

REPORT ON MACHINERY

MON 28 FEB 1898

Port of Glasgow

Received at London Office _____

No. in Survey held at Glasgow
Reg. Book.

Date, first Survey 10th February 1897 Last Survey 18th February 1898

(Number of Visits 29)

on the S.S. "Lawmaline"

Tons { Gross
Net

Master P. Walsh

Built at Glasgow

By whom built J. Shearer & Son

When built 1898

Engines made at Glasgow

By whom made Muir & Houston Ltd.

when made 1898

Boilers made at Glasgow

By whom made Muir & Houston Ltd.

when made 1898

Registered Horse Power _____

Owners W. Robertson

Port belonging to Glasgow

Nom. Horse Power as per Section 28 102

Is Electric Light fitted Yes

ENGINES, &c.

Description of Engines Triple Expansion

No. of Cylinders Three

No. of Cranks Three

Diameter of Cylinders 16" - 26" - 42" Length of Stroke 33 Revolutions per minute 92 Diameter of Screw shaft 7.98
 Diameter of Water shaft as per rule 7.58 Diameter of Crank shaft journals 8" Diameter of Crank pin 8" Size of Crank webs 15 1/2" x 5 3/8"
 Diameter of screw 9" Pitch of screw 13'-0" No. of blades Four State whether moveable No Total surface 36 sq ft.
 No. of Feed pumps Two Diameter of ditto 2 1/2" Stroke 16 1/2" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps Two Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Two and size of Pumps 5 1/2" x 8 1/2" x 5" and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three - 2 1/2" In Holds, &c. Two - 2 1/2"

No. of bilge injections Two sizes 1 1/2" Connected to condenser, or to circulating pump Yes 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 None fitted
 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 Sold sections How are they protected Wood casings
 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 Before launching Is the screw shaft tunnel watertight No tunnel
 Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.

(Letter for record S)

Total Heating Surface of Boilers 1550 sq ft Is forced draft fitted No

No. and Description of Boilers One - Single Ended Working Pressure 160 lbs Tested by hydraulic pressure to 220 lbs
 Date of test 13-11-97 Can each boiler be worked separately Yes Area of fire grate in each boiler 55 sq ft No. and Description of safety valves to each boiler Two - Direct Spring Area of each valve 5.94 sq Pressure to which they are adjusted 165 lbs Are they fitted with easing gear Yes
 Length 10'-6" Material of shell plates Steel Thickness 1 1/8" Description of riveting: circum. seams Lap Rivet Rivet long. seams Rivet Rivet Rivet
 Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 1 3/4" Lap of plates or width of butt straps 18"
 Per centages of strength of longitudinal joint rivets 93.8 Working pressure of shell by rules 161 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring Mc Neil's No. and Description of Furnaces in each boiler Three - Plain Material Steel Outside diameter 42"
 Length of plain part top 5'-10" Thickness of plates crown 3/4" Description of longitudinal joint Weld No. of strengthening rings 5
 Working pressure of furnace by the rules 160 lbs Combustion chamber plates: Material Steel Thickness: Sides 7/16" Back 7/16" Top 7/16" Bottom 1 1/16"
 Pitch of stays to ditto: Sides 8 1/2" x 8" Back 8 1/2" x 8 1/2" Top 8" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 161 lbs
 Material of stays Steel Diameter at smallest part 1 1/2" x 1 1/2" Area supported by each stay 68 sq Working pressure by rules 170 lbs End plates in steam space:
 Material Steel Thickness 7/8" Pitch of stays 15" x 15" How are stays secured Nuts & Washers Working pressure by rules 174 lbs Material of stays Steel
 Diameter at smallest part 2 1/8" Area supported by each stay 225 lbs Working pressure by rules 174 lbs Material of Front plates at bottom Steel
 Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13" Working pressure of plate by rules 170 lbs
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 7/8" x 3/4" Back 7/8" Mean pitch of stays 9 1/2"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 160 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 8 1/2" x (1" x 2) Length as per rule 39" Distance apart 7 1/2" Number and pitch of Stays in each Four - 8"
 Working pressure by rules 160 lbs Superheater or Steam chest; how connected to boiler Yes 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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Lloyd's Register Foundation

DONKEY BOILER— Description *Vertical - Two Cross Tubes*
 Made at *Glasgow* By whom made *Muir & Houston Ltd* When made *1898* Where fixed *Stockholm*
 Working pressure *10 lbs* tested by hydraulic pressure to *140 lbs* No. of Certificate *4273* Fire grate area *10 sq ft* Description of safety valves *Direct Spring*
 No. of safety valves *One* Area of each *4 sq ft* Pressure to which they are adjusted *10 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
 Diameter of donkey boiler *4'-9"* Length *9'-6"* Material of shell plates *Steel* Thickness *3/8"*
 Description of riveting long seams *Lap Rivet Rivet* Diameter of rivet holes *5/16"* Whether punched or drilled *Drilled* Pitch of rivets *3/4"*
 Lap of plating *1/2"* Per centage of strength of joint *Rivets 96 Plates 41* Thickness of shell crown plates *5/16"* Radius of do *4'-6"* No. of Stays to do *None*
 Dia. of stays *1/2"* Diameter of furnace Top *3'-0 1/2"* Bottom *3'-7"* Length of furnace *4'-10"* Thickness of furnace plates *7/16"* Description of joint *Lap Rivet Rivet* Thickness of furnace crown plates *7/16"* Stayed by *Rivets* Working pressure of shell by rules *10 lbs*
 Working pressure of furnace by rules *8 1/2 lbs* Diameter of uptake *18"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Two connecting rod top end & two bottom end bolts & nuts; two main bearing bolts; set coupling bolts; set air circulating feed & barge pump valves, bolts nuts & c.*

The foregoing is a correct description,
Muir & Houston Ltd Manufacturer.

Dates of Survey while building
 During progress of work in shops: 1897:— Feb 10-23. Mar. 2, 5-18. April. 14-15-23-29-30. June. 1-2-9-11-14-15-24-29. July. 15-28. Aug. 20-21-28-30.
 During erection on board vessel: Oct. 11-28-30. Nov. 13-23-26-30. Dec. 6-9-16-25. 1898:— Jan. 13-18-27. Feb. 9-10-16-18.
 Total No. of visits *Thirty-nine*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been constructed under Special Survey, and is of good material and workmanship; it has been securely fitted on board, and worked satisfactorily under steam. In our opinion, it is eligible to have record + L.M.C. 2-98 in the Register Book.*

One Forging Report is appended; the approved photo print is retained for reference in the sister vessel now building.

It is submitted that this vessel is eligible for THE RECORD.
 + L.M.C. 2,98 Blue Light
 1/13/98

The amount of Entry Fee, . . . £ 2 : :
 Special £ 15 : 6 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 MACHINERY CERTIFICATE WRITTEN: 1913/58

R. J. P. [Signature]
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. 1 MAR 1898**
 Assigned + L.M.C. 2,98



GLASGOW.

Certificate (if required) to be sent to

Write 'Sheer Strake' opposite its corresponding letter.
 State a thickness way of Bott
 DOUBL
 Length and thickness
 POOP S
 RAISE
 BRIDGE
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