messrs. Harland & Wolff

Total Heating Surface of Boilers 1224 sq ft Is Forced Draft fitted No No. and Description of Boilers 1 High Pressure Single Ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 6.3.12 No. of Certificate 1883

Can each boiler be worked separately Yes Area of fire grate in each boiler 39 $\frac{1}{2}$  sq ft No. and Description of Safety Valves to each boiler Two - Spring Area of each valve 3.94 sq in 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 $\frac{1}{2}$ " Length 10 $\frac{1}{2}$ " Material of shell plates S

Thickness 1 $\frac{1}{2}$ " Range of tensile strength 29 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L.S. long. seams A.B.S.L.P. Diameter of rivet holes in long. seams 1 $\frac{1}{2}$ " Pitch of rivets 6 $\frac{1}{2}$ " Lap of plates or width of butt straps 15"

Per centages of strength of longitudinal joint rivets 88 plate 85 Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 4" x 1 $\frac{1}{2}$ " No. and Description of Furnaces in each boiler Two plain Material S Outside diameter 3 $\frac{1}{2}$ "

Length of plain part top 6 $\frac{1}{2}$ " bottom 6 $\frac{1}{2}$ " Thickness of plates crown 1 $\frac{1}{2}$ " bottom 1 $\frac{1}{2}$ " Description of longitudinal joint Welded No. of strengthening rings None

Working pressure of furnace by the rules 186 lbs Combustion chamber plates: Material S Thickness: Sides 2 $\frac{3}{8}$ " Back 1 $\frac{1}{2}$ " Top 1 $\frac{1}{2}$ " Bottom 2 $\frac{3}{8}$ "

Pitch of stays to ditto: Sides 10" x 8 $\frac{1}{2}$ " Back 10" x 9" Top 9 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " If stays are fitted with nuts or riveted heads No Working pressure by rules 180 lbs

Material of stays S Diameter at smallest part 2.04 Area supported by each stay 90 sq in Working pressure by rules 204 lbs and plates in steam space: Material S Thickness 1 $\frac{1}{8}$ " Pitch of stays 18" x 18" How are stays secured D.T. & W. Working pressure by rules 185 lbs Material of stays S

Diameter at smallest part 6 $\frac{3}{8}$ " Area supported by each stay 324 sq in Working pressure by rules 203 lbs Material of Front plates at bottom S

Thickness 1 $\frac{1}{2}$ " Material of Lower back plate S Thickness 1 $\frac{1}{2}$ " Greatest pitch of stays 15" x 10" Working pressure of plate by rules 186 lbs

Diameter of tubes 3 $\frac{1}{2}$ " Pitch of tubes 5" x 4 $\frac{1}{2}$ " Material of tube plates S Thickness: Front 1 $\frac{1}{2}$ " Back 1 $\frac{1}{2}$ " Mean pitch of stays 9 $\frac{1}{2}$ "

Pitch across wide water spaces 14 $\frac{1}{2}$ " Working pressures by rules 256 lbs Girders to Chamber tops: Material S Depth and thickness of girder at centre 9 $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " Length as per rule 2 $\frac{1}{2}$ " Distance apart 9 $\frac{1}{2}$ " Number and pitch of stays in each 3 - 8 $\frac{1}{2}$ "

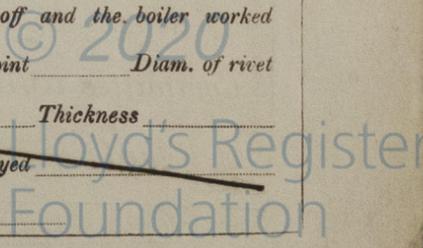
Working pressure by rules 194 lbs Superheater or Steam chest; how connected to boiler No Can the superheater be shut off and the boiler worked separately No

Diameter 10" Length 10" Thickness of shell plates 1 $\frac{1}{2}$ " Material S Description of longitudinal joint Welded Diam. of rivet holes 1 $\frac{1}{2}$ " Pitch of rivets 6 $\frac{1}{2}$ " Working pressure of shell by rules 182 lbs Diameter of flue 10" Material of flue plates S Thickness 1 $\frac{1}{2}$ "

If stiffened with rings No Distance between rings 18" Working pressure by rules 182 lbs End plates: Thickness 1 $\frac{1}{2}$ " How stayed No

Working pressure of end plates 182 lbs Area of safety valves to superheater None Are they fitted with easing gear No

Is a Report also sent on the Hull of the Ship? If not, state whether, and when, one will be sent.



**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 easing 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 \_\_\_\_\_ Radius of do. \_\_\_\_\_ Stayed by \_\_\_\_\_

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

**SPARE GEAR.** State the articles supplied:— *Two each top & bottom end connecting rod bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set each fuel & bilge pump valves, iron of various sizes, a quantity of assorted bolts, nuts etc.*

The foregoing is a correct description,  
**p. pro CHARLES D. HOLMES & Co. LTD.** Manufacturer.

*Arthur Holmes* DIRECTOR

Dates of Survey while building: During progress of work in shops --- 1911: Dec 11, 14, 18, 1912: Jan 1, 5, 12, 16, 23, 25, 30, Feb 1, 3, 6, 9, 13, 15, 16, 23, 27, Mar 4  
 During erection on board vessel --- Mar 6, 12, 14, 19, 20, 27, 29 April 4  
 Total No. of visits 28

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders 12.1.12 Slides 6.3.12 Covers 6.2.12 Pistons 6.3.12 Rods 12.3.12  
 Connecting rods 4.3.12 Crank shaft 24.2.12 Thrust shaft 24.2.12 Tunnel shafts ✓ Screw shaft 30.1.12 Propeller 14.12.11  
 Stern tube 30.1.12 Steam pipes tested 20.3.12 Engine and boiler seatings 3.2.12 Engines holding down bolts 19.3.12  
 Completion of pumping arrangements 24.3.12 Boilers fixed 24.3.12 Engines tried under steam 29.3.12  
 Main boiler safety valves adjusted 24.3.12 Thickness of adjusting washers *Forward & aft 3/8"*  
 Material of Crank shaft *S.* Identification Mark on Do. *N° 8497.9.D* Material of Thrust shaft *S.* Identification Mark on Do. *N° 8497.9.D*  
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *S.* Identification Marks on Do. *N° 8497.9.D*  
 Material of Steam Pipes *Solid drawn copper* ✓ Test pressure *36 lbs. per square inch*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The engines & boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials & workmanship are sound & good. The boiler tested by hydraulic pressure, & with the engines secured on board & tested under steam they are now in good order & safe working condition & respectfully submitted as being eligible in my opinion to be classed with the notation of *L.M.C. 4-12* in the Register's Part.*

*It is submitted that this vessel is eligible for THE BOARD. L.M.C. 4-12*

*20/4/12*  
*FRS*

The amount of Entry Fee .. £ 1 : 0 :  
 Special .. £ 11 : 2 :  
 Donkey Boiler Fee .. £ : :  
 Travelling Expenses (if any) £ : 8/6 :  
 When applied for: 19.4.12  
 When received: 30.4.12

Committee's Minute  
 Assigned *Thome 4.12*

TUE. APR. 23. 1912

*W. R. Jones*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Certificate (if required) to be sent to \_\_\_\_\_

The Surveyors are requested not to write on or below the space for Committee's Minute.

