

REPORT ON MACHINERY.

No. 12429

Port of *Glasgow*

THURS. 7 SEP 1893

No. in Survey held at *Glasgow* Date, first Survey *8 Feb 1893* Last Survey *17 Sept 1893*
 Reg. Book. *S.S. Olive* Number of Vents *3 1/2*
 on the *S.S. Olive* Tons { Gross *1141* Net *381*
 Master *J. Mc 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 *12 7/8* 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 1/2* Pitch of screw *21 1/2* No. of blades *4* State whether moveable *Yes* Total surface *66 sq ft*
 No. of Feed pumps *2* Diameter of ditto *3 7/8* 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* In 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 1/2*
 Length *16 1/2* Material of shell plates *Steel* Thickness *1 1/4* 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 1/2, 5 7/8 & 9"*
 Per centages of strength of longitudinal joint *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 7/8*
 Length of plain part *6* Thickness of plates *9 1/16* 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 1/16* Back *—* Top *9 1/16* Bottom *7 1/8*
 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 1/32* 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 *3 1/16* 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 1/16* Back *13 1/16* 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 *170 lbs* Superheater or *Steam* 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 *—*

GLS168-0045

12429 Gb

DONKEY BOILER— Description *Vertical*
 Made at *Glasgow* By whom made *D. & W. Henderson & Co* When made *1893* Where fixed *For. Steamer*
 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 *9/16*
 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 *66* Rivets *68* 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 rules* Diameter of uptake *16"* Thickness of uptake plates *1/2* Thickness of water tubes *7/16*

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 —

Prob
7/9/93 —

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 3 :	When applied for,
Special	£ 38 : 8	<i>30/8/93</i>
Donkey Boiler Fee	£ " :	When received,
Travelling Expenses (if any) £	" :	<i>31/8/93</i>

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

Committee's Minute

FRI 8 SEP 1893

Assigned

+ L.M.C. 9.93

