

## REPORT ON BOILERS.

No. 297/0

28 APR 1928

Received at London Office

Date of writing Report

192

When handed in at Local Office

27 APR 1928

Port of Sunderland.

No. in Survey held at

Sunderland.

Date, First Survey

Last Survey

20<sup>th</sup> Apr 1928

(Number of Visits

Gross 2402

Tons Net 1209

10054 on the

S.S. "BACTRIA"

Master

Built at Sunderland

By whom built

J. L. Thompson &amp; Sons Ltd

No. 561 When built 1928

Engines made at

Sunderland

By whom made

John Dickinson &amp; Sons Ltd

Engine No. 892

When made 1928

Boilers made at

-do-

By whom made

-do-

Boiler No. 1096

When made 1928

Nominal Horse Power

403

Owners

America-levant line Ltd

Port belonging to

London.

MULTITUBULAR BOILER ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel

The Steel Company of Scotland, Limited.

(Letter for Record

S

Total Heating Surface of Boilers

1041

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

One-Single Ended Marine Type - Plain Furnaces.

Working Pressure

180 lbs  $\square$ "

Tested by hydraulic pressure to

320 lbs  $\square$ "

Date of test

13-3-28

No. of Certificate

3983

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

31.9

No. and Description of safety valves to each boiler

Two - Direct Spring loaded.

Area of each set of valves per boiler

6.86  $\square$ "

Pressure to which they are adjusted

185 lbs  $\square$ "

Are they fitted with easing gear

Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

No - Non-return valve fitted.

Smallest distance between boilers

1'-7"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2'-8"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

10'-10<sup>3</sup>/<sub>16</sub>"

Length

10'-6" (full)

Shell plates: Material

Steel

Tensile strength

28 to 32 tons  $\square$ "

Thickness

29/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

D. R. Lap

long. seams

T.R.D.B.S.

Diameter of rivet holes in

1"

Pitch of rivets

2 7/8"

Percentage of strength of circ. end seams

plate 65.2

rivets 49.6

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.8

rivets 94.4

Working pressure of shell by Rules

181.2 lbs  $\square$ "

Thickness of butt straps

outer 11/16"

inner 13/16"

No. and Description of Furnaces in each Boiler

Two - Plain Furnaces.

Material

Steel

Tensile strength

26 to 32 tons  $\square$ "

Smallest outside diameter

3'-2"

Length of plain part

top

Thickness of plates

crown 3/4"

bottom

Description of longitudinal joint

Welded.

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules

191.3 lbs  $\square$ "

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons  $\square$ "

Thickness

7/8"

Pitch of stays

15" x 14 1/2"

How are stays secured

Double nuts &amp; washers.

Working pressure by Rules

181 lbs  $\square$ "

Tube plates: Material

front Steel

back

Tensile strength

26 to 30 tons  $\square$ "

Thickness

7/8"

Mean pitch of stay tubes in nests

11 1/4"

Pitch across wide water spaces

13 3/4"

Working pressure

front 182.5 lbs  $\square$ "back 219 lbs  $\square$ "

Girders to combustion chamber tops: Material

Steel

Tensile strength

28 to 32 tons  $\square$ "

Depth and thickness of girder

at centre

6 1/4" x 13 1/4"

Length as per Rule

29 7/8"

Distance apart

4 1/2"

No. and pitch of stays

in each

2 x 10"

Working pressure by Rules

181.5 lbs  $\square$ "

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons  $\square$ "

Thickness: Sides

11/16"

Back

11/16"

Top

11/16"

Bottom

15/16"

Pitch of stays to ditto: Sides

10" x 9"

Back

9 1/8" x 10"

Top

10" x 4 1/2"

Are stays fitted with nuts or riveted over

Fitted with nuts

Working pressure by Rules

Sides 182.5 lbs  $\square$ "

Backs

180.2 lbs  $\square$ "

Top

211.4 lbs  $\square$ "

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons  $\square$ "

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons  $\square$ "

Thickness

7/8"

Pitch of stays at wide water space

14" x 10"

Are stays fitted with nuts or riveted over

Fitted with nuts

Working Pressure

212 lbs  $\square$ "

Main stays: Material

Steel

Tensile strength

28 to 32 tons  $\square$ "

Diameter

At body of stay, 2 3/8"

Over threads

No. of threads per inch

6

Area supported by each stay

217.5  $\square$ "

Working pressure by Rules

180.5 lbs  $\square$ "

Screw stays: Material

Steel

Tensile strength

26 to 30 tons  $\square$ "

Diameter

At turned off part, 1 3/4"

Over threads

No. of threads per inch

9

Area supported by each stay

Sides 90  $\square$ "Backs 91.25  $\square$ "Top 45  $\square$ "

Registered Foundation

003333-003340-0084



Sides 2018 lbs  
Backs 1988 lbs  
Tops 242 lbs  
Working pressure by Rules 2018 lbs  
are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 7/8  
or Over threads  
No. of threads per inch 9 Area supported by each stay 115 sq in Working pressure by Rules 1855 lbs  
Tubes: Material Wrought Iron External diameter { Plain 3 1/4 Stay 3 1/4 Thickness { 8 W.G. 5/16 No. of threads per inch 9  
Pitch of tubes 4 1/2 x 4 1/2 Working pressure by Rules Plain 2301 lbs Stay 2201 lbs Manhole compensation: Size of opening in  
shell plate 16 x 12 Section of compensating ring 8 x 29/32 No. of rivets and diameter of rivet holes 30 @ 1 dia  
Outer row rivet pitch at ends 4 1/16 (max.) Depth of flange if manhole flanged  
Tensile strength Thickness of shell Description of longitudinal joint  
Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate Rivets  
Internal diameter Working pressure by Rules Thickness of crown No. and diameter of  
stays Inner radius of crown Working pressure by Rules  
How connected to shell Size of doubling plate under dome Diameter of rivet holes and pitch  
of rivets in outer row in dome connection to shell

Type of Superheater  
Number of elements Material of tubes Manufacturers of { Tubes Steel castings  
Material of headers Tensile strength Thickness Internal diameter and thickness of tubes  
the boiler be worked separately Is a safety valve fitted to every part of the superheater which can be shut off from the boiler  
Area of each safety valve Are the safety valves fitted with easing gear Working pressure as per  
Rules Pressure to which the safety valves are adjusted Hydraulic test pressure  
tubes, castings and after assembly in place Are drain cocks or valves fitted  
to free the superheater from water where necessary

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes. For John Dickinson & Sons, Limited.  
The foregoing is a correct description, S. Dickinson Manufacturer, Director.

Dates of Survey { During progress of work in shops - - - Please see Machinery Report  
while building { During erection on board vessel - - - Are the approved plans of boiler and superheater forwarded herewith  
(If not state date of approval.)  
Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
The materials and workmanship are good.  
The Donkey Boiler has been constructed under Special Survey, and satisfactorily fitted in the vessel.  
For notation see Machinery Report.

Survey Fee ... £ Please see Machinery Report When applied for, 192  
Travelling Expenses (if any) £ When received, 192

A. H. Griffith.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 4 MAY 1928

Assigned See yth. attached