

REPORT ON MACHINERY.

No. 21473

Port of

Sunderland

Received at London Office

SAI. 5 SEP 1903

No. in Survey held at

Sunderland

Date, first Survey

29 June 03

Last Survey

20 Aug 1903

Reg. Book.

on the

Screw Steamer

"St. Agnes"

(Number of Visits)

Master

J. Scott

Built at

Sunderland

By whom built

J. P. Austin & Son Ltd

Tons

Gross 1195

Net 740

When built

1903

Engines made at

Sunderland

By whom made

North Eastern Marine Eng. Co. Lim.

when made

1903

Boilers made at

Sunderland

By whom made

Ditto

when made

1903

Registered Horse Power

Owners

Stephenson Clarke & Co

Port belonging to

London

Nom. Horse Power as per Section 28

167

Is Refrigerating Machinery fitted

✓

Is Electric Light fitted

No.

ENGINES, &c.—Description of Engines

Tri Compound surface condensing

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

19", 31" 51"

Length of Stroke

36"

Revs. per minute

70

Dia. of Screw shaft

as per rule 9.28"

as fitted 11 1/2"

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

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

Partly at liner ends

Length of stern bush

3'-9 1/2"

Dia. of Tunnel shaft

as per rule 9.28"

as fitted 9 3/4"

Dia. of Crank shaft journals

as per rule 9.74"

as fitted 9 3/4"

Dia. of Crank pin

9 3/4"

Size of Crank webs

15 1/2" x 6"

Dia. of thrust shaft under

collars

Dia. of screw

13.3"

Pitch of screw

14'-6"

No. of blades

4

State whether moveable

No

Total surface

55 sq'

No. of Feed pumps

2

Diameter of ditto

2 1/2"

Stroke

1'-9"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

3"

Stroke

1'-9"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

2

Sizes of Pumps

7 1/2" x 9 1/2" 10 1/2" x 5 1/2" 14 1/2" x 5 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

Yes

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 the deep water line

Yes

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

No: New ship

Is the screw shaft tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

top platform

BOILERS; &c.—

(Letter for record

S)

Total Heating Surface of Boilers

2648

Is forced draft fitted

No

No. and Description of Boilers

One cylindrical multitubular

Working Pressure

165

Tested by hydraulic pressure to

330

Date of test

28/7/03

Can each boiler be worked separately

✓

Area of fire grate in each boiler

74.25

No. and Description of safety valves to

each boiler

2 - direct spring

Area of each valve

9.62 sq'

Pressure to which they are adjusted

165

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

15"

Mean dia. of boilers

16'-4 1/2"

Length

10'-6"

Thickness

1 1/16"

Range of tensile strength

29-32

Are they welded or flanged

No

Descrip. of riveting: cir. seams

D. r. lap

Diameter of rivet holes in long. seams

1 1/8"

Pitch of rivets

8 3/4"

Lap of plates or width of butt straps

1'-9 3/4"

Per centages of strength of longitudinal joint

rivets 85%

plate 84.28%

Working pressure of shell by rules

165.1

Size of manhole in shell

End 1'-4" x 1'-0"

Size of compensating ring

flanged

No. and Description of Furnaces in each boiler

4 plain

Material

Stl

Outside diameter

Length of plain part

top 6'-11 1/8"

Thickness of plates

crown 3/4"

Description of longitudinal joint

Welded

No. of strengthening rings

✓

Working pressure of furnace by the rules

168

Combustion chamber plates: Material

Stl

Thickness: Sides

1/16"

Back

3/4"

Top

1/16"

Bottom

1"

Pitch of stays to ditto: Sides

10 1/2" x 9"

Back

11 1/2" x 9 1/2"

Top

10" x 9"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

167.5

Material of stays

Steel area

Diameter at smallest part

2.1

Area supported by each stay

113.82 sq'

Working pressure by rules

166

End plates in steam space:

Material

Stl

Thickness

1 1/8"

Pitch of stays

24" x 22 1/2"

How are stays secured

Stl nuts

Working pressure by rules

165.2

Material of stays

Stl

Diameter at smallest part

9.82

Area supported by each stay

534 sq'

Working pressure by rules

181.9

Material of Front plates at bottom

Stl

Thickness

1/16"

Material of Lower back plate

Stl

Thickness

3/32"

Greatest pitch of stays

14 1/2" x 9 1/2"

Working pressure of plate by rules

165.6

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2" x 4 1/2"

Material of tube plates

Stl

Thickness: Front

1/16"

Back

1/16"

Mean pitch of stays

9 1/2" x 9"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

215.7

Girders to Chamber tops: Material

Stl

Depth and

thickness of girder at centre

6 1/4" x 3 1/4"

Length as per rule

28 1/2"

Distance apart

10"

Number and pitch of Stays in each

2 = 9"

Working pressure by rules

182.5

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

holes

✓

Pitch of rivets

✓

Working pressure of shell by rules

✓

Diameter of flue

DONKEY BOILER— No. *One* Description *Vertical*
 Made at *Gateshead* By whom made *Clarke Chapman & Co* When made *1903* Where fixed *Stokehold*
 Working pressure *90* tested by hydraulic pressure to *180* No. of Certificate *6623* Fire grate area *19 1/2* Description of safety valves *direct spring*
 No. of safety valves *1* Area of each *8.29* Pressure to which they are adjusted *90* If fitted with casing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *5' 9"* Length *12'* Material of shell plates *Stl* Thickness *7/16"* Range of tensile strength *27-33* Descrip. of riveting long. seams *D. r. lap* Dia. of rivet holes *7/8"* Whether punched or drilled *drilled* Pitch of rivets *3 3/16"*
 Lap of plating *4 1/4"* Per centage of strength of joint *73.3* Rivets *73.3* Thickness of shell crown plates *9/16"* Radius of do. *5'* No. of Stays to do. *5*
 Dia. of stays *1 5/8"* Diameter of furnace Top *4' 5 1/4"* Bottom *4' 10"* Length of furnace *4' 11"* Thickness of furnace plates *9/32"* Description of joint *S. r. lap* Thickness of furnace crown plates *9/16"* Stayed by *as above* Working pressure of shell by rules *102*
 Working pressure of furnace by rules *128* Diameter of uptake *15"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *2 bottom end bolts & nuts; 2 top end bolts & nuts; 1 set of coupling bolts & nuts; 2 feed pump valves; 2 bilge pump valves; Assorted bolts, nuts, iron etc.; Spare propeller: 2 main bearing bolts & nuts*

The foregoing is a correct description,
NORTH EASTERN MARINE ENGINEERING CO. LTD. Manufacturer.
Walter Deatherby

Dates { During progress of } 1903- Jun 29 July 1 2 3 24 28 29 30 31 Aug 5 7 20
 of Survey { work in shops - - }
 while { During erection on }
 building { board vessel - - }
 Total No. of s *12*

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 built under Special Survey, the material & workmanship sound & good; Boilers & steam pipes tested by hydraulic pressure to double the working pressure.

The Engines worked well; & the safety valves of the main & donkey boilers were adjusted as above.

This vessel is eligible, in my opinion, to have the notation in the Register Book. + L.M.C. 8.03.

It is submitted that
 this vessel is eligible for
THE RECORD. + L.M.C. 8.03

Bab.
7.9.03
7.9.03

The amount of Entry Fee.. £ *2* : : : When applied for,
 Special .. £ *25* : 1 : : *3.9.1903*
 Donkey Boiler Fee .. £ : : : When received,
 Travelling Expenses (if any) £ : : : *14.9.03*

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

Committee's Minute

TUES. 8 SEP 1903

Assigned

+ L.M.C. 8.03



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 Foundation

MACHINERY CERTIFICATE
 WRITTEN.