

# REPORT ON MACHINERY.

No. 22970

WED. 14 SEP 1910

Received at London Office

Date of writing Report 10 When handed in at Local Office 10<sup>th</sup> Sept 1910 Port of Hull  
 No. in Survey held at Hull Date, First Survey Nov 20/08 Last Survey 9<sup>th</sup> Sept 1910  
 Reg. Book. on the Steel S. S. Southampton (Number of Visits 84)  
 Master Built at Dartmouth By whom built Messrs Philip Son & Co When built 1910  
 Engines made at } By whom made } when made 1910  
 Boilers made at } Hull By whom made } Messrs Charles & Co when made 1910  
 Registered Horse Power \_\_\_\_\_ Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_

Nom. Horse Power as per Section 28 97 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 15" - 24" - 40" Length of Stroke 27" Revs. per minute 120 Dia. of Screw shaft 8.66" Material of screw shaft Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 \_\_\_\_\_ 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 50"  
 Dia. of Tunnel shaft 7.4" Dia. of Crank shaft journals 7.77" Dia. of Crank pin 7.87" Size of Crank webs 15" x 5.5" Dia. of thrust shaft under collars 7.8" Dia. of screw 10" - 0" Pitch of Screw 11" - 6" No. of Blades 3 State whether moveable No Total surface 36 sq ft  
 No. of Feed pumps 2 Diameter of ditto 2.5" Stroke 18" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 2.5" Stroke 18" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines One Sizes of Pumps 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 2", One 2" in Ble Room In Holds, &c. One 2" to fore peak tank, one 2" to fore hold, One 2" to aft hold, One 2" to aft peak tank.  
 No. of Bilge Injections 1 sizes 3.5" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 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 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 None How are they protected \_\_\_\_\_  
 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 23.8.10 of Stern Tube 23.8.10 Screw shaft and Propeller 23.8.10  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door \_\_\_\_\_ worked from \_\_\_\_\_

**BOILERS, &c.**—(Letter for record 3) Manufacturers of Steel Phoenix Act. Westfalen. Germany  
 Total Heating Surface of Boilers 1590 sq ft Is Forced Draft fitted No No. and Description of Boilers One cyl. Mult. S. Ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 10.5.10 No. of Certificate 1741  
 Can each boiler be worked separately 50 sq ft Area of fire grate in each boiler 50 sq ft No. and Description of Safety Valves to each boiler Two Spring Area of each valve 4.9 sq ft 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 6.5" Mean dia. of boilers 13" - 6" Length 11' - 0" Material of shell plates S  
 Thickness 1.32" Range of tensile strength 28 - 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L.D. long. seams O.B.S.I.R. Diameter of rivet holes in long. seams 1.376" Pitch of rivets 8.76" Lap of plates or width of butt straps 17.5"  
 Per centages of strength of longitudinal joint rivets 92 Working pressure of shell by rules 181 lbs Size of manhole in shell 16" x 12" plate 85.2  
 Size of compensating ring 7" x 1.32" No. and Description of Furnaces in each boiler Two Dragon Material S Outside diameter 4' - 2.5"  
 Length of plain part top \_\_\_\_\_ bottom \_\_\_\_\_ Thickness of plates crown 1.9" Description of longitudinal joint Welded No. of strengthening rings \_\_\_\_\_ bottom 3.2"  
 Working pressure of furnace by the rules 187 lbs Combustion chamber plates: Material S Thickness: Sides 3.3" Back 2.1" Top 1.76" Bottom 2.3"  
 Pitch of stays to ditto: Sides 9.5" x 9.5" Back 9.5" x 8" Top 9.5" x 9.5" If stays are fitted with nuts or riveted heads Nuts in Chamber only Working pressure by rules 193 lbs  
 Material of stays S Diameter at smallest part 1.5" Area supported by each stay 76 sq ft Working pressure by rules 185 lbs End plates in steam space: Material S Thickness 1.5" Pitch of stays 18" x 17" How are stays secured dr Working pressure by rules 185 lbs Material of stays S  
 Diameter at smallest part 2.76" Area supported by each stay 306 sq ft Working pressure by rules 211 lbs Material of Front plates at bottom S  
 Thickness 3.12" Material of Lower back plate S Thickness 2.8" Greatest pitch of stays 14.75" x 8" Working pressure of plate by rules 187 lbs  
 Diameter of tubes 3.375" Pitch of tubes 5.5" x 5.5" Material of tube plates S Thickness: Front 3.1" Back 1.76" Mean pitch of stays 10.5"  
 Pitch across wide water spaces 14.75" Working pressures by rules 187 lbs Girders to Chamber tops: Material S Depth and thickness of girder at centre 8" x 12.4" Length as per rule 2' - 6.75" Distance apart 9.5" Number and pitch of stays in each 2 - 9.5"  
 Working pressure by rules 192 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 and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set each air circulating feed and bilge pump valves, and a quantity of assorted bolt nuts etc.

The foregoing is a correct description, *Flomacules* MANAGER

Manufacturer.

Dates of Survey while building	During progress of work in shops	1908. - Nov. 20, 25, Dec. 7, 9, 17, 23. 1909. - Jan. 8, 11, 22, 30, Feb. 9, 15, 24, Mar. 12, 19, Apr. 5, 14, 21, 27, May 1, 5, 11, 20, 27.
	During erection on board vessel	1910. - Jan. 8, 14, 18, 20, 27, Feb. 3, 10, 17, 22, 23, 28, Mar. 7, 9, 16, 23, Apr. 4, 8, 21, 27, May 2, 4, 10, 25, Jun. 15, 16, 19, 20, 21, 25, Aug. 19, 26, 22, 23, 25, 26, 29, Sep. 1, 3, 6, 7, 8, 9.
	Total No. of visits	84

Is the approved plan of main boiler forwarded herewith  No  Yes

sent with Rph 22714

Dates of Examination of principal parts—Cylinders 1.5.09 Slides 20.4.09 Covers 5.4.09 Pistons 14.4.09 Rods 20.4.09

Connecting rods 5.5.09 Crank shaft 1.9.09 Thrust shaft 22.8.10 Tunnel shafts 22.8.10 Screw shaft 22.8.10 Propeller 22.8.10

Stern tube 22.8.10 Steam pipes tested 29.8.10 Engine and boiler seatings 20.8.10 Engines holding down bolts 3.9.10

Completion of pumping arrangements 9.9.10 Boilers fixed 3.9.10 Engines tried under steam 9.9.10

Main boiler safety valves adjusted 9.9.10 Thickness of adjusting washers 7/8 3/8

Material of Crank shaft S Identification Mark on Do. 2187ATD Material of Thrust shaft S Identification Mark on Do. 2483 YDH

Material of Tunnel shafts S Identification Marks on Do. 2483 YDH Material of Screw shafts S Identification Marks on Do. 2483 YDH

Material of Steam Pipes Solid drawn copper Test pressure 400 lbs per sq. inch

**General Remarks** (State quality of workmanship, opinions as to class, &c.) The engines and boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials & workmanship are good. The boiler tested by hydraulic pressure, found satisfactory, and with the engines secured on board, tested under steam and found good. 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 LMC 9.10 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC.9.10.

The amount of Entry Fee	£ 1 : -	When applied for, 13.9.10
Special	£ 14 : 11	19.10
Donkey Boiler Fee	£ :	When received, 26.9.10
Travelling Expenses (if any)	£ :	27.9

*JWB*  
15/9/10  
**James Barclay**  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
Assigned  
FRI. 16 SEP 1910  
Home 9.10

MACHINERY CERTIFICATE WRITTEN.



Certificates (if required) to be sent to Hull

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