

REPORT ON BOILERS.

No. 29601

- 7 JAN 1928

Received at London Office

Date of writing Report

192

When handed in at Local Office

6 JAN 1928

Port of SunderlandNo. in Survey held at
Reg. Book.Sunderland

Date, First Survey

Last Survey

Decr. 28 1927

41133 on the

S. S. "HOLYSTONE"

(Number of Visits

Gross 5462

Tons Net 3336

Master

Built at Sunderland

By whom built

Messrs Short Bros Ltd

Yard No. 427

When built 1927

Engines made at

Sunderland

By whom made

Messrs John Dickinson & Sons, Ltd

Engine No. 885

When made 1927

Boilers made at

Sunderland

By whom made

Messrs John Dickinson & Sons, Ltd

Boiler No. 885

When made 1927

Nominal Horse Power

332

Owners

Northumbrian Shipping Co. Ltd

Port belonging to

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

Manufacturers of Steel

The Steel Company of Scotland Limited

(Letter for Record (S) ✓)

Total Heating Surface of Boilers

5500 sq ft

Is forced draught fitted

No ✓

Coal or Oil fired

Coal ✓

No. and Description of Boilers

Two - Single ended Marine type, corrugated furnaces

Working Pressure

220 lbs sq in

Tested by hydraulic pressure to

380 lbs sq in

Date of test

15.9.27

No. of Certificate

3955

Can each boiler be worked separately

Yes ✓

Area of Firegrate in each Boiler

68.625 sq ft

No. and Description of safety valves to each boiler

Two - Direct Spring loaded.

Area of each set of valves per boiler

per Rule

14.62 sq in

as fitted

Pressure to which they are adjusted

225 lbs sq in

Are they fitted with easing gear

Yes ✓

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

Smallest distance between boilers

uptake and bunkers on woodwork

5' 3" ✓

Is oil fuel carried in the double bottom under boilers

No ✓

Smallest distance between shell of boiler and tank top plating

2' 5" ✓

Is the bottom of the boiler insulated

Yes ✓

Largest internal dia. of boilers

16' 0" ✓

Length

11' 6" (full) ✓

Shell plates: Material

Steel ✓

Tensile strength

29 $\frac{3}{4}$ to 33 $\frac{3}{4}$ tons sq in

Thickness

1 $\frac{1}{2}$ " ✓

Are the shell plates welded or flanged

No ✓

Description of riveting: circ. seams

end D. R. LAP ✓

long. seams

1. R. D. B. S. ✓

Diameter of rivet holes in

circ. seams

1 $\frac{9}{16}$ " ✓

long. seams

Pitch of rivets

4" ✓

10 $\frac{5}{8}$ " ✓

Percentage of strength of circ. end seams

plate

60.94

rivets

52.5

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate

85.29

rivets

87.25

combined

98

Working pressure of shell by Rules

221 lbs sq in

Thickness of butt straps

outer

1 $\frac{3}{16}$ " ✓

inner

1 $\frac{5}{16}$ " ✓

No. and Description of Furnaces in each Boiler

4 - Corrugated - Dighton type

Material

Steel ✓

Tensile strength

26 to 30 tons sq in

Smallest outside diameter

3' 2 $\frac{5}{16}$ " ✓

Length of plain part

top

bottom

Thickness of plates

crown

19" ✓

bottom

32" ✓

Description of longitudinal joint

Welded ✓

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

Working pressure of furnace by Rules

221 lbs sq in

End plates in steam space: Material

Steel ✓

Tensile strength

26 to 30 tons sq in

Thickness

1 $\frac{1}{4}$ " ✓

Pitch of stays

21" x 17 $\frac{1}{2}$ " ✓

How are stays secured

Double Nuts & Washers

Working pressure by Rules

223 lbs sq in

Tube plates: Material

front

back

Steel ✓

Tensile strength

26 to 30 tons sq in

Thickness

7 $\frac{1}{8}$ " ✓

Mean pitch of stay tubes in nests

11" ✓

Pitch across wide water spaces

13 $\frac{1}{4}$ " ✓

Working pressure

front 227 lbs sq in (W.U. Spec)back 229 lbs sq in

Girders to combustion chamber tops: Material

Steel ✓

Tensile strength

28 to 32 tons sq in

Depth and thickness of girder

at centre

7 $\frac{3}{4}$ " x 2 $\frac{1}{2}$ " ✓

Length as per Rule

31 $\frac{3}{8}$ " ✓

Distance apart

10 $\frac{1}{2}$ " ✓

No. and pitch of stays

in each

3 x 8" ✓

Working pressure by Rules

232 lbs sq in

Combustion chamber plates: Material

Steel ✓

Tensile strength

26 to 30 tons sq in

Thickness: Sides

25" ✓

Back

3" ✓

Top

32" ✓

Bottom

32" ✓

Pitch of stays to ditto: Sides

10 $\frac{5}{8}$ " x 9" ✓

Back

10 $\frac{3}{4}$ " x 7 $\frac{5}{8}$ " ✓

Top

10 $\frac{1}{2}$ " x 8" ✓

Are stays fitted with nuts or riveted over

fitted with nuts

Working pressure by Rules

Sides 222 lbs sq in Back 228 lbs sq in Top 240 lbs sq in Bottom 248 lbs sq in

Front plate at bottom: Material

Steel ✓

Tensile strength

26 to 30 tons sq in

Thickness

31" ✓

Lower back plate: Material

Steel ✓

Tensile strength

26 to 30 tons sq in

Thickness

7 $\frac{1}{8}$ " ✓

Pitch of stays at wide water space

12 $\frac{7}{8}$ " x 9 $\frac{1}{4}$ " ✓

Are stays fitted with nuts or riveted over

Fitted with nuts.

Working Pressure

222 lbs sq in

Main stays: Material

Steel ✓

Tensile strength

28 to 32 tons sq in

Diameter

At body of stay,

3 $\frac{3}{8}$ " ✓

No. of threads per inch

6 ✓

Area supported by each stay

367.5 sq in

Working pressure by Rules

238 lbs sq in

Screw stays: Material

Steel ✓

Tensile strength

26 to 30 tons sq in

Diameter

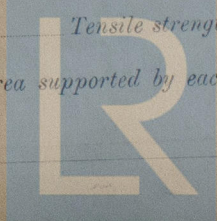
At turned off part,

1 $\frac{3}{4}$ " ✓

No. of threads per inch

9 ✓

Area supported by each stay

82 sq in Lloyd's Register
Foundation

Working pressure by Rules $221\text{ lbs } \square$ Are the stays drilled at the outer ends *No* ✓ Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{7}{8}'' \\ \text{or} \\ \text{Over threads} \end{array} \right.$

No. of threads per inch 9 ✓ Area supported by each stay $94.75\text{ } \square$ Working pressure by Rules $225\text{ lbs } \square$

Tubes: Material *Wrought Iron* ✓ External diameter $\left\{ \begin{array}{l} \text{Plain } 3\frac{1}{4}'' \\ \text{Stay } 3\frac{1}{4}'' \end{array} \right.$ Thickness $\left\{ \begin{array}{l} \text{Plain tubes } 280\text{ lbs } \square \\ \text{Stay tubes } 231 \text{ \& } 223\text{ lbs } \square \end{array} \right.$ No. of threads per inch 9

Pitch of tubes $4\frac{1}{2}'' \times 4\frac{1}{2}''$ ✓ Working pressure by Rules $225\text{ lbs } \square$ Manhole compensation: Size of opening in end plate $16'' \times 12''$ ✓ Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓

Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material ✓

Tensile strength ✓ Thickness of shell ✓ Description of longitudinal joint ✓

Diameter of rivet holes ✓ Pitch of rivets ✓ Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate } \checkmark \\ \text{Rivets } \checkmark \end{array} \right.$

Internal diameter ✓ Working pressure by Rules ✓ Thickness of crown ✓ No. and diameter of boiler made 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 *Smoke tube type made by the Manufacturer of* ✓ Tubes *The Superheater Co. Ltd* ✓

Number of elements 108 ✓ Material of tubes *Solid Drawn Steel* ✓ Steel castings *The Superheater Co. Ltd* ✓

Material of headers *Wrought Steel* ✓ Tensile strength $26\text{ to }30\text{ tons } \square$ ✓ Thickness $1''$ (minimum) ✓ Internal diameter and thickness of tubes $17\text{ M.M. } \& \text{ } 3\text{ M.M.}$ ✓

the boiler be worked separately *yes* ✓ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *yes* ✓ Can the superheater be shut off and

Area of each safety valve $1.767\text{ } \square$ ✓ Are the safety valves fitted with easing gear *yes* ✓ Working pressure as per Rules $220\text{ lbs } \square$ ✓ Pressure to which the safety valves are adjusted $228\text{ lbs } \square$ ✓ Hydraulic test pressure: tubes $1000\text{ lbs } \square$ at maker's works ✓ castings $660\text{ lbs } \square$ at maker's works and after assembly in place $440\text{ lbs } \square$ ✓ Are drain cocks or valves fitted to free the superheater from water where necessary *yes* ✓

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,

W. Dickinson Manufacturer, Director.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - -} \end{array} \right. \end{array} \right.$ Please see *Mch. y. Rpt.*

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 ... £ *Charged on Machinery Report* When applied for, 192

Travelling Expenses (if any) £ When received, 192

A. T. Griffith.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 17 JAN 1928

Assigned

See A.B. rpt. attached



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