

# REPORT ON MACHINERY

ED. 4 APL 1900

Port of Glasgow

No. in Survey held at Paisley Date, first Survey 19 Decr 1898 Last Survey 27th March 1900

Reg. Book. on the vehicular S. Ferry Finnieston (4 screws) (Number of visits 50) Tons { Gross 263.91 Net 8.0

Master Built at Paisley By whom built Fleming & Ferguson Ltd When built 1899

Engines made at Paisley By whom made Fleming & Ferguson when made 1900

Boilers made at do By whom made do do when made 1900

Registered Horse Power Owners Clyde Navigation Trustees Port belonging to Glasgow

Com. Horse Power as per Section 28 61 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c. Description of Engines Two sets, Triple Expansion fore & aft screws to each set No. of Cylinders Six No. of Cranks 6

Dia. of Cylinders 10, 15 1/2 & 22 Length of Stroke 18" Revs. per minute 160 Dia. of Screw shaft as per rule 4.92" as fitted 5.0" Lgth. of stern bush 20 3/4"

Dia. of Tunnel shaft as per rule 2.45" as fitted 3" Dia. of Crank shaft journals as per rule 4.69" as fitted 5.0" Dia. of Crank pin 5 1/2" Size of Crank webs 9 1/2 x 3 1/2" Dia. of thrust shaft under

rollers 5 1/2" Dia. of screw 6-0" Pitch of screw 5-0" No. of blades 3 State whether moveable Solid Total surface 11 sq ft

No. of Feed pumps each set Diameter of ditto 1 3/4" Stroke 10" Can one be overhauled while the other is at work Yes

No. of Bilge pumps each set Diameter of ditto 1 3/4" Stroke 10" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 5 x 3 1/2 x 5 & 5 x 3 1/2 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps

in Engine Room Two 2 1/4" In Holds, &c. Four 2 1/4"

No. of bilge injections 1 sizes 6" Connected to condenser Yes to circulating pump Yes Is a separate donkey suction fitted in Engine room of size Yes 2"

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 Yes

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 None How are they protected Yes

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 26/3/00 Is the screw shaft tunnel watertight None

Is it fitted with a watertight door Yes worked from Yes

OILERS, &c. — (Letter for record S) Total Heating Surface of Boilers 1103 sq ft Is forced draft fitted No

No. and Description of Boilers Two Single Ended Working Pressure 160 lb Tested by hydraulic pressure to 320 lb

Date of test 8/8/99 Can each boiler be worked separately Yes Area of fire grate in each boiler 23 3/4 sq ft No. and Description of safety valves to

each boiler Two, Direct Spring Area of each valve 3-14-0 Pressure to which they are adjusted 160 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean dia. of boilers 8-6" Length 9-0" Material of shell plates Steel

Thickness 3/4" Range of tensile strength 27/32 Are they welded or flanged Neither Descrip. of riveting: cir. seams Double R Lap long. seams Double R Butt

Diameter of rivet holes in long. seams 7/8" Pitch of rivets 6" Lap of plates or width of butt straps 12 7/8 x 5/8 outside

Per centages of strength of longitudinal joint plate 99.1 Working pressure of shell by rules 175 lb Size of manhole in shell 16" x 12"

Size of compensating ring McNeil's No. and Description of Furnaces in each boiler Two, Morrison Material Steel Outside diameter 33"

Length of plain part top 5 1/2" bottom 22" Thickness of plates crown 1 1/32 bottom 1 1/32 Description of longitudinal joint Welded No. of strengthening rings None

Working pressure of furnace by the rules 172 lb Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 1/16"

Pitch of stays to ditto: Sides 8 1/2 x 8" Back 8 1/2 x 8 1/2" Top 8 x 8" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 161 lb

Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 102 sq in Working pressure by rules 178 lb End plates in steam space:

Material Steel Thickness 13/16" Pitch of stays 15 3/4 x 14 1/2" How are stays secured Double nuts Working pressure by rules 162 lb Material of stays Steel

Diameter at smallest part 4.57" Area supported by each stay 228 sq in Working pressure by rules 199 Material of Front plates at bottom Steel

Thickness 13/16" Material of Lower back plate Steel Thickness 13/16" Greatest pitch of stays 13" Working pressure of plate by rules 200 lb

Diameter of tubes 3" Pitch of tubes 4 1/8" Material of tube plates Steel Thickness: Front 3/4" Back 1/16" Mean pitch of stays 10 3/4"

Pitch across wide water spaces 13" Working pressures by rules 268 lb Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 6 1/2 x 1 1/2" Length as per rule 25" Distance apart 8" Number and pitch of Stays in each Two, 8"

Working pressure by rules 184 lb Superheater or Steam chest; how connected to boiler None. 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



**DONKEY BOILER**— No. *ne.* Description ✓

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_

Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_

Descrip. of riveting long. seams \_\_\_\_\_ Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of Stays to do. \_\_\_\_\_

Dia. of stays. \_\_\_\_\_ Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_

Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *As required by the rules & the following, 2 propellers one pair crank pin brasses, one pair main bearing brasses, one set air pump valves, 4 guards & studs for air pump, one spring for each set of escape valves, 6 plain & 2 stay tubes &c.*

The foregoing is a correct description, *For Fleming & Ferguson, Ltd. Morrison*  
 Manufacturer.

Dates of Survey while building  
 During progress of work in shops— 1898:— Dec. 19. 1899:— Feb. 8. 9. 21. Mar. 8. 15. 27. Apr. 11. 14. 19. 20. May. 2. 10. 16. 18. 24. June. 1. 7. 19. 28. July. 18. 25.  
 During erection on board vessel— Aug. 5. 8. Sep. 6. 8. 14. 22. 28. Oct. 6. 13. 24. Nov. 1. 4. 14. 16. 24. Dec. 1. 5. 14. 18. 26. 1900:— Jan. 12. 15. Feb. 6. Mar. 1. 13. 19. 21. 27.  
 Total No. of visits *50* Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " *None.*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*In addition to the aforementioned propelling machinery, there is a set of Inverted Triple Expansion Engines 8", 12" & 18" diameter by 12" stroke used for raising & lowering the vehicle & passenger platform.*

*The machinery of this vessel has been built under special survey, the materials and workmanship being of good quality, it has been securely fitted on board, and satisfactorily tried under full steam.*

*In our opinion, the machinery of this vessel is now eligible for record of  $\times$  L.M.C. 3-00 (unred) in register book.*

*Boiler plan, Hoisting, & Electric Lighting reports now forwarded.*

It is submitted that this vessel is eligible for THE RECORD.  $\times$  L.M.C. 3.00. Elec. Light

Certificate (if required) to be sent to  
 (The Surveys are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee. £ 1 : : When applied for,  
 Special . . . . . £ 9 : 3 : 314/1900  
 Donkey Boiler Fee . . . . . £ : : :  
 Travelling Expenses (if any) £ : : :  
 When received, 5/4/10

*James Morrison*  
*George Murdoch*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI. 6 APL 1900*  
 Assigned *+ L.M.C. 3.00*

