

REPORT ON MACHINERY.

Port of *Glasgow.*Received at London Office **TUES. FEB 6 1900**No. in Survey held at *Glasgow.*
Reg. Book.Date, first Survey *4 July 1899* Last Survey *29 January 1900.*
(Number of Visits *31.*)on the *Screw Steamer Cal de Travers.*Tons { Gross *767.95*
Net *275.62*Master *Wm. Ivey.* Built at *Ayr*By whom built *S. McKnight & Co. Ltd.*When built *1900*Engines made at *Glasgow*By whom made *Ross & Duncan.*when made *1900*Boilers made at *Glasgow.*By whom made *Ross & Duncan.*when made *1900*

Registered Horse Power

Owners *John Harrison*Port belonging to *Glasgow.*Nom. Hors. Power as per Section 28 *116*Is Refrigerating Machinery fitted *No.*Is Electric Light fitted *No.*ENGINES, &c.—Description of Engines *Triple Expansion*No. of Cylinders *Three* No. of Cranks *Three*

Dia. of Cylinders *17 27 1/2 - 44"* Length of Stroke *33"* Revs. per minute *90* Dia. of Screw shaft *as per rule 8.6"* Lgth. of stern bush *36"*
 Dia. of Tunnel shaft *as per rule 3.8"* Dia. of Crank shaft journals *as per rule 8 1/4"* Dia. of Crank pin *9 1/2"* Size of Crank webs *16 1/2 x 5 1/2"* Dia. of thrust shaft under
 rollers *8 1/2"* Dia. of screw *11.6"* Pitch of screw *12 1/2"* No. of blades *4* State whether moveable *No* Total surface *44 Sq. ft.*
 No. of Feed pumps *2* Diameter of ditto *5"* Stroke *16 1/2"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *3 1/2"* Stroke *16 1/2"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *Two.* Sizes of Pumps *(3 1/2 x 5") (6 x 8 1/2 x 6")* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Two: 2 1/4" dia.* In Holds, &c. *Two: 2" dia.*

No. of bilge injections *1* sizes *4 1/2"* Connected to condenser, or to circulating pump *C.P.* Is a separate donkey suction fitted in Engine room & size *Yes: 2 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 *✓*
 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 *New Vessel* Is the screw shaft tunnel watertight *✓*
 Is it fitted with a watertight door *✓* worked from *✓*

BOILERS, &c.— (Letter for record *S.*) Total Heating Surface of Boilers *1830 Sq. ft.* Is forced draft fitted *No.*

No. and Description of Boilers *One: Cylindrical: Single ended. Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs.*
 Date of test *22/12/99* Can each boiler be worked separately *✓* Area of fire grate in each boiler *60 Sq. ft.* No. and Description of safety valves to
 each boiler *2: Direct Spring* Area of each valve *6.49"* Pressure to which they are adjusted *165 lbs.* Are they fitted with easing gear *Yes.*
 Smallest distance between boilers or uptakes and bunkers or woodwork *About 9"* Mean dia. of boilers *15' 0"* Length *10' 6"* Material of shell plates *Steel*
 Thickness *1 1/16"* Range of tensile strength *27-32 tons* Are they welded or flanged *No.* Descrip. of riveting: cir. seams *Lap Double* long. seams *Butt Straps*
 Diameter of rivet holes in long. seams *1 1/16"* Pitch of rivets *8"* Lap of plates or width of butt straps *14 1/2"*
 Per centages of strength of longitudinal joint *88%* Working pressure of shell by rules *169 lbs.* Size of manhole in shell *16" x 12"*
 Size of compensating ring *7' x 1 1/16"* No. and Description of Furnaces in each boiler *3: Deighton's Material Steel Outside diameter 48"*
 Length of plain part *top 6' 6"* Thickness of plates *bottom 3 1/4"* Description of longitudinal joint *Welded.* No. of strengthening rings *✓*
 Working pressure of furnace by the rules *141 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *19"* Back *32"* Top *32"* Bottom *8"*
 Pitch of stays to ditto: Sides *8 1/2" x 8 1/2"* Back *8 1/2" x 7 1/2"* Top *8 1/2" x 8"* If stays are fitted with nuts or riveted heads *Nuts.* Working pressure by rules *169 lbs.*
 Material of stays *Steel* Diameter at smallest part *1 3/8"* Area supported by each stay *72 1/4"* Working pressure by rules *164 lbs.* End plates in steam space:
 Material *Steel* Thickness *7/16"* Pitch of stays *16" x 16"* How are stays secured *By nuts and washers.* Working pressure by rules *163 lbs.* Material of stays *Steel*
 Diameter at smallest part *2 5/16"* Area supported by each stay *256"* Working pressure by rules *164 lbs.* Material of Front plates at bottom *Steel*
 Thickness *3/4"* Material of Lower back plate *Steel* Thickness *3/4"* Greatest pitch of stays *12 1/2"* Working pressure of plate by rules *362 lbs.*
 Diameter of tubes *3 1/2"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *15 1/4"* Back *4"* Mean pitch of stays *10.28"*
 Pitch across wide water spaces *14"* Working pressures by rules *161 lbs. 181 lbs.* Girders to Chamber tops: Material *Iron* Depth and
 thickness of girder at centre *7" x 2"* Length as per rule *29 1/2"* Distance apart *8"* Number and pitch of Stays in each *2: 8 1/2"*
 Working pressure by rules *144 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— No. *1* Description *Vertical with cross tubes*
 Made at *Stockton* By whom made *Riley Bros.* When made *16/12/99* Where fixed *In Stockton.*
 Working pressure *80 lb* Tested by hydraulic pressure to *160 lb* No. of Certificate *2118* Fire grate area *19.6* Description of safety valves *Direct Spring*
 No. of safety valves *1* Area of each *9.62* Pressure to which they are adjusted *82 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
 Dia. of donkey boiler *6' 0"* Length *10' 6"* Material of shell plates *Steel* Thickness *1/32"* Range of tensile strength *27-32 tons* Descrip. of riveting long. seams *D. Riv. Lap* Dia. of rivet holes *1/16"* Whether punched or drilled *P* Pitch of rivets *2 1/4"*
 Lap of plating *4 1/4"* Per centage of strength of joint *48* Rivets *48* Thickness of shell crown plates *1/32"* Radius of do. *5 ft* No. of Stays to do. *6*
 Dia. of stays. *1 1/2"* Diameter of furnace Top *4' 10"* Bottom *3' 5 1/8"* Length of furnace *59"* Thickness of furnace plates *1/32"* Description of joint *Lap* Thickness of furnace crown plates *1/32"* Stayed by *As above.* Working pressure of shell by rules *82*
 Working pressure of furnace by rules *91 lb* Diameter of uptake *15"* Thickness of uptake plates *1/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *2 main Bearing Bolts, 2 Crank pin Bolts, 2 Crosshead Bolts, 1 set Coupling Bolts, 1 set Feed & Bilge pump, 1 main Chest valve, 1 Donkey check valve, 3 Boiler tubes*

The foregoing is a correct description,

C. Ross & Lumsden Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1899:— July. 4. Aug. 1. 3. 14. 22. 28. Sep. 22. 28. Oct. 6. 13. 26. Nov. 3. 7. 10. 14. 21. 27. 30. Dec. 1. 7. 8. 21. 22. 28.*
 During erection on board vessel — *1900:— Jan. 8. 11. 17. 22. 23. 27. 29.*
 Total No. of visits *31.*

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

" " " donkey " " " *No.*

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

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

*The machinery is now in good and safe working condition and eligible in my opinion to have the record of **L.M.C. 1, 1900.** marked in the Society's Register Book.*

THE RECORD + LMC. 1.00.

Wm. R. Austin
6.2.00 6.2.00.

The amount of Entry Fee.. £ *2* : : When applied for, *5/2 1/4 1900.*
 Special .. £ *17* : *8* :
 Donkey Boiler Fee .. £
 Travelling Expenses (if any) £ *9* : *18* : *10* When received, *7.2.00*

Committee's Minute

Assigned

FRI. 9 FEB 1900

+ LMC. 1.00

MACHINERY CERTIFICATE
 WRITTEN.

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



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Lloyd's Register
 Foundation

Glasgow.

Certificate (if required) to be sent to

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