

Rpt. 4.

## REPORT ON MACHINERY.

No. 65923

Port of

London

THUR. 24 DEC 1903

No. in Survey held at  
Reg. Book.

Yarmouth

Date, first Survey

Dec 2

Last Survey

Dec 12

19 03

on the

ss. "Earn"

(Number of Visits 4)

Master

Built at

Hull

By whom built

G. Cooper

Engines made at

Yarmouth

By whom made

Grattree &amp; Co.

when made

1903

Boilers made at

Stockton

By whom made

Riley Bros

when made

1903

Registered Horse Power

Owners Simpson &amp; Farquhar

Port belonging to

Barff

Nom. Horse Power as per Section 28

Is Refrigerating Machinery fitted

no

Is Electric Light fitted

no.

ENGINES, &amp;c.—Description of Engines

Compound

No. of Cylinders

2

No. of Cranks

2

Dia. of Cylinders

11 &amp; 22

Length of Stroke

14

Revs. per minute

Dia. of Screw shaft

as per rule 5.05

Material of

steel

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

in the propeller boss no liner 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

✓

If two

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

✓

Length of stern bush

20

Dia. of Tunnel shaft

as per rule 4.2

Dia. of Crank shaft journals

as per rule 4.4

Dia. of Crank pin

14 1/2

Size of Crank webs

2 3/4 x 6

Dia. of thrust shaft under

collars

14 1/2

Dia. of screw

6-0

Pitch of screw

7-0

No. of blades

4

State whether moveable

no

Total surface

11 1/4

No. of Feed pumps

1

Diameter of ditto

2 1/2

Stroke

5 3/4

Can one be overhauled while the other is at work

✓

No. of Bilge pumps

1

Diameter of ditto

2 1/2

Stroke

5 3/4

Can one be overhauled while the other is at work

✓

No. of Donkey Engines

one

Sizes of Pumps

bilge 40 3 x 6

feet

2 1/2 x 6

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

In Engine Room

one 2" engine suction

one 2" ejector

one 2" donkey suction

In Holds, &amp;c.

2" ejector

2" engine &amp; donkey suction

suction

No. of bilge injections

1

size

2"

Connected to condenser or to circulating pump

Is a separate donkey suction fitted in Engine room &amp; size

2" donkey

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

before

launching

Is the screw shaft tunnel watertight

✓

Is it fitted with a watertight door

✓

worked from

✓

BOILERS, &amp;c.—

(Letter for record)

Total Heating Surface of Boilers

Is forced draft fitted

no

No. and Description of Boilers

one cyl. multitubular

Working Pressure

120 lbs

Tested by hydraulic pressure to

Date of test

Can each boiler be worked separately

Area of fire grate in each boiler

No. and Description of safety valves to

each boiler

2 direct spring

Area of each valve

3.14 sq. ft.

Pressure to which they are adjusted

120 lbs

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

6"

Mean dia. of boilers

Length

Material of shell plates

Thickness

Range of tensile strength

Are they welded or flanged

Descrip. of riveting: cir. seams

long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Per centages of strength of longitudinal joint

rivets

plate

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

top

bottom

Thickness of plates

crown

bottom

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space:

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of Stays in each

Working pressure by rules

Superheater or Steam chest; how connected to boiler

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 they fitted with easing gear

W1431-0241



## DONKEY BOILER— No. Description

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_  
 No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:—

as per rule.

The foregoing is a correct description,

Manufacturer.

Dates of Survey  
 During progress of work in shops - -  
 During erection on board vessel - -  
 Total No. of building s

Dec 2. 1904 21 Dec 12

Is the approved plan of main boiler forwarded herewith

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

These engines have been constructed under special survey the material tested in accordance with the Society's rules & the workmanship is good.

The machinery has been satisfactorily fitted on board and the safety valves adjusted under steam & engines tried under steam.

In my opinion this vessel is eligible for the record + LMC 12.03

It is submitted that  
 this vessel is eligible for  
 THE RECORD. + LMC 12.03

Bel  
29.12.03Working press 120 lb  
Sms

Certificate (if required) to be sent to

The amount of Entry Fee.. £ 1 : 0 : 0 When applied for,  
 Special .. .. £ 5 : 6 : 0 29.12.03  
 Donkey Boiler Fee .. .. £ : : : When received,  
 Travelling Expenses (if any) £ 1 : 13 : 0 12.5.1904

Committee's Minute

TUES. DEC 29 1903

Assigned

+ LMC 12.03

MACHINERY CERTIFICATE  
WRITTEN.

C. Marshall

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



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Foundation