

## 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  
Reg. Book.

Glasgow

Date, First Survey

5 Jan. 1916

Last Survey

11. 3.

1918

on the

S.S. "Rubiera"

(Number of Visits)

86

Master

Built at Port Glasgow

By whom built

Rimell &amp; Co

(694)

Tons

Gross

Net

When built

1918

Engines made at

Glasgow

By whom made

D. Rowan &amp; Co Ltd

(651)

when made

1918

Boilers made at

Glasgow

By whom made

D. Rowan &amp; 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, &amp;c.—Description of Engines

Triple expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

24½, 41½, 70

Length of Stroke

48

Revs. per minute

76

Dia. of Screw shaft

14.36

Material of

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

13.29

Dia. of Crank shaft journals

as per rule

13.73

Dia. of Crank pin

14½"

Size of Crank webs

9"

Dia. of thrust shaft under

collars

14½"

Dia. of screw

17.0"

Pitch of Screw

16-6"

No. of Blades

4

State whether moveable

yes

Total surface

93ft

No. of Feed pumps

2

Diameter of ditto

10½x8"

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

No.

and size

of Suctions

connected

to both

Bilge

and

Donkey

pumps

In Engine Room

(4)

3½"

In Holds, &amp;c. (2) 3½ in each Hold (1) 2½ in tunnel well

No. of Bilge Injections

1

sizes

6"

Connected to condenser, or to circulating pump

pump

Is a separate Donkey Suction fitted in Engine room

size

yes

3½"

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

none

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, &amp;c.—(Letter for record

(7))

Manufacturers of Steel

The Steel Company of Scotland Ltd

Total Heating Surface of Boilers

8613 ft

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

8803

Can each boiler be worked separately

yes

Area of fire grate in each boiler

50 ft

No. and Description of Safety Valves to

each boiler

1 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

1/32"

Range of tensile strength

28 to 32 ton

Are the shell plates welded or flanged

yes

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

rivets 87.6

plate 85.5

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

bottom

Thickness of plates

crown 19

bottom 32

Description of longitudinal joint

weld

No. of strengthening rings

yes

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 5 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 ft

Working pressure by rules

205

End plates in steam space:

yes

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 ft

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

3 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 &amp; 207

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

10 1/2 x 7 1/2"

Length as per rule

35 1/2"

Distance apart

10 1/4"



# VERTICAL DONKEY BOILER—

Manufacturers of Steel *Worm*

No.	Description	Made at	By whom made	When made	Where fixed
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 Plates
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 Cowie & 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. 14, 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.
	Total No. of visits	86

Is the approved plan of main 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 28/11/17 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 <sup>d</sup> Bolts 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.	
Material of Crank shaft <i>Steel</i> Identification Mark on Do. <i>WNC 23/4/17</i> Material of Thrust shaft <i>Steel</i> Identification Mark on Do. <i>WNC 9/5/17</i>	
Material of Tunnel shafts <i>Steel</i> Identification Marks on Do. <i>WNC 20/6/17</i> Material of Screw shafts <i>Steel</i> Identification Marks on Do. <i>WNC 1/6/17</i>	
Material of Steam Pipes <i>Cap welded iron</i> ✓ Test pressure <i>600 lbs.</i> ✓	

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

These engines and boilers have been built under special supervision. 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.

*JWD.*  
21/3/18  
*ARR*

The amount of Entry Fee	£ 3	When applied for.	11/3. 1918
Special	£ 47. 16	When received.	22.3. 1918
Donkey (Boiler Fee)	£		
Travelling Expenses (if any)	£		

Committee's Minute **GLASGOW.** 19 MAR. 1918

Assigned + L.M.C. 3. 18

*MACHINERY CERTIFICATE*  
WRITTEN 20.3.18

**L**  
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Lloyd's Register  
Foundation

*Glasgow*

Certificates (if required) to be sent to

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