

REPORT ON MACHINERY.

Port of *Glasgow.*

WED. FEB 14 1900

Received at London Office

No. in Survey held at *Glasgow.*
Reg. Book.Date, first Survey *14. April 99*Last Survey *10 Feb 1900*(Number of Visits *49*)

on the

*Screw Steamer "Canganian"*Tons Gross *1142.67*Net *705.74*When built *1900*Master *Mr Evans.*Built at *Glasgow.*By whom built *Macrie & Thomson*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 *O & W. Williams*Port belonging to *Cardiff*Nom. Horse Power as per Section 28 *122*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 *14" 28" 45"* Length of Stroke *33"* Revs. per minute *44* Dia. of Screw shaft as per rule *9.15"* as fitted *9.5"* Lgth. of stern bush *39"*Dia. of Tunnel shaft as per rule *8.4"* as fitted *8.4"* Dia. of Crank shaft journals as per rule *8.4"* as fitted *9.4"* Dia. of Crank pin *9.4"* Size of Crank webs *14" x 6 1/2"* Dia. of thrust shaft under collars *9.4"* Dia. of screw *12.3"* Pitch of screw *13 ft. to 15 ft.* No. of blades *4* State whether moveable *No.* Total surface *5259 sq. ft.*No. of Feed pumps *2* Diameter of ditto *3 1/4"* 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 *6" x 6" (Korthington)* and size of Suctions connected to both Bilge and Donkey pumps *(9" x 9" x 12" Simpson & Lamont)*In Engine Room *Four: 2 1/4" dia.* In Holds, &c. *Fore Holds: Two - 2" dia. After**Hold: 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 *Awash.*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 *Yes.*Is it fitted with a watertight door *Yes.* worked from *Top platform*

BOILERS, &c.—

(Letter for record *\$.*)Total Heating Surface of Boilers *1835 sq. ft.*Is forced draft fitted *No.*No. and Description of Boilers *One: cylindrical multi. Single ended. Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs.*Date of test *1/12/99.* 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 *5.94 sq. in.* Pressure to which they are adjusted *180 lbs.* Are they fitted with easing gear *Yes.*Smallest distance between boilers or uptakes and bunkers or woodwork *About 12"* Mean dia. of boilers *15' 0"* Length *10' 6"* Material of shell plates *Steel*Thickness *1 1/2"* Range of tensile strength *27-32 tons* Are they welded or flanged *No.* Descrip. of riveting: cir. seams *Lap double long. seams D. Butt Sharp.*Diameter of rivet holes in long. seams *1.56"* Pitch of rivets *9"* Lap of plates or width of butt straps *19"*Per centages of strength of longitudinal joint rivets *83* plate *85* Working pressure of shell by rules *189 lbs.* Size of manhole in shell *16" x 12"*Size of compensating ring *6 1/2" x 1 1/2"* No. and Description of Furnaces in each boiler *3: Ribbed Material Steel* Outside diameter *45"*Length of plain part top *6' 3/2"* bottom *6' 3/2"* Thickness of plates crown *9"* bottom *7 1/2"* Description of longitudinal joint *Welded.* No. of strengthening rings *✓*Working pressure of furnace by the rules *181 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *32"* Back *32"* Top *32"* Bottom *16"*Pitch of stays 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 *191 lbs.*Material of stays *Steel* Diameter at smallest part *1 3/8"* Area supported by each stay *64 sq. in.* Working pressure by rules *185 lbs.* End plates in steam space:Material *Steel* Thickness *1"* Pitch of stays *16" x 16"* How are stays secured *D. L. knots washers* Working pressure by rules *185 lbs.* Material of stays *Steel*Diameter at smallest part *2 3/8"* Area supported by each stay *256 sq. in.* Working pressure by rules *183 lbs.* Material of Front plates at bottom *Steel*Thickness *3/8"* Material of Lower back plate *Steel* Thickness *3/4"* Greatest pitch of stays *15 1/2"* Working pressure of plate by rules *255 lbs.*Diameter of tubes *3 1/2"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *1"* Back *3/4"* Mean pitch of stays *10.28"*Pitch across wide water spaces *14"* Working pressures by rules *182 lbs. 195 lbs.* Girders to Chamber tops: Material *Iron* Depth andthickness of girder at centre *4 1/2" x 2 1/2"* Length as per rule *21.6"* Distance apart *8"* Number and pitch of Stays in each *3: 8"*Working pressure by rules *189 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. *One*. Description *Boehran's patent*.
Made at *Burkehead* By whom made *Boehran & Co* When made *9/9/99* Where fixed *In Stokerhold*
Working pressure *90 lb* tested by hydraulic pressure to *180 lb* No. of Certificate *1595* Fire grate area *218 sq ft* Description of safety valves *Direct Spring*
No. of safety valves *2* Area of each *3.98* Pressure to which they are adjusted *92 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *6' 6"* Length *14' 0"* Material of shell plates *Steel* Thickness *5/16"* Range of tensile strength
Descrip. of riveting long. seams *Double end Lap* Dia. of rivet holes *7/8"* Whether punched or drilled *Drilled* Pitch of rivets *3"*
Lap of plating *4 1/4"* Per centage of strength of joint Rivets *72%* Thickness of shell crown plates *7/16"* Radius of do. *3' 3"* No. of Stays to do. *4*
Dia. of stays. *1 1/2"* Diameter of furnace Top *2' 8"* Bottom *5' 4"* Length of furnace *Cumulative* Thickness of furnace plates *9/16"* Description of joint *Lap Single* Thickness of furnace crown plates *9/16"* Stayed by *Hemispherical* Working pressure of shell by rules *92 lb*
Working pressure of furnace by rules *105 lb* Diameter of uptake *17 x 19* Thickness of uptake plates *1/2"* Thickness of water tubes *1/2"*

SPARE GEAR. State the articles supplied:— *2 Main Bearing Bolts & nuts, 2 Crank pin Bolts & nuts, 2 Crosshead Bolts & nuts, 1 Set Coupling Bolts & nuts, 1 Set Feed & Bilge pump valves,*

The foregoing is a correct description,

James Duncan Manufacturer.

Dates of Survey while building
During progress of work in shops— *1899:— Apr. 14, 19, 24 May. 1, 5, 9, 19, 25, 31 July 4 Aug. 1, 3, 14, 22, 28 Sep. 22, 28 Oct. 6, 13, 26 Nov. 3, 7, 10, 14, 21, 27*
During erection on board vessel— *Dec. 1, 6, 7, 8, 11, 18, 15, 21, 22, 27, 28, 1900:— Jan. 8, 9, 11, 17, 23, 24, 26, 30, 31 Feb. 7, 8, 10*
Total No. of visits *19* Is the approved plan of main boiler forwarded herewith *Yes*
" " " donkey " " "

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 workmanship is good. When completed the vessel's machinery was tried under steam and on this occasion the Condenser leaked badly; at the conclusion of the trial the doors were taken off when thirteen of the studs securing the tube plates to the condenser ends were found broken. The defective studs were removed, new studs fitted, and on the following day the Condenser was tested by a head of water and found tight. Immediately after the test the machinery was again put on a full speed trial when everything worked satisfactorily.

The machinery is now in good and efficient order and eligible in my opinion to have the record of
L.M.C. 2, 1900. marked in the Society's Register Book.

It is submitted that
this vessel is eligible for
THE RECORD. *LMC 2.00*

AM.

R.S.
14.2.00

The amount of Entry Fee. . . £ *2 : . .* When applied for, *13/21/1900*
Special £ *18 : 6* : *24/2/1900*
Donkey Boiler Fee £ : : *23/2/1900*
Travelling Expenses (if any) £ : : *1/1/1900*

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

Committee's Minute

FRI. 16 FEB 1900

Assigned

+ LMC 2.00

MACHINERY CERTIFICATE
WRITTEN.



Lloyd's Register
Foundation