

REPORT ON MACHINERY.

No. 4493

Port of MIDDLESBROUGH-ON-TEES

Received at London Office

THUR. 18 OCT 1906

No. in Survey held at StocktonDate, first Survey 1st June

Last Survey

19

Reg. Book:

981 on the Steel S.S. "Millpool"

(Number of Visits)

Gross 4217.93

Net 2707.03

When built 1906

Master O. OvensBuilt at Stockton

By whom built

Thompson & SonEngines made at Stockton

By whom made

Polain & Co. Ltd

when made

1906

Boilers made at Stockton

By whom made

Polain & Co. Ltd

when made

1906

Registered Horse Power

Owners The Teal Shipping Co. LtdPort belonging to W. Antelope

Nom. Horse Power as per Section 28

369

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Direct acting Trip expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

25-42-68

Length of Stroke

48

Revs. per minute

56

Dia. of Screw shaft

as per rule 14.3

Material of

screw shaft W. 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

✓

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

✓

Length of stern bush

5-4

Dia. of Tunnel shaft

as per rule 12.72

as fitted 13.12

Dia. of Crank shaft journals

as per rule 13.35

as fitted 14

Dia. of Crank pin

14 1/2

Size of Crank webs

22 1/2 x 9 1/2

Dia. of thrust shaft under

collars

14 1/2

Dia. of screw

17-6

Pitch of Screw

17 1/2 ft

No. of Blades

4

State whether moveable

No

Total surface

92 sq

No. of Feed pumps

2

Diameter of ditto

3 1/4

Stroke

34

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4 3/4

Stroke

34

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

2

Sizes of Pumps

4 x 8

Ballast

9 x 10

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

In Engine Room

Three 3 1/2 diameter

In Holds, &c.

Two each hold 3 1/2 diameter

One 3" tunnel well

No. of Bilge Injections

1

sizes

6 1/4

Connected to condenser, or to circulating pump

L.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

Dates of examination of completion of fitting of Sea Connections

16-8-06

of Stern Tube

20-8-06

Screw shaft and Propeller

Is the Screw Shaft Tunnel watertight

See ship report

Is it fitted with a watertight door

Yes

worked from

Top platform

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel

John Thompson & Son Ltd

Total Heating Surface of Boilers

5999 sq

Is Forced Draft fitted

No

No. and Description of Boilers

Two Cyl. Tubular

Working Pressure

180 lb

Tested by hydraulic pressure to

360 lb

Date of test

10-8-06

No. of Certificate

3741

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

63 1/2 sq

No. and Description of Safety Valves to

each boiler

Two, spring

Area of each valve

8.29 sq

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

2-6

Dia. of boilers

16-9

Length

11-6

Material of shell plates

Steel

Thickness

3/8 in

Range of tensile strength

28/32

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

2 in

long. seams

D. Butt Ship

Diameter of rivet holes in long. seams

1 7/16

Pitch of rivets

9 7/8

Lap of plates or width of butt straps

1-9 1/4

Per centages of strength of longitudinal joint

rivets

86.8%

plate

85.4%

Working pressure of shell by rules

184 lb

Size of manhole in shell

17 x 13

Size of compensating ring

31 x 27 x 1 1/8 in

No. and Description of Furnaces in each boiler

3 Browns

Material

Steel

Outside diameter

3-9 1/2

Length of plain part

top 7-2

bottom 7-5 1/4

Thickness of plates

9/16 in

Description of longitudinal joint

Welded

No. of strengthening rings

-

Working pressure of furnace by the rules

191 lb

Combustion chamber plates: Material

Steel

Thickness: Sides

7/8 in

Back

7/8 in

Top

7/8 in

Bottom

13/16

Pitch of stays to ditto: Sides

9 3/4 x 8 3/4

Back

9 3/8 x 8 5/8

Top

9 3/4 x 8 5/8

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

183 lb

Material of stays

Steel

Diameter at smallest part

1 7/16

Area supported by each stay

80.9 sq

Working pressure by rules

213 lb

End plates in steam space:

Material

Steel

Thickness

3/8 in

Pitch of stays

23 1/4 x 22

How are stays secured

Nuts

Working pressure by rules

182 lb

Material of stays

Steel

Diameter at smallest part

3 1/2

Area supported by each stay

511.5 sq

Working pressure by rules

188 lb

Material of Front plates at bottom

Steel

Thickness

1/32

Greatest pitch of stays

17 1/2 x 8 7/8

Working pressure of plate by rules

193 lb

Diameter of tubes

3 1/2

Pitch of tubes

4 3/4 x 4 7/8

Material of tube plates

Steel

Thickness: Front

1/32

Back

3/16

Mean pitch of stays

11 3/16

Pitch across wide water spaces

14 1/2

Working pressures by rules

189 lb

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

8 7/8 x 2

Length as per rule

33

Distance apart

9 3/4

Number and pitch of stays in each

Three 8 5/8

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

Yes

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

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:— *Set of top and bottom end connecting rods bolts & nuts. Set of coupling bolts & nuts. Two main bearing bolts. Set of feed & bilge pump valves. H & M piston rings for piston of rings. Propeller & propeller shaft &c &c*

The foregoing is a correct description,
FOR BLAIR & CO., LIMITED.

W. Borrie Manufacturer of main engines & boilers

SECRETARY. 1906. June 4. 15 July 4. 10. 16. 17. 20. 23. 25. 26. Aug 3. 9. 10. 13. 14. 15. 16. 17. 27. 28. 31
Sept 4. 6. 7. 14. 20. 21. 25. 26. Oct. 2. 4

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 *Yes*

Dates of Examination of principal parts—Cylinders $\frac{4}{7}$ $\frac{9}{7}$ $\frac{2}{8}$ Slides $\frac{26}{7}$ Covers $\frac{4}{7}$ Pistons $\frac{26}{7}$ Rods $\frac{15}{6}$
Connecting rods $\frac{15}{6}$ Crank shaft $\frac{17}{8}$ Thrust shaft $\frac{16}{7}$ Tunnel shafts $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ Screw shaft $\frac{28}{8}$ Propeller $\frac{17}{8}$
Stern tube $\frac{25}{7}$ Steam pipes tested $\frac{6}{9}$ Engine and boiler seatings $\frac{28}{8}$ Engines holding down bolts $\frac{7}{9}$
Completion of pumping arrangements $\frac{26}{9}$ Boilers fixed $\frac{7}{9}$ Engines tried under steam $\frac{26}{9}$
Main boiler safety valves adjusted $\frac{26}{9}$ Thickness of adjusting washers $\frac{5}{16}$ $\frac{3}{16}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{5}{16}$ $\frac{5}{16}$ $\frac{1}{4}$ $\frac{1}{4}$
Material of Crank shaft *W. I.* Identification Mark on Do. $\frac{5926}{5927}$ Material of Thrust shaft *W. I.* Identification Mark on Do. $\frac{5880}{5881}$
Material of Tunnel shafts *Scrap* Identification Marks on Do. $\frac{5924}{5925}$ Material of Screw shafts *W. I.* Identification Marks on Do. $\frac{5929}{5930}$
Material of Steam Pipes *Copper, solid drawn* $\frac{5920}{5921}$ Test pressure $\frac{360}{361}$

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

The machinery of this vessel has been constructed under special survey, the material and workmanship are good and efficient and when tested under steam was found satisfactory, and in my opinion eligible for the notation + F.M.C. 10.06 in the Register Book.

It is submitted that
this vessel is eligible for
THE RECORD F.M.C. 10.06

18.10.06
18.10.06

The amount of Entry Fee. £ 3 : 0 : 0 When applied for, _____
Special £ 38 : 9 : 0 _____
Donkey Boiler Fee £ : : : _____
Travelling Expenses (if any) £ : : : _____

Geo. A. Milner
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 19 OCT 1906

Assigned

+ L.M.C. 10.06

MINISTRY CERTIFICATE
WRITTEN.



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Foundation