

REPORT ON MACHINERY.

No. 24864

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Date of writing Report 19 When handed in at Local Office 18.4.12 Port of Hull
No. in Survey held at Silby & Hull. Date, First Survey Dec. 11th Last Survey Apr 11th 1912
Reg. Book 53 Supp. on the S.C.K. "GAROLA" (Number of Visits 28)
Master Built at Silby By whom built Messrs. Buchanan & Sons. Tons Gross 246 Net 134
Engines made at Hull. By whom made Messrs. Charles R. Hughes & Co. Ltd. when made 1912
Boilers made at Hull. By whom made when made 1912
Registered Horse Power Owners Frank & Baker S. F. C. Ltd. Port belonging to Grimsby
Nom. Horse Power as per Section 28 74 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 as per rule 4 $\frac{3}{8}$ " as fitted 4 $\frac{3}{8}$ " Material of screw shaft S.
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 If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 36"
Dia. of Tunnel shaft as per rule 6 $\frac{5}{8}$ " as fitted 6 $\frac{5}{8}$ " Dia. of Crank shaft journals as per rule 6 $\frac{5}{8}$ " as fitted 6 $\frac{5}{8}$ " Dia. of Crank pin 4 $\frac{7}{8}$ " 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 $\frac{1}{2}$
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 Pump Is a separate Donkey Suction fitted in Engine room & size Yes 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 Cold 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 No. Is it fitted with a watertight door No. worked from No.

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Messrs. Phoenix A.L. Co. Ltd. Hobart Town of Hobart
Total Heating Surface of Boilers 1224 $\frac{1}{2}$ 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 $\frac{1}{2}$ ft² No. and Description of Safety Valves to each boiler Two - Spring. Area of each valve 3.940 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.B.S. long. seams A.B.S. 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 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ "
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
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 $\frac{1}{2}$ " 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 B.F. & 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 $\frac{1}{2}$ " Working pressure by rules 203 lbs. Material of Front plates at bottom S.
Thickness 1 $\frac{1}{8}$ " Material of Lower back plate S. Thickness 1 $\frac{1}{8}$ " Greatest pitch of stays 16" 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 $\frac{1}{8}$ " Back 1 $\frac{1}{8}$ " Mean pitch of stays 9 $\frac{1}{2}$ "
Pitch across wide water spaces 14 $\frac{1}{2}$ " x 3 $\frac{1}{2}$ " 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 $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " 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 Can the superheater be shut off and the boiler worked separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed
Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

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 feed & trip 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.

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 & 11-3/8*
Material of Crank shaft *I.* Identification Mark on Do. *N° 8497.4.0* Material of Thrust shaft *S.* Identification Mark on Do. *N° 8497.5.0*
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *I.* Identification Marks on Do. *N° 8497.4.0*
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 'A.M.C. 4-12' in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. *1 LMC 4-12*

The amount of Entry Fee .. £ 1 : 0 :
Special .. £ 11 : 2 :
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : 8/2 :
When applied for. 19.4.12
When received, 30.1.19

Committee's Minute

Assigned

TUE. APR. 23. 1912

thine 4.12

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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