

# REPORT ON MACHINERY.

No. 12429

Port of Glasgow

THURS. 7 SEP 1893

No. in Reg. Book.

Survey held at Glasgow

Date, first Survey 8 Feb 1893 Last Survey 17 Sept 1893

Received at London Office

Number of Vents 3 1/2

on the

S.S. Olive

Tons } Gross 1141  
Net 381

Master W. M. Dougall Built at Glasgow By whom built J. & N. Henderson & Co When built 1893

Engines made at Glasgow By whom made J. & N. Henderson & Co when made 1893

Boilers made at Glasgow By whom made J. & N. Henderson & Co when made 1893

Registered Horse Power 368 Owners A. A. Laird & Coy Port belonging to Glasgow

Nom. Horse Power as per Section 28 368

ENGINES, &c.— Description of Engines Triple Expansion No. of Cylinders Three

Diameter of Cylinders 26, 42 & 68 1/2 Length of Stroke 45 Revolutions per minute 90 Diameter of Screw shaft 12 1/4

Diameter of Tunnel shaft 11 5/8 Diameter of Crank shaft journals 13 1/4 Diameter of Crank pin 13 1/4 Size of Crank webs 9" x 19"

Diameter of screw 13'-0" Pitch of screw 21'-0" No. of blades 4 State whether moveable Yes Total surface 66 sq ft

No. of Feed pumps 2 Diameter of ditto 3 5/8 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps double act. 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Wings & Centre 2 1/2 double act. 2 1/4 x 4" Holds, &c. Four Suctions 2 1/2 dia"

No. of bilge injections 1 sizes 6" 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 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 hold suction for How are they protected wood box

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 on stocks Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from upper platform

BOILERS, &c.— (Letter for record (S)) Total Heating Surface of Boilers 6348

No. and Description of Boilers Two Cylind. Double End. Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 29.6.93 Can each boiler be worked separately Yes Area of fire grate in each boiler 112 sq ft. No. and Description of safety valves to

each boiler Two Spring Area of each valve 12.56 Pressure to which they are adjusted 162 lbs Are they fitted

with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 8" below deck Mean diameter of boilers 13'-9 1/2"

Length 16'-9" Material of shell plates Steel Thickness 1 1/2 Description of riveting: circum. seams double butt lap long seams double butt

Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 8" x 4" Lap of plates or width of butt straps 22, 5 7/8 & 9"

Per centages of strength of longitudinal joint rivets 88.29 Working pressure of shell by rules 180 lbs Size of manhole in shell 12" x 16"

Size of compensating ring 34 x 30 x 1 1/2 No. and Description of Furnaces in each boiler 6 Pipes Material Steel Outside diameter 3'-7 1/8

Length of plain part top 6 bottom 8 Thickness of plates crown 9/16 bottom 9/16 Description of longitudinal joint welded No. of strengthening rings —

Working pressure of furnace by the rules 189 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16 Back — Top 9/16 Bottom 7/8

Pitch of stays to ditto: Sides 7 1/2 x 8 Back — Top 7 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 172 lbs

Material of stays Steel Diameter at smallest part 1 3/8 Area supported by each stay 56 Working pressure by rules 176 lbs End plates in steam space:

Material Steel Thickness 3/32 Pitch of stays 8 x 15 How are stays secured d. nuts Working pressure by rules 165 lbs Material of stays Steel

Diameter at smallest part 2 7/8 Area supported by each stay 270 Working pressure by rules 168 lbs Material of Front plates at bottom Steel

Thickness 13/16 Material of Lower back plate — Thickness — Greatest pitch of stays — Working pressure of plate by rules —

Diameter of tubes 3" Pitch of tubes 4 1/2 x 4 1/8 Material of tube plates Steel Thickness: Front 13/16 Back 13/16 Mean pitch of stays 12 7/8 x 8 1/2

Pitch across wide water spaces 13 1/2 Working pressures by rules 160 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 7 1/2 x 2 Length as per rule 37 1/2 Distance apart 7 1/2 Number and pitch of Stays in each 4. 7 1/2

Working pressure by rules 176 lbs Superheater or Reheat chest; how connected to boiler — 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 —

If a Report also sent on the Hull of the ship

Lloyd's Register of Shipping

GLS168-0045

12429 Gb

**DONKEY BOILER**— Description *Vertical*  
 Made at *Glasgow* By whom made *D. & W. Henderson & Co* When made *1893* Where fixed *For. Steer. hole*  
 Working pressure *65 lbs* tested by hydraulic pressure to *130 lbs* No. of Certificate *3405* Fire grate area *18.6* Description of safety valves *Spring*  
 No. of safety valves *2*. Area of each *4.9* Pressure to which they are adjusted *65 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *5'-6"* Length *12'-3"* Material of shell plates *Steel* Thickness *3/16*  
 Description of riveting long seams *A. Riv. lap* Diameter of rivet holes *7/8* Whether punched or drilled *drill*. Pitch of rivets *2 3/4*  
 Lap of plating *4 1/8* Per centage of strength of joint Rivets *66*. Thickness of shell crown plates *7/8* Radius of do. *5'-6"* No. of Stays to do. *7*.  
 Dia. of stays *2"* Diameter of furnace Top *4'-4 1/2"* Bottom *5'-0"* Length of furnace *6'-6"* Thickness of furnace plates *7/8* Description of joint *welded* Thickness of furnace crown plates *7/8* Stayed by *as above* Working pressure of shell by rules *128 lbs*  
 Working pressure of furnace by rules *100 lbs by stays* Diameter of uptake *16"* Thickness of uptake plates *1/2* Thickness of water tubes *3/16*

**SPARE GEAR.** State the articles supplied:— *Propeller blades studs & nuts. — One set coupling bolts, Main bearing bolts. Top and bottom end bolts. Feed & bilge pump valves. —*

The foregoing is a correct description.

*David W. Henderson* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The above mentioned engines and boilers have been built under special survey and are of good workmanship and material. They have been well fitted on board the vessel and tried under steam with satisfactory results. The vessel is now in my opinion eligible to the notation: L.M.C. 9.93. —*

*Appended Boiler print Forging Report.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 9.93 -

*Grice*  
7/9/93 -

Certificate (if required) to be sent to		<b>MACHINERY CERTIFICATE</b>	
The amount of Entry Fee..	£ 3 : "	WRITTEN	When applied for,
Special .. .. .	£ 38 : 8		30/8/93
Donkey Boiler Fee .. .	£ " : "		When received,
Travelling Expenses (if any) £	" : "		31/8/93

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

Committee's Minute  
Assigned

**FR 8 SEP 1893**  
+ L.M.C. 9.93



The Surveyors are requested not to write on or before the space for Committee's Minutes.