

REPORT ON MACHINERY.

No. 26478

Received at London Office THUR. 23 APL 1908

Date of writing Report *Apr 17th 1908* When handed in at Local Office *Apr 18th 1908* Port of *Glasgow*

No. in Survey held at *Glasgow* Date, First Survey *12th Aug 1907* Last Survey *April 15th 1908*
 Reg. Book. *99th on the* *J.J. Barcelona* (Number of Visits *36*)

Master *Chas. Connell & Co* Built at *Glasgow* By whom built *Chas. Connell & Co* When built *1908*

Engines made at *Glasgow* By whom made *David Rowan & Co (N^o 480)* when made *1908*

Boilers made at *do* By whom made *do* when made *1908*

Registered Horse Power *660* Owners *Pinillos, Izquierdo & Co* Port belonging to *Cadix*

Nom. Horse Power as per Section 28 *660* 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 *30.50.82* Length of Stroke *60* Revs. per minute *70* Dia. of Screw shaft *as per rule 17.5* Material of screw shaft *Steel*

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 *Yes* 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 *Painted* Length of stern bush *5.10*

Dia. of Tunnel shaft *as per rule 15.495* Dia. of Crank shaft journals *as per rule 16.266* Dia. of Crank pin *16.5* Size of Crank webs *11.5* Dia. of thrust shaft under collars *17* Dia. of screw *18.0* Pitch of Screw *23.0* No. of Blades *4* State whether moceable *No* Total surface *120*

No. of Feed pumps *2* Diameter of ditto *4.5* Stroke *30* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* Diameter of ditto *5* Stroke *30* Can one be overhauled while the other is at work *Yes*

No. of Donkey Engines *3* Sizes of Pumps *9x13x10, 8x5x8, 5x3x5* No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room *4-3.5* In Holds, &c. *2-3.5 each hold*

No. of Bilge Injections *1* sizes *7* Connected to condenser, or to circulating pump *Yes* Is a separate Donkey Suction fitted in Engine room & size *Yes-3.5*

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 *For Suctions* How are they protected *Wood covering*

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 *9* of Stern Tube *0* Screw shaft and Propeller *14/3/08*

Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Top grating*

BOILERS, &c.—(Letter for record *(5)*) Manufacturers of Steel

Total Heating Surface of Boilers *11470* Is Forced Draft fitted *No* No. and Description of Boilers *2 D & 1 S. 8.28*

Working Pressure *180 lb* Tested by hydraulic pressure to *360 lb* Date of test *2.8/1/08* No. of Certificate *9329*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *21.138.56.69* No. and Description of Safety Valves to each boiler *2 Cochran* Area of each valve *5.5.7* Pressure to which they are adjusted *185 lb* 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 *12.0* Material of shell plates *Steel*

Thickness *1* Range of tensile strength *25-32. SE* 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 *1.9/16* Pitch of rivets *9. SE* Top of plates or width of butt straps *19.5*

Per centages of strength of longitudinal joint rivets *85.4, 89.4* Working pressure of shell by rules *180 lb* Size of manhole in shell *17x13*

Size of compensating ring *2.5x2.9* No. and Description of Furnaces in each boiler *6 D & 1 Dugan* Material *Steel* Outside diameter *4-2.3/16*

Length of plain part *top* Thickness of plates *bottom* Description of longitudinal joint *weld* No. of strengthening rings *—*

Working pressure of furnace by the rules *184* Combustion chamber plates: Material *Steel* Thickness: Sides *2.1/32* Back *5/8* Top *2.1/32* Bottom *3/4*

Pitch of stays to ditto: Sides *9.5x8.5* Back *8.5x8* Top *9.5x8.5* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *184*

Material of stays *Steel* Diameter at smallest part *1.24* Area supported by each stay *65* Working pressure by rules *185 lb* Material of stays *Steel*

Material *Steel* Thickness *1.3/32* Pitch of stays *19.5x22* How are stays secured *D. Nuts* Working pressure by rules *180* Material of Front plates at bottom *Steel*

Diameter at smallest part *7.59* Area supported by each stay *4.35* Working pressure by rules *180* Material of Front plates at bottom *Steel*

Thickness *7/8* Material of Lower back plate *Steel* Thickness *1.3/16* Greatest pitch of stays *13.3/4* Working pressure of plate by rules *181*

Diameter of tubes *3.5* Pitch of tubes *4.5x4.5* Material of tube plates *Steel* Thickness: Front *3.1/32* Back *1.3/16* Mean pitch of stays *11.5*

Pitch across wide water spaces *13.5* Working pressures by rules *165* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *9.5x3x2.5* Length as per rule *40.5* Distance apart *9.5* Number and pitch of stays in each *4-8.5 DE*

Working pressure by rules *180* Superheater or Steam chest; how connected to boiler *None* Can the superheater be shut off and the boiler worked separately *—*

holes *—* Diameter *—* Length *—* Thickness of shell plates *—* Material *—* Description of longitudinal joint *—* Diam. of rivet *—*

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 *—*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Is a Report also sent on the Hull of the Ship?

Lloyd's Register Foundation

W1094-0084

Multitubular Cylindrical

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description *In Rpt. 5a*
 Made at *Glasgow* By whom made *David Rowan & Co* When made *1908* Where fixed *St. Rollox*
 Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety
 Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment
 If fitted with easing gear If steam from main boilers can enter the donkey boiler Dia. of donkey boiler Length
 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 Stayed by
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— *Propeller shaft, propeller, 1/2 crank shaft, air pump rod, wire pump rod, top end brasses, bottom end brasses, eccentric complete 1HP cylinder cover, 40 condenser tubes, 50 boiler tubes, etc, & the bolts & nuts required by the Rules.*

The foregoing is a correct description,

Manufacturer. *David Rowan & Co*

Dates of Survey while building
 During progress of work in shops— *1907 Aug. 12, 16, 20, 24, 29 Sept. 5, 18, 25 Oct. 11, 15, 29 Nov. 4, 12, 15 Dec. 2, 5, 9, 12, 14 1908.*
 During erection on board vessel— *Jan. 15, 27 Feb. 20, 21 Mar. 4, 6, 13, 14, 21, 23, 26, 31 April 2, 4, 8, 9, 15*
 Total No. of visits *36*

Is the approved plan of main boiler forwarded herewith *Yes as per Ladig*
 " " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *2/12/07* Slides *2/12/07* Covers *5/12/07* Pistons *5/12/07* Rods *15/1/08*
 Connecting rods *15/1/08* Crank shaft *21/2/08* Thrust shaft *21/2/08* Tunnel shafts *21/2/08* Screw shaft *15/1/08* Propeller *15/1/08*
 Stern tube *15/1/08* Steam pipes tested *31/3/08* Engine and boiler seatings *21/3/08* Engines holding down bolts *9/4/08*
 Completion of pumping arrangements *9/4/08* Boilers fixed *9/4/08* Engines tried under steam *15/4/08*
 Main boiler safety valves adjusted *9/4/08* Thickness of adjusting washers *SDE 1/32 & 7/16, PDE 3/8 & 7/16, SE 1/16 & 3/16*
 Material of Crank shaft *steel* Identification Mark on Do. *H.G.S.* Material of Thrust shaft *steel* Identification Mark on Do. *H.G.S.*
 Material of Tunnel shafts *steel* Identification Marks on Do. Material of Screw shafts *steel* Identification Marks on Do.
 Material of Steam Pipes *Iron or copper* Test pressure *540 lb 360 lb.*

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

These engines & boilers 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. 4.08** in the Register Book.*

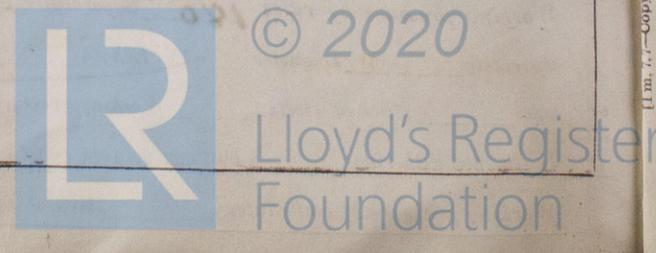
It is submitted that this vessel is eligible for THE RECORD **L.M.C. 4.08.** ELEC LIGHT.

H.S. 24.4.08
24.4.08

The amount of Entry Fee *£3* : : When applied for, *17/4/1908*
 Special *£5.3* : :
 Donkey Boiler Fee : : When received, *£6.5*
 Travelling Expenses (if any) : : *22/4/1908*

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

Committee's Minute *Glasgow* 22 APR 1908
 Assigned *+ L.M.C. 4.08*



Certificate (if required) to be sent to Glasgow

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