

REPORT ON MACHINERY.

No. 14240

Port of *Glasgow*

SAT. MAR 7 1896

No. in Survey held at
Reg. Book.

Date, first Survey *17 May 1895* Last Survey *29 Feb 1896*

(Number of Visits *51*)

on the *SS. Daphne*
Master *Wm. McIntyre* Built at *Glasgow* By whom built *Scott & Sons*
Engine, made at *Glasgow* By whom made *Muir & Houston, Ltd.* when made *1896*
Boiler, made at *Glasgow* By whom made *Muir & Houston, Ltd.* when made *1896*
Re *90* Horse Power Owners *Mr. Robertson* Port belonging to *Glasgow*
Power as per Section 28 *61* *102 HP*

Tons { Gross *643*
Net *199*
When built *1896*

Description of Engines *Triple Expansion, Direct Acting* No. of Cylinders *Three*
Diameter of cylinders *16" - 24" - 42"* Length of Stroke *33"* Revolutions per minute *90* Diameter of Screw shaft as per rule *7.9"*
Diameter of Crank shaft journals *8"* Diameter of Crank pin *8"* Size of Crank webs *15 1/2" x 5 3/4"*
Pitch of screw *11" - 0"* No. of blades *Four* State whether moveable *No* Total surface *36 sq ft*
Diameter of ditto *2 1/2"* Stroke *16 1/2"* Can one be overhauled while the other is at work *Yes*
Diameter of ditto *3"* Stroke *16 1/2"* Can one be overhauled while the other is at work *Yes*
No. of Bilge pumps *Two* Sizes of Pumps *5 1/2" x 9 1/2" x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room *Three 2 1/2"* In Holds, &c. *Two - 2 1/2"*

No. of bilge injections *Two* sizes *3 1/2"* Connected to condenser, or to circulating pump *Yes* Is a separate donkey suction fitted in Engine room & size *Yes - 2 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 *Yes*
Are 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 *Hot Suctions* How are they protected *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 bilges *Yes*
When were stern tube, propeller, screw shaft, and all connections examined in dry dock *Before launching* Is the screw shaft tunnel watertight *No tunnel*
Is it fitted with a watertight door *Yes* worked from *Yes*

BOILERS, &c. — (Letter for record *S*) Total Heating Surface of Boilers *1550 sq ft.*
No. and Description of Boilers *One - Cylindrical Multitube* Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs*
Date of test *11-5-95* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *55 sq ft* No. and Description of safety valves to
each boiler *Two - Direct Spring* Area of each valve *5.9 sq in* Pressure to which they are adjusted *16.5 lbs* Are they fitted
with easing gear *Yes* Smallest distance between boilers or uptakes and bunkers or woodwork *12"* Mean diameter of boilers *14' - 0"*
Length *10' - 6"* Material of shell plates *Steel* Thickness *1 1/8"* Description of riveting: circum. seams *Lap Rivets Rivet long. seams Butt, Lap Rivet*
Diameter of rivet holes in long. seams *1 1/16"* Pitch of rivets *1 1/4"* Lap of plates or width of butt straps *18"*
Per centages of strength of longitudinal joint rivets *92.5%* Working pressure of shell by rules *161 lbs* Size of manhole in shell *16" x 12"*
Size of compensating ring *W. H. Ails* No. and Description of Furnaces in each boiler *Three - Plain* Material *Steel* Outside diameter *42"*
Length of plain part *5' - 0"* Thickness of plates *3 1/4"* Description of longitudinal joint *Double Strap Butt* No. of strengthening rings *Yes*
Working pressure of furnace by the rules *160 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *7/8"* Back *7/8"* Top *7/8"* Bottom *1 1/8"*
Pitch of stays to ditto: Sides *8 1/2" x 8"* Back *8 1/2" x 8"* Top *8 1/2" x 7 1/2"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *161 lbs*
Material of stays *Steel* Diameter at smallest part *1 1/4"* Area supported by each stay *68 sq in* Working pressure by rules *170 lbs* End plates in steam space:
Material *Steel* Thickness *3/4"* Pitch of stays *15" x 15"* How are stays secured *Nuts & Washers* Working pressure by rules *174 lbs* Material of stays *Steel*
Diameter at smallest part *4 3/4"* Area supported by each stay *225 sq in* Working pressure by rules *174 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"* Working pressure of plate by rules *170 lbs*
Diameter of tubes *3 1/2"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *5/8" x 3/4"* Back *5/8"* Mean pitch of stays *9 1/2"*
Pitch across wide water spaces *14 1/2"* Working pressures by rules *216 lbs* Girders to Chamber tops: Material *Iron* Depth and
thickness of girder at centre *8 1/2" x (1 x 2)* Length as per rule *39"* Distance apart *4 1/2"* Number and pitch of Stays in each *Four - 8"*
Working pressure by rules *160 lbs* Superheater or Steam chest; how connected to boiler *Yes* Can the superheater be shut off and the boiler worked
separately *Yes* Diameter *14"* Length *14"* Thickness of shell plates *3/4"* Material *Steel* Description of longitudinal joint *Butt* Diam. of rivet
holes *1 1/16"* Pitch of rivets *1 1/4"* Working pressure of shell by rules *161 lbs* Diameter of flue *14"* Material of flue plates *Steel* Thickness *3/4"*
If stiffened with rings *Yes* Distance between rings *14"* Working pressure by rules *174 lbs* End plates: Thickness *3/4"* How stayed *Yes*
Working pressure of end plates *174 lbs* Area of safety valves to superheater *174 lbs* Are they fitted with easing gear *Yes*

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DONKEY BOILER— Description *Vertical - Two Course Tubes*
Made at *Glasgow* By whom made *Muir & Houston* When made *1896* Where fixed *Stokehold*
Working pressure *Tested by hydraulic pressure to 140 lbs* No. of Certificate *2139* Fire grate area *12 sq ft* Description of safety valves *Direct Spring*
No. of safety valves *One* Area of each *4.4* Pressure to which they are adjusted *70 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *4'-8"* Length *9'-6"* Material of shell plates *Steel* Thickness *3/8"*
Description of riveting long. seams *Lap Rivet* Diameter of rivet holes *5/8"* Whether punched or drilled *Riveted* Pitch of rivets *3 1/2"*
Lap of plating *4 1/2"* Per centage of strength of joint *96%* Rivets *9/16"* Thickness of shell crown plates *5/8"* Radius of do. *4'-6"* No. of Stays to do. *None*
Dia. of stays *5/8"* Diameter of furnace Top *1'-0 1/2"* Bottom *1'-7"* Length of furnace *4'-10"* Thickness of furnace plates *7/8"* Description of joint *Lap Single Rivet* Thickness of furnace crown plates *7/8"* Stayed by *Shell crown* Working pressure of shell by rules *103 lbs*
Working pressure of furnace by rules *87 lbs* Diameter of uptake *10"* Thickness of uptake plates *7/8"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Two connecting rods top bottom end bolts & nuts; two main bearing bolts; set coupling bolts; set feed & bilge pump valves, bolts, nuts & set*

The foregoing is a correct description,
Muir & Houston Manufacturer.

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

The machinery of this vessel has been built under Special Survey, and in accordance with the Rules of this Society - It has been securely fitted on board, and worked satisfactorily under steam.
In my opinion it is eligible for record of + L.M.C. 2-96 in the Register Book.

Enclosed are two Forging Reports, and the approved boiler tracing.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 2-96.

W.S. *W.S.*
7.3.96 *7.3.96*

Certificate (if required) to be sent to *Glasgow*

| | | |
|--------------------------------|---------------|-------------------|
| The amount of Entry Fee.. | £ 1 : " : " | When applied for, |
| Special | £ 13 : 10 : " | 4/3/96 |
| Donkey Boiler Fee | £ " : " : " | When received, |
| Travelling Expenses (if any) £ | " : " : " | 5/3/96 |

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

Committee's Minute *TUES. MAR 10 1896*
Assigned *+ L.M.C. 2, 96*

White Supr.