

# REPORT ON MACHINERY.

Port of Glasgow

Received at London Office SAT, 2 NOV 1895

No. in Survey held at Glasgow Date, first Survey 8<sup>th</sup> January Last Survey 29<sup>th</sup> Oct<sup>r</sup> 1895  
Reg. Book. P.S. Prins Hendrik (Number of Visits 40)

Master. Built at Glasgow By whom built Fairfield S. B. & Eng. Coy L<sup>d</sup> When built 1895  
Tons { Gross 1869  
Net 452

Engines made at Glasgow By whom made Fairfield S. B. & Eng. Coy L<sup>d</sup> when made 1895

Boilers made at Glasgow By whom made Fairfield S. B. & Eng. Coy L<sup>d</sup> when made 1895

Registered Horse Power 1350. Owners Zeeland Stoomvaart Maatschappij Port belonging to Amsterdam  
Nom. Horse Power as per Section 28 1177

**ENGINES, &c.** — Description of Engines Diagonal Triple Exp<sup>n</sup> No. of Cylinders Three

Diameter of Cylinders 51, 45 & 112 Length of Stroke 78 Revolutions per minute 48 Diameter of Screw shaft as per rule  
Diameter of <sup>ring</sup> ~~Tunnel~~ shaft as per rule 23 Diameter of Crank shaft journals 21 Diameter of Crank pin 21 Size of Crank webs 13 1/2  
Diameter of <sup>wheel</sup> ~~screw~~ 22-6 1/2 Pitch of screw Flats 12-9 x 4-10 1/2 No. of <sup>Flats</sup> blades 9 State whether moveable Yes Total surface —  
No. of Feed pumps 2 Diameter of ditto 1 1/2 Stroke 20 Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 Diameter of ditto 8 Stroke 22 Can one be overhauled while the other is at work Yes  
No. of Donkey Engines Two Sizes of Pumps 7" x 10" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 5. 3" diameter 6" x 8" x 8" In Holds, &c. Aft. 2. 2 1/2" dia<sup>r</sup>. For<sup>d</sup> 3. 2 1/2" dia<sup>r</sup>

No. of bilge injections 1 sizes 22 Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes 5  
Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible —  
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 about  
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 — How are they protected —  
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock 26. 10. 95 Is the screw shaft tunnel watertight —  
Is it fitted with a watertight door — worked from —

**BOILERS, &c.** — (Letter for record (s)) Total Heating Surface of Boilers 18714 sq. ft.

No. and Description of Boilers 6. S.E. Multitubular Working Pressure 170 lbs Tested by hydraulic pressure to 340 lbs  
Date of test 23. 8. 95 Can each boiler be worked separately Yes Area of fire grate in each boiler 96. 83 No. and Description of safety valves to  
each boiler 2. direct act. Spring Area of each valve 14. 09 Pressure to which they are adjusted 173 lbs Are they fitted  
with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 18 Mean diameter of boilers 15-8  
Length 10-9 Material of shell plates steel Thickness 9/32 Description of riveting: circum. seams d. riv. lap long. seams d. butt str.  
Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 7/8 Lap of plates or width of butt straps 17 3/4  
Per centages of strength of longitudinal joint <sup>rivets</sup> 86.5 Working pressure of shell by rules 170 lbs Size of manhole in shell Ends 12" x 16"  
Size of compensating ring Hanged in. No. and Description of Furnaces in each boiler 4. Fox's Material steel Outside diameter 44  
Length of <sup>top</sup> ~~plain~~ part 37-6 Thickness of plates <sup>crown</sup> 3 1/2 Description of longitudinal joint welded No. of strengthening rings —  
Working pressure of furnace by the rules 171 lbs. Combustion chamber plates: Material steel Thickness: Sides 9/16 Back 9/16 Top 9/16 Bottom 13/16  
Pitch of stays to ditto: Sides 7 1/2 Back 7 1/2 x 7 5/8 Top 7 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 193 lbs  
Material of stays steel Diameter at <sup>smallest</sup> part 2 3/8 Area supported by each stay 56. 25 Working pressure by rules 170 lbs End plates in steam space:  
Material steel Thickness 15/16 Pitch of stays 15 1/8 How are stays secured d. nuts Working pressure by rules 174 lbs Material of stays steel  
Diameter at smallest part 2 3/8 Area supported by each stay 228 Working pressure by rules 173 lbs Material of Front plates at bottom steel  
Thickness 3/4 Material of Lower back plate steel Thickness 19/32 Greatest pitch of stays 12" dbl. Working pressure of plate by rules 170 lbs  
Diameter of tubes 2 5/8 Pitch of tubes 3 3/4 & 3 5/8 Material of tube plates steel Thickness: Front 5/8 Back 5/8 Mean pitch of stays 7 1/2  
Pitch across wide water spaces 13 1/2 Working pressures by rules 170 lbs by 6/16 Girders to Chamber tops: Material steel Depth and  
thickness of girder at centre 8 x 1 3/8 Length as per rule 30 Distance apart 7 1/2 Number and pitch of Stays in each 3. 7 1/2  
Working pressure by rules 170 lbs. Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked  
separately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet  
holes — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —  
If stiffened with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —  
Working pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —

If not, state whether, and when, one will be sent on the hull of the ship?

L.R. Form No. 5. (1894) Copyable.



14051 *yes*

**DONKEY BOILER**— Description *Vertical with cross tubes*  
 Made at *Paisley* By whom made *Bow, McLachlan & Co* When made *1895* Where fixed *Stakehold*  
 Working pressure *170 lbs* tested by hydraulic pressure to *340 lbs* No. of Certificate *3756* Fire grate area *22.3* Description of safety valves *d. spring*  
 No. of safety valves *2* Area of each *3.14* Pressure to which they are adjusted *170 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *6'-3"* Length *11'-6"* Material of shell plates *steel* Thickness *1/16*  
 Description of riveting long seams *lap quad. riv.* Diameter of rivet holes *15/16* Whether punched or drilled *drilled* Pitch of rivets *4 1/2"*  
 Lap of plating *7"* Per centage of strength of joint Rivets *77* Thickness of shell crown plates *1/2* Radius of do. *6'-0"* No. of Stays to do. *2 rows 3 curved stays*  
 Dia. of stays *2 1/4"* Diameter of furnace Top *4'-4"* Bottom *5'-4"* Length of furnace *5'-0"* Thickness of furnace plates *5/8* Description of joint *weld* Thickness of furnace crown plates *5/8* Stayed by *as above* Working pressure of shell by rules *170 lbs*  
 Working pressure of furnace by rules *140 lbs* Diameter of uptake *22"* Thickness of uptake plates *1/16 iron* Thickness of water tubes *3/8 iron*

**SPARE GEAR.** State the articles supplied:— *Connecting rod and Coupling bolts—*  
*Paddle wheel driving arm, two floats complete with brackets*  
*Feed and bilge pump valves etc—*

THE FAIRFIELD SHIPBUILDING AND ENGINEERING CO., LIMITED  
 The foregoing is a correct description,  
 Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *These engines and boilers have been built under Special Survey and are of good workmanship and material— they have been well fitted on board the vessel and on completion tried under steam with satisfactory results— The vessel is fitted with closed stokeholds, air being supplied by four engines working above.*)

*The machinery is now in our opinion in a good working order and eligible to be noted in the Society's Register: L.M.C. 10.95. & F.D.*

*Forging reports } Appended -*  
*Boiler prints }*

*It is submitted that this vessel is eligible for THE RECORD. L.M.C. 10.95 & F.D.*

*Wm. Sanderford*  
*2.11.95*

Certificate (if required) to be sent to *Glasgow*

The amount of Entry Fee..	£ 3 : 0 : 0	When applied for, 30/10/95
Special .. .. .	£ 48 : 14 : 0	
Donkey Boiler Fee .. .	£ : : :	When received, 5.11.1895
Travelling Expenses (if any) £	: : :	

*John Sanderford, James Morrison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *TUES. 5 NOV 1895*  
 Assigned *L.M.C. 10.95*



The Surveyors are requested not to write on or below the space for Committee's Minutes.