

REPORT ON MACHINERY.

No. 13992.

Port of *Glasgow*

MON. 14 OCT 1895

No. in Survey held at *Glasgow*
Reg. Book.

Date, first Survey *21st Feb 95*

Last Survey *14th October 1895*

(Number of Visits *1/1*)

on the *S. S. Langbank*

Tons { Gross
Net

When built *1895*

Master

Built at *Port Glasgow* By whom built *Russell & Co*

Engines made at *Glasgow*

By whom made *Dimmick & Jackson*

when made *1895*

Boilers made at *Glasgow*

By whom made *Dimmick & Jackson*

when made *1895*

Registered Horse Power

Owners

Port belonging to *Liverpool*

Nom. Horse Power as per Section 28 *350*

ENGINES, &c.— Description of Engines *Triple expansion inverted directacting* No. of Cylinders *three*
Diameter of Cylinders *32", 40", 68"* Length of Stroke *48"* Revolutions per minute *40* Diameter of Screw shaft *12 3/4"*
Diameter of Tunnel shaft *12 3/8"* Diameter of Crank shaft journals *13 1/2"* Diameter of Crank pin *13 1/4"* Size of Crank webs *20", 8 1/2"*
Diameter of screw *17' 0"* Pitch of screw *17' 6"* No. of blades *four* State whether moveable *no* Total surface *81 sq. ft.*
No. of Feed pumps *two* Diameter of ditto *3 3/4"* Stroke *24* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *two* Diameter of ditto *4 1/2"* Stroke *24* Can one be overhauled while the other is at work *yes*
No. of Donkey Engines *four* Sizes of Pumps *duplex 7", 5", 6" and 4 1/2", 2 1/2" x 4". Ballas double acting 7", 9" x 10"* No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room *Three 3 1/2"* In Holds, &c. *Four 3 1/2" in forward hold*
Three 3 1/2" in aft hold.

No. of bilge injections *one* sizes *6 1/2"* 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 *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 except main discharge*
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 *forward hold bilge pipes* How are they protected *Cased in*
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*
When were stern tube, propeller, screw shaft, and all connections examined in dry dock *23rd Oct 95* Is the screw shaft tunnel watertight *apparently*
Is it fitted with a watertight door *yes* worked from *upper platform*

BOILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *5131 sq. ft.*
No. and Description of Boilers *Three single ended* Working Pressure *200 lbs* Tested by hydraulic pressure to *400 lbs*
Date of test *4, 5, 6th Sept 95* Can each boiler be worked separately *yes* Area of fire grate in each boiler *552 sq. ft.* No. and Description of safety valves to each boiler *two spring loaded* Area of each valve *4 1/2 sq. in.* Pressure to which they are adjusted *205 lbs.* Are they fitted with easing gear *yes* Smallest distance between boilers or uptakes and bunkers or woodwork *stand clear* Mean diameter of boilers *159"*
Length *11' 0"* Material of shell plates *Steel* Thickness *1 1/16"* Description of riveting: circum. seams *lap 2 Rivets* long. seams *Double butt 5 Rivets*
Diameter of rivet holes in long. seams *1 1/16"* Pitch of rivets *9 1/2"* Lap of plates or width of butt straps *21" x 1 1/2"*
Per centages of strength of longitudinal joint rivets *88.4* Working pressure of shell by rules *224 lbs.* Size of manhole in shell *12" x 16"* plate *84.8*
Size of compensating ring *1/2" Neils* No. and Description of Furnaces in each boiler *Three Morrison's* Material *Steel* Outside diameter *41"*
Length of plain part *7' 10"* thickness of plates *19/32* Description of longitudinal joint *Weld* No. of strengthening rings *Carriages*
Working pressure of furnace by the rules *230 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *19/32"* Back *7/16"* Top *7/8"* Bottom *15/16"*
Pitch of stays to ditto: Sides *7 3/4"* Back *7 3/8"* Top *7 3/4"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *approved*
Material of stays *Steel* Diameter at smallest part *1 1/8"* Area supported by each stay *60 sq. in.* Working pressure by rules *approved* End plates in steam space:
Material *Steel* Thickness *1 1/16"* Pitch of stays *18 x 18 1/2"* How are stays secured *Double nuts* Working pressure by rules *295 lbs* Material of stays *Steel*
Diameter at smallest part *7 5/16"* Area supported by each stay *333 sq. in.* Working pressure by rules *202 lbs* Material of Front plates at bottom *Steel*
Thickness *3/16"* Material of Lower back plate *Steel* Thickness *1/16"* Greatest pitch of stays *15"* Working pressure of plate by rules *approved*
Diameter of tubes *3 1/2"* Pitch of tubes *4 3/4" x 4 7/8"* Material of tube plates *Steel* Thickness: Front *13/16"* Back *7/8"* Mean pitch of stays *9 3/8"*
Pitch across wide water spaces *14 1/2"* Working pressures by rules *315, 215 lbs* Girders to Chamber tops: Material *Iron* Depth and thickness of girder at centre *7 1/2" x 2 x 1"* Length as per rule *26 1/2"* Distance apart *8 3/16"* Number and pitch of Stays in each *2 x 7 3/4"*
Working pressure by rules *248 lbs* 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
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

GRW 332-0074

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DONKEY BOILER— Description *See Supplementary report*
 Made at *Glasgow* By whom made *J. J. Jackson* When made *1895* Where fixed *in Deck house*
 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
 Diameter of donkey boiler Length Material of shell plates Thickness
 Description of riveting long. seams Diameter of rivet holes Whether punched or drilled Pitch of rivets
 Lap of plating Per centage of strength of joint Rivets plates 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:— *As required by the rules, also one propeller and safety valve springs*

The foregoing is a correct description, *See Supplementary Report.*
 Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines and boilers have been built under the conditions of special survey, they have been securely fitted on board and satisfactorily tested under steam.*

The material and workmanship are good.

In my opinion this vessel is eligible for the record + L.M.C. 10.95.

I beg to draw attention to the sizes of the safety valves of the main boiler their total area amounts to 0.178 sq. inch per square foot of grate surface.

It has been pointed out to the builders that unless a draincock is fitted to the main steam pipe that there is danger of a mishap if the stop valves are carelessly opened, and they have sent instructions to the engineer to have a draincock fitted. The Cardiff Surveyors have been advised.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 10.95.

subject to a drain cock being fitted to the main steam pipe. The Colombo Surveyor to be advised.

J.S.
18.10.95.

Certificate (if required) to be sent to

The amount of Entry Fee.. £ *3* : " : *9/10/95*
 Special £ *34* : *10* : "
 Donkey Boiler Fee £ " : " : "
 Travelling Expenses (if any) £ " : " : "

MACHINERY CERTIFICATE

When applied for, *9/10/95*
 When received, *10/10/95*

C. J. Brownlee.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 18 OCT 1895

FRI. 1 NOV 1895

Assigned

+ L.M.C. 10.95 subject



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