

REPORT ON MACHINERY.

8109

No. 8109

No. in Survey held at

Reg. Book. *Port Glasgow*

Date, first Survey *23 March 1881* Last Survey *16 Decr 1881*

(Received in London Office *22/12/81*)

Master *S. S. Blyndale* Built at *Port Glasgow* When built *1881*

Engines made at *Port Glasgow* By whom made *Blackwood & Co. Ltd.* when made *1881*

Boilers made at *Donkey Boiler* By whom made *W. Watson* when made *1881*

Registered Horse Power *100* Owners *R. Mackill & Co.* Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Compound Inverted Direct Acting*
 Diameter of Cylinders *26 & 49* Length of Stroke *36"* No. of Rev. per minute *80* Point of Cut off, High Pressure *2 1/2* Low Pressure *2 1/2*
 Diameter of Screw shaft *9"* Diameter of Tunnel shaft *8 1/2"* Diameter of Crank shaft journals *9"* Diameter of Crank pin *9"* size of Crank webs *10x5"*
 Diameter of screw *12x0* Pitch of screw *16x0* No. of blades *Four* state whether moveable *yes* total surface *45 sq feet*
 No. of Feed pumps *Two* diameter of ditto *3 3/4"* Stroke *16"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *Two* diameter of ditto *4 1/2"* Stroke *16"* Can one be overhauled while the other is at work *yes*
 Where do they pump from *Engine Room, Storehold & Cargo Hold*
 No. of Donkey Engines *Two* Size of Pumps *4 1/2 x 9 Stroke* Where do they pump from *Surline pumps from*
Ballast Tanks. the other pumps from Sea & Bilges
 Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on *on side of bulkheads*
 No. of bilge injections *one* and sizes *3"* Are they connected to condenser, or to circulating pump *Circ pump*
 How are the pumps worked *by Levers Connected to crosshead*
 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 *on line*
 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 *bilge pipes at foot of P. Side* How are they protected *by sound Casement*
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *on Ship before vessel was launched*
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Deck Platform*

OILERS, &c.—

Number of Boilers *one* Description *Round Horizontal Multitubular*
 Working Pressure *85 lbs* Tested by hydraulic pressure to *170 lbs* Date of test *5th November 1881*
 Description of superheating apparatus or steam chest *Vertical Dome*
 Can each boiler be worked separately *—* Can the superheater be shut off and the boiler worked separately *no Superheater*
 To. of square feet of fire grate surface in each boiler *70 sq feet* Description of safety valves *Direct Spring*
 To. to each boiler *Two* area of each valve *17.72 sq* Are they fitted with easing gear *yes*
 To. of safety valves to superheater *—* area of each valve *—* are they fitted with easing gear *—*
 Smallest distance between boilers and bunkers or woodwork *5"*
 Diameter of boiler *11x6"* Length of boiler *15x0"* description of riveting of shell long. seams *lap tube* circum. seams *double*
 Thickness of shell plates *15/16"* diameter of rivet holes *1 3/16"* whether punched or drilled *punched* pitch of rivets *4 3/4"*
 Lap of plating *9"* per centage of strength of longitudinal joint *74* working pressure of shell by rules *86 lbs*
 Size of manholes in shell *16x12"* size of compensating rings *3 1/2 x 3 x 3/4"*
 No. of Furnaces in each boiler *Four* outside diameter *41"* length, top *6x0"* bottom *through*
 Thickness of plates *1/2" Steel* description of joint *butt strap* if rings are fitted *yes* greatest length between rings *6x0 to 6x12 feet*
 Working pressure of furnace by the rules *91 lbs*
 Combustion chamber plating, thickness, sides *1/2" Steel* back *—* top *1/2" Steel*
 Thickness of stays to ditto sides *8 1/4 x 8 1/4"* back *—* top *8 x 8 1/4"*
 Are stays fitted with nuts or riveted heads *Nuts on top & rivets on side* working pressure of plating by rules *94 lbs for sides & 112 lbs for top*
 Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *108 lbs*
 Thickness of plates in steam space, thickness *3/4"* pitch of stays to ditto *15 1/2 x 15 1/2"* how stays are secured *double nuts*
 Working pressure by rules *86 lbs* diameter of stays at smallest part *2 1/4"* working pressure by rules *99 lbs*
 Bottom plates at bottom, thickness *5/8" Steel* Back plates, thickness *—* greatest pitch of stays *—* working pressure by rules *—*

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Diameter of tubes $3\frac{1}{2}$ pitch of tubes $4\frac{3}{4} \times 4\frac{3}{4}$ thickness of tube plates, front $\frac{1}{16}$ back $\frac{1}{16}$ Steel
How stayed Stay Lugs pitch of stays $9\frac{1}{2} \times 9\frac{1}{2} \times 14\frac{1}{4}$ width of water spaces $5\frac{1}{2}$
Diameter of Superheater or Steam chest $4\frac{1}{2}$ length $4\frac{1}{2}$ height $4\frac{1}{2}$
Thickness of plates $\frac{1}{2}$ description of longitudinal joint double riveted diameter of rivet holes $\frac{13}{16}$ pitch of rivets 3
Working pressure of shell by rules $113\frac{1}{2}$ lbs Diameter of flue no flue thickness of plates —
If stiffened with rings — distance between rings — Working pressure by rules —
End plates of superheater, or steam chest; thickness $\frac{3}{4}$ How stayed Four 2" bar stays
Superheater or steam chest; how connected to boiler by neck piece

DONKEY BOILER— Description Round Upright
Made at Greenock By whom made W. Watson when made 1881
Where fixed in Stechale working pressure 50 lbs Tested by hydraulic pressure to 100 lbs No. of Certificate 44
Fire grate area 13 sq feet Description of safety valves Direct spring No. of safety valves one area of each 7.06 sq
If fitted with easing gear yes If steam from main boilers can enter the donkey boiler stop valve for it
Diameter of donkey boiler $5\frac{1}{2}$ length $11\frac{1}{2}$ description of riveting double & single
thickness of shell plates $\frac{3}{8}$ diameter of rivet holes $\frac{3}{4}$ whether punched or drilled punched
pitch of rivets $3\frac{1}{4}$ lap of plating $3\frac{1}{2}$ per centage of strength of joint 62
thickness of crown plates $\frac{7}{16}$ stayed by Four 1 1/2" bar stays & Uptake
Diameter of furnace, top $4\frac{1}{2}$ bottom $4\frac{1}{2}$ length of furnace $5\frac{1}{2}$
thickness of plates $\frac{3}{8}$ steel description of joint lap single
thickness of furnace crown plates $\frac{7}{16}$ steel stayed by bar stays & Uptake
Working pressure of shell by rules 69 lbs working pressure of furnace by rules 55 lbs
diameter of uptake $1\frac{1}{2}$ thickness of plates $\frac{3}{8}$ thickness of water tubes $\frac{3}{8}$ Lugs 10" diam

The foregoing is a correct description,
Prothblackwood & Gordon Manufacturer.
Greenock Manager

General Remarks (State quality of workmanship, opinions as to class, &c. The Engines & Boilers were constructed under Mr. Alcham's inspection. They have been fitted on board and tested under steam by me & in my opinion the quality of workmanship is good. The Machinery and Boilers are now in good order and safe working condition & eligible to be noted in the Register Book. **LLOYD'S M.C. 12.81.**

It is submitted that this vessel is eligible to have the notification & Lloyds M.C. recorded
M 22/12/81

Andrew G. Kern
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
Glasgow District

The amount of Entry Fee £ 3 : 4 : 4 received by me,
Special .. £ 15 : : :
Certificate (if required) .. £ Gratis 20/10/1881
To be sent as per margin.
(Travelling Expenses, if any, £ ..)

Committee's Minute Friday, December, 23rd, 1881.