

REPORT ON MACHINERY.

No. 5342

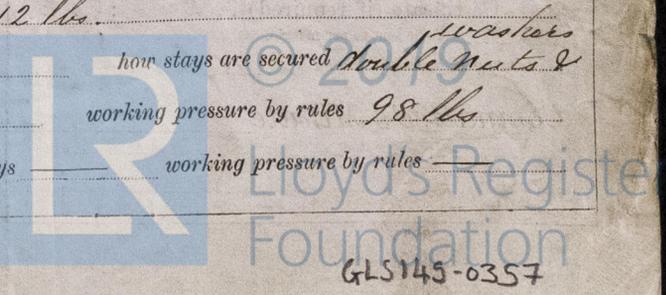
(Received in London Office 11/18/81)

No. in Survey held at Glasgow Date, first Survey 24th May 1880 Last Survey 8th April 1881
 Reg. Book. 1935-65
 on the S.S. "Glenarvon" Tons 2985.35

Master Capt. Taylor Built at Glasgow When built 1880 & 81
 Engines made at Glasgow By whom made Lauder & Glasgow Co. when made 1880
 Boilers made at " By whom made " when made 1880
 Registered Horse Power 530 Owners McGregor Gair & Co. Port belonging to Glasgow

ENGINES, &c.—
 Description of Engines Compound Inverted Direct Acting
 Diameter of Cylinders 48 & 88 Length of Stroke 4.6 No. of Rev. per minute 56 Point of Cut off, High Pressure 4.3 Low Pressure 4.0
 Diameter of Screw shaft 16 1/2 Diameter of Tunnel shaft 14 7/8 Diameter of Crank shaft journals 16 1/4 Diameter of Crank pins 16 1/4 size of Crank webs 18 1/2 x 12
 Diameter of screw 18.0 Pitch of screw 25.6 No. of blades Four state whether moveable yes total surface 88.0 feet
 No. of Feed pumps Two diameter of ditto 5 1/2 Stroke 3.0 Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two diameter of ditto 5 1/2 Stroke 3.0 Can one be overhauled while the other is at work yes
 Where do they pump from Engine Room, Hatchhole & Cargo Hold
 No. of Donkey Engines Two Size of Pumps 5 x 10 stroke Where do they pump from Sea, Hatch & Bilges
A Centrifugal pump draws from Ballast Tanks & Bilges
 Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes
 No. of bilge injections one and sizes 6" Are they connected to condenser, or to circulating pump to circulating 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 Valves & Cocks
 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 below
 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 & Ballast Tank pipe How are they protected by wood 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 Ship was launched
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Mid platform

BOILERS, &c.—
 Number of Boilers Three Description Round Horizontal Multitubular
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs per inch Date of test 5th November 1880
 Description of superheating apparatus or steam chest Round Horizontal Receiver
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no Superheater
 No. of square feet of fire grate surface in each boiler 94.6 sq feet Description of safety valves Direct spring
 No. to each boiler Two area of each valve 23.76 sq Are they fitted with easing gear yes
 No. of safety valves to superheater — area of each valve — are they fitted with easing gear —
 Smallest distance between boilers and bunkers or woodwork 3 feet from Deck
 Diameter of boilers 12.0 Length of boilers 18.0 description of riveting of shell long. seams Welded circum. seams Double
 Thickness of shell plates 3/32 diameter of rivet holes 1/16 in circum whether punched or drilled punched pitch of rivets 4 1/4
 Lap of plating 5" per centage of strength of longitudinal joint 70 working pressure of shell by rules 89 lbs
 Size of manholes in shell 16 x 12 size of compensating rings 4 x 3 x 1/2
 No. of Furnaces in each boiler 6 outside diameter 2.11 1/2 length, top 6.9 bottom through
 Thickness of plates 1/32 description of joint Double butt strap if rings are fitted half king greatest length between rings 4.9 bottom half king
 Working pressure of furnace by the rules 105 lbs
 Combustion chamber plating, thickness, sides 7/16 back no back top 1/2
 Pitch of stays to ditto sides 7 3/4 x 8 1/2 back — top 9 x 9
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 81 lbs for sides 94 lbs for top
 Diameter of stays at smallest part 1 1/4 working pressure of ditto by rules 112 lbs
 End plates in steam space, thickness 3/4 pitch of stays to ditto 16 x 13 1/2 how stays are secured Double nuts & washers
 Working pressure by rules 78.7 lbs diameter of stays at smallest part 2 1/8 working pressure by rules 98 lbs
 Front plates at bottom, thickness 5/8 Steel Back plates, thickness no back greatest pitch of stays — working pressure by rules —



5342 *egs*

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{1}{2}$ " thickness of tube plates, front $\frac{1}{16}$ " back $\frac{1}{8}$ "
 How stayed *Stay Tubes* pitch of stays $9\frac{1}{2} \times 11\frac{1}{2}$ " width of water spaces $6\frac{1}{2}$ "
 Diameter of Superheater or Steam chest $3\frac{1}{2}$ " length $18\frac{1}{2}$ "
 Thickness of plates $\frac{1}{16}$ " description of longitudinal joint *lap double* diameter of rivet holes $\frac{1}{16}$ " pitch of rivets $3\frac{1}{8}$ "
 Working pressure of shell by rules $188\frac{1}{2}$ lbs Diameter of flue — thickness of plates —
 If stiffened with rings — distance between rings — Working pressure by rules —
 End plates of superheater, or steam chest; thickness $5\frac{1}{8}$ " How stayed *by a 2" round bar stay*
 Superheater or steam chest; how connected to boiler *by neck piece*

DONKEY BOILER—

Description *Multitubular flat sided*
 Made at *Wigan* By whom made *Lindal & Wigan Co* when made *1880*
 Where fixed *on Main Deck* working pressure 50 lbs Tested by hydraulic pressure to 100 lbs per sq. in. No. of Certificate *388*
 Fire grate area $21\frac{1}{2}$ feet Description of safety valves *Direct Spring* No. of safety valves *Two* area of each $7\frac{1}{2}$ "
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*
 Diameter of donkey boiler $4\frac{1}{2}$ " length $9\frac{1}{2}$ " height $9\frac{1}{2}$ " description of riveting *double & single*
 thickness of shell plates $\frac{7}{16}$ " diameter of rivet holes $1\frac{3}{16}$ " whether punched or drilled *punched*
 pitch of rivets $2\frac{5}{8}$ & 2 " lap of plating $4\frac{1}{2}$ & 3 " per centage of strength of joint 69
 thickness of crown plates — stayed by —
 Diameter of furnace, top $3\frac{1}{2}$ " bottom — length of furnace $6\frac{1}{2}$ "
 thickness of plates $\frac{7}{16}$ " description of joint *double butt Strap*
 thickness of furnace crown plates — stayed by —
 Working pressure of shell by rules 84 lbs working pressure of furnace by rules 60 lbs
 diameter of uptake — thickness of plates — thickness of water tubes —

The foregoing is a correct description,

THE LONDON & LANCASHIRE
for J. Riches & Hughes Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *No. Engines & Boilers have been*
Carefully inspected by me during construction the workmanship is of
good quality & the Machinery & Boilers are now in good order & safe working
condition & are in my opinion eligible to be noted in the Register Book
 + **LLOYD'S M.C. 4.81.**

This submits that this vessel is eligible to have the notification & Lloyd's M.C. recorded in the Register Book
JM 11/4/81

The amount of Entry Fee .. £ 3 : " : " received by me,
 Special .. £ 46 : 10 : " viz £50.0.0
 Certificate (if required) .. £ " : " : " 9th April 1881
 To be sent as per margin.
 (Travelling Expenses, if any, £ 0.10.6)

Andrew L. Ham
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
Wigan District

Committee's Minute Tuesday April 12th 1881.

