

REPORT ON MACHINERY.

Bw 866
No. 16860

Port of Glasgow

SAT. 25 MAR 1899

Received at London Office

in Survey held at Glasgow
Book.

Date, first Survey 13 June 1898 Last Survey 20 March 1899
(Number of Visits 36)

on the Screw Steamer "Fred"

Tons } Gross
 } Net

Built at Kirkcubrighton By whom built R. Williamson & Sons When built 1899

es made at Glasgow By whom made Ross & Dunnean when made 1899

s made at Glasgow By whom made Ross & Dunnean when made 1899

tered Horse Power Owners T. G. Best Port belonging to Liverpool

Horse Power as per Section 28 72 Is Electric Light fitted No

ENES, &c.—Description of Engines Compound surface condensing No. of Cylinders Two No. of Cranks Two
ter of Cylinders 18" 36" Length of Stroke 24" Revolutions per minute 100 Diameter of Screw shaft as per rule 4.5"
ter of Tunnel shaft as per rule 6.8" Diameter of Crank shaft journals 7 1/4" Diameter of Crank pin 7 1/4" Size of Crank webs 10" x 4 1/2"
er of screw 8.3" Pitch of screw 11.4 1/2" No. of blades 4 State whether moveable No Total surface 26 Sq. feet
Feed pumps 1 Diameter of ditto 2 3/4" Stroke 12" Can one be overhauled while the other is at work ✓
Bilge pumps 1 Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work ✓
Donkey Engines One Sizes of Pumps 5 1/4" x 2 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps
In Room Two: 2" dia. In Holds, &c. One: 2" dia.

ge injections 1 sizes 3" Connected to condenser, or to circulating pump C. P. Is a separate donkey suction fitted in Engine room & size Yes: 2"
he 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
connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both
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
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
pes are carried through the bunkers ✓ How are they protected ✓
pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes
bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes
re stern tube, propeller, screw shaft, and all connections examined in dry dock See vessel Is the screw shaft tunnel watertight ✓
d with a watertight door ✓ worked from ✓

ES, &c.— (Letter for record £) Total Heating Surface of Boilers 13655 sq. ft. Is forced draft fitted No
Description of Boilers One cylinder, single ended Working Pressure 130 lbs Tested by hydraulic pressure to 260 lbs
st 16/12/98 Can each boiler be worked separately ✓ Area of fire grate in each boiler 40 1/2 sq. ft. No. and Description of safety valves to Two: direct spring
Area of each valve 5.4 sq. in. Pressure to which they are adjusted 135 lbs Are they fitted ✓
gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork Along 6 feet Mean diameter of boilers 12' 0"
Material of shell plates Steel Thickness 1 1/8" Description of riveting: circum. seams Lap double long. seams Butt straps
Pitch of rivets 5 1/4" Lap of plates or width of butt straps 1 1/8"
s of strength of longitudinal joint 95% Working pressure of shell by rules 136 lbs Size of manhole in shell 16" x 12"
ensating ring 6 1/2" x 1 1/8" No. and Description of Furnaces in each boiler 2: plain Material Steel Outside diameter 45"
lain part 6' 6" Thickness of plates 1 1/8" Description of longitudinal joint Welded No. of strengthening rings partial at bottom
essure of furnace by the rules 132 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/8" Back 1 1/8" Top 1 1/8" Bottom 1 1/8"
s to ditto: Sides 8' x 8" Back 8' x 8" Top 8' x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 135 lbs
stays Steel Diameter at smallest part 1 1/4" Area supported by each stay 64 sq. in. Working pressure by rules 154 lbs End plates in steam space: Steel
Thickness 7/8" Pitch of stays 16' x 16 1/2" How are stays secured By nuts & washers Working pressure by rules 137 lbs Material of stays Steel
smallest part 2 1/8" Area supported by each stay 264 sq. in. Working pressure by rules 142 lbs Material of Front plates at bottom Steel
Material of Lower back plate Steel Thickness 5/8" Greatest pitch of stays 12" Working pressure of plate by rules 255 lbs
tubes 3/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 7/16" Back 3/8" Mean pitch of stays 10' 6"
s wide water spaces 15 1/4" Working pressures by rules 137 lbs Girders to Chamber tops: Material Steel Depth and
girder at centre 6 1/2" x 1 1/2" Length as per rule 28' Distance apart 8' Number and pitch of Stays in each 2: 8"
essure by rules 137 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked
Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet
Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓
th rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓
ssure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

DONKEY BOILER— Description *None fitted.*

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 boiler _____

enter the donkey boiler _____ Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____

Description of riveting long. seams _____ Diameter 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 _____

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:— *2 main Bearing Bolts & nuts, 2 crank pin Bolts & nuts, 2 crosshead Bolts & nuts, 1 set Coupling & nuts, 1 set Feed & Bilge pump valves, a quantity of nuts & washers of various sizes, also Bars of iron of various sizes.*

The foregoing is a correct description,
James Duncan Manufacturer.

Dates of Survey while building { During progress of work in shops - 1898: June 13. 16. 23. July 4. 26. 28. Aug 3. 13. 20. 26. Sep. 2. 16. 23. Oct. 3. 6. 13. 18. 24. 31. Nov. 1. 15. 18. 25. Feb. 4. 6. 24. 27. Mar. 9. 14. 15. 17. 18. 20. }
 { During erection on board vessel - }
 Total No. of visits *36*

General Remarks (State quality of workmanship, opinions as to class, &c.)

ENGINES—Length of stern bush *2' 3"* Diameter of crank shaft journals *7 1/4"* as per rule *7 1/4"* as fitted *7 1/4"* Diameter of thrust shaft under collars *7 1/4"*

BOILERS—Range of tensile strength *27-32 tons* Are they welded or flanged *No.* **DONKEY BOILERS**—No. _____ Range of tensile strength _____

Is the approved plan of main boiler forwarded herewith *Yes.* Is the approved plan of donkey boiler forwarded herewith _____

The Engines and Boiler of this vessel have been under Special Survey and the materials and workmanship are good. When completed they were examined and worked satisfactorily.

The Machinery of this vessel is now in good and efficient condition and eligible in my opinion to the notation *L.M.C. 3.99.* marked in the Society's Register Book.

It is submitted that this vessel is eligible for THE RECORD. *L.M.C. 3.99.*

A.C.H.
27.3.99.
27.3.99.

The amount of Entry Fee £ *10*
 Special .. £ *16*
 Donkey Boiler Fee .. £ *1*
 Travelling Expenses (if any) £ *6*
(for Barrow)

When applied for, *24/3/99*
 When received, *1.4.99*

Committee's Minute

Assigned

TUES. 28 MAR 1899

+ L.M.C. 3.99

MACHINERY CERTIFICATE WRITTEN.

Wm. Austin
 Engineer Surveyor to Lloyd's Register of British & Foreign



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Lloyd's Register Foundation

Certificate (if required) to be sent to

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