

REPORT ON MACHINERY.

Port of *Glasgow*

FRI. 3 NOV 1899

Received at London Office

18

No. in Survey held at *Glasgow*
Reg. Book.Date, first Survey *8 Decr 1898* Last Survey *25 October 1899*
(Number of Visits *46*)on the *Screw Steamer "Adato"*Gross
Tons
NetMaster Built at *Glasgow* By whom built *H. Hamilton & Co.* When built *1899*Engines made at *Glasgow* By whom made *Dunsmuir & Jackson* when made *1899*Boilers made at *Glasgow* By whom made *Dunsmuir & Jackson* when made *1899*Registered Horse Power Owners *A. Neil & Co.* Port belonging to *Glasgow*Nom. Horse Power as per Section 28 *299* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *Three* No. of Cranks *Three*
 Diameter of Cylinders *24"-40"-65"* Length of Stroke *42"* Revolutions per minute *72* Diameter of Screw shaft *as per rule 11.89 12.4*
 Diameter of Tunnel shaft *as fitted 10.45 11.20* Diameter of Crank shaft journals *12 1/2"* Diameter of Crank pin *12 1/2"* Size of Crank webs *14 3/4" x 8 1/4"*
 Diameter of screw *16 1/2"* Pitch of screw *14 9/16"* No. of blades *4* State whether moveable *Yes* Total surface *79 sq. ft.*
 No. of Feed pumps *2* Diameter of ditto *3 3/4"* Stroke *21"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *4"* Stroke *21"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *Two* Sizes of Pumps *(6" x 4 1/2" x 6") (9" x 10" x 10")* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Four: 3 1/2" dia. 2"* In Holds, &c. *2 1/2" Hold: Two-3 1/2" dia. 2" Hold: 2-3 1/2" dia.*
2 1/2" Hold: Two-3 1/2" dia. 2" Hold: one-3 1/2" dia. 2" Tunnel well: *one-3 1/2" dia. 2"*
 No. of bilge injections *1* sizes *5"* Connected to condenser, or to circulating pump *C. P.* Is a separate donkey suction fitted in Engine room & size *Yes: 3 1/2"*
 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 *in vessel* Is the screw shaft tunnel watertight *Yes*
 Is it fitted with a watertight door *Yes* worked from *Pop platform*

BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers *4620 sq. ft.* Is forced draft fitted *No*
 No. and Description of Boilers *2 cyl. multi. Single ended* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*
 Date of test *8/9/99* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *63 1/2 sq. ft.* No. and Description of safety valves to
 each boiler *2: Direct Spring* Area of each valve *7.06 sq. in.* Pressure to which they are adjusted *185 lbs* Are they fitted
 with easing gear *Yes* Smallest distance between boilers or uptakes and bunkers or woodwork *Alt. 15"* Mean diameter of boilers *15'-6"*
 Length *10' 9"* Material of shell plates *Steel* Thickness *1 1/4"* Description of riveting: circum. seams *Lap Double* long. seams *Double Butt Strap*
 Diameter of rivet holes in long. seams *1 7/16"* Pitch of rivets *9 1/4"* 4-5-8. Lap of plates or width of butt straps *19 1/2"*
 Per centages of strength of longitudinal joint *87%* Working pressure of shell by rules *183 lbs* Size of manhole in shell *16" x 12"*
 Size of compensating ring *34" x 28 1/2" x 1 1/4"* No. and Description of Furnaces in each boiler *3: Doughton's* Material *Steel* Outside diameter *48"*
 Length of plain part *top 36' 9" bottom 36' 9"* Thickness of plates *top 1 1/2" bottom 1 1/2"* Description of longitudinal joint *Welded* No. of strengthening rings *-*
 Working pressure of furnace by the rules *180 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *5"* Back *19"* Top *5"* Bottom *3 1/4"*
 Pitch of stays to ditto: Sides *9' x 8 1/4"* Back *8' x 8"* Top *9' x 8 1/4"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *181 lbs*
 Material of stays *Steel* Diameter at smallest part *1 3/8" x 1 1/2"* Area supported by each stay *744 sq. in.* Working pressure by rules *185 lbs* End plates in steam space:
 Material *Steel* Thickness *1 1/6"* Pitch of stays *14' x 16 1/2"* How are stays secured *Double nut* Working pressure by rules *180 lbs* Material of stays *Steel*
 Diameter at smallest part *2 7/8"* Area supported by each stay *282 sq. in.* Working pressure by rules *184 lbs* Material of Front plates at bottom *Steel*
 Thickness *3/8"* Material of Lower back plate *Steel* Thickness *3/8"* Greatest pitch of stays *14 1/2"* Working pressure of plate by rules *192 lbs*
 Diameter of tubes *3 1/2"* Pitch of tubes *4 1/4" x 4 5/8"* Material of tube plates *Steel* Thickness: Front *1"* Back *3/8"* Mean pitch of stays *11 3/4"*
 Pitch across wide water spaces *14 1/2"* Working pressures by rules *182 lbs 197 lbs* Girders to Chamber tops: Material *Steel* Depth and
 thickness of girder at centre *3' x 2 1/6"* Length as per rule *20 1/2"* Distance apart *8 1/4"* Number and pitch of Stays in each *2' 9"*
 Working pressure by rules *194 lbs* 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—

Description

Cylindrical mult Single ended with 2 furnaces

Made at *Glasgow*

By whom made

Dunsmuir & Jackson

When made *8/9/99* Where fixed *In Larkhall*

Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *5146* Fire grate area *20* Description of safety valves *Over Spring*

No. of safety valves *2* Area of each *3.98* Pressure to which they are adjusted *95 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*

Diameter of donkey boiler *8' 6"* Length *8' 6"* Material of shell plates *Steel* Thickness *1/2"*

Description of riveting long. seams *Lap - Quadruple* Diameter of rivet holes *13/16"* Whether punched or drilled *Drilled* Pitch of rivets *4 1/2"*

Lap of plating *6 1/2"* Per centage of strength of joint *82.9* Rivets *82.9* Thickness of shell plates *32* Radius of do. *pitch* No. of Stays to do. *16*

Dia. of stays. *1 1/8"* Diameter of furnace *Top 30 1/8"* Bottom *28 1/8"* Length of furnace *5' 6"* Thickness of furnace plates *1/2"* Description of joint *held*

Thickness of *inner cover* plates *1/2"* Stayed by *18 stays* Working pressure of shell by rules *95 lbs*

Working pressure of furnace by rules *101 lbs* Diameter of *uptake* tubes *3"* Thickness of *uptake* plates *3/32"* Thickness of *water* tubes *1/4"*

SPARE GEAR. State the articles supplied:— *The list of spare gear required by the Rules is fitted*

on board, also the following articles: 1 Set valves for each pump in ship.

1 Set piston Rings for H.P. & L.P. pistons, 1 Spring for each size of escape valve, 1 Set of

piston valve packing Rings, 1 Propeller & shaft, 20 Condenser tubes, 20 Boiler tubes

6 Donkey Boiler tubes Iron & Bolts assorted sizes.

The foregoing is a correct description,

Dunsmuir & Jackson Manufacturer.

Dates During progress of work in shops— *1898: Dec. 8. 1899: Jan. 12. 23. 31. Feb. 2. 7. 13. 21. Mar. 10. 17. 22. 27. Apr. 12. 17. B. 24. May. 1. 11. 16.*
of Survey During erection on board vessel— *30. June. 1. 8. 20. 26. July. 5. 25. 29. Aug. 7. 14. 16. 25. 30. Sep. 1. 8. 21. 27. Oct. 2. 5. 9. 12. 13. 27. 18. 24.*
building Total No. of visits *46*

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

ENGINES—Length of stern bush *4' 4"* Diameter of crank shaft journals *as per rule 11 1/2"* Diameter of thrust shaft under collars *as fitted 12 1/2"*

BOILERS—Range of tensile strength *28-32 tons* Are they welded or flanged *No* **DONKEY BOILERS**—No. *1* Range of tensile strength *28-32*

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

The Engines and Boilers of this vessel have been built under special Survey and the materials and workmanship are good. When completed they were tried under steam and worked satisfactorily.

The Machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of *L.M.C. 10,99* marked in the Society's Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10.99.

Elec Lt.

3/11/99

The amount of Entry Fee. £ *3* : : When applied for. *27 Oct 99*
Special .. £ *34* : *19* : :
Donkey Boiler Fee .. £ : : : When received. *28 Oct 99*
Travelling Expenses (if any) £ : : : :

Committee's Minute

FRI. 3 NOV 1899

Assigned

MACHINERY CERTIFICATE WRITTEN

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



Lloyd's Register Foundation