

REPORT ON MACHINERY.

No. 24241

Received at London Office

TUE. SEP. 26. 1911

Date of writing Report

19

When handed in at Local Office

22. 9. 11. Port of Hull

No. in Survey held at

Hull

Date, First Survey

Jan 3rd

Last Survey

22nd Sep. 1911

Reg. Book.

263 on the

Steel S. S. Harrogate

(Number of Visits 56)

Gross

Net

When built

1911

aster

Built at Hull

By whom built

Messrs Earle's & Co. Ltd

Engines made at

By whom made

Messrs

when made

1911

Boilers made at

Hull

By whom made

Earle's & Co. Ltd

when made

1911

Registered Horse Power

Owners

Wilson & N. E. Rly Shipping Co. Ltd, Port belonging to Hull

Horse Power as per Section 28

272

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

20 $\frac{1}{2}$ - 34 - 56

Length of Stroke

39

Revs. per minute

98

Dia. of Screw shaft

as per rule

12

Material of

S

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

No

Is the after end of the liner made water tight

Is the propeller boss

Yes

If the liner is in more than one length are the joints burned

Two liners

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

If two

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

no liners

Length of stern bush

4' 8 $\frac{1}{2}$ "

Dia. of Tunnel shaft

as per rule

10.4

Dia. of Crank shaft journals

as per rule

10.9

Dia. of Crank pin

11.375

Size of Crank webs

17 $\frac{1}{2}$ x 7 $\frac{1}{2}$

Dia. of thrust shaft under

Collars

11 $\frac{3}{8}$ "

Dia. of screw

13.9

Pitch of Screw

14.9

No. of Blades

4

State whether moveable

No

Total surface

No. of Feed pumps

Two

Diameter of ditto

3 $\frac{1}{4}$ "

Stroke

21

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

Diameter of ditto

3 $\frac{1}{4}$ "

Stroke

21

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Four

Sizes of Pumps

one 8" Cent. Cent. pump, one 7 $\frac{1}{2}$ x 8 x 8, one 7 $\frac{1}{2}$ x 5 x 8, one 5 x 4 $\frac{1}{2}$ x 5

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

In Engine Room

Three 1 $\frac{1}{2}$ ", one 3", one 5 $\frac{1}{2}$ "In Holds, &c. One 2 $\frac{1}{2}$ " FPT, One 2 $\frac{3}{4}$ " 11 tank, Two 3" 12 tank, 12 $\frac{1}{4}$ tank

No. of Bilge Injections

1

sizes

5 $\frac{1}{2}$ "

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

Yes

3"

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

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

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

29. 6. 11

of Stern Tube

29. 6. 11

Screw shaft and Propeller

29. 6. 11

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

top platform

BOILERS, &c.—(Letter for record

5)

Manufacturers of Steel

John Spencer Sons

Total Heating Surface of Boilers

5000 ϕ

Is Forced Draft fitted

No

No. and Description of Boilers

Two cyl. Multi. S. Endel

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

29. 6. 11

No. of Certificate

1820

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

69 ϕ

No. and Description of Safety Valves to

each boiler

Two Spring

Area of each valve

7.07 ϕ

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

16"

Mean dia. of boilers

15'-6"

Length

11'-6"

Material of shell plates

S

Thickness

1 $\frac{1}{2}$ "

Range of tensile strength

30. 34

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

L. D.

long. seams

D. B. S. I. R.

Diameter of rivet holes in long. seams

1 $\frac{3}{8}$ "

Pitch of rivets

9 $\frac{1}{8}$ "

Lap of plates or width of butt straps

19 $\frac{1}{8}$ "

Per centages of strength of longitudinal joint

rivets

90

plate

84.9

Working pressure of shell by rules

209 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

12" x 1 $\frac{1}{2}$ "

No. and Description of Furnaces in each boiler

3

Neighbors

Material

S

Outside diameter

50 $\frac{1}{4}$ "

Length of plain part

top

Thickness of plates

crows

1 $\frac{1}{2}$ "

Description of longitudinal joint

Welded

No. of strengthening rings

0

No.

11"

Top

11"

Bottom

31"

Working pressure of furnace by the rules

226 lbs

Combustion chamber plates: Material

S

Thickness: Sides

1 $\frac{1}{2}$ "

Back

1 $\frac{1}{2}$ "

Top

1 $\frac{1}{2}$ "

Bottom

32"

Pitch of stays to ditto: Sides

9 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ "

Back

8 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ "

Top

8" x 8"

If stays are fitted with nuts or riveted heads

No

Working pressure by rules

209 lbs

Material of stays

S

Diameter at smallest part

1 $\frac{1}{2}$ "

Area supported by each stay

77.875

Working pressure by rules

181 lbs

End plates in steam space:

Material

S

Thickness

3 $\frac{1}{2}$ "

Pitch of stays

15 $\frac{1}{2}$ " x 14 $\frac{1}{2}$ "

How are stays secured

D. N.

Working pressure by rules

183 lbs

Material of stays

S

Diameter at smallest part

2 $\frac{1}{2}$ "

Area supported by each stay

228.6 ϕ

Working pressure by rules

234 lbs

Material of Front plates at bottom

S

Thickness

15"

Material of Lower back plate

S

Thickness

15"

Greatest pitch of stays

10 x 14 $\frac{1}{2}$ "

Working pressure of plate by rules

195 lbs

Mean pitch of stays

9"

Diameter of tubes

3 $\frac{1}{4}$ "

Pitch of tubes

4 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ "

Material of tube plates

S

Thickness: Front

15"

Back

7"

Mean pitch of stays

9"

Pitch across wide water spaces

14 $\frac{1}{4}$ "

Working pressures by rules

188 lbs

Girders to Chamber tops: Material

S

Depth and

thickness of girder at centre

8 $\frac{3}{4}$ " x 1 $\frac{1}{2}$ "

Length as per rule

2' 9"

Distance apart

Working pressure by rules

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:— Two each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set feed and bilge pump valves, a quantity of assorted bolts and nuts, Iron of various sizes etc etc

The foregoing is a correct description,

F. J. Sale Thorpe

Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1911 - Jan 3, 7, 10, 12, 14, 31, Feb 2, 8, 10, 13, 15, 21, 22, 24, Mar 6, 8, 13, 22, 23, Apr 1, 4, 5, 7, 13, 21, Apr 27, May 1, 4, 9, 16, 19, 25, 27, 31, Jun 1, 8, 12, 14, 19, 26, 28, 29, July 1, 3, 7, 11, 19, 21, 25, 27, 29, Aug 1, 11, 21, 23, 26 -
Total No. of visits 56

Is the approved plan of main boiler forwarded herewith

Yes

Dates of Examination of principal parts—Cylinders 5.4.11 Slides 28.6.11 Covers 13.3.11 Pistons 5.4.11 Rods 5.4.11

Connecting rods 26.6.11 Crank shaft 5.4.11 Thrust shaft 21.5.11 Tunnel shafts 11.4.11 Screw shaft 26.6.11 Propeller 26.6.11

Stern tube 19.5.11 Steam pipes tested 3.4.11 Engine and boiler seatings 1.4.11 Engines holding down bolts 26.8.11

Completion of pumping arrangements 26.8.11 Boilers fixed 26.8.11 Engines tried under steam 26.8.11

Main boiler safety valves adjusted 26.8.11 Thickness of adjusting washers *4 1/2" for Bl. 5 3/4" for Bl. 1 1/2" for Bl. 1 1/2"*

Material of Crank shaft 8 Identification Mark on Do. 5078.6.11 Material of Thrust shaft 5 Identification Mark on Do. 6955

Material of Tunnel shafts 5 Identification Marks on Do. 3055.6485 Material of Screw shafts 5 Identification Marks on Do. 7731 N

Material of Steam Pipes Iron Test pressure 600 lbs per sq. inch

General Remarks (State quality of workmanship, opinions as to class, &c. The engines, and boilers) of this vessel have been constructed under special survey in accordance with the Rules. The workmanship and materials are good. The boiler tested by hydraulic pressure, and with the engines secured on board & tested under steam, they are now in good order and safe working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of $\frac{1}{2}$ L.M.C. 9.11 in the Register Book

It is submitted that this vessel is eligible for THE RECORD + LMC 9.11

J.W.D.
8/6/9/11

The amount of Entry Fee .. £ 2 : : When applied for, 25.9.1911.
Special .. £ 33 : :
Donkey Boiler Fee .. £ 1 : :
Travelling Expenses (if any) £ 1 : : When received, 30/9/11

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

Committee's Minute

FRI. SEP. 29 1911

Assigned

+ LMC 9.11

MACHINERY CERTIFICATE WRITER.



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