

REPORT ON MACHINERY.

No. 23030

Date of writing Report 19 When handed in at Local Office 6th Oct 1910 Port of Hull Received at London Office SAT. 8 OCT 1910

No. in Survey held at Selby & Hull Date, First Survey May 3rd Last Survey 6th Oct 1910
Reg. Book. 24 Supp. on the Steel Sec. to S. L. Haldane (Number of Visits 34) Gross 257 Tons Net 105

Master Built at Selby By whom built Messrs Buchanan & Co. When built 1910

Engines made at } By whom made } Messrs when made 1910
Boilers made at } Hull By whom made } Charles D. Holmes & Co. Ltd when made 1910

Registered Horse Power Owners Pickering Haldane & Co. Ltd. Port belonging to Hull

Nom. Horse Power as per Section 28 75 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 114 Dia. of Screw shaft as per rule 7 $\frac{1}{4}$ " as fitted 7 $\frac{1}{2}$ " 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 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 6.73 as fitted Dia. of Crank shaft journals as per rule 7.06 as fitted 7.25 Dia. of Crank pin 7 $\frac{1}{4}$ " Size of Crank webs 14" x 4 $\frac{1}{2}$ " Dia. of thrust shaft under collars 7 $\frac{1}{4}$ " Dia. of screw 9" ~ 0" Pitch of Screw 11" ~ 0" No. of Blades 4 State whether moveable No Total surface 29 ft²

No. of Feed pumps 1 Diameter of ditto 2 $\frac{3}{8}$ " Stroke 14 $\frac{1}{4}$ " Can one be overhauled while the other is at work —

No. of Bilge pumps 1 Diameter of ditto 2 $\frac{3}{8}$ " Stroke 14 $\frac{1}{4}$ " Can one be overhauled while the other is at work —

No. of Donkey Engines One Sizes of Pumps 6" x 4 $\frac{1}{2}$ " x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 2" In Holds, &c. One 2" in each, the fore peak, Slush well, and hold.

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 $\frac{1}{2}$ " &c.

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 23. 7. 10 of Stern Tube 23. 7. 10 Screw shaft and Propeller 23. 7. 10

Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door — worked from —

OILERS, &c.—(Letter for record S) Manufacturers of Steel Phoenix A&K. G. A. H. Vermin, of Goerde.

Total Heating Surface of Boilers 1180 ft² Is Forced Draft fitted No No. and Description of Boilers One cyl. Mult. Single Ended

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 7. 9. 10 No. of Certificate 1769

Can each boiler be worked separately — Area of fire grate in each boiler 36 ft² No. and Description of Safety Valves to each boiler Two spring Area of each valve 3.94 ft² Pressure to which they are adjusted 190 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 7 $\frac{1}{2}$ " Int. diam. of boilers 12" ~ 9" Length 10" ~ 6" Material of shell plates S

Thickness 1 $\frac{1}{2}$ " Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams S D.

Long. seams D. B. S. Y. R. Diameter of rivet holes in long. seams 1 $\frac{1}{16}$ " Pitch of rivets 8" Lap of plates or width of butt straps 18"

Percentages of strength of longitudinal joint rivets 88.8 plate 85 Working pressure of shell by rules 201 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 7" x 1 $\frac{1}{2}$ " No. and Description of Furnaces in each boiler Two plain Material S Outside diameter 3'-8 $\frac{5}{8}$ "

Length of plain part top 6.43" Thickness of plates crown 1 $\frac{1}{16}$ " Description of longitudinal joint Welded No. of strengthening rings None

Working pressure of furnace by the rules 200 lbs Combustion chamber plates: Material S Thickness: Sides 3 $\frac{1}{32}$ " Back 3 $\frac{1}{32}$ " Top 3 $\frac{1}{32}$ " Bottom 3 $\frac{1}{32}$ "

Pitch of stays to ditto: Sides 9 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " Back 9 $\frac{1}{8}$ " x 9 $\frac{1}{8}$ " Top 10" x 8 $\frac{1}{2}$ " If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 203 lbs

Material of stays S Diameter at smallest part 1 $\frac{5}{8}$ " Area supported by each stay 87.8 ft² Working pressure by rules 212 lbs End plates in steam space: Material S Thickness 1 $\frac{3}{16}$ " Pitch of stays 18" x 18" How are stays secured D. 7. 16 8 x 3 $\frac{1}{4}$ Working pressure by rules 206 lbs Material of stays S

Diameter at smallest part 6.33" Area supported by each stay 32.4 ft² Working pressure by rules 203 lbs Material of Front plates at bottom S

Thickness 1 $\frac{1}{16}$ " Material of Lower back plate S Thickness 3 $\frac{1}{32}$ " Greatest pitch of stays 15" x 9 $\frac{5}{8}$ " Working pressure of plate by rules 210 lbs

Diameter of tubes 3 $\frac{1}{2}$ " Pitch of tubes 4 $\frac{1}{8}$ " x 4 $\frac{1}{8}$ " Material of tube plates S Thickness: Front 1 $\frac{1}{16}$ " Back 1 $\frac{1}{8}$ " Mean pitch of stays 9 $\frac{3}{4}$ "

Pitch across wide water spaces 14 $\frac{1}{4}$ " Working pressures by rules 283 lbs Girders to Chamber tops: Material S Depth and thickness of girder at centre 9 $\frac{1}{2}$ " x 2" Length as per rule 36" Distance apart 8" 10" Number and pitch of stays in each Three 8 $\frac{1}{2}$ "

Working pressure by rules 215 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

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

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	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 and bottom end connecting rod bolts and nuts, two main bearing bolts, one set coupling bolt and nuts, one set each air feed and bilge pump valves, and a quantity of bolts nuts etc

The foregoing is a correct description,

Manufacturer.

p. pro CHARLES D. HOLMES & Co. LTD.

Harold I. Sheardown.

Dates	During progress of work in shops—	1910:— May 3. 4. 5. 6. 11. July 12. 18. 20. 23. 26. 29 Aug 4. 5. 9. 11. 15. 17. 19. 23. 25. 30 Sep 2.
of Survey while building	During erection on board vessel —	Sep 12. 20. 22. 23. 26. 27. 28. 30 Oct. 3. 4. 6
	Total No. of visits	34

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " "

Dates of Examination of principal parts—	Cylinders 30.8.10	Slides 30.8.10	Covers 2.9.10	Pistons 23.8.10	Rods 2.9.10
Connecting rods 25.8.10	Crank shaft 23.8.10	Thrust shaft 23.8.10	Tunnel shafts	Screw shaft 20.7.10	Propeller 20.7.10
Stern tube 20.7.10	Steam pipes tested 27.9.10	Engine and boiler seatings 23.7.10	Engines holding down bolts 30.9.10		
Completion of pumping arrangements 4.10.10	Boilers fixed 30.9.10	Engines tried under steam 4.10.10			
Main boiler safety valves adjusted 30.9.10	Thickness of adjusting washers 5" 5/16"				
Material of Crank shaft I	Identification Mark on Do. 621 J.B	Material of Thrust shaft I	Identification Mark on Do. 621 J.B		
Material of Tunnel shafts	Identification Marks on Do.	Material of Screw shafts I	Identification Marks on Do. 621 J.B		
Material of Steam Pipes	Solid drawn Copper	Test pressure 400 lbs			

General Remarks (State quality of workmanship, opinions as to class, &c. The engines and boiler of this vessel have been constructed under special supervision in accordance with the Secretary's letters. E. 10.5.10 + 2.6.10 in general conformity with the Rules. The materials and workmanship are good. The boiler tested by hydraulic pressure, and with the engines secured on board and tested under steam and found satisfactory they are now in good order, and safe working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of L.M.C. 10.10 in the Register Book

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10.10.

JWD 10/10/10

R.D.

The amount of Entry Fee	£ 1	:	:	When applied for, 5/10/10
Special	£ 11	:	5	
Donkey Boiler Fee	£	:		When received, 31.10.10
Travelling Expenses (if any)	£	:	8 2	

Committee's Minute

TUES. 11 OCT 1910

Assigned

MACHINERY CERTIFICATE WRITTEN.

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



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