

REPORT ON MACHINERY.

No. 21770

14th. 21 APR 1904

Port of

Sunderland

Received at London Office

10

No. in Survey held at

Sunderland

Date, first Survey 9th Decr. '03 Last Survey 13th April 1904

Reg. Book.

(Number of Visits 30)

on the

Steel S.S. "Bumholme"

Gross 3423
Tons Net 2209

Master G. Breckan

Built at

Sunderland

By whom built

J. L. Thompson + Sons

When built

1904

Engines made at

Sunderland

By whom made

J. Dickinson + Sons Ltd

when made

1904

Boilers made at

Sunderland

By whom made

J. Dickinson + Sons Ltd

when made

1904

Registered Horse Power

Owners

Rowland & Marwood S.S. Co.

Port belonging to

Whitby

Nom. Horse Power as per Section 28

321

Is Refrigerating Machinery fitted

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

24" - 40" - 66"

Length of Stroke

45"

Revs. per minute

70

Dia. of Screw shaft

as per rule 13.74
as fitted 14.5"

Material of screw shaft

W. 9.

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

If two

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

Yes

Length of stern bush

4'-9"

Dia. of Tunnel shaft

as per rule 12.1
as fitted 12.4"

Dia. of Crank shaft journals

as per rule 12.72
as fitted 13.4"

Dia. of Crank pin

13.4"

Size of Crank webs

Ballant

Dia. of thrust shaft under

collars

13.4"

Dia. of screw

17'-0"

Pitch of screw

17'-0"

No. of blades

4

State whether moveable

No

Total surface

800

No. of Feed pumps

2

Diameter of ditto

3.5"

Stroke

22.5"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4.5"

Stroke

22.5"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

2

Sizes of Pumps

Ballant. 8" x 8" x 10"
and duplex 8" x 8" x 8"

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

In Engine Room

3 - 3.5"

In Holds, &c.

2 of 3.5" in each hold.

No. of bilge injections

1

sizes

4"

Connected to condenser, or to circulating pump

C.P.

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

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

New vessel.

Is the screw shaft tunnel watertight

Yes.

Is it fitted with a watertight door

Yes

worked from

Top platform.

OILERS, &c.—

(Letter for record S)

Total Heating Surface of Boilers

50000

Is forced draft fitted

No

No. and Description of Boilers

Two cylindrical multitubular

Working Pressure

180 lb.

Tested by hydraulic pressure to

360 lb.

Date of test

16/3/04

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

71

No. and Description of safety valves to

each boiler

2 Spring loaded

Area of each valve

8.3

Pressure to which they are adjusted

185 lb.

Are they fitted with easing gear

Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork

2'-0"

Mean dia. of boilers

16'-3"

Length

10'-6"

Thickness

1.5"

Range of tensile strength

28-32

Are they welded or flanged

No

Descrip. of riveting: cir. seams

D.R.L.

long. seams

T.R.D.B.S.

Diameter of rivet holes in long. seams

1.5"

Pitch of rivets

9.5"

Lap of plates or width of butt straps

1'-8.5"

Per centages of strength of longitudinal joint

rivets 88.5
plate 85.5

Working pressure of shell by rules

183 lb.

Size of manhole in shell

16" x 12"

Size of compensating ring

8.5" x 1.5"

No. and Description of Furnaces in each boiler

4 plain

Material

Steel

Outside diameter

3'-4.5"

Length of plain part

top 8.5"
bottom 8.5"

Thickness of plates

crown 7.49"
bottom 7.49"

Description of longitudinal joint

Welded

No. of strengthening rings

—

Working pressure of furnace by the rules

181.5 lb.

Combustion chamber plates: Material

Steel

Thickness: Sides

1.5"

Back

1.5"

Top

1.5"

Bottom

1.5"

Pitch of stays to ditto: Sides

10 x 9"

Back

10 x 9"

Top

10 x 9"

If stays are fitted with nuts or riveted heads

Yes

Working pressure by rules

180 lb.

Material of stays

Steel

Area at smallest part

2.35"

Area supported by each stay

115.6"

Working pressure by rules

182 lb.

End plates in steam space:

Material

Steel

Thickness

1.5"

Pitch of stays

18" x 16.5"

How are stays secured

D.N.+W.

Working pressure by rules

181.5 lb.

Material of stays

Steel

Area at smallest part

5.57

Area supported by each stay

294.75

Working pressure by rules

189 lb.

Material of Front plates at bottom

Steel

Thickness

2.5"

Material of Lower back plate

Steel

Thickness

3.5"

Greatest pitch of stays

14.5"

Working pressure of plate by rules

260 lb.

Diameter of tubes

3.4"

Pitch of tubes

4.5" x 4.5"

Material of tube plates

Steel

Thickness: Front

1"

Back

3.5"

Mean pitch of stays

9"

Pitch across wide water spaces

14.5"

Working pressures by rules

180 lb.

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

6.5" x 1 x 2

Length as per rule

29.5"

Distance apart

9"

Number and pitch of Stays in each

2 of 10"

Working pressure by rules

184 lb.

Superheater or Steam chest; how connected to boiler

None

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

Thickness

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

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

Yes

Lloyd's Register

Foundation

W666-6092

DONKEY BOILER— No. One Description Cylindrical Multitubular, 2 plain furnace.
Made at Sunderland By whom made J. Dickinson & Sons Ltd When made 1904 Where fixed Main deck
Working pressure 180 lb tested by hydraulic pressure to 360 lb. No. of Certificate 2244 Fire grate area 23 sq ft Description of safety valves Spring loaded
No. of safety valves 2 Area of each 4.9 sq ft Pressure to which they are adjusted 185 lb. If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No Dia. of donkey boiler 9'-6" Length 9'-0" Material of shell plates Steel Thickness 7/8" Range of tensile strength 28-32 Descrip. of riveting long. seams D.R.D.B.S. Dia. of rivet holes 1 1/8" Whether punched or drilled drilled Pitch of rivets 5 1/8"
Width of butch chop 6" Rivets 90 end Thickness of shell plates 7/8" Pitch of stay 5 1/8" x 1 1/2" No. of Stays to do. 8
Lap of plating 1 1/8" Per centage of strength of joint Plates 80 Thickness of furnace plates 4 1/4" Description of joint Welded Thickness of furnace plates 4 1/4" Stayed by 1 3/4" clamp 10 x 9" Working pressure of shell by rules 180 lb.
Working pressure of furnace by rules 182 lb. Diameter of tubes 3 1/2" Thickness of tubes plates F 7/8" B. 13/16" Thickness of water tubes 1/4"

SPARE GEAR. State the articles supplied:— Propeller, two top end + two bottom end bolts + nuts, two main bearing bolts + nuts, set of coupling bolts, set of feed + bilge pump valves + assorted bolts, nuts + iron.

The foregoing is a correct description,
JOHN DICKINSON & SONS, LIMITED. Manufacturer.

Dates of Survey { During progress of work in shops - - SECRETARY 1903:- Dec. 9 - 1904:- Jan 20, 22, 27, 29, Feb 2, 3, 5, 10, 11, 16, 18, 23, 25, Mar. 2, 5, 8, 9, 11, 16, 18, 21, 22, 24, 28, 30, 31, Apr 1
while building { During erection on board vessel - -
Total No. of s 30. Is the approved plan of main boiler forwarded herewith Yes
" " " donkey " " " Yes

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

The machinery of this vessel has been constructed under special survey, the materials + workmanship are good + efficient. Boilers + main steam pipes tested by hydraulic pressure to double the working pressure. The whole examined under steam + safety valves adjusted as stated above.

In my opinion this vessel is eligible for the registration in the Register Book of L.M.C. 4.04.

It is submitted that
this vessel is eligible for
THE RECORD. - L.M.C. 4.04.

Bal.
21.4.04

The amount of Entry Fee.. £ 3 : : When applied for,
Special £ 36 : 1 : 20.4.04
Donkey Boiler Fee £ 2 : 2 : When received,
Travelling Expenses (if any) £ : : 23.5.04

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

Committee's Minute

APR 22 APR 1904

TUES. 26 APR 1904

Assigned

+ L.M.C. 4.04

MACHINERY CERTIFICATE
WRITTEN



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Lloyd's Register
Foundation

Sunderland.

Certificate (if required) to be sent to

(The Surveyor are requested not to write on or below the space for Committee's Minute.)