

## REPORT ON BOILERS.

No. 57571

21 OCT 1936

Date of writing Report

19

When handed in at Local Office

19. 10. 1936

Port of

Received at London Office

Glasgow.

No. in Survey held at

Reg. Book.

Glasgow.

Date, First Survey

11/10/35

Last Survey

16/10/36

on the

S.S. City of Benares

(Number of Visits

30)

Gross

Tons

11081

Net

6720.

Master

Built at

Glasgow.

By whom built

Barclay Curle &amp; Co Ltd

Yard No.

656

When built

1936

Engines made at

Birkenhead

By whom made

Lammell Laird &amp; Co Ltd

Engine No.

2193

When made

1936

Boilers made at

Glasgow.

By whom made

Barclay Curle &amp; Co Ltd

Boiler No.

656

When made

1936

Nominal Horse Power

1047.

Owners

Ellerman Line Ltd.

Port belonging to

Glasgow.

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

Manufacturers of Steel

D. Colville &amp; Son

Total Heating Surface of Boilers

15,700.  $\text{sq. ft.}$ 

Is forced draught fitted

yes

(Letter for Record

(S)

No. and Description of Boilers

5. S.B.

Tested by hydraulic pressure to

463 lbs

Date of test

31-3-36

No. of Certificate

19702-2

Working Pressure

245 lbs

Area of Firegrate in each Boiler

65.6  $\text{sq. ft.}$ 

No. and Description of safety valves to each boiler

19748-2

Area of each set of valves per boiler

per Rule

as fitted

13.52

Pressure to which they are adjusted

245 lbs

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 or woodwork

well clear

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

well clear

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

16'-6"

Length

12'-6"

Shell plates: Material

Steel

Tensile strength

34/38 Tons.

Thickness

1 3/4"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

inter.

Long. seams

T.R.-D.B.S.

Diameter of rivet holes in

circ. seams

long. seams

113/16"

Pitch of rivets

4.357"

Percentage of strength of circ. end seams

plate

rivets

46.0

Percentage of strength of circ. intermediate seam

plate

rivets

83.8

Percentage of strength of longitudinal joint

plate

rivets

83.1

Working pressure of shell by Rules

280 lbs.

Thickness of butt straps

outer 1 3/8"

inner 1 1/2"

No. and Description of Furnaces in each Boiler

4. Beighton Section

Material

Steel

Tensile strength

26/30 Tons.

Smallest outside diameter

3'-4 13/16"

Length of plain part

top

bottom

Thickness of plates

crown

bottom

Description of longitudinal joint

weld

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

Working pressure of furnace by Rules

281 lbs

End plates in steam space: Material

Steel

Tensile strength

26/30 Tons

Thickness

1 7/16"

Pitch of stays

21" x 16"

How are stays secured

D.N.

Working pressure by Rules

249 lbs

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30 Tons.

Thickness

1 1/8"

Mean pitch of stay tubes in nests

10.4

Pitch across wide water spaces

13 3/4"

Working pressure

front

back

337 lbs

338

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 Tons.

Depth and thickness of girder

at centre

10 3/4" x 7 1/8" dble.

Length as per Rule

3'-0 1/16"

Distance apart

8 1/4" wings, 8" centre.

No. and pitch of stays

in each

3 @ 8 1/2"

Working pressure by Rules

293 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26/30 Tons.

Thickness: Sides

3/4"

Back

25/32"

Top

3/4"

Bottom

15/16"

Pitch of stays to ditto: Sides

9 1/8" x 7 3/4"

Back

7 3/4" x 7 1/4"

Top

8 1/2" x 8"

Are stays fitted with nuts or riveted over

coned stays fitted.

4 as per plan.

Working pressure by Rules

244 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30 Tons.

Thickness

1 1/8"

Lower back plate: Material

Steel

Tensile strength

26/30 Tons.

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

275 lbs

Main stays: Material

Steel

Tensile strength

28/32 Tons.

Diameter

At body of stay,

3 1/2"

No. of threads per inch

6

Area supported by each stay

336.0"

Working pressure by Rules

282 lbs

Screw stays: Material

Steel

Tensile strength

26/30 Tons.

Diameter

At turned off part,

1 5/8" &amp; 1 7/8"

No. of threads per inch

9

Area supported by each stay

70.7"

W369-0106

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Foundation



Working pressure by Rules 290 lb Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" x 2 1/8" Over threads }  
No. of threads per inch 9 Area supported by each stay 20.8 - 80.3 Working pressure by Rules 300 lb  
Tubes: Material W.I. External diameter { Plain 3" Stay 3" Thickness { 3/8" 7/16" 1/2" No. of threads per inch 9  
Pitch of tubes Center 4 1/4" x 4 1/8" Working pressure by Rules 300 lb Manhole compensation: Size of opening in shell plate 21" x 17" approx Section of compensating ring 3 3/4" x 3 1/2" x 1 3/4" of rivets and diameter of rivet holes 38 - 1 13/16"  
Outer row rivet pitch at ends 11 3/4" Depth of flange if manhole flanged 3 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 { 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 \_\_\_\_\_

Type of Superheater Smoke tube Manufacturers of { Tubes Tubes Ltd: Steel castings Nottingham Sheet Cold  
Number of elements 220 Material of tubes S. & Steel Internal diameter and thickness of tubes 15 1/2" x 2 1/2"  
Material of header Forged Steel Tensile strength 26-30 Ton Thickness 7/8" 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 3.97 I.H.L. (single) Are the safety valves fitted with easing gear yes Working pressure as per Rules 275 lb Pressure to which the safety valves are adjusted 275 lb Hydraulic test pressure: tubes 1500 lb, castings 825 lb and after assembly in place 600 lb 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

FOR BARCLAY, CURLE & CO., LTD.

The foregoing is a correct description,

James B. McCre Manufacturer.

Dates of Survey { During progress of work in shops - - 1935 Oct. 11. 22 Nov. 15. 18. 25 Dec Are the approved plans of boiler and superheater forwarded herewith yes while building { During erection on board vessel - - 5.10.16 (1936) Jan. 1. 6. 9. 29 Feb. 7. 11. 28 (If not state date of approval.)  
Total No. of visits 30  
Mar. 6. 13. 20. 24. 31 Apr. 21. 30 May 5. 15. 22 June 9. 15. 19 July 31 Aug 26 Oct. 16

Is this Boiler a duplicate of a previous case no If so, state Vessel's name and Report No. \_\_\_\_\_

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

These boilers have been built under Special Survey, to approved plans in accordance with the Society's Requirements. Materials and workmanship are good. They are intended for Mr Barclay Curle's Robt - s. s. City of Benares.

8/9/36 They have been efficiently secured in position on board, examined under steam and found in order.

Survey Fee Charged on Machinery Report.

When applied for, \_\_\_\_\_

19

Travelling Expenses (if any) £ \_\_\_\_\_

When received, \_\_\_\_\_

19

Committee's Minute GLASGOW 20 OCT 1936

Assigned SEE ACCOMPANYING MACHINERY REPORT.

A. Sutherland  
Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 29 DEC 1936



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