

## REPORT ON BOILERS.

No. 29682

Received at London Office 26 MAR 1928

Date of writing Report

192

When handed in at Local Office

24 MAR. 1928

Port of Sunderland

No. in Survey held at

Sunderland

Date, First Survey

Last Survey 17 Mar 1928

Reg. Book.

S. S. "BOSNIA"

(Number of Visits

Gross 2396

Tons

Net 1247

Master

Built at Sunderland

By whom built J. L. Thompson &amp; Sons Ltd

Yard No. 560

When built 1928

Engines made at

Sunderland

By whom made John Dickinson &amp; Sons Ltd

Engine No. 891 When made 1928

Boilers made at

Sunderland

By whom made John Dickinson &amp; Sons Ltd

Boiler No. 891 When made 1928

Nominal Horse Power

403

Owners

America-Levant Line Ltd

Port belonging to London

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY OR DONKEY~~.

Manufacturers of Steel

The Steel Company of Scotland Limited

(Letter for Record (S))

Total Heating Surface of Boilers

5944 sq

Is forced draught fitted Yes

Coal or Oil fired Coal

No. and Description of Boilers

Two Single Ended Marine type. Corrugated Furnaces Working Pressure 180 lbs sq

Tested by hydraulic pressure to

320 lbs sq

Date of test 21.1.28

No. of Certificate 3975

Can each boiler be worked separately Yes

Area of Firegrate in each Boiler

77.5 sq

No. and Description of safety valves to each boiler

Two Direct Spring loaded. (Patent High Lift)

Area of each set of valves per boiler

9.816 sq

Pressure to which they are adjusted

185 lbs sq

Are they fitted with easing gear Yes

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

Yes

Smallest distance between boilers

on uptakes and bunkers on woodwork

3' 6"

Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating

2' 0"

Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers

16' 3 1/16"

Length 11' 9" (FULL)

Shell plates: Material Steel

Tensile strength 28 to 32 tons sq

Thickness

1 1/32"

Are the shell plates welded or flanged No

Description of riveting: circ. seams

end D. R. Lap

long. seams

A. R. D. S. S.

Diameter of rivet holes in

circ. seams 1 7/16"

long. seams 1 7/16"

Pitch of rivets

3 3/8"

9 1/16"

Percentage of strength of circ. end seams

plate 63

rivets 51.2

Percentage of strength of circ. intermediate seam

plate 85.2

rivets 96

Percentage of strength of longitudinal joint

plate 85.2

rivets 96

combined 89.6

Working pressure of shell by Rules

182 lbs sq

Thickness of butt straps

outer 1 1/16"

inner 1 3/16"

No. and Description of Furnaces in each Boiler

Four - Corrugated. Deighton type.

Material

Steel

Tensile strength

26 to 30 tons sq

Smallest outside diameter

3' 5 13/16"

Length of plain part

top

bottom

Thickness of plates

crown 1 3/32"

bottom 1 3/32"

Description of longitudinal joint

Welded

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

Working pressure of furnace by Rules

184 lbs sq

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons sq

Thickness

1 5/32"

Pitch of stays 18" x 21"

How are stays secured

Double Nuts and Washers

Working pressure by Rules

185 lbs sq

Tube plates: Material

front Steel

back

Tensile strength

26 to 30 tons sq

Thickness

7/8"

3/8"

Mean pitch of stay tubes in nests

9 7/8"

9 3/8"

Pitch across wide water spaces

12 1/2"

Working pressure

front 232 lbs sq

back 284 lbs sq

(curved)

Girders to combustion chamber tops: Material

Steel

Tensile strength

28 to 32 tons sq

Depth and thickness of girder

at centre

6 3/4" x 2"

Length as per Rule

31 7/16"

Distance apart 8 3/4" Centres 8" Wings

No. and pitch of stays

in each

2 x 10"

Working pressure by Rules

182 lbs sq

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons sq

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

1 1/16"

Bottom

1 1/16"

Pitch of stays to ditto: Sides

9" x 10"

Back

Wings 9 1/2" x 9 1/2"

Top

Wings 10" x 8 3/4"

Are stays fitted with nuts or riveted over

Fitted with nuts (inside only)

Working pressure by Rules

Sides 182.5 lbs sq

Backs 183 lbs sq

Tops 187 lbs sq

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons sq

Thickness

7/8"

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons sq

Thickness

7/8"

Pitch of stays at wide water space

12 1/4" x 9 1/2"

Are stays fitted with nuts or riveted over

Fitted with nuts (inside only)

Working Pressure

230 lbs sq

Main stays: Material

Steel

Tensile strength

28 to 32 tons sq

Diameter

At body of stay,

3 1/8"

No. of threads per inch

6

Area supported by each stay

378 sq

Working pressure by Rules

194 lbs sq

Screw stays: Material

Steel

Tensile strength

26 to 30 tons sq

Diameter

At turned off part,

1 3/4"

No. of threads per inch

9

Area supported by each stay

Sides 900 sq

Centres 85.5 sq

Wings 96.25 sq

Top 87.5 sq

Bottom 80 sq

Working Pressure

230 lbs sq

Main stays: Material

Steel

Tensile strength

28 to 32 tons sq

Diameter

At turned off part,

1 3/4"

No. of threads per inch

9

Area supported by each stay

Sides 900 sq

Centres 85.5 sq

Wings 96.25 sq

Top 87.5 sq

Bottom 80 sq

Working Pressure

230 lbs sq

Main stays: Material

Steel

Tensile strength

28 to 32 tons sq

Diameter

At turned off part,

1 3/4"

No. of threads per inch

9

Area supported by each stay

Sides 900 sq

Centres 85.5 sq

Wings 96.25 sq

Top 87.5 sq

Bottom 80 sq

Working Pressure

230 lbs sq

Main stays: Material

Steel

Tensile strength

28 to 32 tons sq



Side 201.8 lbs. 0"
Back 201.2 lbs. 0"
Total 403.0 lbs. 0"
Working pressure by Rules 182.5 lbs. 0" 201.5
No. of threads per inch 9
Area supported by each stay 117.0" (102)
Working pressure by Rules 182.5 lbs. 0" 201.5
Tubes: Material Wrought Iron
External diameter 2 1/2"
Thickness 5/16"
No. of threads per inch 9
Pitch of tubes 3 3/4" x 3 3/4"
Working pressure by Rules stay 194 lbs. 0" Plain 300 lbs. 0"
Manhole compensation: Size of opening in
END plate 16" x 12"
Section of compensating ring
No. of rivets and diameter of rivet holes
Outer row rivet pitch at ends
Depth of flange if manhole flanged 3 3/4"
Steam Dome: Material
Tensile strength
Thickness of shell
Description of longitudinal joint
Diameter of rivet holes
Pitch of rivets
Percentage of strength of joint
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
Manufacturers of
Tubes
Steel castings
Number of elements
Material of tubes
Internal diameter and thickness of tubes
Material of headers
Tensile strength
Thickness
Can the superheater be shut off and
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,
Manufacturer.

Dates of Survey: During progress of work in shops - - - Please see Mach. Rpt.
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 Boilers have been constructed under Special Survey, and satisfactorily fitted in the vessel.
For notation see Machinery Report.

Survey Fee ... £
Travelling Expenses (if any) £
When applied for, 192
When received, 192
A. I. Griffiths.
Engineer Surveyor to Lloyd's Register of Shipping.