

## REPORT ON BOILERS.

No. 31859

16 JUL 1936

Received at London Office

Date of writing Report

1936

When handed in at Local Office

10 JULY 1936

Port of

Sunderland.

No. in Survey held at  
Reg. Book.

Sunderland.

Date, First Survey

Last Survey

8 July 1936

on the

S.S. "ST. HELENA"

(Number of Visits

Gross

4313

Tons

Net 2605

Master

Built at

Sunderland

By whom built

J. L. Thompson &amp; Sons Ltd

Yard No.

543

When built

1936

Engines made at

Hebburn-on-Tyne

By whom made

Whites &amp; Sons, Eng. &amp; S. Ltd

Engine No.

C 4.

When made

1936

Boilers made at

Sunderland

By whom made

G. Clark Ltd

Boiler No.

1196

When made

1936

Nominal Horse Power

304.

Owners

St. Quentin Shipping Co. Ltd

Port belonging to

Newport.

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

Manufacturers of Steel

Colvella &amp; Co. Ltd

Total Heating Surface of Boilers

3730 sq ft

Is forced draught fitted

Yes

(Letter for Record

S.

No. and Description of Boilers

Two Single Ended Multitubular marine

Coal or Oil fired

Both

Working Pressure

930.

Tested by hydraulic pressure to

395 lb/sq in

Date of test

15.5.36

No. of Certificate

4182

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

38 sq ft

No. and Description of safety valves to each boiler

Two Cockburn High Lift

Area of each set of valves per boiler

(per Rule

4.75 sq in

Pressure to which they are adjusted

230

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 or uptakes and bunkers

9'-0"

Is oil fuel carried in the double bottom under boilers

Yes

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

12'-10 1/16"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

15/16"

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

circ. seams

B. 1 3/8" F. 1 5/16"

long. seams

13/8"

Pitch of rivets

9 1/4"

Percentage of strength of circ. end seams

plate

B. 66.6 F. 65.4

rivets

B. 43.5 F. 43.4

Percentage of strength of circ. intermediate seam

plate

85.13

Percentage of strength of longitudinal joint

plate

85.13

rivets

90.8

combined

88.6.

Working pressure of shell by Rules

232.

Thickness of butt straps

outer

1"

Material

Steel

No. and Description of Furnaces in each Boiler

Three Corrugated (Leighton).

Length of plain part

inner

1 1/8"

Tensile strength

26/30

Smallest outside diameter

2'-11 3/8"

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

Thickness of plates

crown

9/16"

bottom

Description of longitudinal joint

held.

Working pressure of furnace by Rules

231

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

1 1/32"

Pitch of stays

22" x 18"

How are stays secured

Double nuts.

Working pressure by Rules

230

Tube plates: Material

front

Steel

Tensile strength

26/30

Thickness

1 1/16"

Pitch of stays

24/32

Mean pitch of stay tubes in nests

9 3/8" x 1 1/2"

Pitch across wide water spaces

13 1/2"

Working pressure

front

580, W.W.S. 336

back

365

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33

Depth and thickness of girder

at centre

8 5/8" x 13 1/4"

Length as per Rule

2'-9"

Distance apart

8 1/4"

No. and pitch of stays

in each

3 @ 1 3/4"

Working pressure by Rules

232

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

23/32"

Back

3/4"

Top

23/32"

Bottom

1/8"

Pitch of stays to ditto: Sides

9 1/4" x 8"

Back

8 1/2" x 8 3/4"

Top

8" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts.

Working pressure by Rules

245

254

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

1 1/16"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

1 1/32"

Pitch of stays at wide water space

14 1/2"

Are stays fitted with nuts or riveted over

nuts.

Working Pressure

294

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay.

3 1/4" 3"

No. of threads per inch

6

Area supported by each stay

21" x 18 1/2"

Working pressure by Rules

234

240

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part.

1 3/4" 1 1/8" 2" 2 1/4"

No. of threads per inch

9

Area supported by each stay

8 5/8" x 9"

11 3/4" x 9"

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W1153-0064



Working pressure by Rules **245 232** Are the stays drilled at the outer ends **No.** Margin stays: Diameter **At turned off part, 1 1/8" 2" 2 1/4"**  
 No. of threads per inch **9.** Area supported by each stay **82" 103" 141"** Working pressure by Rules **232, 240, 230**  
 Tubes: Material **S.D. Steel** External diameter **Plain 2 1/2"** Thickness **N° 8 W.G. 5/16 3/8 13/32** No. of threads per inch **9.**  
 Pitch of tubes **3 3/4" x 3 5/8"** Working pressure by Rules **238** Manhole compensation: Size of opening in shell plate **End plate.** Section of compensating ring **No. of rivets and diameter of rivet holes**  
 Outer row rivet pitch at ends **4 1/8"** Depth of flange if manhole flanged **Steam Dome: Material None.**  
 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

**Combustion chamber**  
 Type of Superheater **(Superheaters Co. Ltd.)** Manufacturers of **See Manchester Cast.**  
 Number of elements **40** Material of tubes **S.D. Steel** Internal diameter and thickness of tubes **1 1/8" x 10 W.G.**  
 Material of headers **Forged Steel** Tensile strength **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 **3.14 sq"** Are the safety valves fitted with easing gear **Yes.** Working pressure as per Rules **233** Hydraulic test pressure: **(Manchester), castings 690 lbs/sq"** and after assembly in place **500 lbs/sq"** Are drain cocks or valves fitted to free the superheater from water where necessary **Yes.**

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **Yes.**

The foregoing is a correct description,  
 FOR GEORGE CLARK (1936) LTD.  
 Manufacturer.  
 Retained for  
 Sister Vessel.  
 (app. 25/1/36)

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

These boilers have been Constructed under Special Survey in accordance with the approved plan & the Rules of the Society, tested by hydraulic pressure as per Rules & found tight & Sound. The materials & workmanship are good. The boilers have been Securely fixed on board the vessel & have been fitted to burn oil fuel (F.P. above 150°F). Section 20 of the Rules has been complied with, Safety valves of boilers & superheaters adjusted to working pressure & accumulation test Carried out Satisfactorily. In recommendation see Incl. Rpt.

Survey Fee **See Incl. Rpt.** When applied for. 192  
 Travelling Expenses (if any) £ : : When received. 192

**J. B. Fraser.**

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 24 JUL 1936

Assigned

**See 28 Machy. Rpt.**



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