

REPORT ON BOILERS.

No. 96691

of writing Report

192

When handed in at Local Office

19 FEB. 1930

Received at London Office

22 FEB 1930

in Book

Survey held at

Birkenhead

Port of

Date, First Survey

14/1/29

Last Survey

9/2/

1930

on the

Twin S. S. 'Sultan Star'

(Number of Visits)

Gross
Tons
Net

Built at

Birkenhead

By whom built

Cammell Laird & Co Ltd

Yard No. 955

When built 1930

Engines made at

Birkenhead

By whom made

Cammell Laird & Co Ltd

Engine No. 955

When made 1930

Boilers made at

Birkenhead

By whom made

Cammell Laird & Co Ltd

Boiler No. 955

When made 1930

Nominal Horse Power

2030

Owners

Blue Star Line Ltd

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.

Manufacturers of Steel

D. Colville & Sons Ltd

Heating Surface of Boilers

20199 sq ft

Is forced draught fitted

Yes

Description of Boilers

Three double ended multitubular

(Letter for Record)

Coal or Oil fired

Working Pressure 230 lb/sq in

Tested by hydraulic pressure to

395 lb/sq in

Date of test

11.6.29

No. of Certificate

2334

Area of Firegrate in each Boiler

150 sq ft

No. and Description of safety valves to each boiler

Two spring loaded—high lift.

Pressure of each set of valves per boiler

as fitted 230 lb/sq in

Pressure to which they are adjusted

235 lb/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

Yes

Least distance between boilers or uptakes and bunkers or woodwork

15"

Least distance between shell of boiler and tank top plating

2'-6"

Least internal dia. of boilers

17'-0"

Length

21'-6"

Is oil fuel carried in the double bottom under boilers

Yes

Least thickness of shell plates

1 1/16"

Are the shell plates welded or flanged

No

Shell plates: Material

Steel

Tensile strength

30-34 tons/sq in

Description of riveting: circ. seams

end 2 R. lap

inter 2 R. lap

Pitch of rivets

Ends 4'-3 1/2", inter 4'-8 1/2"

Percentage of strength of circ. end seams

plate 60%

rivets 57%

Percentage of strength of circ. intermediate seam

plate 64%

rivets 69%

Percentage of strength of longitudinal joint

plate 83%

rivets 97%

combined 86%

Working pressure of shell by Rules

231 lb/sq in

No. and Description of Furnaces in each Boiler

8 Corrugated

Tensile strength

26-30 tons/sq in

Smallest outside diameter

3'-6 3/8"

Thickness of plates

crown 3 1/16"

bottom 3 1/16"

Description of longitudinal joint

Weld

Working pressure of furnace by Rules

238 lb/sq in

Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

1 1/2"

Pitch of stays

21 x 16 1/2"

Are stays secured

Double nuts and small plain washers

Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

15/16"

Pitch of stay tubes in nests

9'-2"

Pitch across wide water spaces

13 1/2"

Material

Steel

Tensile strength

28-32 tons/sq in

Depth and thickness of girder

Distance apart

8"

Working pressure by Rules

230 lb/sq in

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

Sides 1 1/16"

Back 1 1/16"

Top 1 1/16"

Bottom 1 3/16"

Are stays fitted with nuts or riveted over

hatted

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

15/16"

Lower back plates: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

15/16"

Main stays: Material

Steel

Tensile strength

28-32 tons/sq in

Area supported by each stay

346 sq in

Screw stays: Material

Iron

Tensile strength

2 1/2 tons/sq in

Area supported by each stay

65 sq in

No. of threads per inch

6

At body of stay

3 3/4"

At turned off part

1 5/8"

Working pressure by Rules

232 lb/sq in

At body of stay

3 3/4"

At turned off part

1 5/8"

Working pressure by Rules

232 lb/sq in

At body of stay

3 3/4"

At turned off part

1 5/8"

Working pressure by Rules

232 lb/sq in

At body of stay

3 3/4"

At turned off part

1 5/8"

Working pressure by Rules

232 lb/sq in

At body of stay

3 3/4"

At turned off part

1 5/8"

Working pressure by Rules

232 lb/sq in

At body of stay

3 3/4"

At turned off part

1 5/8"

Working pressure by Rules

232 lb/sq in

At body of stay

3 3/4"

At turned off part

1 5/8"

Working pressure by Rules

232 lb/sq in

At body of stay

3 3/4"

At turned off part

1 5/8"

Working pressure by Rules

232 lb/sq in

At body of stay

3 3/4"

At turned off part

1 5/8"

Working pressure by Rules

232 lb/sq in

W448-0221

© 2020

Lloyd's Register
Foundation

Working pressure by Rules $233\frac{1}{2}$ Are the stays drilled at the outer ends *ho* Margin stays: Diameter *At turned off part, or Over threads* ☒
 No. of threads per inch ☒ Area supported by each stay *✓* Working pressure by Rules *✓*
 Tubes: Material *Iron lapweld* External diameter *Plain 2 1/2" Stay 2 1/2"* Thickness *1/8" 3/16" 1/4"* No. of threads per inch *9*
 Pitch of tubes $3\frac{1}{16} \times 3\frac{1}{16}$ Working pressure by Rules $235\frac{1}{2}$ Manhole compensation: Size of opening *✓*
 shell plate 18×22 Section of compensating ring $24\frac{3}{4} \times 1\frac{1}{16}$ No. of rivets and diameter of rivet holes $42 \text{ @ } 1\frac{3}{4}"$
 Outer row rivet pitch at ends $10\frac{1}{2}"$ Depth of flange if manhole flanged $3\frac{1}{2}"$ 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 *✓*
 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 *Sugden's uplate type* Manufacturers of *✓*
 Number of elements *64 each boiler* Material of tubes *Steel drawn steel* Internal diameter and thickness of tubes *1" x 1/16" 1/8"*
 Material of headers *hot steel* Tensile strength $24 \cdot 28 \text{ tons}$ Thickness $3/4"$ Can the superheater be shut off *✓*
 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 $3 \cdot 14 \text{ sq. ft.}$ Are the safety valves fitted with easing gear *Yes* Working pressure as *✓*
 Rules $235\frac{1}{2}$ Pressure to which the safety valves are adjusted $235\frac{1}{2}$ Hydraulic test pressure *✓*
 tubes *✓* castings *✓* and after assembly in place 4 bolts 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*
CAMMELL LAIRD AND COMPANY LIMITED.
 The foregoing is a correct description,
J. W. L. Laid
 SECRETARY, Manufacture

Dates of Survey *During progress of work in shops - - -* *See Machy rpt.* 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 *1*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
These boilers have been constructed under special Survey, and in accordance with the Rules and the approved plan. The workmanship is good. They have been satisfactorily fitted on board, and examined under steam.

Survey Fee ... £ *✓* : : When applied for, 192
 Travelling Expenses (if any) £ *✓* : : When received, 192

Committee's Minute **LIVERPOOL 21 FEB. 1930**
 Assigned *See accompanying machy rpt.*
 TUE. 1