

REPORT ON MACHINERY.

No. 24326

Port of Glasgow

Received at London Office **TUES, 21 AUG 1906**

No. in Survey held at Reg. Book.

Glasgow

Date, first Survey 9 Feb 05 Last Survey Aug 10 1906

1790 on the S S "Juvenic"

Master Built at Port Glasgow By whom built Russell & Co When built 1906

Engines made at Glasgow By whom made David Rowan & Co (1842) when made 1906

Boilers made at do By whom made do when made 1906

Registered Horse Power 589 Owners A Weir & Co Port belonging to Glasgow

Nom. Horse Power as per Section 28 589 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 28 1/2 - 47 - 78 Length of Stroke 54 Revs. per minute 60 Dia. of Screw shaft 16 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 No 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 5-9

Dia. of Tunnel shaft 14 1/4 Dia. of Crank shaft journals 15 1/4 Dia. of Crank pin 15 1/4 Size of Crank webs 10 Dia. of thrust shaft under collars 15 3/4 Dia. of screw 19-6 Pitch of Screw 19-0 No. of Blades 4 State whether moveable Yes Total surface 124

No. of Feed pumps 2 Diameter of ditto 4 Stroke 31 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 5 Stroke 31 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 + 1 Weirs Sizes of Pumps 8x5x8, 9x13x10, 5x3 1/2x6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3 - 3 1/2 In Holds, &c. 2 - 3 1/2 each hold

No. of Bilge Injections 1 sizes 7 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes - 3 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 For suction How are they protected Wood covering

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 2 of Stern Tube 2 Screw shaft and Propeller exam at Glasgow

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top gratings

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Glyde Bridge Steel Co. Ltd.

Total Heating Surface of Boilers 8400 Is Forced Draft fitted Yes No. and Description of Boilers Three Single Ended

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 24/5/06 No. of Certificate 8181

Can each boiler be worked separately Yes Area of fire grate in each boiler 63-2 No. and Description of Safety Valves to each boiler 2 Spring

Area of each valve 9-6 Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork abt 2-6 Mean dia. of boilers 15-6 Length 12-0 Material of shell plates Steel

Thickness 1 1/4 Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D. R. L.

long. seams D. B. S. Diameter of rivet holes in long. seams 1 7/16 Pitch of rivets 9 Lap of plates or width of butt straps 19 1/2

Per centages of strength of longitudinal joint rivets 83-4 Working pressure of shell by rules 183 lb Size of manhole in shell 16x12

plate 89-4 Size of compensating ring 2-7x2-3 No. and Description of Furnaces in each boiler 3 Dighton Material Steel Outside diameter 4-2 1/8

Length of plain part 1 Thickness of plates 19/32 Description of longitudinal joint weld No. of strengthening rings —

Working pressure of furnace by the rules 147 Combustion chamber plates: Material Steel Thickness: Sides 2 1/32 Back 2 1/32 Top 2 1/32 Bottom 7/8

Pitch of stays to ditto: Sides 8 3/4 x 8 3/4 Back 8 5/8 x 9 Top 8 3/4 x 9 1/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184

Material of stays Steel Diameter at smallest part 2-07 Area supported by each stay 81 Working pressure by rules 304 End plates in steam space:

Material Steel Thickness 1 5/32 Pitch of stays 19 3/8 x 16 3/4 How are stays secured D. nuts Working pressure by rules 180 Material of stays Steel

Diameter at smallest part 6-41 Area supported by each stay 320 Working pressure by rules 200 Material of Front plates at bottom Steel

Thickness 3 1/32 Material of Lower back plate Steel Thickness 27/32 Greatest pitch of stays 14 Working pressure of plate by rules 180 lb

Diameter of tubes 2 1/2 Pitch of tubes 3 5/8 Material of tube plates Steel Thickness: Front 3 1/32 Back 13/16 Mean pitch of stays 9

Pitch across wide water spaces 13 1/2 Working pressures by rules 185 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/2 x 1 1/8 x 2 Length as per rule 35 Distance apart 9 1/4 Number and pitch of stays in each 3 - 8 3/4

Working pressure by rules 206 lb Superheater or Steam chest; how connected to boiler None 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 —

W1108-0092



VERTICAL DONKEY BOILER—

Manufacturers of Steel

Inal tubular See Rpt 5.

No.	Description		
Made at	By whom made	When made	Where fixed
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted
If fitted with easing gear	If steam from main boilers can enter the donkey boiler		Date of adjustment
Material of shell plates	Thickness	Range of tensile strength	Di. of donkey boiler
Di. of rivet holes	Whether punched or drilled	Pitch of rivets	Length
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	Descrip. of riveting long. seams
Diameter of furnace Top	Bottom	Length of furnace	Per centage of strength of joint
Working pressure of furnace by rules	Thickness of furnace crown plates	Stayed by	Rivets
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Plates
			Dates of survey

SPARE GEAR. State the articles supplied:— Propeller Shaft, 2 propeller blades, set circulating pump valves, set of air pump valves, pr. crank pin bushes, set of piston valve rings, 20 condenser tubes, etc, & the bolts, nuts, etc required by the rules.

The foregoing is a correct description,
David Lowan & Co Manufacturer.

Dates of Survey while building	During progress of work in shops	1905. Feb. 9. 15. Mar. 1. 2. 7. 11. 21. Apr. 4. 6. 16. 27. May 5. 17. 19. Jun. 12. 16. 29. July 1. 11. Aug. 1. 6. 10.
	During erection on board vessel	Aug. 1. 11. 19. 22. Oct. 4. 19. Nov. 4. 20. Dec. 16. 21. 28. 1906. Jan. 10. 11. 16. Feb. 6. 8. 25. 28. Mar. 5. 6. 9. 12. 17. 21. 22. May 20. 27. 28. 1907.
Total No. of visits		51.

Is the approved plan of main boiler forwarded herewith Yes

Is the approved plan of donkey boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 17.5.06 Slides 10.5.06 Covers 10.5.06 Pistons 10.5.06 Rods 22.3.06

Connecting rods 22.3.06 Crank shaft 23.2.06 Thrust shaft 6.3.06 Tunnel shafts 28.2.06 Screw shaft 30.11.06 Propeller 17.5.06

Stern tube 17.5.06 Steam pipes tested 4.5.7.06 Engine and boiler seatings 11.7.06 Engines holding down bolts 11.7.06

Completion of pumping arrangements 1.8.06 Boilers fixed 6.8.06 Engines tried under steam 10.8.06

Main boiler safety valves adjusted 6.8.06 Thickness of adjusting washers St. Bl. 5 7/16 P 13/32 Cu. Bl. 5 7/16 P 13/32 Pt. Bl. 5 7/16

Material of Crank shaft Steel Identification Mark on Do. (HSS) Material of Thrust shaft Steel Identification Mark on Do. (HSS)

Material of Tunnel shafts Steel Identification Marks on Do. (HSS) Material of Screw shafts Iron Identification Marks on Do. (HSS)

Material of Steam Pipes Copper Test pressure 360 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.)

The engines & boilers of this vessel have been constructed under Special Survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

This vessel is in our opinion eligible for notation L M C 8.06 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L M C 8.06 P.D. Rec. light.

The amount of Entry Fee... £ 3 : : When applied for.

Special... £ 49.9 : : 20 AUG 1906

Donkey Boiler Fee... £ : : When received.

Travelling Expenses (if any) £ : : 27/8/06

H. Gardner-Smith
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Glasgow 20 AUG 1906

Committee's Minute Assigned L. M. C. 8.06

