

REPORT ON MACHINERY.

TUES. SEP 17 1901

Port of GlasgowNo. in Survey held at Glasgow
Reg. Book.Date, first Survey 15 Jan'yLast Survey 30 Augt 1901(Number of Plates 27)Gross 658.9Tons Net 232.43When built 1901Master J. McQuodale Built at PaisleyBy whom built J. Fullerton & Co.Engines made at CoatbridgeBy whom made W. V. Lidgerwoodwhen made 1901Boilers made at GlasgowBy whom made Hindray Burnett & Co.when made 1901

Registered Horse Power

Owners Paton & HendryPort belonging to GlasgowNom. Horse Power as per Section 28 125.5Is Refrigerating Machinery fitted No.Is Electric Light fitted No.

ENGINES, &c.—Description of Engines

Compound surface condensingNo. of Cylinders 2No. of Cranks 2Dia. of Cylinders 21" + 47"Length of Stroke 33"Revs. per minute 86Dia. of Screw shaft 9.91"as per rule 9.91"as fitted 10.25"Length of stern bush 3-10 1/2"Dia. of Tunnel shaft 9.01"as per rule 9.01"as fitted 9.4"Dia. of Crank shaft journals 9.46"as per rule 9.46"as fitted 9.5"Dia. of Crank pin 9 1/2"Size of Crank webs 6 1/2"Dia. of thrust shaft under collars 9 1/2"Dia. of screw 12.0"Pitch of screw 14.0"No. of blades 4State whether moveable No.Total surface 51.3 sq ftNo. of Feed pumps twoDiameter of ditto 3"Stroke 16 1/2"Can one be overhauled while the other is at work Yes.No. of Bilge pumps twoDiameter of ditto 3"Stroke 16 1/2"Can one be overhauled while the other is at work Yes.No. of Donkey Engines twoSizes of Pumps Pulomoter No. 8No. and size of Suctions connected to both Bilge and Donkey pumps two at 2 1/2" after end of hold.In Engine Room two 2 1/2"In Holds, &c. two at 2 1/2" after end of hold.No. of bilge injections 1 sizes 4"Connected to condenser, or to circulating pump YesIs a separate donkey suction fitted in Engine room & size Yes. 2 1/2"Are all the bilge suction pipes fitted with roses YesAre the roses in Engine room always accessible YesAre the sluices on Engine room bulkheads always accessible YesAre all connections with the sea direct on the skin of the ship YesAre they Valves or Cocks Both.Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YesAre the discharge pipes above or below the deep water line aboveAre they each fitted with a discharge valve always accessible on the plating of the vessel YesAre the blow off cocks fitted with a spigot and brass covering plate YesWhat pipes are carried through the bunkers two bilge pipesHow are they protected wood casingsAre all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges YesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock ✓Is the screw shaft tunnel watertight No tunnelIs it fitted with a watertight door Noneworked from ✓Is the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnelIs the screw shaft tunnel watertight No tunnel

BOILERS, &c.—

(Letter for record S.)Total Heating Surface of Boilers 2118 sq. ft.Is forced draft fitted No.No. and Description of Boilers 1 S.E. cylindricalWorking Pressure 130 lb.Tested by hydraulic pressure to 260 lb.Date of test 6/8/01Can each boiler be worked separately ✓Area of fire grate in each boiler 56 sq ftNo. and Description of safety valves to each boiler Lockheim / doubleArea of each valve 8.29Pressure to which they are adjusted 132 lb.Are they fitted with easing gear Yes.Smallest distance between boilers or uptakes and bunkers or woodwork 5'-6"Mean dia. of boilers 15'-0"Length 10'-6"Material of shell plates steelThickness 1 1/2"Range of tensile strength 28-32Are they welded or flanged No.Descrip. of riveting: cir. seams Lap J. R. long. seamsD. B. strapsDiameter of rivet holes in long. seams 1 1/2"Pitch of rivets 6 1/2"Lap of plates or width of butt straps 16 3/4"Per centages of strength of longitudinal joint 84.8Working pressure of shell by rules 131 lb.Size of manhole in shell 16" x 12"Size of compensating ring McNeil'sNo. and Description of Furnaces in each boiler 3 plainMaterial steelOutside diameter 42"Length of plain part 9.3"Thickness of plates 3 1/2"Description of longitudinal joint WeldedNo. of strengthening rings partial at bottomWorking pressure of furnace by the rules 140 lb.Combustion chamber plates: Material steelThickness: Sides 9/16"Back 9/16"Top 9/16"Bottom 3/2"Pitch of stays to ditto: Sides 9 1/2" x 8 1/2"Back 9 1/2" x 8 1/2"Top 9" x 9"If stays are fitted with nuts or riveted heads NutsWorking pressure by rules 131 lb.Material of stays steelDiameter at smallest part 1 3/8"Area supported by each stay 83.6Working pressure by rules 139 lb.End plates in steam space: Material steelThickness 1 1/2"Pitch of stays 18" x 16 1/2"How are stays secured J. nutsWorking pressure by rules 133 lb.Material of stays steelDiameter at smallest part 1 3/4"Area supported by each stay 298Working pressure by rules 145 lb.Material of Front plates at bottom steelThickness 1 1/2"Diameter of tubes 3 1/2"Pitch of tubes 4 1/2" x 4 1/2"Material of tube plates steelThickness: Front 3/4"Back 3/4"Mean pitch of stays 11 1/8"Pitch across wide water spaces 14 1/2"Working pressures by rules 181Girders to Chamber tops: Material steelDepth and thickness of girder at centre 7 1/2" x 1 1/2"Length as per rule 31 1/2"Distance apart 9"Number and pitch of Stays in each 2-9"Working pressure by rules 129 lb.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 ✓Are they fitted with easing gear ✓Are they fitted with easing gear ✓Are they fitted with easing gear ✓Are they fitted with easing gear ✓Are they fitted with easing gear ✓

If not, state whether, and when, one will be sent.

Is a Report also sent on the Hull of the ship?

[500-12/8/01-Copyable Ink.]

W535-0061

Lloyd's Register Foundation

DONKEY BOILER— No. *one* Description *latent vertical*
 Made at *Annan* By whom made *Cochran & Co.* When made *1901* Where fixed *stockholm*
 Working pressure *100* tested by hydraulic pressure to *200* No. of Certificate *5828* Fire grate area *13 sq ft* Description of safety valves *Cochran 2 3/4"*
 No. of safety valves *6* Area of each *5.94* Pressure to which they are adjusted *100 lb.* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *5'-3"* Length *11'-9"* Material of shell plates *steel* Thickness *7/16"* Range of tensile strength *17-32* Descrip. of riveting long. seams *double* Dia. of rivet holes *25/32"* Whether punched or drilled *drilled* Pitch of rivets *2 7/8"*
 Lap of plating *4"* Per centage of strength of joint *70.9* Rivets *70.2* Thickness of shell crown plates *13/32"* Radius of do. *2'-7 1/2"* No. of Stays to do. *none*
 Dia. of stays *1"* Diameter of furnace Top *2'-0"* Bottom *1'-0"* Length of furnace *11'-9"* Thickness of furnace plates *13/32"* Description of joint *rimmed* Thickness of furnace crown plates *13/32"* Stayed by *yes* Working pressure of shell by rules *100 lb.*
 Working pressure of furnace by rules *101 lb.* Diameter of uptake *2 1/2"* Thickness of uptake plates *5/8"* Thickness of water tubes *1/4"*

SPARE GEAR. State the articles supplied:— *2 connecting rod top end & 2 bottom end bolts and nuts, 2 main bearing bolts, 1 set crank g. bolts, 1 set feed & bilge pump valves, 1 interchangeable valve spindle (main), 1 set cylinder & 1 set air pump valves, springs for feed bilge relief valves & for safety valves, 12 cond. tubes & grommets.*

The foregoing is a correct description,
W. W. Lidgerwood Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1901: Jan. 15, Feb. 6, Apr. 11, 17, 30, May 10, 14, 17, 23, 29, Jun. 6, 16*
 During erection on board vessel— *20, 21, 26, Jul. 3, 10, 18, 25, 30, Aug. 6, 8, 13, 24, 26, 29, 30*
 Total No. of visits *27*
 Is the approved plan of main boiler forwarded herewith *yes*
 " " " donkey " " " *no*

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

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 *yes* If two liners are fitted, is the shaft lapped or protected between the liners *yes*

The engines and boiler of this vessel have been built under Special Survey and the materials and workmanship are good. When completed they were examined under full steam and worked satisfactorily.

The machinery is now in good and efficient condition and eligible in my opinion to have the notation L.M.C. 8.01 in the Register book.

It is submitted that
 this vessel is eligible for
 THE RECORD + L.M.C. 8.01

C.M.
17.9.01

The amount of Entry Fee... £ *2* : :
 Special ... £ *18* : *15* :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *16/9/01*
 When received, *28/9/01*

Jos. M. Buchanan.
J.W. Dominock.
H. Gardner Smith
 Engineer-Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

Glasgow, 16 SEP. 1901

+ L.M.C. 8.01.

When received

MACHINERY CERTIFICATE
 WRITTEN *17/01*



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