

Rpt. 4.

REPORT ON MACHINERY.

Hwa No. 52345
Sta. No. 23117

Port of

Sunderland

Received at London Office

TUES. FEB 12 1907

No. in Survey held at

Reg. Book.

on the

S. S. No. 162

Date, first Survey 26 February 06. Last Survey 15 January 1907

(Number of Visits 53)

Master

Built at Newcastle

By whom built

Tynes Iron Shipbuilding Co

Gross 3556

Tons Net 2288

When built 1907

Engines made at Sunderland

By whom made

Messrs J. Dickinson & Sons

when made

1907

Boilers made at Sunderland

By whom made

Messrs J. Dickinson & Sons

when made

1907

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28

307

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ENGINES, &c.—Description of Engines

Inverted 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 13.7

Material of screw shaft

Iron

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

4.9

Dia. of Tunnel shaft

as per rule 12.1

as fitted 12.2

Dia. of Crank shaft journals

as per rule 12.7

as fitted 12.4

Dia. of Crank pin

12.4

Size of Crank webs

Patent

collars

12.4

Dia. of screw

17.0

Pitch of Screw

16.0

No. of Blades

4

State whether moveable

no

No. of Feed pumps

2

Diameter of ditto

3.2

Stroke

22.2

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4.2

Stroke

22.2

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

2

Sizes of Pumps

6 x 4 x 6

7.5 x 9 x 10

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

In Engine Room

4 of 3.2

In Holds, &c.

Two in each hold 3.2 dia

one in Tunnel well

2.4 dia

No. of Bilge Injections

1 sizes

4

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

Yes

Is a separate Donkey Suction fitted in Engine room & size

Yes

Is a separate Donkey Suction fitted in Engine room & size

Yes

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

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

19.12.06

of Stern Tube

4.1.07

Screw shaft and Propeller

4.1.07

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Top platform

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

BOILERS, &c.—(Letter for record

S)

Manufacturers of Steel

Messrs J. Spencer & Sons

Total Heating Surface of Boilers

4600

Is Forced Draft fitted

no

No. and Description of Boilers

2. S. E. Cylindrical Built

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

19.12.06

No. of Certificate

2563

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

Area of each valve

8.3

Pressure to which they are adjusted

Smallest distance between boilers or uptakes and bunkers or woodwork

2.5

Mean dia. of boilers

15.9

Length

10.6

Material of shell plates

steel

Thickness

1.2

Range of tensile strength

28/32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

d. v. lap.

long. seams

t. r. d. v. s.

Diameter of rivet holes in long. seams

1.4

Pitch of rivets

9.7

Lap of plates or width of butt straps

20.2

Per centages of strength of longitudinal joint

rivets 92.6

plate 85.2

Working pressure of shell by rules

181.5

Size of manhole in shell

16 x 12

Size of compensating ring

flanged

No. and Description of Furnaces in each boiler

4 plain

Material

steel

Outside diameter

40.4

Length of plain part

top 84.7

Thickness of plates

crown 49.6

Description of longitudinal joint

weld

No. of strengthening rings

Yes

Working pressure of furnace by the rules

180 lbs

Combustion chamber plates: Material

steel

Thickness: Sides

11/16

Back

11/16

Top

11/16

Pitch of stays to ditto: Sides

10 x 9

Back

10 x 9

Top

9 x 9

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

180.5

Material of stays

steel

Diameter at smallest part

2.03

Area supported by each stay

90

Working pressure by rules

203

End plates in steam space:

Material

Material

steel

Thickness

1.3

Pitch of stays

18 x 17.2

How are stays secured

d. n. w.

Working pressure by rules

184

Diameter at smallest part

5.5

Area supported by each stay

308.2

Working pressure by rules

181

Material of Front plates at bottom

steel

Thickness

7/8

Material of Lower back plate

steel

Thickness

27/32

Greatest pitch of stays

13.2 x 10

Working pressure of plate by rules

181

Diameter of tubes

3.4

Pitch of tubes

4.2 x 4.2

Material of tube plates

steel

Thickness: Front

1.3

Back

7/8

Pitch across wide water spaces

13.4

Working pressures by rules

244

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

6.2 x 2

Length as per rule

Working pressure by rules

182

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

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

1510-015

1510-015

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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 _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 1 Propeller, 1 Propeller shaft, 2 top end, 2 bottom end, 2 Main bearing & 1 set of coupling bolts; 2 Lead & 2 Bilge pump valves, 1 set of Air pump & 1 set of Air pump valves, 2 Main & 2 Donkey feed check valves, 2 Ballast & 2 Sky valves, 2 Safety valve springs, 2 Escape valve springs, 6 boiler tubes & assorted nuts & bolts.

The foregoing is a correct description,

John Dickinson & Co., Ltd.

Admission

Manufacturer.

Dates of Survey while building: During progress of work in shops— 1906: Feb 26, 28, Aug 13, 15, Sept 11, 13, Oct 2, 4, 10, 11, 14, 15, 17, 24, 29, Nov 1, 6, 9, 10, 13, 14, 16, 17, 19, 20, 22, 23, 26, 27, Dec 28, 29, 30. During erection on board vessel— Dec 1, 3, 4, 14, 15, 17, 18, 19, 20, 21, 22, 24, 27, Jan 3, 10, 7, 8, 10, 11, 12, 15. Total No. of visits 53.

Is the approved plan of main boiler forwarded herewith ☒ Yes

Dates of Examination of principal parts—Cylinders 13.12.06 Slides 20.12.06 Covers 14.12.06 Pistons 17.12.06 Rods 29.11.06

Connecting rods 3.12.06 Crank shaft 20.11.06 Thrust shaft 22.12.06 Tunnel shafts 18.12.06 Screw shaft 21.12.06 Propeller 27.12.06

Stern tube 17.12.06 Steam pipes tested 14.1.07 Engine and boiler seatings 14.1.07 Engines holding down bolts 7.1.07

Completion of pumping arrangements 16.1.07 Boilers fixed 7.1.07 Engines tried under steam 15.1.07

Main boiler safety valves adjusted 15.1.07 Thickness of adjusting washers P.F. 15/32, P.A. 1/8, S.F. 3/8, S.A. 1/2.

Material of Crank shaft steel Identification Mark on Do. 371B Material of Thrust shaft steel Identification Mark on Do. 902 P.A.

Material of Tunnel shafts steel Identification Marks on Do. 372, 373, 3729, Material of Screw shafts Iron Identification Marks on Do. 375 B

Material of Steam Pipes Copper Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.) The Machinery of this vessel has been constructed under special survey, the workmanship and materials used are both of good quality, the engines have been tried under steam and worked satisfactorily.

It is submitted that this vessel is eligible for THE RECORD

L.M.C. 1.07.

12.2.07

We beg to recommend that this vessel is eligible in our opinion to have the record L.M.C. 1-07 in the Register Book

The amount of Entry Fee... £ 3 : : When applied for, 21.1.1907

Special ... £ 35 : : 13/2/07

Donkey Boiler Fee ... £ : : When received, 12.2.07

Travelling Expenses (if any) £ : : 12.2.07

K. W. Coomber & J. E. Sella
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. FEB 15 1907

Assigned



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