

REPORT ON MACHINERY.

No. 34548
WED. 20 MAR. 1918

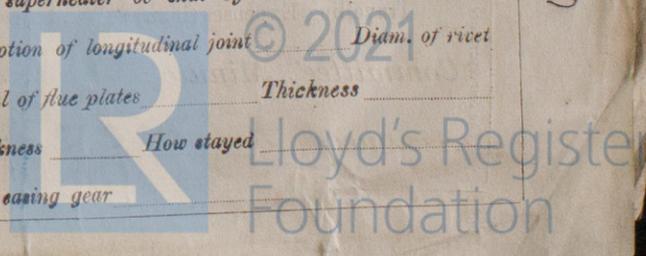
Received at London Office

Date of writing Report 19 _____ When handed in at Local Office 19 _____ Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 5th Jan. 1916 Last Survey 11. 3. 1918
 Reg. Book. on the S.S. "Rubiera" (Number of Visits 86)
 Master Built at Port Glasgow By whom built Rimell & Co (694) Tons } Gross
 Engines made at Glasgow By whom made D Rowan & Co Ltd (651) when made 1918 } Net
 Boilers made at Glasgow By whom made D Rowan & Co Ltd (651) when made 1918
 Registered Horse Power _____ Owners Blue Star Line Ltd Port belonging to London
 Nom. Horse Power as per Section 28 556 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Simple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 24 1/2", 41 1/2", 70" Length of Stroke 48" Revs. per minute 76 Dia. of Screw shaft 14 3/8" 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 length 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 yes Length of stern bush 5-4"
 Dia. of Tunnel shaft as per rule 13.279 Dia. of Crank shaft journals as per rule 13.73 Dia. of Crank pin 14 1/4" Size of Crank webs 9" Dia. of thrust shaft under collars 14 1/4" Dia. of screw 17.0" Pitch of Screw 16-6" No. of Blades 4 State whether moveable yes Total surface 937
 No. of Feed pumps 2 Diameter of ditto 10 1/2 x 8" Stroke 21" 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 4 Sizes of Pumps 9x10x15", 8x6x18", 6x6x10", 5x5x8" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room (4) 3 1/2" In Holds, &c. (2) 3 1/2" in each hold (1) 2 1/2" in tunnel well
 No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump pumps Is a separate Donkey Suction fitted in Engine room & size yes 3 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 no
 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 both
 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 bilge suction How are they protected in lumber
 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 _____ Screw shaft and Propeller _____
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record (7)) Manufacturers of Steel The Steel Company of Scotland Ltd
 Total Heating Surface of Boilers 8613 Is Forced Draft fitted yes No. and Description of Boilers 3 Single ended
 Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 1/6/17 No. of Certificate 18803
 Can each boiler be worked separately yes Area of fire grate in each boiler 50 No. and Description of Safety Valves to each boiler pair direct spring Area of each valve 8.3 Pressure to which they are adjusted 205 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 30" Mean dia. of boilers 15-0" Length 12-0" Material of shell plates steel
 Thickness 1 3/4" Range of tensile strength 28 to 32 ton Are the shell plates welded or flanged no Descrip. of riveting: cir. seams lap double
 long. seams butt table Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 20 1/2"
 Per centages of strength of longitudinal joint 87.0 Working pressure of shell by rules 205 Size of manhole in shell 16x12"
 Size of compensating ring 2-7 1/2 x 2-11 1/2" No. and Description of Furnaces in each boiler 3 Deighton Material steel Outside diameter 46 3/16"
 Length of plain part top 19 Thickness of plates bottom 32 Description of longitudinal joint weld No. of strengthening rings _____
 Working pressure of furnace by the rules 205 Combustion chamber plates: Material steel Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 2"
 Pitch of stays to ditto: Sides 8 1/2 x 9 3/8" Back 4 1/2 x 8 5/8" Top 10 1/2 x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 215
 Material of stays iron Diameter at smallest part 2.07 Area supported by each stay 87 Working pressure by rules 205 End plates in steam space: _____
 Material steel Thickness 1 3/8" Pitch of stays 20 x 21" How are stays secured 2 nuts Working pressure by rules 201 Material of stays steel
 Diameter at smallest part 8.29 Area supported by each stay 420 Working pressure by rules 200 Material of Front plates at bottom steel
 Thickness 29/32" Material of Lower back plate steel Thickness 2" Greatest pitch of stays 13 5/8" Working pressure of plate by rules 200
 Diameter of tubes 2 1/2" Pitch of tubes 3 5/8 x 3 5/8" Material of tube plates steel Thickness: Front 29/32" Back 3/4" Mean pitch of stays 9 3/32"
 Pitch across wide water spaces 13 3/8" Working pressures by rules 233 & 207 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 10 1/2 x 7" Length as per rule 35 1/2" Distance apart 10 1/2" Number and pitch of stays in each (3) 8 1/2"
 Working pressure by rules 209 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 _____

W440-0011



VERTICAL DONKEY BOILER— Manufacturers of Steel *Worm*

No.	Description		When made	Where fixed
Made at	By whom made			
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
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
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:— 2 top end bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set of coupling bolts & nuts, feed & bilge pump valves, iron bolts & nuts, of various sizes etc.

The foregoing is a correct description,
for *David Cowan & Co* Manufacturer.

Dates of Survey while building	During progress of work in shops	1916 Jan 5, May 18, June 16, 9, 12, July 21, Aug. 4, 10, 31, Sep. 6, 12, 27, Oct. 3, 12, 16, 17, 20, 27, Nov. 16, 30, Dec. 11, 1917 Jan. 19, 27, 29, 30.
	During erection on board vessel	Feb. 4, 15, 23, Mar. 6, 12, 19, 25, 27, Apr. 3, 4, 11, 23, May 3, 9, 10, 15, 22, 28, 29, 30, 31, June 1, 4, 11, 14, 19, 20, 25, 26, 27, July 3, 10, 18, 24, 25, 30, Aug. 14, 18, Sep. 6, 14, Oct. 15, 22, 26, Nov. 8, 21, 27, 28, 29, Dec. 4, 9, 13, 18, 19, 28, 1918 Jan. 15, Feb. 18, Mar. 11.
	Total No. of visits	86

Is the approved plan of main boiler forwarded herewith yes

Is the approved plan of donkey boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 19/3/17 Slides 29/5/17 Covers 19/3/17 Pistons 14/6/17 Rods 14/6/17

Connecting rods 8/5/17 Crank shaft 23/4/17 Thrust shaft 9/5/17 Tunnel shafts 20/6/17 Screw shaft 1/6/17 Propeller 1/6/17

Stern tube 28/5/17 Steam pipes tested 22/11/17 Engine and boiler seatings ✓ Engines holding down bolts 1/10/17

Completion of pumping arrangements 8/10/17 Boilers fixed 1/10/17 Engines tried under steam 11/3/18

Main boiler safety valves adjusted 29 12-17 Thickness of adjusting washers 3^d Bolt 3/32, 3^d Nut 7/16 Port 7/16 3^d Bolt 3/32, 3^d Nut 7/16 Port 7/16

Material of Crank shaft *Steel* Identification Mark on Do. *WNC 23/4/17* Material of Thrust shaft *Steel* Identification Mark on Do. *WNC 9/5/17*

Material of Tunnel shafts *Steel* Identification Marks on Do. *WNC 25/6/17* Material of Screw shafts *Steel* Identification Marks on Do. *WNC 1/6/17*

Material of Steam Pipes *Cap welded iron* ✓ Test pressure 600 lbs. ✓

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

These engines and boilers have been built under special survey the materials and workmanship are of good description, they have been well fitted on board and tried under steam.

This machinery is now in our opinion eligible to have notification of L.M.C 3. 18 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C 3. 18. F.D.

J.W.D.
21/3/18
A.P.R.

The amount of Entry Fee	£ 3	When applied for.	11.3.18
Special	£ 47. 16	When received.	22.3.18
Donkey (Boiler Fee)	£		
Travelling Expenses (if any)	£		

A. M. Kland + Wm. H. Copeman
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute **GLASGOW.** 19 MAR. 1918
Assigned + L.M.C 3, 18

MACHINERY CERTIFICATE WRITTEN 20.3.18



Glasgow

Certificate (if required) to be sent to
(The Surveyors are requested not to write on or below the space for Committee's Minute.)