

# REPORT ON MACHINERY.

No. 39263  
WED. 29 OCT. 1919

Received at London Office

Date of writing Report

19

When handed in at Local Office

20/10/19

1919

Port of Glasgow

No. in Survey held at

Glasgow

Date, First Survey 20/6/18

Last Survey 14<sup>th</sup> Oct 1919

Reg. Book.

on the

S.S. "TREMATION"

(Number of Visits 49)

Master

Built at

Glasgow

By whom built

W & W Henderson & Co Ltd

Tons

Gross

Net

When built 1919

Engines made at

Glasgow

By whom made

do

(No 521) when made 1919

Boilers made at

do

By whom made

do

(No 521) when made 1919

Registered Horse Power

Owners

Hain S.S. Co Ltd

Port belonging to St Ives

Nom. Horse Power as per Section 28

517

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

27-44-73

Length of Stroke 48

Revs. per minute 80

Dia. of Screw shaft

as per rule 14.7

Material of screw shaft

as fitted 15.7

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

No

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

fits whole length

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush 5-0 1/2

Dia. of Tunnel shaft

as per rule 13.3

Dia. of Crank shaft journals

as per rule 13.9

Dia. of Crank pin

14 1/2

Size of Crank webs

9 x 28

Dia. of thrust shaft under collars

14 3/4

Dia. of screw

17-6

Pitch of Screw

16-6

No. of Blades 4

State whether moveable

No

Total surface

98.2

No. of Feed pumps

2

Diameter of ditto

4

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

3

Sizes of Pumps

1 1/2 x 7 x 18

2 1/2 x 7 x 18

3 1/2 x 7 x 18

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

(2) 3 1/2

Stokehold

(2) 3 1/2

In Holds, &c.

No 1 (2) 3 1/2

No 2 (2) 3 1/2

No 3 (2) 3 1/2

No. of Bilge Injections

1

sizes 12

Connected to condenser, or to circulating pump

Pump

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

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

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

7 & Suctions

How are they protected

Wood Casings

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

9.9.19

of Stern Tube 25.8.19

Screw shaft and Propeller 25.8.19

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from Engine room to Platform

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel

Steel Co of Scotland Ltd

Total Heating Surface of Boilers

7668

Is Forced Draft fitted

Yes

No. and Description of Boilers

3 Single ended

Working Pressure

180 lb

Tested by hydraulic pressure to

360 lb

Date of test

15.8.19

No. of Certificate

14853

14859

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

633

No. and Description of Safety Valves to each boiler

2 Spring loaded

Area of each valve

9.620

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

1-9

Mean dia. of boilers

15-6

Length

11-6

Material of shell plates

Steel

Thickness

1 1/4

Range of tensile strength

286

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

do Lap

long. seams

T.R.D.B.S.

Diameter of rivet holes in long. seams

1 5/16

Pitch of rivets

9 1/8

Lap of plates or width of butt straps

19 1/2

Per centages of strength of longitudinal joint

ribs 88.3

plate 85.6

Working pressure of shell by rules

181

Size of manhole in steel

16 x 12

Size of compensating ring

end flanged

No. and Description of Furnaces in each boiler

3 Bagatin

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 furnaces by the rules

188

Combustion chamber plates: Material

Steel

Thickness: Sides

3/32

Back

1/16

Top

3/32

Bottom

3/32

Pitch of stays to ditto: Sides

9 1/4 x 10 5/8

Back

8 3/4 x 10 1/2

Top

9 1/4 x 10 5/8

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

180

Material of stays

Steel

Diameter at smallest part

1.99

Area supported by each stay

98

Working pressure by rules

184

End plates in steam space:

Material

Steel

Thickness

1 3/32

Pitch of stays

2 3/8

Diameter at smallest part

8.29

Area supported by each stay

445

Working pressure by rules

198

Material of Front plates at bottom

Steel

Thickness

3/32

Greatest pitch of stays

13 5/8

Working pressure of plate by rules

187

Diameter of tubes

2 3/4

Pitch of tubes

4 x 3 7/8

Material of tube plates

Steel

Thickness: Front

3/32

Back

3/4

Mean pitch of stays

9 7/8

Pitch across wide water spaces

13 5/8

Working pressures by rules

181

Girders to Chamber tops: Material

Steel

Depth and thickness of girder at centre

10 x 7 1/8 (2)

Length as per rule

35 7/16

Distance apart

10 5/8

Number and pitch of stays in each

(3) 9 1/4

Working pressure by rules

&lt;

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. None Description None

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 casing 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 and nuts 2 main bearing bolts and nuts, 6 Coupling bolts and nuts, 1 set of feed and belfe Pump Valves, Bolts and nuts assorted Iron and other articles.

The foregoing is a correct description, For **DAVID & WILKINSON HENDERSON & CO., Ltd.** Manufacturer. *J. D. Patrick* DIRECTOR

Dates of Survey while building	During progress of work in shops --	1919. June 20. Sept. 17. 20. 23. 24. Oct. 8. 14. 29. Nov. 20. Dec. 12. 19. 1919. Jan. 9. 8. 14. 29. Feb. 19. Mar. 13. 14.
	During erection on board vessel --	Apr. 1. 8. 28. 30. May 5. 27. 28. June 2. 4. 10. 11. 20. 24. July 8. 16. Aug. 13. 15. 25. 28. Sept. 3. 9. 12. 15. 23. 24. 25. 30. Oct. 2.
	Total No. of visits	49.

Is the approved plan of main boiler forwarded herewith no

" " " donkey " " " " " " " " " " " "

Dates of Examination of principal parts—	Cylinders 8.4.19	Slides 8.4.19	Covers 8.4.19	Pistons 4.6.19	Rods 4.6.19
Connecting rods	8.7.19	Crank shaft 13.3.19	Thrust shaft 13.3.19	Tunnel shafts 25.8.19	Screw shaft 25.8.19
Propeller	25.8.19	Stern tube 8.7.19	Steam pipes tested 20.6.18. 23.9.19	Engine and boiler seatings 24.9.19	Engines holding down bolts 24.9.19
Completion of pumping arrangements	10.10.19	Boilers fixed 2.10.19	Engines tried under steam 3.10.19	14.10.19	
Main boiler safety valves adjusted	3.10.19	Thickness of adjusting washers	Stabs $\frac{25}{64}$ - $\frac{3}{8}$	Centre $\frac{1}{2}$ - $\frac{5}{16}$	Polts $\frac{3}{4}$ - $\frac{17}{64}$
Material of Crank shaft	Steel	Identification Mark on Do.	521 TM 3.19	Material of Thrust shaft	Steel
Identification Mark on Do.	521 TM	Material of Tunnel shafts	Steel	Identification Marks on Do.	1837 J D
Material of Screw shafts	Steel	Identification Marks on Do.	25.8.19 463	Material of Steam Pipes	Steel
Test pressure	540 lb sq in				

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

1837	1837	841	2633	841	1837
JD	JD	JD	JP	JD	JD
203	199	68	835	79	189
25.8.19					
G.L.S.					

The machinery of this vessel has been constructed under special survey in accordance with the Rules and approved Plans and has been seen working satisfactorily under steam. Materials and workmanship are good.

The machinery is eligible in our opinion to be classed + LMC 10.19.

It is submitted that this vessel is eligible for THE RECORD + LMC 10.19. F.D.

*J.W.D.*  
30/10/19.  
*J.P.R.*

The amount of Entry Fee .. £	:	:	When applied for,
Special .. .. £	115	12	23/10/19.
Donkey Boiler Fee .. £	:	:	When received,
Travelling Expenses (if any) £	:	:	28/10/19.

*James Easthope*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW 28 OCT 1919**

Assigned + LMC 10.19

TUE. MAY. 18 1920  
TUE. NOV. 30 1920

MACHINERY CERTIFIED WRITTEN 29/10/19 *J.D.*



Certificate (if required) to be sent to GLASGOW  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)  
 J.C. 18.10.19