

# REPORT ON MACHINERY.

5574  
No. in Survey held at Glasgow & Greenock Date, first Survey February Last Survey Oct 12 1881  
Reg. Book. 2977.93  
on the Screw Steamer Brins. Alexander Tons 1905.02  
Master M. C. Braat Built at Glasgow When built 1881  
Engines made at Glasgow By whom made W. & A. D. & Co. when made 1881  
Boilers made at Glasgow By whom made " " " " when made 1881  
Registered Horse Power 400 Owners Stoomvaart, Maats. Maats. Nederland Port belonging to Amsterdam

INES, &c.—

Description of Engines Compound Inverted Direct Acting  
No. of Cylinders 4 2" x 80" Length of Stroke 48" No. of Rev. per minute 40 Point of Cut off, High Pressure .65 Low Pressure .5  
Diameter of Screw shaft 15" Diameter of Tunnel shaft 14" Diameter of Crank shaft journals 15" Diameter of Crank pin 15 1/2" size of Crank webs 10 1/2"  
Diameter of screw 16 1/2" Pitch of screw 22 ft No. of blades four state whether moveable Yes total surface 40 ft  
No. of Feed pumps two diameter of ditto 4 3/4" Stroke 26" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps two diameter of ditto 4 3/4" Stroke 26" Can one be overhauled while the other is at work Yes  
Where do they pump from All the Compartments  
No. of Donkey Engines two Size of Pumps 9" x 9" x 5 1/2" Where do they pump from The Sea Bilge & Hotwell  
Fire Engines 8" x 8" x 4 3/8"  
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 two and sizes one 8" one 3 1/2" Are they connected to condenser, or to circulating pump To Circulating & Condenser  
How are the pumps worked By Levers  
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 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 Bilge pipes to Forehold How are they protected By wood 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 previous to being launched  
Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper platform

BOILERS, &c.—

Number of Boilers two Description Round Horizontal  
Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 29.8.81  
Description of superheating apparatus or steam chest Vertical Annular with single tube  
Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately Yes  
No. of square feet of fire grate surface in each boiler 120 ft Description of safety valves Direct Spring (Cochburn's)  
No. to each boiler three area of each valve 25.96" Are they fitted with easing gear Yes  
No. of safety valves to superheater one area of each valve 4" are they fitted with easing gear Yes  
Smallest distance between boilers and bunkers or woodwork 10" to bunkers  
Diameter of boilers 13' 6" Length of boilers 16' 0" description of riveting of shell long. seams Double riveted circum. seams Double  
Thickness of shell plates 1 1/2" diameter of rivet holes 1 7/16" whether punched or drilled Drilled pitch of rivets 5 7/8"  
Lap of plating 10" per centage of strength of longitudinal joint 71% working pressure of shell by rules 80 lbs  
Size of manholes in shell 12" x 16" size of compensating rings Forged rings fitted  
No. of Furnaces in each boiler two outside diameter 3' 4" mean length, top 6' 6" bottom Through Furnaces  
Thickness of plates 7/2" description of joint " " if rings are fitted " " greatest length between rings " "  
Working pressure of furnace by the rules " "  
Combustion chamber plating, thickness, sides 9/16" back bottoms 9/16" top 9/16"  
Pitch of stays to ditto sides 8 1/2" x 8 1/2" back " " top 8 1/2" x 8 3/4"  
If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 106 lbs  
Diameter of stays at smallest part 1 3/8" working pressure of ditto by rules 102 lbs  
End plates in steam space, thickness 1 3/16" pitch of stays to ditto 14 1/2" x 15" how stays are secured By double nuts  
Working pressure by rules 105 lbs diameter of stays at smallest part 2 1/8" working pressure by rules 98 lbs  
Front plates at bottom, thickness 1 1/16" Back plates, thickness " " greatest pitch of stays " " working pressure by rules " "



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Diameter of tubes  $3\frac{1}{4}$ " pitch of tubes  $4\frac{3}{8} \times 4\frac{1}{2}$ " thickness of tube plates, front  $\frac{1}{16}$ " back  $\frac{1}{16}$ "  
How stayed *by tubes* pitch of stays  $13\frac{1}{2} \times 13\frac{1}{8} \times 8$ " width of water spaces  
Diameter of Superheater or Steam chest  $10\frac{1}{2}$ " length  $9\frac{1}{2}$ " high  
Thickness of plates  $\frac{1}{16}$ " description of longitudinal joint *Lap Rivet* diameter of rivet holes  $\frac{1}{16}$ " pitch of rivets  $4\frac{3}{4}$ "  
Working pressure of shell by rules  $44$  lbs Diameter of flue  $4\frac{1}{2}$ " thickness of plates  $\frac{1}{16}$ "  
If stiffened with rings *yes* distance between rings  $1\frac{1}{2}$ " Working pressure by rules  $312$  lbs T bars  $5 \times 3 \times 9$   
End plates of superheater, ~~on steam chest~~; thickness  $\frac{1}{16}$ " How stayed *Attached to the shell & flue by Stays*  
Superheater ~~on steam chest~~; how connected to boiler *by Copper pipes*  
DONKEY BOILER— Description *Round Horizontal with Single Furnace*  
Made at *Glasgow* By whom made *Gyall & Anderson* when made *1881*  
Where fixed *on main deck* working pressure *86* lbs Tested by hydraulic pressure to *160* lbs No. of Certificate *re*  
Fire grate area  $13.3$  ft<sup>2</sup> Description of safety valves *Direct Spring* No. of safety valves *Two* area of each  $6\frac{1}{2}$ "  
If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*  
Diameter of donkey boiler  $4$  ft length  $4\frac{1}{2}$ " description of riveting *Double & Single*  
thickness of shell plates  $\frac{1}{16}$ " diameter of rivet holes  $\frac{1}{8}$ " whether punched or drilled *Drilled*  
pitch of rivets  $4$ " lap of plating  $6\frac{3}{4}$ " per centage of strength of joint  $42\%$   
thickness of crown plates  $\frac{1}{16}$ " stayed by  $\frac{1}{16}$ "  
Diameter of furnace, top  $2\frac{1}{2}$ " bottom  $\frac{1}{16}$ " length of furnace  $5\frac{1}{2}$ "  
thickness of plates  $\frac{1}{16}$ " description of joint *Double Straps*  
thickness of furnace crown plates  $\frac{1}{16} + \frac{1}{16}$  bottom stayed by  $\frac{1}{16}$ "  
Working pressure of shell by rules *86* lbs working pressure of furnace by rules *99* lbs  
diameter of uptake  $\frac{1}{16}$ " thickness of plates  $\frac{1}{16}$ " thickness of water tubes  $\frac{1}{16}$ "

The foregoing is a correct description,  
*John Elder & Co* Manufacturer.  
*P. A. Bryce*

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines & Boilers are of good workmanship and are now in good order & safe working condition and eligible in our opinion to be not noted in the Register*  
*Lloyds M.C. 10.81*

*It is submitted that this vessel is eligible to have the notifications & Lloyds M.C. recorded*  
*Mc 14/10/81*

The amount of Entry Fee  $\pounds 3$  : : : received by me,  
Special  $\pounds 40$  : : :  
Certificate (if required)  $\pounds$  : : : *12/10/81*  
To be sent as per margin.  
(Travelling Expenses, if any,  $\pounds$  : : :)

Committee's Minute Friday, October 14th 1881.  
*Lloyds M.C.*

*James Morrison* *McGregor*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

*Clyde District*

Lloyd's Register  
Foundation