

REPORT ON MACHINERY.

8109

No. 8109
 No. in Survey held at Port Glasgow Date, first Survey 23rd March 1881 Last Survey 11th Dec^r 1881
 Reg. Book. S. S. Plymudale
 Master R. B. Lawrence Built at Port Glasgow When built 1881
 Engines made at Port Glasgow By whom made Blackwood & Co. Ltd when made 1881
 Main Boilers made at Greenock By whom made W. Watson when made 1881
 Registered Horse Power 100 Owners R. Mackill & Co. Port belonging to Glasgow

(Received in London Office 22/12/81)
 Tons 972.31
608.49

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 2/3 Low Pressure 2.7
 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, Stevedores & 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 side of bulkheads
Engine room bulkheads always accessible yes
 No. of bilge injections one and sizes 3" Are they connected to condenser, or to circulating pump Cir^p 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 fore end of P. Side How are they protected by sound casing
 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"
 Thickness of plating 9" per centage of strength of longitudinal joint 74 working pressure of shell by rules 86 lbs
 Size of manholes in shell 10x17" 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 no greatest length between rings 6x0 to joint
 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 & riveted 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
 Thickness of 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 $9\frac{1}{2} \times 9\frac{1}{2} \times 14\frac{1}{2}$ width of water spaces $5\frac{1}{2}$
 Diameter of Superheater or Steam chest $4\frac{1}{2}$ length $4\frac{1}{2}$
 Thickness of plates $\frac{1}{2}$ description of longitudinal joint double rivet diameter of rivet holes $\frac{13}{16}$ pitch of rivets 3
 Working pressure of shell by rules $113\frac{1}{2}$ 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 47
 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
 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,
 W. Watson Manufacturer.
 Greenock

General Remarks (State quality of workmanship, opinions as to class, &c. The Engines & Boilers were constructed under Mr. Watson'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 & LLOYD'S M.C. recorded
 M 27/12/81*

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