

REPORT ON MACHINERY.

No. 25918

FRI. NOV. 21. 1913

Date of writing Report

19

When handed in at Local Office

20. 11. 1913 Port of Sunderland.

No. in Survey held at

Sunderland

Date, First Survey

7 May

Last Survey

13 Nov 1913

Reg. Book.

on the *Shel S/S Den of Borne*

(Number of Visits)

38

Gross 4645

Net 2853

When built 1913

Master *A. White*

Built at

Sunderland

By whom built

J. L. Thompson & Sons Ltd.

when made 1913

Engines made at *Sunderland*

By whom made

J. Dickinson & Sons Ltd.

Boilers made at

By whom made

when made 1913

Registered Horse Power

Owners

Barrie Shipping Co. Ltd.

Port belonging to

Sunderland

Nom. Horse Power as per Section 28

455

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

J. L. Thompson

No. of Cylinders

No. of Cranks

Dia. of Cylinders *24 1/2**44 1/2*Length of Stroke *48*Revs. per minute *40*

Dia. of Screw shaft

as per rule *14.89*

Material of

St

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

yes

Length of stern bush

5 feet

Dia. of Tunnel shaft

as per rule *13.48*

Dia. of Crank shaft journals

as per rule *14.15*

Dia. of Crank pin

14 1/2

Size of Crank webs

Patent

Dia. of thrust shaft under

collars *14 1/2*

Dia. of screw

17 9

Pitch of Screw

17 6

No. of Blades

4

State whether moveable

no

Total surface

1082 sq

No. of Feed pumps

2

Diameter of ditto

4 1/2

Stroke

24

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

5

Stroke

24

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

3

Sizes of Pumps

*10 x 10**(4 x 24)**(4 1/2 x 10)*

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

two of 3 1/2 in each

In Engine Room

four 3 1/2

In Holds, &c.

two of 3 1/2 in each

No. of Bilge Injections

1

sizes

4

Connected to condenser, or to circulating pump

CR

Is a separate Donkey Suction fitted in Engine room & size

yes 4

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

none

How are they protected

yes

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

24.9.13

of Stern Tube

20.10.13

Screw shaft and Propeller

20.10.13

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from top platform

yes

BOILERS, &c.—(Letter for record *B*)

Manufacturers of Steel

J. Spencer & Sons Ltd.

Total Heating Surface of Boilers

4545 sq

Is Forced Draft fitted

no

No. and Description of Boilers

3 Marine type

Working Pressure

180 lbs

Tested by hydraulic pressure to

360

Date of test

15 Oct. 1913

No. of Certificate

3157

Can each boiler be worked separately

yes

Area of fire grate in each boiler

65 sq

No. and Description of Safety Valves to

each boiler

two Spring

Area of each valve

8.3

Pressure to which they are adjusted

185

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

1' 3"

Mean dia. of boilers

15' 9"

Length

11' 6"

Material of shell plates

St

Thickness

3/32

Range of tensile strength

28 1/2 - 32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

d. 7/16

long. seams

R.A. butt

Diameter of rivet holes in long. seams

15/16

Pitch of rivets

8 5/16

Lap of plates or width of butt straps

1' 4 1/2"

Per centages of strength of longitudinal joint

92.46

Size of compensating ring

8 7/8 x 1 3/2

No. and Description of Furnaces in each boiler

3 Corrugated

Material

St

Outside diameter

4' 2"

Length of plain part

top

Thickness of plates

bottom

Description of longitudinal joint

weld

No. of strengthening rings

19

Working pressure of furnace by the rules

189

Combustion chamber plates: Material

St

Pitch of stays to ditto: Sides

10 3/4 x 8

Back

10 3/8 x 8 1/2

Top

10 x 9

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

187

Material of stays

St

Diameter at smallest part

1' 6"

Area supported by each stay

94 1/2

Working pressure by rules

184

End plates in steam space

St

Material

St

Thickness

1 3/16

Pitch of stays

18 1/2 x 20

How are stays secured

d nuts

Working pressure by rules

181

Material of stays

St

Diameter at smallest part

2' 9 1/2

Area supported by each stay

370

Working pressure by rules

188

Material of Front plates at bottom

St

Thickness

3/8

Material of Lower back plate

St

Thickness

29/32

Greatest pitch of stays

14 x 10 1/2

Working pressure of plate by rules

184

Diameter of tubes

3 1/4

Pitch of tubes

42 x 42

Material of tube plates

St

Thickness: Front

3/8

Back

3/8

Mean pitch of stays

9 x 11 1/4

Pitch across wide water spaces

1' 1 1/4"

Working pressures by rules

288 lbs

Girders to Chamber tops: Material

St

thickness of girder at centre

7 1/2 x 2"

Length as per rule

2' 8 1/2"

Distance apart

9"

Number and pitch of stays in each

2 @ 10"

Working pressure by rules

184

Superheater or Steam chest; how connected to boiler

no

Can the superheater be shut off and the boiler worked

separately

Diameter

10

Length

10

Thickness of shell plates

3/8

Material

St

Description of longitudinal joint

St

Diam. of rivet

15/16

Pitch of rivets

8 5/16

Working pressure of shell by rules

181

Diameter of flue

VERTICAL DONKEY BOILER—Manufacturers of Steel

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: *Propeller & propeller shaft. Set of Coupling bolts & nuts two top & bottom end bolts & nuts. Set of holding down bolts & nuts. 1 Set feed & bilge pump valves & seats. 2 main and 2 donkey check valves. Set of Air & Live pump ballast & donkey valves. Two valves & seats for duplex feed pump. Assorted bolts & nuts & iron of various sizes*

The foregoing is a correct description,
John Dickinson & Sons, Limited.
John Dickinson Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1913 May 7. Jun 2. Jul. 1. 3. 8. 10. Aug 5. 6. 14. 21. 27. 29. Sep 8. 19. 20. 23. 24
	During erection on board vessel - - -	Oct. 1. 6. 7. 9. 13. 15. 16. 20. 21. 22. 23. 24. 27. 28. 29. 30. 31. Nov. 1. 5. 11. 13.
	Total No. of visits	(38)
		Is the approved plan of main boiler forwarded herewith <i>yes</i>
		" " " donkey " " " <i>no</i>
Dates of Examination of principal parts —Cylinders 19. 9. 13 Slides 6. 8. 13 Covers 6. 8. 13 Pistons 8. 9. 13 Rods 19. 9. 13 Connecting rods 19. 9. 13 Crank shaft 1. 10. 13 Thrust shaft 1. 10. 13 Tunnel shafts 1. 10. 13 Screw shaft 24. 9. 13 Propeller 24. 9. 13 Stern tube 24. 9. 13 Steam pipes tested 22. 10. 13. Engine and boiler seatings 20. 9. 13 Engines holding down bolts 27. 10. 13 Completion of pumping arrangements 31. 10. 13 Boilers fixed 27. 10. 13 Engines tried under steam 31. 10. 13 Main boiler safety valves adjusted 31. 10. 13 Thickness of adjusting washers <i>PB f 5/32" a 3/8". CB p. 1/32" s 13/32" SB f 1/32" a 7/16"</i> Material of Crank shaft <i>S</i> Identification Mark on Do. <i>PA. 5814</i> Material of Thrust shaft <i>S</i> Identification Mark on Do. <i>PA. 5814</i> Material of Tunnel shafts <i>S</i> Identification Marks on Do. <i>4723 445 HK</i> Material of Screw shafts <i>S</i> Identification Marks on Do. <i>4236 4375 HK</i> Material of Steam Pipes <i>C</i> Test pressure <i>370 lbs</i>		

General Remarks (State quality of workmanship, opinions as to class, &c. *Machinery and boilers constructed under survey. Materials and workmanship good. Engines & boilers examined under full steam & found satisfactory. In my opinion this vessel is worthy of the record in the Register of L.M.C. 11/1913*

It is submitted that
 this vessel is eligible for
 THE RECORD. + LMC 11. 13.

The amount of Entry Fee	£ 3 :	When applied for,
Special	£ 42. 15 :	18. 11. 1913
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any) £	:	20. 11. 1913

Committee's Minute TUE. NOV. 25. 1913
 Assigned + LMC 11. 13

J. P. Studlay
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.