

REPORT ON MACHINERY.

No. 21574

Port of

Sunderland.

14th Nov 1903

Received at London Office

19

No. in Survey held at
Reg. Book.

Sunderland.

Date, first Survey 2nd Sept.Last Survey 29th Oct. 1903.

(Number of Visits)

on the Steel Screw Steamer

"Factor"

Tons { Gross 1178
Net 730
When built 1903

Master

Built at

Sunderland.

By whom built

A.P. Austin & Son, Ltd.

Engines made at

Sunderland.

By whom made

A.E. M'Eng. & Co. (C 1577)

when made

1903

Boilers made at

Sunderland.

By whom made

do

when made

1903

Registered Horse Power

Owners

Factor S. S. Co. Ltd.

Port belonging to

London

Nom. Horse Power as per Section 28

173

Is Refrigerating Machinery fitted

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Tri-Compound Surf. Condensing

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

19' 31' 51"

Length of Stroke

36"

Revs. per minute

81

Dia. of Screw shaft

as per rule 7.8 11.97
as fitted 11.4

Material of

w. I. screw shaft

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

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

No

Length of stern bush

3'-10"

Dia. of Tunnel shaft

as per rule 9.19
as fitted 9.38

Dia. of Crank shaft journals

as per rule 9.65
as fitted 9.34

Dia. of Crank pin

9 3/4"

Size of Crank webs

1'-3 1/2" x 6"

Dia. of thrust shaft under

collars

9 3/4"

Dia. of screw

13'-3"

Pitch of screw

14'-0"

No. of blades

4

State whether moveable

No

Total surface

53 sq ft

No. of Feed pumps

2

Diameter of ditto

3

Stroke

1'-6"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

3 1/2"

Stroke

1'-6"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

2

Sizes of Pumps

7 x 9, 9 x 5, 3 x 4 1/2"

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

In Engine Room

3 of 2 1/2"

In Holds, &c. 2 of 2 1/2" in each hold

No. of bilge injections

1

sizes

3 1/2"

Connected to condenser, or to circulating pump

C.P.

Is a separate donkey suction fitted in Engine room & size

Yes - 2 1/2"

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

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

Is the screw shaft tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Main Deck

OILERS, &c.—

(Letter for record

S)

Total Heating Surface of Boilers

2847 sq ft

Is forced draft fitted

No

No. and Description of Boilers

2 Ordinary marine type

Working Pressure

160

Tested by hydraulic pressure to

320

Date of test

7/10/03

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

38.8 sq ft

No. and Description of safety valves to

each boiler

2 Spring

Area of each valve

4.9

Pressure to which they are adjusted

160

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

1'-3"

Mean dia. of boilers

12'-2 3/4"

Length

10'-6"

Material of shell plates

S

Thickness

29/32"

Range of tensile strength

29-32

Are they welded or flanged

No

Descrip. of riveting: cir. seams

d. r. l. long. seams

d. r. d. b.

Diameter of rivet holes in long. seams

1 1/4"

Pitch of rivets

7/4"

Lap of plates or width of butt straps

13 3/8"

Per centages of strength of longitudinal joint

rivets 83.35
plate 82.75

Working pressure of shell by rules

160.6

Size of manhole in shell

back 16" x 12"

Size of compensating ring

flanged

No. and Description of Furnaces in each boiler

2 plain

Material

S

Outside diameter

3'-6"

Length of plain part

top 7'-0 1/2"
bottom 7'-0 1/2"

Thickness of plates

crown 3/4"
bottom 3/4"

Description of longitudinal joint

Welded

No. of strengthening rings

None

Working pressure of furnace by the rules

166.6

Combustion chamber plates: Material

S

Thickness: Sides

11/16"

Back

11/16"

Top

11/16"

Bottom

1"

Pitch of stays to ditto: Sides

11 1/8" x 8 1/2"

Back

10 1/8" x 9 1/2"

Top

9 1/2" x 8 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

162

Material of stays

S

area

Diameter at smallest part

1.79

Area supported by each stay

100 sq in

Working pressure by rules

161

End plates in steam space:

Material

S

Thickness

1"

Pitch of stays

17 1/8" x 16 1/2"

How are stays secured

new

Working pressure by rules

160

Material of stays

S

area

Diameter

at smallest part

5'-0 1/2"

Area supported by each stay

294 sq in

Working pressure by rules

171.2

Material of Front plates at bottom

S

Thickness

3/4"

Material of Lower back plate

S

Thickness

27/32"

Greatest pitch of stays

14 1/8" x 9 1/2"

Working pressure of plate by rules

161.7

Diameter of tubes

3 1/4"

Pitch of tubes

4 3/4" x 4 1/2"

Material of tube plates

S

Thickness: Front

3/4"

Back

3/4"

Mean pitch of stays

9 1/2" x 9"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

192.5

Girders to Chamber tops: Material

S

Depth and

thickness of girder at centre

7 1/2" x 1 1/8"

Length as per rule

28.5

Distance apart

9.5

Number and pitch of Stays in each

248 1/2"

Working pressure by rules

167

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

DONKEY BOILER—

No.

Description

None fitted

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:—

Top & bottom End connecting rod bolts & nuts
2 main bearing bolts & nuts: 1 set of coupling bolts, feed & bilge pump
valves: propeller: bolts & nuts assorted.

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING CO. LTD.

Manufacturer.

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

1903- Sep. 2, 4, 24, 25. Oct. 2, 3, 6, 7, 8, 9, 13, 15, 28, 29.

Is the approved plan of main boiler forwarded herewith

Yes

" " " donkey " " "

✓

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

The machinery of this vessel has been built under Special Survey. Materials & workmanship good. Boilers & steam pipes tested by hydraulic pressure to double the working pressure. The Engines worked well. The safety valves of the boilers adjusted as above.

The vessel is eligible in my opinion to have the notation in the Register Book of + L.M.C. 10,03

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 10,03.

BAG

12.11.03

J.S.

13.11.03

The amount of Entry Fee.. £ 2: -

When applied for,

Special

£ 25: 19

9.11.1903

Donkey Boiler Fee

£

:

When received,

Travelling Expenses (if any) £

:

:

12.11.1903

P. R. Salmon.

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

Committee's Minute

FRI. 13 NOV 1903

Assigned

+ L.M.C. 10,03



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Foundation