

REPORT ON MACHINERY.

Port of *Glasgow*

Received at London Office

105. 30 OCT 1900

No. in Survey held at *Penrith*
Reg. Book.Date, first Survey *12 January* Last Survey *22 October 1900.*(Number of Visits *34*)on the *Hopper Barge "Arion"*Tons { Gross *491.19*
Net *267.55*Master ☒Built at *Penrith*By whom built *Tom Simons & Co*When built *1900*Engines made at *Penrith*By whom made *Tom Simons & Co*when made *1900*Boilers made at *Glasgow*By whom made *R Napier & Sons*when made *1900*

Registered Horse Power

Owners *Bristol Corporation*Port belonging to *Bristol*Nom. Horse Power as per Section 28 *90*Is Refrigerating Machinery fitted *no*Is Electric Light fitted *no*

ENGINES, &c.—Description of Engines

*Twin triple Expansion*No. of Cylinders *six*No. of Cranks *six*Dia. of Cylinders *11. 17. 25*Length of Stroke *21*Revs. per minute *160*Dia. of Screw shaft *as per rule 3 1/2*Lgth. of stern bush *25"*Dia. of Tunnel shaft *as per rule none*Dia. of Crank shaft journals *as per rule 8 3/4*Dia. of Crank pin *8 3/4*Size of Crank webs *44 x 11 1/2*Dia. of thrust shaft under collars *5 1/2*Dia. of screw *6-6"*Pitch of screw *9-6"*No. of blades *4"*State whether moveable *no*Total surface *24 sq ft each*No. of Feed pumps *10 each*Diameter of ditto *2 1/4"*Stroke *12"*Can one be overhauled while the other is at work *yes*No. of Bilge pumps *10 each*Diameter of ditto *2 1/4"*Stroke *12"*Can one be overhauled while the other is at work *yes*No. of Donkey Engines *10*In Engine Room *thru 2 1/2"*

No. and size of Suctions connected to both Bilge and Donkey pumps

In Holds, &c. *five 2 1/2"*No. of bilge injections *two sizes 3"*Connected to condenser, or to circulating pump *pump*Is a separate donkey suction fitted in Engine room & size *yes 3"*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 *ford bilge suction and steam pipes for ford cranks*How are they protected *with wood casings*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 bilge *yes*When were stern tube, propeller, screw shaft, and all connections examined in dry dock *before launch*Is the screw shaft tunnel watertight *none*Is it fitted with a watertight door ☒worked from ☒

BOILERS, &c.—

(Letter for record *B*)Total Heating Surface of Boilers *1636 sq ft*Is forced draft fitted *no*No. and Description of Boilers *one single ended return tube*Working Pressure *160 lbs*Tested by hydraulic pressure to *320 lbs*Date of test *19/6/00*Can each boiler be worked separately ☒Area of fire grate in each boiler *84.6 sq ft*No. and Description of safety valves to each boiler *one direct opening*Area of each valve *7.07 sq in*Pressure to which they are adjusted *165 lbs*Are they fitted with easing gear *yes*Smallest distance between boilers or uptakes and bunkers or woodwork *about 5-6"*Mean dia. of boilers *13-0*Length *10-6*Material of shell plates *steel*Thickness *1/8"*Range of tensile strength *27-32*Are they welded or flanged *no*Descrip. of riveting: cir. seams *double lap*long. seams *butt*Pitch of rivets *8 1/4"*Diameter of rivet holes in long. seams *1 3/16*Pitch of rivets *8 1/4"*Lap of plates or width of butt straps *17 1/2"*Per centages of strength of longitudinal joint *89.0*Working pressure of shell by rules *184 lbs*Size of manhole in shell *16 x 12*Size of compensating ring *7 in. 7 in.*No. and Description of Furnaces in each boiler *3 Morrison's*Material *steel* Outside diameter *42 1/2"*Length of plain part *top 10 1/2"*Thickness of plates *bottom 10 1/2"*Description of longitudinal joint *welded*No. of strengthening rings *—*Working pressure of furnace by the rules *163 lbs*Combustion chamber plates: Material *steel*Thickness: Sides *9/16"*Back *9/16"*Top *9/16"*Bottom *3/4"*Pitch of stays to ditto: Sides *8 1/4 x 8"*Back *8 1/4 x 8"*Top *8 x 7 1/2"*If stays are fitted with nuts or riveted heads *nuts*Working pressure by rules *166.182*Material of stays *steel*at smallest part *1.45"*Area supported by each stay *66"*Working pressure by rules *176 lbs*End plates in steam space: Material *steel*Thickness *1"*Pitch of stays *10 1/2 x 10 1/2"*How are stays secured *2 nuts to*Working pressure by rules *167 lbs*Material of stays *steel*Diameter at smallest part *4.1"*Area supported by each stay *228 1/2"*Working pressure by rules *220 lbs*Material of Front plates at bottom *steel*Thickness *3/4"*Material of Lower back plate *steel*Thickness *3/4"*Greatest pitch of stays *13 1/2"*Working pressure of plate by rules *250 lbs*Diameter of tubes *3 1/2"*Pitch of tubes *4 1/2 x 4 1/2"*Material of tube plates *steel*Thickness: Front *1 1/16"*Back *1 1/16"*Mean pitch of stays *10 1/2"*Pitch across wide water spaces *4 1/2"*Working pressures by rules *237 & 225 lbs*Girders to Chamber tops: Material *steel*Depth and thickness of girder at centre *9 x 1 1/2"*Length as per rule *34 3/8*Working pressure by rules *160 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

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

Lloyd's Register Foundation

DONKEY BOILER— No. Description *none*

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety 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

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 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

Thickness of furnace crown plates Stayed by Working pressure of shell by rules

Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:— *Two top & bottom end bolts & nuts, 2 main bearing bolts, 1 set of coupling bolts 1 set of feed and bridge pump valves, bolts and nuts assorted, iron of various sizes & one span propeller*

The foregoing is a correct description,

FOR WM. SIMONS & CO., LTD

Manufacturer.

Dates of Survey while building During progress of work in shops— During erection on board vessel— Total No. of visits

1900: Jan. 17. 19. 30. Feb. 6. 8. 13. 14. 16. 20. Mar. 6. 15. 22. 30. Apr. 2. May. 1. 5. 9. 17. 18. June. 5. 13. 19. 29. July. 5. Aug. 2. 14. 16. Sep. 7. 13. 17. 25. Oct. 1. 19. 23.

34.

Is the approved plan of main boiler forwarded herewith *no*

sent with S.S. Home Report

donkey

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

These engines and boiler have been constructed under special survey the materials & workmanship are of good description, they have been well fitted on board and tried under steam

*In our opinion this machinery is eligible to have notification of **L.M.C. 10.00** in the Register Book*

It is submitted that this vessel is eligible for THE RECORD

✠ L.M.C. 10.00

BD

30.10.00

AS

30.10.00

The amount of Entry Fee. £ 1 : : When applied for, 29/10/1900

Special .. £ 13 : 10 : When received, 31.10.00

Donkey Boiler Fee .. £ : : 31.10.00

Travelling Expenses (if any) £ : : 31.10.00

A. McKeand & H. Gairdner Smith
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

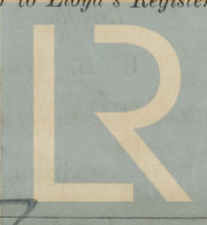
Committee's Minute **Glasgow. 29 OCT. 1900**

Assigned

✠ *d.m.b. 10.00*
(When fees paid)

MACHINERY CERTIFICATE WRITTEN.

David



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