

REPORT ON MACHINERY.

No. 25250

Received at London Office THU. JUL. 25. 1912

Date of writing Report 19 1912 When handed in at Local Office 24. 7. 12 Port of Hull.
 No. in Survey held at Hull. Date, First Survey Mar 4 Last Survey July 16 1912
 Reg. Book. 9 supp. on the Sc. K. "ANDREW MARVEL" (Number of Visits 24) Tons Gross 285 Net 114
 Master Sully Built at Sully By whom built Cochran & Sons When built 1912
 Engines made at Hull By whom made Messrs. Charles D. Holmes & Co. Ltd. when made 1912
 Boilers made at Hull By whom made Messrs. Charles D. Holmes & Co. Ltd. when made 1912
 Registered Horse Power 49 Owners Pickering & Haldane's Son, Inverness belonging to Hull.
 Nom. Horse Power as per Section 28 49 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 3/4 - 22 - 36 Length of Stroke 24 Revs. per minute 112 Dia. of Screw shaft 7 1/4 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 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 1/4 Dia. of Crank shaft journals 7 1/4 Dia. of Crank pin 4 1/4 Size of Crank webs 4 3/4 x 14 Dia. of thrust shaft under
 collars 4 1/4 Dia. of screw 9-0 Pitch of Screw 11-0 No. of Blades 4 State whether moveable No. Total surface 29 1/2
 No. of Feed pumps 1 Diameter of ditto 2 3/8 Stroke 14 1/4 Can one be overhauled while the other is at work No.
 No. of Bilge pumps 1 Diameter of ditto 2 3/8 Stroke 14 1/4 Can one be overhauled while the other is at work No.
 No. of Donkey Engines 1 Sizes of Pumps 6 x 4 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Two 2" diam. One forward & one aft. In Holds, &c. One 2" 1/2 stuck well, one 2" 1/2 main hold,
one 2" 1/2 fore castle, & extra suction 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 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 No.
 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 & stowwell 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 15.6.12 of Stern Tube 15.6.12 Screw shaft and Propeller 15.6.12
 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 Phenix Wk. Co. Ltd. of Glasgow or other Union of Iron Works.
 Total Heating Surface of Boilers 1295 1/2 Is Forced Draft fitted No. No. and Description of Boilers One aft. Multi Single Ended.
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 18.6.12 No. of Certificate 1908.
 Can each boiler be worked separately No. Area of fire grate in each boiler 46 1/2 No. and Description of Safety Valves to
 each boiler Two Spring Area of each valve 4.90 Pressure to which they are adjusted 200 lbs. Are they fitted with easing gear Yes.
 Smallest distance between boilers on uptakes and bunkers on woodwork 6" Mean dia. of boilers 13-6 Length 10-6 Material of shell plates S.
 Thickness 1 3/16 Range of tensile strength 29/27.5 Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams 2.70
 long. seams D. B. S. S. P. Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8" Lap of plates or width of butt straps 16 5/8
 Per centages of strength of longitudinal joint rivets 85% Working pressure of shell by rules 202 lbs. Size of manhole in shell 16" x 12"
 plate 85% Size of compensating ring 4" x 1 3/16 No. and Description of Furnaces in each boiler 3 plain Material S. Outside diameter 38"
 Length of plain part top 6-5 3/4 Thickness of plates crown 5 1/4 Description of longitudinal joint Welded. No. of strengthening rings 0
 bottom 6-4 Working pressure of furnace by the rules 212 lbs. Combustion chamber plates: Material S. Thickness: Sides 23/32 Back 23/32 Top 1/4 Bottom 23/32
 Pitch of stays to ditto: Sides 8" x 10" Back 8 1/4" x 10" Top 8" x 11" If stays are fitted with nuts or riveted heads No. Working pressure by rules 212 lbs.
 Material of stays S. Diameter at smallest part 1.40 Area supported by each stay 101.062 Working pressure by rules 213 lbs. End plates in steam space:
 Material S. Thickness 1 3/16 Pitch of stays 18" x 18" How are stays secured By nuts. Working pressure by rules 206 lbs. Material of stays S.
 Diameter at smallest part 6.33 Area supported by each stay 324.0 Working pressure by rules 203 lbs. Material of Front plates at bottom S.
 Thickness 1 5/16 Material of Lower back plate S. Thickness 3/32 Greatest pitch of stays 14 1/2" x 8 1/4" Working pressure of plate by rules 204 lbs.
 Diameter of tubes 3 1/2" Pitch of tubes 5 1/2" x 5" Material of tube plates S. Thickness: Front 1 5/16 Back 1 5/16 Mean pitch of stays 10"
 Pitch across wide water spaces 14 3/8 Working pressures by rules 215 lbs. Girders to Chamber tops: Material S. Depth and
 thickness of girder at centre 10 3/4 - 1 1/4 Length as per rule 2.11 3/8 Distance apart 11" Number and pitch of stays in each 8 - 8"
 Working pressure by rules 203 lbs. Superheater or Steam chest; how connected to boiler No. Can the superheater be shut off and the boiler worked
 separately No. Diameter 14 3/8 Length 14 3/8 Thickness of shell plates 1 5/16 Material S. Description of longitudinal joint Welded. Diam. of rivet
 holes 1 3/16 Pitch of rivets 8" Working pressure of shell by rules 203 lbs. Diameter of flue 14 3/8 Material of flue plates S. Thickness 1 5/16
 If stiffened with rings No. Distance between rings 14 3/8 Working pressure by rules 203 lbs. End plates: Thickness 1 5/16 How stayed By nuts.
 Working pressure of end plates 203 lbs. Area of safety valves to superheater None. Are they fitted with easing gear No.

If not, state whether, and when, one was or is sent

012460 - 012472 - 0103

Lloyd's Register Foundation

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
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
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 fixed & slide pump valves, iron of various sizes, a quantity of assorted bolts, nuts etc.

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

Dates of Survey while building: During progress of work in shops - - - 1912:— Mar 4. 6. Apr 12. 23. 25 May 1. 7. 15. 17. 22. 30 Jun 5. 7. 11. 14. 15. 18. 20. 27
During erection on board vessel - - - July 5. 6. 10. 16
Total No. of visits 24
Is the approved plan of main boiler forwarded herewith *Ref No 25162*

Dates of Examination of principal parts—Cylinders 30.5.12 Slides 4.6.12 Covers 14.6.12 Pistons 4.6.12 Rods 20.6.12
Connecting rods 20.6.12 Crank shaft 14.5.12 Thrust shaft 4.6.12 Tunnel shafts - Screw shaft 5.6.12 Propeller 14.5.12
Stern tube 14.5.12 Steam pipes tested 6.4.12 Engine and boiler seatings 15.6.12 Engines holding down bolts 4.4.12
Completion of pumping arrangements 10.4.12 Boilers fixed 10.4.12 Engines tried under steam 10.4.12
Main boiler safety valves adjusted 10.4.12 Thickness of adjusting washers Forward $\frac{5}{16}$ " Aft $\frac{3}{8}$ "
Material of Crank shaft S. Identification Mark on Do. N° 895 T.G.D. Material of Thrust shaft S. Identification Mark on Do. N° 895 T.G.D.
Material of Tunnel shafts - Identification Marks on Do. - Material of Screw shafts S. Identification Marks on Do. N° 895 T.G.D.
Material of Steam Pipes Solid drawn copper Test pressure 400 lbs. per sq. inch hydraulic.

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 suitable in my opinion to be classed with the notation of *L.M.C. 7.12* in the Register Book.

It is submitted that this vessel is eligible for **THE RECORD. + L.M.C. 7.12.**

J.M. J.W.D.
25/7/12

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

The amount of Entry Fee .. £ 1 : 0 :
Special .. £ 11 : 14 :
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : 4/1 :
When applied for, 23.7.12
When received, 31.7.12

Committee's Minute
Assigned
FRI. JUL. 26. 1912
thmc. 7.12

Certificate (if required) to be sent to

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



MACHINERY CERTIFICATE WRITTEN