

1-7 JAN 1907

## REPORT ON MACHINERY.

No. 58760

Port of LIVERPOOL

Received at London Office WED. JAN 10 1907

Survey held at

Date, first Survey 7 Dec 05

Last Survey 7 Jan 1907

(Number of Visits 51)

on the

Turbine Steamer "Marylebone"

Tons { Gross 1972  
Net 572

Built at

Birkenhead

By whom built

Messrs. Cammell Laird &amp; Co. Ltd.

made at

Birkenhead

By whom made

Messrs. Cammell Laird &amp; Co. Ltd.

when made

made at

Do

By whom made

Do

when made

Horse Power

Owners Great Central Railway Co

Port belonging to Grimsby

Horse Power as per Section 28

960

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ES, &amp;c.

Description of Engines

Triple Expansion Turbine

No. of Cylinders

3

No. of Cranks

4

Cylinders

4-3-1 1/2

Length of Stroke

18

Revs. per minute

445

Dia. of Screw shaft

14

Material of screw shaft

Steel

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

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

The bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

Yes

If two

fitted, is the shaft lapped or protected between the liners

No

Length of stern bush

3.8

Crank shaft

as per rule

1/2

Dia. of Crank shaft journals

as per rule

10

Dia. of Crank pin

Size of Crank webs

Dia. of thrust shaft under

9"

Dia. of screw

6.3

Pitch of Screw

5.6

No. of Blades

3

State whether moveable

Yes

Total surface

2604 sq ft

Suction pumps

2

Diameter of ditto

10"

Stroke

26"

Can one be overhauled while the other is at work

Yes

Large pumps

2

Diameter of ditto

8"

Stroke

8"

Can one be overhauled while the other is at work

Yes

Donkey Engines

See List

Sizes of Pumps

See List attached

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

Room

See 3 1/2 &amp; one 3"

In Holds, &amp;c.

One 2 1/2" in each compartment

Injections

2 sizes

8 1/2"

Connected to condenser, or to circulating pump

Pump

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

Yes 3"

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

Connections with the sea direct on the skin of the ship

Yes

Are they Valves or Cocks

Both

Roses 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

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

Pipes are carried through the bunkers

None

How are they protected

No

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Yes

Large Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Yes

Examination of completion of fitting of Sea Connections

Satisfactory

Date of Stern Tube

25.9.06

Screw shaft and Propeller

25.9.06

Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from Engine room, tunnel &amp; deck

ES, &amp;c. (Letter for record (S.1))

Manufacturers of Steel

Steel Co. of Scotland

Heating Surface of Boilers

3300 sq ft

Is Forced Draft fitted

Yes

No. and Description of Boilers

Three Single ended Steel

Working Pressure

160 lb

Tested by hydraulic pressure to

320 lb

Date of test

30.4.06

No. of Certificate

1804

Can boiler be worked separately

Yes

Area of fire grate in each boiler

72.56 sq ft

No. and Description of Safety Valves to

or 3 Spring

Area of each valve

12.6

Pressure to which they are adjusted

160 lb

Are they fitted with easing gear

Yes

Distance between boilers or uptakes and bunkers or woodwork

12"

Mean dia. of boilers

16.12

Length

11.4

Material of shell plates

Steel

Range of tensile strength

29-32

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

Lap double

Diameters

See List

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

8 1/2"

Lap of plates or width of butt straps

19 3/16"

Degrees of strength of longitudinal joint

rivets

88%

Working pressure of shell by rules

140.2

Size of manhole in shell

14" x 12 1/2"

Compensating ring

8 x 1 1/2"

No. and Description of Furnaces in each boiler

3

Material

Steel

Outside diameter

4.14 1/2"

Plain part

top

7.6

Thickness of plates

crown

19.2

Description of longitudinal joint

Weld

No. of strengthening rings

4

Pressure of furnace by the rules

148

Combustion chamber plates: Material

Steel

Thickness: Sides

1 1/2"

Back

1 1/2"

Top

7/16"

Bottom

3/4"

Stays to ditto: Sides

4 1/2 x 4 1/2"

Back

4"

Top

8 x 4 1/2"

If stays are fitted with nuts or riveted heads

Yes

Working pressure by rules

160 lb

of stays

Steel

Diameter at smallest part

1.46

Area supported by each stay

58 sq in

Working pressure by rules

183

End plates in steam space:

Thickness

Steel

2 1/2"

Pitch of stays

14 x 16

How are stays secured

By 4 bolts

Working pressure by rules

188.4

Material of stays

Steel

at smallest part

2 1/2"

Area supported by each stay

272 sq in

Working pressure by rules

165.6

Material of Front plates at bottom

Steel

Material of Lower back plate

Steel

Thickness

2 1/2"

Greatest pitch of stays

12 1/2 x 6"

Working pressure of plate by rules

181

Mean pitch of stays

As plan

of tubes

2 1/2"

Pitch of tubes

3 5/8"

Material of tube plates

Steel

Thickness: Front

1 1/2"

Back

3/4"

Mean pitch of stays

As plan

Cross wide water spaces

13 1/2 x 7 1/2"

Working pressures by rules

165 lb

Girders to Chamber tops: Material

Steel

Depth and

of girder at centre

6 1/2 x 2 1/2"

Length as per rule

2.4

Distance apart

8"

pressure by rules

163.5

Superheater or Steam chest; how connected to boiler

None

Can the superheater be shut off and the boiler worked

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

d with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

W1243-0233



VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.

Description

*The boiler has been efficiently fitted and well ranged.*

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

*284* Description of St

Valves

No. of Safety Valves

Area of each

*4.9*

Pressure to which they are adjusted

*100 lb*

Date of adjustment

*2.10.06*

If fitted with easing gear

*Yes*

If steam from main boilers can enter the donkey boiler

*No*

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

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

Stayed by

Diameter of uptake

Thickness of uptake plates

Thickness of water tubes

Dates of survey

SPARE GEAR. State the articles supplied:—

*12 Shaft coupling bolts & nuts, two bearing trapezes 50 main condenser tubes, 10 augmentor & 10 main condenser tubes, feed & tilting valves, safety & escape valves, 50 boiler tubes, valves, springs & pins for auxiliary pumps, fire bars for main & donkey boilers, nuts, bolts & iron assorted.*

The foregoing is a correct description,

*R. R. Lewis*

Manufacturer.

Dates of Survey while building  
During progress of work in shops—  
During erection on board vessel—  
Total No. of visits

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders Slides Covers Pistons Rods

Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller

Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Material of Crank shaft Identification Mark on Do. Material of Thrust shaft Identification Mark on Do.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.

Material of Steam Pipes Test pressure

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

*The machinery and boilers have been specially surveyed during construction. The material and workmanship good and have been efficiently fitted, tried under full steam ahead & astern at sea and found to work satisfactorily, rendering the vessel eligible in my opinion to have the Record + L.M.C. 1-07 in the Register Book of the Port of Liverpool.*

It is submitted that this vessel is eligible for THE RECORD

L.M.C. 1-07. F.D. ELEC. LIGHT 35 STEAM TURBINES.

*9.1.07*

The amount of Entry Fee..

When applied for,

Special

When received,

Donkey Boiler Fee

Travelling Expenses (if any)

Committee's Minute

Assigned

LIVERPOOL

*L.M.C. 1-07*

MACHINERY CERTIFICATE

WRITTEN 9.1.07

*Richard Miles*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

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