

REPORT ON MACHINERY.

Port of *Glasgow.*

THUR, 3 FEB 1898

Received at London Office

No. in Survey held at *Glasgow.*Date, first Survey *29th Decr. 1896* Last Survey *28th January 1898.*Reg. Book. *Supp.*(Number of Visits *53*)28 on the *Screw Steamer "Lodes"*Tons { Gross *396*
Net *123*

Master

Built at *Workington*By whom built *R. Williamson & Son*When built *1898.*Engines made at *Glasgow*By whom made *Ross & Duncan*when made *1898.*Boilers made at *Glasgow*By whom made *Ross & Duncan*when made *1898.*

Registered Horse Power

Owners *Casbourne, Fowler & Co.*Port belonging to *Middlebrook.*Nom. Horse Power as per Section 28 *74.*Is Electric Light fitted *No.*

ENGINES, &c.—Description of Engines *Compound Surface Condensing* No. of Cylinders *Two* No. of Cranks *Two*
 Diameter of Cylinders *19" - 38"* Length of Stroke *24"* Revolutions per minute *110* Diameter of Screw shaft as per rule *4"*
 Diameter of ~~Tunnel~~ *Thrust* shaft as per rule *4"* as fitted *4 1/2"* Diameter of Crank shaft journals *4 1/2"* Diameter of Crank pin *4 1/2"* Size of Crank webs *14" x 5" built*
 Diameter of screw *9" 2"* Pitch of screw *12" 1 1/2"* No. of blades *4* State whether moveable *No* Total surface *32 1/2 sq ft.*
 No. of Feed pumps *One* Diameter of ditto *3"* Stroke *13 1/2"* Can one be overhauled while the other is at work *✓*
 No. of Bilge pumps *One* Diameter of ditto *3"* Stroke *13 1/2"* Can one be overhauled while the other is at work *✓*
 No. of Donkey Engines *One* Sizes of Pumps *6" x 4" x 6" duplex.* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Two: 2" dia.* In Holds, &c. *Two: 2" dia.*

No. of bilge injections *1* sizes *3 1/2"* Connected to condenser, or to circulating pump *cp.* Is a separate donkey suction fitted in Engine room & 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 *✓*
 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 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 *four vessel.* Is the screw shaft tunnel watertight *No tunnel.*
 Is it fitted with a watertight door *✓* worked from *✓*

BOILERS, &c.— (Letter for record *B.*) Total Heating Surface of Boilers *1300 sq. ft.* Is forced draft fitted *No.*

No. and Description of Boilers *One: Cyl. & Mult. Single ended* Working Pressure *115 lbs.* Tested by hydraulic pressure to *230 lbs.*
 Date of test *10/1/94* Can each boiler be worked separately *✓* Area of fire grate in each boiler *49 sq. ft.* No. and Description of safety valves to
 each boiler *Two: direct spring* Area of each valve *4.64 sq. in.* Pressure to which they are adjusted *120 lbs.* Are they fitted
 with easing gear *Yes.* Smallest distance between ~~boilers~~ *stays* and bunkers *9"* Mean diameter of boilers *12" 4 1/2"*
 Length *10' 0"* Material of shell plates *Steel* Thickness *3/8"* Description of riveting: circum. seams *Lap double long.* seams *0.13.8.*
 Diameter of rivet holes in long. seams *28"* Pitch of rivets *5 1/2"* *2 Rows* *1 Row* *2 3/4"* *Lap of plates* width of butt straps *14 3/4"*
 Per centages of strength of longitudinal joint *83.5%* Working pressure of shell by rules *118 lbs.* Size of manhole in shell *12" x 16"*
 Size of compensating ring *6" x 3/4"* No. and Description of Furnaces in each boiler *3: plain* Material *Steel* Outside diameter *34"*
 Length of plain part *top 6 1/4"* *bottom 9 1/4"* Thickness of plates *top 3/8"* *bottom 3/8"* Description of longitudinal joint *Welded.* No. of strengthening rings *one partial.*
 Working pressure of furnace by the rules *123 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *1/2"* Back *1/2"* Top *1/2"* Bottom *1/2"*
 Pitch of stays to ditto: Sides *8" x 8"* Back *8" x 8"* Top *8" x 7 1/2"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *120 lbs.*
 Material of stays *Steel* Diameter at smallest part *1 1/8"* Area supported by each stay *64 sq. in.* Working pressure by rules *126 lbs.* End plates in steam space:
 Material *Steel* Thickness *1/8"* Pitch of stays *16" x 16"* How are stays secured *by nuts & washers* Working pressure by rules *118 lbs.* Material of stays *Steel*
 Diameter at smallest part *2 1/8"* Area supported by each stay *260 sq. in.* Working pressure by rules *116 lbs.* Material of Front plates at bottom *Steel*
 Thickness *1/8"* Material of Lower back plate *Steel* Thickness *1/8"* Greatest pitch of stays *12 1/2"* Working pressure of plate by rules *194 lbs.*
 Diameter of tubes *3 1/2"* Pitch of tubes *4 1/2"* Material of tube plates *Steel* Thickness: Front *1/8"* Back *3/32"* Mean pitch of stays *11 1/4"*
 Pitch across wide water spaces *14"* Working pressures by rules *161 lbs.* *125 lbs.* Girders to Chamber tops: Material *Iron* Depth and
 thickness of girder at centre *6" x 1 1/2"* Length as per rule *26 1/2"* Distance apart *4 1/2"* Number and pitch of Stays in each *2: 8"*
 Working pressure by rules *128 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

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DONKEY BOILER— Description *Vertical with 3 cross water tubes.*
 Made at *Glasgow* By whom made *Marriott & Graham* When made *1894* Where fixed *In Stokenold.*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *4283* Fire grate area *9 1/2* Description of safety valves *Direct Spring.*
 No. of safety valves *One* Area of each *4 9/16* Pressure to which they are adjusted *85 lbs* If fitted with easing gear *Yes.* If steam from main boilers can enter the donkey boiler *No.* Diameter of donkey boiler *4 1/2* Length *9' 0"* Material of shell plates *Steel* Thickness *3/8*
 Description of riveting long. seams *Lap Double riveted* Diameter of rivet holes *1 1/16* Whether punched or drilled *Drilled* Pitch of rivets *2 3/4*
 Lap of plating *3 7/8* Per centage of strength of joint Rivets *85-5* Thickness of shell crown plates *1/2* Radius of do. *5 ft* No. of Stays to do. *None*
 Dia. of stays. *-* Diameter of furnace Top *44"* Bottom *47"* Length of furnace *5' 3"* Thickness of furnace plates *1 1/2* Description of joint *Lap Double* Thickness of furnace crown plates *1/2* Stayed by *Stayed* Working pressure of shell by rules *96 lbs*
 Working pressure of furnace by rules *83 lbs* Diameter of uptake *13"* Thickness of uptake plates *1/2* Thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *Two main Bearing Bolts & nuts, Two Crank pin Bolts & nuts, Two Crosshead Bolts & nuts, One set Coupling Bolt & nut, 1 set Feed & Bilge pump valves, 6 Boiler tubes; Bolts, Nuts, & Iron of various sizes, Spare propeller.*

The foregoing is a correct description,

James Duncan Manufacturer.

Dates of Survey { During progress of work in shops - - } 1896. Decr. 29. 1897. Jan'y. 13. 21. 25. 29. Feby. 3. 5. 10. 11. 12. 16. 17. 23. 26. Mar. 2. 4. 8. 11. 12. 17. 24. 31.
 { During erection on board vessel - - } April. 5. 7. 13. 20. 22. 26. 28. May. 19. 25. 27. 31. June. 2. 8. 10. 17. 26. 29. July. 7. 12. 28. Aug. 4. 11. 17. 18. 24. 1898. Jan. 18. 21.
 { Total No. of visits } 53

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

The engine and Boiler of this vessel have been built under special survey and the materials and workmanship are good. When completed they were run 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. 1, 98.** inserted in the Society's Register Book.*

It is submitted that
this vessel is eligible for
THE RECORD.

+ L.M.C. 1, 98

W. L.
3/2/98

The amount of Entry Fee. £ 1 : : When applied for.
 Special £ 11 : 2 : 31. 1. 1898.
 Donkey Boiler Fee £ : : : When received.
 Travelling Expenses (if any) £ : : 2. 2. 1898.

Committee's Minute

FRI, 4 FEB 1898

Assigned

Wm. Austin

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



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