

REPORT ON MACHINERY.

No. 8004

(Received in London Office)

23/6/81

No. in Survey held at Greenock & P. Glasgow Date, first Survey Aug. 13th 80 Last Survey June 18th 81
 Reg. Book. 2022-61
 on the Hon. Screw Steamer "Laja" Tons 1335-44
 Master Pedro Lantrop Built at Port Glasgow When built 1881
 Engines made at Greenock By whom made Parkin & Blackmore when made 1881
 Boilers made at Greenock By whom made Parkin & Blackmore when made 1881
 Registered Horse Power 280 Owners Companhia Sud Americana de Navegacao Port belonging to Valparaiso

ENGINES, &c.—

Description of Engines Compound, Inverted, Direct-acting, Surface-condensing
 Diameter of Cylinders 45" & 80" Length of Stroke 54" No. of Rev. per minute 62 Point of Cut off, High Pressure Var. Low Pressure 5/8 stroke
 Diameter of Screw shaft 16" Diameter of Tunnel shaft 14 1/2" Diameter of Crank shaft journals 16" Diameter of Crank pin 14" size of Crank webs 18 1/2" x 11"
 Diameter of screw 16" 0" Pitch of screw 24" 0" No. of blades 4 state whether moveable Yes total surface 43 sq. ft.
 No. of Feed pumps 2 diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes
 Where do they pump from All compartments
 No. of Donkey Engines Three Size of Pumps 1-8" x 9" Where do they pump from Ballast tanks, Sea bilges and hotwell
 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 2 and sizes 3/4" Are they connected to condenser, or to circulating pump Circulating pump
 How are the pumps worked By levers from main crossheads
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves and 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 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 Tank pipes and bilge pipes How are they protected By wooden 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 Before being launched and in Glasgow Dry Dock 16/6/81
 Is the screw shaft tunnel watertight Stuffed with oakum and fitted with a sluice door worked from Top of E. Room

BOILERS, &c.—

Number of Boilers Four Description Round, horizontal, multitubular
 Working Pressure 75 lbs Tested by hydraulic pressure to 150 lbs Date of test 7th April & 19th April 81
 Description of superheating apparatus or steam chest Annular superheater
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately No
 No. of square feet of fire grate surface in each boiler 63 Description of safety valves Direct spring (Turbull's)
 No. to each boiler Two area of each valve 15.98 sq. inches Are they fitted with easing gear Yes
 No. of safety valves to superheater One area of each valve 70" are they fitted with easing gear Yes
 Smallest distance between boilers and bunkers on woodwork About 4"
 Diameter of boilers 14' 1" Length of boilers 9' 11 1/4" description of riveting of shell long. seams Double lap circum. seams Double lap
 Thickness of shell plates 1 1/8" diameter of rivet holes 1 5/16" whether punched or drilled Punched pitch of rivets 4 3/8"
 Lap of plating 9" per centage of strength of longitudinal joint 71 working pressure of shell by rules 79 lbs
 Size of manholes in shell 16 1/2" x 11" size of compensating rings 6 1/2" x 1 1/8" flat rings
 No. of Furnaces in each boiler Three outside diameter 3' 6" length, top 6' 6" bottom 8' 6"
 Thickness of plates 1/2" description of joint Double straps if rings are fitted No greatest length between rings —
 Working pressure of furnace by the rules 82 lbs
 Combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2" & 9/16"
 Pitch of stays to ditto — sides 8 3/4" x 8" back 8 3/4" x 4 1/2" top Girders 10" x 4 3/4"
 If stays are fitted with nuts or riveted heads Riveted, nuts on top working pressure of plating by rules 44 lbs (least)
 Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 91 lbs
 End plates in steam space, thickness 3/4" pitch of stays to ditto 15" x 14 1/2" how stays are secured Double nuts & washers
 Working pressure by rules 89 lbs diameter of stays at smallest part 2 1/8" working pressure by rules 96 lbs
 Front plates at bottom, thickness 3/4" Back plates, thickness 1 1/16" greatest pitch of stays 12 1/2" x 8 3/4" working pressure by rules 93 lbs

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{1}{4}$ " thickness of tube plates, front $3\frac{1}{4}$ " back $3\frac{1}{4}$ "
How stayed *Tubes* pitch of stays $14\frac{1}{16}$ " & $14\frac{1}{16}$ " width of water spaces $8\frac{1}{2}$ " between tubes.
Diameter of Superheater or Steam chest $10\frac{1}{2}$ " length $8\frac{1}{2}$ "
Thickness of plates $3\frac{1}{4}$ " description of longitudinal joint *Double* diameter of rivet holes $1\frac{1}{16}$ " pitch of rivets $4\frac{1}{8}$ "
Working pressure of shell by rules $7\frac{1}{2}$ lbs Diameter of flue $4\frac{1}{2}$ " thickness of plates $3\frac{1}{4}$ "
If stiffened with rings *no* distance between rings *—* Working pressure by rules $4\frac{1}{2}$ lbs
End plates of superheater, or steam chest; thickness $3\frac{1}{4}$ " How stayed *By shell & flue attached to angles*
Superheater or steam chest; how connected to boiler *By copper steam pipes.*
DONKEY BOILER— Description *Round horizontal, multitubular.*
Made at *Greenock* By whom made *R. Steele & Co.* when made *1881*
Where used *Over stokehold* working pressure *60 lbs* Tested by hydraulic pressure to *120 lbs* No. of Certificate *55*
Fire grate area *21.4 sq. ft.* Description of safety valves *Direct spring* No. of safety valves *Two* area of each *40"*
If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *no*
Diameter of donkey boiler $18\frac{1}{4}$ " length $8\frac{1}{2}$ " description of riveting *Treble lap.*
thickness of shell plates $9\frac{1}{16}$ " diameter of rivet holes $15\frac{1}{16}$ " whether punched or drilled *Punched before bedding.*
pitch of rivets $3\frac{3}{4}$ " lap of plating $6"$ per centage of strength of joint *75*
thickness of crown plates $7\frac{1}{16}$ " & $4\frac{1}{2}$ " stayed by *Tops of finches by girder stays*
Diameter of furnace, top $2\frac{1}{4}$ " bottom *—* length of furnace $5\frac{1}{2}$ "
thickness of plates $7\frac{1}{16}$ " & $4\frac{1}{2}$ " description of joint *Double straps*
thickness of furnace crown plates $7\frac{1}{16}$ " stayed by *—*
Working pressure of shell by rules 69 lbs working pressure of furnace by rules 116 lbs
diameter of uptake *—* thickness of plates *—* thickness of water tubes *—*

The foregoing is a correct description,
Rankin & Blackmore Manufacturers.

General Remarks (State quality of workmanship, opinions as to class, &c. *Workmanship and materials good.*

The engines and boilers have been inspected by me during construction, they are in good and efficient condition, and eligible in my opinion to be classed "LLOYD'S M.C.", and to be rated "6.81"

*This submitted that the vessel is eligible to have the notification of Lloyd's M.C. recorded
Jm 23/6/81*

The amount of Entry Fee .. £ *3 : 0 : 0* received by me, *Alfred H. Alchin*

Special .. £ *34 : 0 : 0*

Certificate (if required) .. £ *0 : 0 : 0* 21 June 1881

To be sent as per margin.

(Travelling Expenses, if any, £

Committee's Minute

Friday, June 21st 1881.

+ Lloyd's

Alfred H. Alchin
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Greenock.

Lloyd's Register
Foundation