

REPORT ON BOILERS.

No. 29353

Received at London Office

10 JAN 1927

Date of writing Report

192

When handed in at Local Office

-7 JAN. 1927

Port of

Sunderland

No. in
Reg. Book.

Survey held at

Sunderland

Date, First Survey

Last Survey

3rd Jan 1927

88493 on the

S. S. "CYDONIA"

(Number of Visits

Gross

3517

Net

2175

Master

Built at

Sunderland

By whom built

John Blumer & Co Ltd

Yard No. 258

When built 1927

Engines made at

Sunderland

By whom made

John Dickinson & Son Ltd

Engine No. 878

When made 1927

Boilers made at

Sunderland

By whom made

John Dickinson & Son Ltd

Boiler No. 878

When made 1927

Nominal Horse Power

301

Owners

Stag Line Ltd

Port belonging to

North Shields.

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

Manufacturers of Steel

David Colville & Son Ltd

(Letter for Record

(S)

Total Heating Surface of Boilers

4690 sq ft

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

2. Single ended marine type

Working Pressure

180 lbs

Tested by hydraulic pressure to

320 lbs

Date of test

198-24

No. of Certificate

J896

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

63.6 sq ft

No. and Description of safety valves to each boiler

2- Direct Spring loaded

Area of each set of valves per boiler

per Rule

15.04 sq ft

Pressure to which they are adjusted

185 lbs

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 or uptakes and bunkers or woodwork

5 ft

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2' 3"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15' 9 1/2"

Length

10' 6"

Shell plates: Material

Steel

Tensile strength

29 1/2 to 33 tons

Thickness

1/4"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D.R. lap

Long. seams

T.R.D.B.S

Diameter of rivet holes in

circ. seams

1 3/8"

long. seams

1 3/8"

Pitch of rivets

3 3/4"

9 1/8"

Percentage of strength of circ. end seams

plate

63.3

rivets

49.4

Percentage of strength of circ. intermediate seam

plate

84.9

rivets

95.98

Percentage of strength of longitudinal joint

plate

84.9

rivets

95.98

combined

89.13

Working pressure of shell by Rules

181 lbs

Thickness of butt straps

outer

1"

inner

1 1/8"

No. and Description of Furnaces in each Boiler

3- Deighton

Material

Steel

Tensile strength

26 to 30 tons

Smallest outside diameter

31' 9 1/16"

Length of plain part

top

2'

bottom

2'

Thickness of plates

crown

1 1/2"

bottom

1 1/2"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

188 lbs

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons

Thickness

1 1/16"

Pitch of stays

18"x22"

How are stays secured

D. Nuts and washers

Working pressure by Rules

184 lbs

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26 to 30 tons

Thickness

7/8" + 5/8" D.P.

7/8"

Lean pitch of stay tubes in nests

10.345' (c.c.)

Pitch across wide water spaces

13 1/4"

Working pressure

front

192.3 lbs

back

258 lbs

Orders to combustion chamber tops: Material

Steel

Tensile strength

28 to 32 tons

Depth and thickness of girder

centre

20 4" x 1"

Length as per Rule

2-4 1/16"

Distance apart

9"

No. and pitch of stays

each

20 10"

Working pressure by Rules

191 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

1 1/16"

Bottom

1 1/16"

Pitch of stays to ditto: Sides

10" x 9"

Back

10 1/2" x 8 5/8" (W.P.)

Top

10" x 9"

Are stays fitted with nuts or riveted over

Nuts in C.C.

Working pressure by Rules

Back

182 lbs

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons

Thickness

7/8"

Pitch of stays at wide water space

12 1/2" x 8 5/8"

Are stays fitted with nuts or riveted over

Nuts

Shipping Working Pressure

197 lbs

Main stays: Material

Steel

Tensile strength

28 to 32 tons

Pitch of stays

At body of stay,

or

Over threads

3 1/8"

No. of threads per inch

6

Area supported by each stay

396 sq in

Working pressure by Rules

185 lbs

Screw stays: Material

Steel

Tensile strength

26 to 30 tons

Pitch of stays

At turned off part,

or

Over threads

1 5/8" cut

1 3/4" wing back

No. of threads per inch

9

Area supported by each stay

side 900"

Centre back 700"

Wing back 880"

W1022-0064

Working pressure by Rules *205 lbs* ^{centre back 217.5 lbs} _{wing back 205} Are the stays drilled at the outer ends *No* ✓ Margin stays: Diameter { At turned off part. *3/4"* or Over threads *1/4"* ✓
 No. of threads per inch *9* ✓ Area supported by each stay *94 sq. in.* Working pressure by Rules *184.2 lbs* ✓
 Tubes: Material *Wrought Iron* ✓ External diameter { Plain *3 1/4"* ✓ Stay *3 1/4"* ✓ Thickness { *5/16"* ✓ No. of threads per inch *9* ✓
 Pitch of tubes *4 1/2" x 4 1/2"* ✓ Working pressure by Rules *Plain tubes 230 lbs* ✓ *stay tubes 216 lbs* ✓ Manhole compensation: Size of opening *16 x 12"* ✓
 Section of compensating ring *16 x 12"* ✓ No. of rivets and diameter of rivet holes *3 3/4"* ✓
 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 { Plate Rivets
 Internal diameter Working pressure by Rules Thickness of crown No. and diameter of stays 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 Superheater Co. Ltd.* ✓ Manufacturers of Tubes *The Superheater Co. Ltd.* ✓
 Number of elements *112* ✓ Material of tubes *Solid Drawn Steel* ✓ Internal diameter and thickness of tubes *16 M.M. & 3 M.M.* ✓
 Material of headers *Wrought Steel* ✓ Tensile strength *26 to 30 tons* ✓ Thickness *1" (minimum)* ✓ Can the superheater be shut off and 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* ✓
 Area of each safety valve *1.77 sq. ins.* ✓ Are the safety valves fitted with easing gear *yes* ✓ Working pressure as per. and De. Rules *180 lbs* ✓ Pressure to which the safety valves are adjusted *188 lbs* ✓ Hydraulic test pressure tested by h. tubes *1000 lbs* ✓ at Maker's Works *540 lbs* ✓ at Maker's and after assembly in place *400 lbs* ✓ 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* ✓

The foregoing is a correct description,
 W. H. Robertson Manufacturer

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These Boilers have been satisfactorily fitted in the vessel, and the Main Boilers and Superheaters Safety Valves adjusted under steam.

For notation see Machinery Report.

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

A. T. Griffith *Eng. Surveyor to Lloyd's Register of Shipping.*

Committee's Minute FRI. 14 JAN 1927

Assigned *See Sld J.B. v.1 No 29353*