

REPORT ON MACHINERY.

8103

(Received in London Office)

19/12/1881

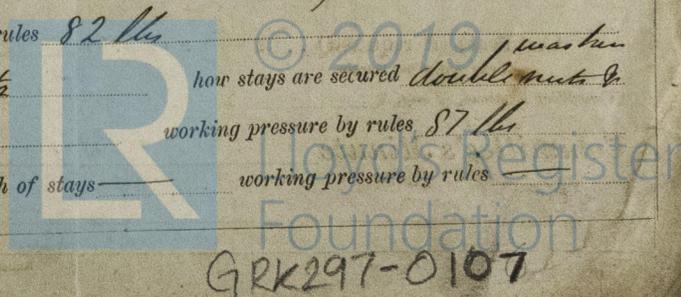
No. in Survey held at Greenock & Glasgow Date, first Survey 26th April 1881 Last Survey 14th December 1881
 on the S.S. "Solani" Tons 1573.38
 Built at Port Glasgow When built 1881
 By whom made Kinnaird & Macalister when made 1881
 By whom made H. Wallace & Co. when made 1881
 Owners Rochburn & Birrell Port belonging to Glasgow

ENGINES, &c.—

Description of Engines Compound Inverted Direct Acting
 Diameter of Cylinders 32 & 60 Length of Stroke 39" No. of Rev. per minute 65 Point of Cut off, High Pressure 24" Low Pressure 28"
 Diameter of Screw shaft 10 1/2 Diameter of Tunnel shaft 9 3/4 Diameter of Crank shaft journals 10 1/2 Diameter of Crank pin 10 1/2 size of Crank webs 12 1/2
 Diameter of screw 15.8 Pitch of screw 1 1/2 No. of blades Four state whether moveable yes total surface 58 sq feet
 Diameter of Feed pumps Two diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes
 Diameter of Bilge pumps Two diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes
 Where do they pump from Engine Room & Hold
 Diameter of Donkey Engines Two Size of Pumps both 5 1/2 x 10 stroke Where do they pump from Sea bilges & Tanks
 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
 Number of bilge injections one and sizes 4" Are they connected to condenser, or to circulating pump Circ pump
 How are the pumps worked by Lewis 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
 How are the pipes carried through the bunkers none How are they protected —
 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 Slip before ship was launched
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from top of 2nd Rear Stair

BOILERS, &c.—

Number of Boilers Three Description Round Horizontal Multitubular
 Working Pressure 75 lbs Tested by hydraulic pressure to 150 lbs per sq in Date of test 3rd November 1881
 Description of superheating apparatus or steam chest Horizontal Reciprocating
 Can each boiler be worked separately — Can the superheater be shut off and the boiler worked separately —
 Number of square feet of fire grate surface in each boiler 117 Description of safety valves Direct Spring
 Number to each boiler Four area of each valve 15.9 sq in Are they fitted with easing gear yes
 Number of safety valves to superheater no superheater area of each valve — are they fitted with easing gear —
 Smallest distance between boilers and bunkers or woodwork 7 1/2
 Diameter of boilers 13.0 Length of boilers 18.3 description of riveting of shell long. seams lap quadruple circum. seams double
 Thickness of shell plates 7/8" diameter of rivet holes 1 3/32 whether punched or drilled punched pitch of rivets 5 1/2
 Gap of plating 10 percentage of strength of longitudinal joint 78 working pressure of shell by rules 74 lbs
 Size of manholes in shell 10 3/4 x 12 size of compensating rings 6 x 16
 No. of Furnaces in each boiler Six outside diameter 40 length, top 6.6 bottom 8.9
 Thickness of plates 15/32 Steel description of joint double butt strap if rings are fitted yes bottom greatest length between rings 4.3
 Working pressure of furnace by the rules 74.5 lbs
 Combustion chamber plating, thickness, sides 15/32 Steel back 15/32 Steel top 1/2 Steel
 Pitch of stays to ditto sides 8 1/2 x 8 1/2 back 8 1/2 x 8 1/2 top 8 1/2 x 8 1/2
 Are stays fitted with nuts or riveted heads riveted with black nuts on top working pressure of plating by rules 77.8 lbs for back & sides 105 lbs for top
 Diameter of stays at smallest part 1 1/2 working pressure of ditto by rules 82 lbs
 End plates in steam space, thickness 1 1/2 pitch of stays to ditto 16 1/2 x 16 1/2 how stays are secured double nuts &c.
 Working pressure by rules 87 lbs diameter of stays at smallest part 2 1/4 working pressure by rules 87 lbs
 Front plates at bottom, thickness 1 1/2 Back plates, thickness — greatest pitch of stays — working pressure by rules —



Diameter of tubes $3\frac{3}{4}$ extth pitch of tubes 5×5 thickness of tube plates, front $\frac{11}{16}$ back $\frac{5}{8}$
 How stayed *Stay Tubes* pitch of stays $15 \times 10 \times 13 \times 17$ width of water spaces 6 to 9
 Diameter of Superheater or Steam chest $4\frac{1}{2}$ length $14\frac{1}{2}$
 Thickness of plates $\frac{7}{16}$ description of longitudinal joint *Lap double* diameter of rivet holes $\frac{13}{16}$ pitch of rivets $3\frac{1}{4}$
 Working pressure of shell by rules $111\frac{1}{2}$ 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 $\frac{5}{8}$ How stayed *No stays ever dished*
 Superheater or steam chest; how connected to boiler *by mesh pieces*

DONKEY BOILER— Description *Round Upright*
 Made at *Glasgow* By whom made *H. Wallace & Co* when made *1881*
 Where fixed *in Steadale* working pressure $75\frac{1}{2}$ Tested by hydraulic pressure to $150\frac{1}{2}$ No. of Certificate *667*
 Fire grate area 13 feet Description of safety valves *Direct opening* 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 *yes if stop valve is open*
 Diameter of donkey boiler 5.6 length *height* 10.6 description of riveting *double & single*
 thickness of shell plates $\frac{7}{16}$ diameter of rivet holes $\frac{13}{16}$ whether punched or drilled *punched*
 pitch of rivets $3\frac{1}{4}$ in vertical lap of plating $4\frac{1}{2}$ per centage of strength of joint 73
 thickness of crown plates $\frac{1}{2}$ steel stayed by *Four $1\frac{3}{4}$ bar stays & uptake*
 Diameter of furnace, top 3.11 bottom 4.5 height 5.3 length of furnace 5.3
 thickness of plates $\frac{7}{16}$ steel description of joint *Lap single*
 thickness of furnace crown plates $\frac{1}{2}$ steel stayed by *Four bar stays & uptake*
 Working pressure of shell by rules $75\frac{1}{2}$ working pressure of furnace by rules *Furnace stayed by two rows of*
 diameter of uptake $1.3\frac{1}{2}$ thickness of plates $\frac{7}{16}$ thickness of water tubes $\frac{3}{8}$ *Four tubes 10 diam*

The foregoing is a correct description,
Armed Donald Manufacturer's

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Engines were inspected during construction by Mr. Blake; the Boilers were constructed under my inspection: they have been fitted in board and tested under steam by me & in my opinion the quality of workmanship is good. The Machinery & Boilers are now in good order and safe working condition, and eligible to be noted in the Register Book.*
 ✠ LLOYD'S M.C. 13. 81.

It is submitted that this record is eligible to have the notification of Mr. M.C. recorded
19/12/81

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

The amount of Entry Fee £ 3 : : : received by me,
 Special .. £ 23 : 11 : :
 Certificate (if required) .. £ Gratis: 15/12/1881
 (Travelling Expenses, if any, £)

Committee's Minute *Tuesday, December, 20th, 1881.*