

## 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  
Reg. Book.

Date, First Survey 20/6/18

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

(Number of Visits 49)

on the

S.S. "TREMATION"

Master

Built at

Glasgow

By whom built

D &amp; W Henderson &amp; Co Ltd

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, &amp;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

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

—

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

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

Length of stern bush

5'-0"

Dia. of Tunnel shaft

as per rule 13.3"

Dia. of Crank shaft journals

as per rule 13.9"

Dia. of Crank pin

14.5"

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 sq ft

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"

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

In Engine Room

(2) 3 1/2" Stokes

(2) 3 1/2" Stokes

(2) 3 1/2" Stokes

(2) 3 1/2" Stokes

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(2) 3 1/2" Stokes

(2) 3 1/2" Stokes

(2) 3 1/2" Stokes

No. of Bilge Injections

1

sizes

12"

Connected to condenser, or to circulating pump

Pump

Is a separate Donkey Suction fitted in Engine room &amp; size

Yes

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

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 x 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, &amp;c.—(Letter for record)

S

Manufacturers of Steel

Steel Co of Scotland Ltd

Total Heating Surface of Boilers

7668 sq ft

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

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

63.3 sq ft

No. and Description of Safety Valves to

each boiler

2 Spring loaded

Area of each valve

9.62 sq ft

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

28 to 35 tons

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

rivets 88.3

plate 85.6

Working pressure of shell by rules

181

Size of manhole in shell

16" x 12"

Size of compensating ring

end flanged

No. and Description of Furnaces in each boiler

3 Bagatelle

Material

Steel

Outside diameter

4'-2 3/16"

Length of plain part

top

bottom

Thickness of plates

crown 1.9"

Description of longitudinal joint

weld

No. of strengthening rings

—

Working pressure of furnace by the rules

188

Combustion chamber plates: Material

Steel

Thickness: Sides

3/32"

Back

1/16"

Top

3/32"

Pitch of stays to ditto: Sides

9 1/4" x 10 5/8"

Back

8 3/4" x 10 5/8"

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 sq in

Working pressure by rules

184

End plates in steam space:

Material

Steel

Thickness

1 3/32"

Pitch of stays

2 3/4" x 20 1/2"

How are stays secured

Nuts

Working pressure by rules

182

Material of stays

Steel

Diameter at smallest part

8.29"

Area supported by each stay

445 sq in

Working pressure by rules

198

Material of Front plates at bottom

Steel

Thickness

31/32"

Material of Lower back plate

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

31/32"

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"

Working pressure by rules

188

Superheater or Steam chest; how connected to boiler

True

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



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 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 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 & CO., Ltd.

Manufacturer.

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 -- April 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. 3. 10. 14. Total No. of visits 119.

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 20.6.19 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 Stab  $\frac{25}{64}$   $\frac{3}{8}$  Centre  $\frac{1}{2}$   $\frac{5}{16}$  Polts  $\frac{3}{16}$   $\frac{1}{4}$  1138 J.H.S. Material of Crank shaft Steel Identification Mark on Do. 521 TM 3.19 Material of Thrust shaft Steel Identification Mark on Do. 521 TM 1837 J.D. Material of Tunnel shafts Steel Identification Marks on Do. X Material of Screw shafts Steel Identification Marks on Do. 25.8.19 1946 S 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.

The amount of Entry Fee .. £ : : When applied for, 23/10/19.  
Special .. £ 115.12 : :  
Donkey Boiler Fee .. £ : : When received, 28/10/19.  
Travelling Expenses (if any) £ : :  
Committee's Minute GLASGOW 28 OCT 1919

Assigned + LMC 10.19

Asst. Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

TUE. MAY. 18 1920

TUE. NOV. 30 1920

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