

# REPORT ON MACHINERY.

9926

MON 30 JUNE 1890

Port of *Glasgow*

Received at London Office

No. *9926*

No. in Survey held at *Paisley*

Date, first Survey *20<sup>th</sup> August 1889* Last Survey *28<sup>th</sup> June 1890*

Reg. Book.

(Number of Visits *35*)

on the *Twin Screw Steamer "Duckenfield"*

Tons } Gross *912*  
Net *552*

Master *M. Witherpoon* Built at *Paisley*

By whom built *Fleming & Ferguson* When built *1890.*

Engines made at *Paisley* By whom made *Fleming & Ferguson* when made *1890.*

Boilers made at *Glasgow* By whom made *Anderson & Lyall* when made *1890.*

Registered Horse Power *150.* Owners *Jos. & Alex. Brown*

Port belonging to *Newcastle N.S.W.*

## ENGINES, &c.—

Description of Engines *Quadruple Expansion. Two Sets.* No. of Cylinders *4 each set.*

Diam. of Cylinders *13", 18", 25" & 36"* Length of Stroke *29"* Rev. per minute *90* Point of Cut off, High Pressure — Low Pressure —

Diameter of Screw shaft *7"* Diam. of Tunnel shaft *6 3/4"* Diam. of Crank shaft journals *7 1/2"* Diam. of Crank pin *7 1/2"* size of Crank webs *5" x 8 1/2"*

Diameter of screws *9-6"* Pitch of screws *15-0"* No. of blades *4* state whether moveable *sol.* total surface *25.5 sq ft*

No. of Feed pumps *One* diameter of ditto *3"* Stroke *14"* Can one be overhauled while the other is at work —

of Bilge pumps *One* diameter of ditto *3"* Stroke *14"* Can one be overhauled while the other is at work —

Where do they pump from *All Compartments*

No. of Donkey Engines *2* Feed-Size of Pumps *4 1/2" x 3" x 7"* Where do they pump from *Hotwell, sea, tanks & bilges.*  
*12" x 10 1/2" x 12"*

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*

of bilge injections *One* and sizes *3"* Are they connected to condenser, or to circulating pump *yes*

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 *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 stocks before launching*

Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper platform.*

Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper platform.*

## BOILERS, &c.—

No. of Boilers *Two* Description *Multitubular* Material *Steel.* Letter (for record) *S.*

Working Pressure *200 lbs.* Tested by hydraulic pressure to *400 lbs.* Date of test *16<sup>th</sup> April 1890.*

Description of superheating apparatus or steam chest *None*

Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately —

No. of square feet of fire grate surface in each boiler *46.* Description of safety valves *d. Spring* No. to each boiler *two*

Area of each valve *7"* Are they fitted with easing gear *yes* No. of safety valves to superheater — area of each valve —

Are they fitted with easing gear — Smallest distance between boilers and bunkers or *scowwork* *18"* Diameter of boilers *12' 6"*

Length of boilers *10' 0"* description of riveting of shell long. seams *d. butt straps 3 rows circum. seams* Lap joint *2 rows* Thickness of shell plates *1 3/8"*

Diameter of rivet holes *1 3/8"* whether punched or drilled *drilled* pitch of rivets *8 7/8" x 3 1/2"* Lap of plating *1' 10 1/4" x 6 1/2"*

Percentage of strength of longitudinal joint *84 1/2%* working pressure of shell by rules *200 lbs.* size of manholes in shell *16" x 12"*

No. of compensating rings *McNeill's* No. of Furnaces in each boiler *Three* Description of Furnaces *Purbed (Purvis)*

Inside diameter *2' 11 1/8"* length *6' 10"* thickness of plates *9/16"* description of joint *Welded* if rings are fitted —

Smallest length between rings — working pressure of furnace by the rules *231 lbs.* combustion chamber plating, thickness, sides *5/8"* back *19/32* top *5/8"*

Pitch of stays to ditto, sides *7 1/2" x 7 1/2"* back *7" x 6 3/4"* top *7 1/2" x 7 1/2"* stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by

rules *220 lbs.* Diameter of stays at smallest part *1 1/8"* working pressure of ditto by rules *241 lbs.* plates in steam space, thickness *7/8" + 3/4"*

Pitch of stays to ditto *15 1/2" x 14"* how stays are secured *D. nuts & washers* working pressure by rules *220 lbs.* diameter of stays at

smallest part *2 5/8"* working pressure by rules *200 lbs.* Front plates at bottom, thickness *3/4"* Back plates, thickness *3/4"*

Greatest pitch of stays *7" x 7"* working pressure by rules — Diameter of tubes *3 1/2"* pitch of tubes *4 3/4" x 4 3/4"* thickness of tube

plates, front *13/16"* back *13/16"* how stayed *S. Tubes.* pitch of stays *9 1/2" x 9 1/2"* width of water spaces *6" to 9"*

Diameter of Superheater or Steam chest — length — thickness of plates — description of longitudinal joint — diam. of rivet holes —

Pitch of rivets — working pressure of shell by rules — 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 — how stayed —

Superheater or steam chest; how connected to boiler —

Form No. 1-1890

Lloyd's Register Foundation

GLS160-0104

9926 ELS

**DONKEY BOILER**— Description *Vertical with cross tubes.*  
 Made at *Gateshead* by whom made *Clark, Chapman & Co* when made *1890* where fixed *Stokehold*  
 Working pressure *80 lbs.* tested by hydraulic pressure to *160 lbs.* No. of Certificate *3155* fire grate area *15 1/2* description of safety  
 valves *d. spring* No. of safety valves *one* area of each *7"* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *5'-6"* length *10'-0"* description of riveting *single & double*  
 Thickness of shell plates *13/32* diameter of rivet holes *13/16* whether punched or drilled *drilled* pitch of rivets *3"* lap of plating *4 1/2"*  
 per centage of strength of joint *72%* thickness of crown plates *9/16* stayed by *5 stays 1 3/8" dia*  
 Diameter of furnace, top *4'-2"* bottom *4'-7"* length of furnace *4'-0"* thickness of plates *9/16* description of joint *single riv lap*  
 Thickness of furnace crown plates *1/2"* stayed by *as shell crown* working pressure of shell by rules *96 lbs*  
 Working pressure of furnace by rules *90 lbs* diameter of uptake *14"* thickness of plates *2/8"* thickness of water tubes *3/8" iron*

**SPARE GEAR.** State the articles supplied:— *Top and bottom end bolts. Main  
 bearing bolts Coupling bolts. Bottom end branes—  
 Bilge, feed and donkey pump valves—  
 One propeller shaft and two propellers—*  
 The foregoing is a correct description,  
*Hemming & Frymson* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The above mentioned  
 engines and boilers have been built under  
 special survey and are now completed  
 onboard in a satisfactory manner and  
 the machinery is now in opinion  
 eligible to the notation: + L.M.C. 6.90.—*

*This vessel is fitted with the electric light  
 the dynamo and engine for same being  
 placed in the engine room. The double  
 wires are well insulated and carried along  
 in a proper casing. The arrangement is in  
 my opinion good and efficient &c.*

*It is submitted that this  
 vessel is eligible to have  
 + L.M.C. 6.90 recorded.  
 The vessel is fitted with the  
 electric light*

*John Sanderson & J. Stewart  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping*

The amount of Entry Fee .. £ *2* : : : received by me,  
 Special .. .. £ *22* : *10* :  
 Donkey Boiler Fee .. .. £ : : :  
 Certificate (if required) .. £ : : : *2.7.1890*  
 To be sent as per margin.

Committee's Minute  
*7003 1 July 1890  
 + L.M.C. 6.90*

*Glasgow*  
 Lloyd's Register  
 Foundation