

REPORT ON MACHINERY

Received at London Office

SAT. FEB. -1. 1913

Date of writing Report 31 Jan^y 1913 When handed in at Local Office 19 Port of PLYMOUTH

No. in Survey held at Dartmouth Date, First Survey 5th June Last Survey 20 December 1912
 Reg. Book. 71 on the Steel Sewing "Arany" (Number of Visits 15)
 Master Not yet appointed Built at Dartmouth By whom built Philip Mon Ltd Tons { Gross 88.15
 Engines made at Dartmouth By whom made Philip Mon Ltd when made 1912 Net 7.75
 Boilers made at Stockton-on-Tees By whom made Riley Bros when made 1912
 Registered Horse Power 52 Owners The Amazon River Steam Nav. Co (1911) Ltd. Port belonging to Para
 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines 7.8 x Vert Ins^d S.B. No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 10 1/4 x 16 x 26 Length of Stroke 20 Revs. per minute 146 Dia. of Screw shaft 5.73 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 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 2 ft
 Dia. of Tunnel shaft 5.213 Dia. of Crank shaft journals 5.47 Dia. of Crank pin 5 1/2 Size of Crank webs 3 1/2 x 6 1/2 x 16 Dia. of thrust shaft under collars 5 1/2
 Dia. of screw 6-9 Pitch of Screw 8-9 No. of Blades 4 State whether moceable No Total surface 22 ft²
 No. of Feed pumps one Diameter of ditto 2 Stroke 9 Can one be overhauled while the other is at work
 No. of Bilge pumps one Diameter of ditto 2 Stroke 9 Can one be overhauled while the other is at work
 No. of Donkey Engines one Sizes of Pumps 4 1/2 x 2 3/4 - 4 stroke No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 1 in no. Bilge 1 Donkey 2 suction In Holds, &c. Bilge 2 & 3 - 2
 No. of Bilge Injections one sizes 3 Connected to condenser, or to circulating pump Circ pump 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 Boch
 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 22 Oct 12 of Stern Tube 22 Oct 12 Screw shaft and Propeller 22 Oct 12
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record) Manufacturers of Steel

Total Heating Surface of Boilers	Is Forced Draft fitted	No. and Description of Boilers
Working Pressure	Tested by hydraulic pressure to	Date of test
Can each boiler be worked separately	Area of fire grate in each boiler	No. and Description of Safety Valves to each boiler
Area of each valve	Pressure to which they are adjusted	Are they fitted with easing gear
Smallest distance between boilers or uptakes and bunkers or woodwork	Mean dia. of boilers	Length
Material of shell plates	Thicknes	Range of tensile strength
Are the shell plates welded or flanged	Descrip. of riveting: cir. seams	long. seams
Diameter of rivet holes in long. seams	Pitch of rivets	Lap of plates or width of butt straps
Per centages of strength of longitudinal joint	Working pressure of shell by rules	Size of manhole in shell
Material	Outside diameter	No. of strengthening rings
Length of plain part	Description of longitudinal joint	Working pressure of furnace by the rules
Combustion chamber plates: Material	Thicknes	Sides
Back	Top	Bottom
Pitch of stays to ditto: Sides	If stays are fitted with nuts or riveted heads	Working pressure by rules
Material of stays	Diameter at smallest part	Area supported by each stay
Working pressure by rules	End plates in steam space	Material of stays
How are stays secured	Working pressure by rules	Material of Front plates at bottom
Diameter at smallest part	Area supported by each stay	Working pressure by rules
Material of Lower back plate	Thicknes	Greatest pitch of stays
Working pressure of plate by rules	Material of tube plates	Thicknes: Front
Back	Mean pitch of stays	Bottom
Pitch across wide water spaces	Working pressures by rules	Girders to Chamber tops: Material
Depth and thickness of girder at centre	Length as per rule	Distance apart
Number and pitch of stays in each	Working pressure by rules	Material of Front plates at bottom
Superheater or Steam chest; how connected to boiler	Can the superheater be shut off and the boiler worked separately	Description of longitudinal joint
Diameter	Length	Thicknes of shell plates
Material	Diameter of flue	Material of flue plates
Thicknes	Working pressure of shell by rules	Thicknes
If stiffened with rings	Distance between rings	Working pressure by rules
End plates: Thicknes	How stayed	Are they fitted with easing gear
Working pressure of end plates	Area of safety valves to superheater	

Boiler built at Stockton by Riley Bros



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 casing 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:— Cong. Rod bolts 2 Top 2 Bot— main bearing studs 2 in no. Coupling Bolts 1 set. Feed Bilge pump valves 1 set. Air & Oil pump valves 1 set, main & donkey feed valves 1 of each. Springs for safety valves 1 pair, escape valve spring 1 in no. Washers for condenser tubes 2 doz and full set of stones & stools for do. Bolts & nuts assorted

The foregoing is a correct description, and Iron of various sizes

G. Nowell Philip Manufacturer.

Dates of Survey while building: During progress of work in shops --- 1912. July 1. 18. Aug 15. 22. Sept 4. 17. Oct 11. 18. 22. During erection on board vessel --- Nov 5. 12. 19. Dec 4. 13. 20. Total No. of visits 15

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders 4 Sept Slides 11 Oct Covers 11 Oct Pistons 11 Oct Rods 11 Oct Connecting rods 11 Oct Crank shaft 4 Sept Thrust shaft 22 Oct Tunnel shafts ✓ Screw shaft 22 Oct Propeller 22 Oct Stern tube 22 Oct Steam pipes tested 12 Nov Engine and boiler seatings 22 Oct Engines holding down bolts 13 Dec Completion of pumping arrangements 13 Dec Boilers fixed 19 Nov Engines tried under steam 20 Dec Main boiler safety valves adjusted 20 Dec Thickness of adjusting washers Port 3/8 Star 5/16

Material of Crank shaft Steel Identification Mark on Do. No 50 J 6 B Material of Thrust shaft Iron Identification Mark on Do. ✓

Material of Tunnel shafts none Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. ✓

Material of Steam Pipes Copper ✓ Test pressure 370 lbs per sq in

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been constructed under special survey in accordance with drawings approved and in conformity with the Rules.

The Boiler was made at Stockton-on-Tees by Riley Bros vide Middlesbrough-on-Tees Rpt No 7561-

Test certificates for shafting &c accompany this report

The materials used and workmanship are of very good quality and to my satisfaction.

The main & auxiliary machinery and Boiler were worked underway at full working pressure of 185 lbs with very satisfactory results.

The machinery & Boiler of this vessel are in my opinion good, and efficient and eligible, subject to the favorable consideration of the Committee, to be classed with this Society and to receive the notation of **L.M.C. - 12.12** in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 12.12.

The amount of Entry Fee .. £ 1 : : When applied for, Special .. £ 8 : : 27 Jan 1913 Donkey Boiler Fee .. £ ✓ : : When received, Travelling Expenses (if any) £ 3 : 10 : 29 Jan 1913

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

Committee's Minute

FRI. FEB. - 7 1913

Assigned

+ hmc 12.12



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Messrs Philip & Nowell, Hartmouth

Certificate (if required) to be sent to or below the space for Committee's Minute.