

REPORT ON MACHINERY.

No. 25092

Received at London Office WED. SEP. 10. 1913

Date of writing Report 10 When handed in at Local Office 6.9.13 Port of Glasgow
 No. in Survey held at Reg. Book. Glasgow Date, First Survey 3.4.13 Last Survey Sept. 5th 1913
 15th Sep. on the J. J. "Malaspina" (Number of Visits 26)
 Master Bull at Dublin By whom built Dublin Dockyard 1st When built 1913
 Engines made at Glasgow By whom made David Rowan & Co. (2:602) when made 1913
 Boilers made at Glasgow By whom made David Rowan & Co. (2:602) when made 1913
 Registered Horse Power Owners Canadian Government Port belonging to
 Nom. Horse Power as per Section 28 161 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 16, 24 $\frac{1}{2}$, 40 Length of Stroke 30 Revs. per minute 160 Dia. of Screw shaft as per rule 8.45 $\frac{1}{8}$ Material of screw shaft as fitted 8 $\frac{3}{4}$ Material of screw shaft
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight in the propeller boss Yes If the liner is in more than one length are the joints burned — If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 3.0
 Dia. of Tunnel shaft as per rule 7.99 $\frac{1}{8}$ Dia. of Crank shaft journals as per rule 8.397 $\frac{1}{8}$ Dia. of Crank pin 8 $\frac{1}{2}$ Size of Crank webs 5 $\frac{1}{2}$ Dia. of thrust shaft under collars 8 $\frac{3}{4}$ Dia. of screw 9.6 Pitch of Screw 10.6 No. of Blades 4 State whether moveable No Total surface 31
 No. of Feed pumps 2 Diameter of ditto 7 $\frac{1}{2}$, 5 $\frac{1}{2}$ Stroke 15 Can one be overhauled while the other is at work Yes Wires
 No. of Bilge pumps 1 on engine Diameter of ditto 4 Stroke 6 Double acting Can one be overhauled while the other is at work Also 6 $\frac{1}{2}$ 7 15 Wires
 No. of Donkey Engines 3 Sizes of Pumps 6 7 6 x 6, 5 7 3 2 x 6, 7 5 2 1 5 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 at 2 In Holds, &c. 3 at 2 $\frac{1}{2}$
 No. of Bilge Injections 1 sizes 5 Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 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 Below
 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
 Dates of examination of completion of fitting of Sea Connections of Stern Tube of Screw shaft and Propeller Dublin Rpt.

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel David Cowill & Sons & Stewards & Lloyd's
 Total Heating Surface of Boilers 2700 Is Forced Draft fitted Yes No. and Description of Boilers One Single Ended
 Working Pressure 185 lbs Tested by hydraulic pressure to 370 lbs Date of test 9/7/13 No. of Certificate 12185
 Can each boiler be worked separately Area of fire grate in each boiler 78 No. and Description of Safety Valves to each boiler Cockburn Double Area of each valve 12.56 Pressure to which they are adjusted 184 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 15 Mean dia. of boilers 15.6 Length 11.6 Material of shell plates slit
 Thickness 1 $\frac{3}{8}$ Range of tensile strength 30 4 34. Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D. R. L.
 long. seams D. B. S. Diameter of rivet holes in long. seams 17/16 Pitch of rivets 9.625 Lap of plates or width of butt straps 21 $\frac{1}{4}$
 Per centages of strength of longitudinal joint rivets 91.4 Working pressure of shell by rules 228 lbs Size of manhole in shell 16 x 12
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 4 Dighton Material slit Outside diameter 3-7 $\frac{1}{16}$
 Length of plain part top Thickness of plates crown 17/32 Description of longitudinal joint wild No. of strengthening rings
 bottom Thickness of plates bottom 3/32 Working pressure of furnace by the rules 190 Combustion chamber plates: Material slit Thickness: Sides 23/32 Back 21/32 Top 23/32 Bottom 23/32
 Pitch of stays to ditto: Sides 8 $\frac{1}{2}$ x 10 Back 9 $\frac{3}{8}$ x 8 $\frac{1}{4}$ Top 8 $\frac{1}{2}$ x 10 $\frac{1}{2}$ If stays are fitted with nuts or riveted heads nuts Working pressure by rules 192 lbs
 Material of stays slit Diameter at smallest part 1.76 Area supported by each stay 89 Working pressure by rules 185 End plates in steam space:
 Material slit Thickness 1 $\frac{1}{32}$ Pitch of stays 20 $\frac{1}{2}$ x 16 $\frac{1}{2}$ How are stays secured 2 nuts Working pressure by rules 245 Material of stays slit
 Diameter at smallest part 7.06 Area supported by each stay 320 Working pressure by rules 216 Material of Front plates at bottom slit
 Thickness 7/8 Material of Lower back plate slit Thickness 13/16 Greatest pitch of stays 13 3/8 Working pressure of plate by rules 183
 Diameter of tubes 2 $\frac{1}{2}$ Pitch of tubes 3 3/4 x 3 3/8 Material of tube plates slit Thickness: Front 7/8 Back 1/16 Mean pitch of stays 9 7/8
 Pitch across wide water spaces 13 3/8 Working pressures by rules 187 Girders to Chamber tops: Material slit Depth and
 thickness of girder at centre 10 1/4 x 3/4 x 2 Length as per rule 32.6 Distance apart 10 1/2 Number and pitch of stays in each 3 at 8 1/2
 Working pressure by rules 185 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

W1514-0133

VERTICAL DONKEY BOILER— Manufacturers of Steel *Glasgow Iron & Steel Co^s*
 No. *1* Description *Cochran Patent - see Glasgow Reg. 2: 32815*
 Made at *Annan* By whom made *Cochran & Co. Annan* When made *1913* Where fixed *Sto. Rehold*
 Working pressure *100* tested by hydraulic pressure to *200* Date of test *6.6.13* No. of Certificate *12145* Fire grate area *11 3/4* Description of Safety
 Valves *Spring loaded* No. of Safety Valves *2* Area of each *3.74* Pressure to which they are adjusted *100 lb* Date of adjustment *26/8/13*
 If fitted with casing gear *Y.L.B.* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *4-9* height *10-3*
 Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams
 Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets
 Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays
 Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint
 Working pressure of furnace by rules Thickness of furnace crown plates Radius of do. Stayed by
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— *Two top end bolts, 2 bottom end bolts, 2 main bearing bolts, set of coupling bolts - all with nuts, feed & bilge pump valves, assorted iron, etc. Also propeller shaft, propeller, crosshead bush, crank pin bush, valve spindle, eccentric strap & sheave, etc.*

The foregoing is a correct description,

for *David Rowan & Co.* Manufacturer.

Dates of Survey while building
 During progress of work in shops -- *1913. Apr 3-5. 28. May 7. June 2. 14. 11. 23. 24. 26. 30. July 2. 14. 29. 30.*
 During erection on board vessel --- *Aug 1. 7. 12. 15. 18. 21. 22. 26. 29. Sept 2. 5.*
 Total No. of visits *26.*

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

Dates of Examination of principal parts—Cylinders *24/6/13* Slides *2/6/13* Covers *2/6/13* Pistons *2/6/13* Rods *2/6/13*
 Connecting rods *2/6/13* Crank shaft *11/6/13* Thrust shaft *11/6/13* Tunnel shafts *23/6/13* Screw shaft *24/6/13* Propeller *24/6/13*
 Stern tube *24/6/13* Steam pipes tested *7/8/13* Engine and boiler seatings *1/8/13* Engines holding down bolts *22/8/13*
 Completion of pumping arrangements *26/8/13* Boilers fixed *7/8/13* Engines tried under steam *29/8/13*
 Main boiler safety valves adjusted *26/8/13* Thickness of adjusting washers *S. 3/8 P. 3/8 bare*
 Material of Crank shaft *stl* Identification Mark on Do. *H.G.S.* Material of Thrust shaft *stl* Identification Mark on Do. *H.G.S.*
 Material of Tunnel shafts *stl* Identification Marks on Do. *J. H. H.* Material of Screw shafts *stl* Identification Marks on Do. *H.G.S.*
 Material of Steam Pipes *Copper* Test pressure *370 lbs.*

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

The engines & boilers of this vessel have been constructed under Special Survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

This vessel is in my opinion eligible to have notation *L.M.C. 9, 13.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.13.

F.D.

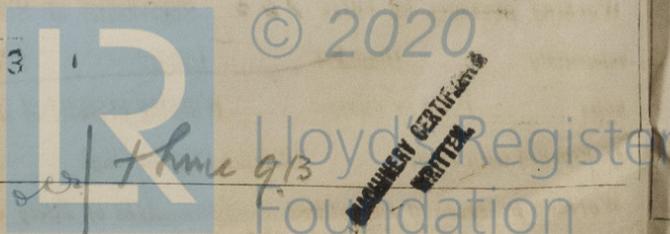
Handwritten signature and date 10/9/13

The amount of Entry Fee .. £ 2 : - :
 Special £ 24 : 3 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *2-9-13*
 When received, *4/9/13*

H. Gardner-Smith
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW** 9-SEP-1913 FRI. SEP. 12 1913

Assigned + L.M.C. 9, 13 } subject to classification of hull
F.D.



GLASGOW

Certificate (if required) to be sent to

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

Handwritten numbers 240 6/9/13