

## REPORT ON BOILERS.

No. 29440

Received at London Office

21 MAY 1927

Reporting Report

192

When handed in at Local Office

20 MAY 1927

Port of

Sunderland.

Survey held at

Sunderland.

Date, First Survey

14 Feb

Last Survey

17 May 1927

on the

S. S. "CHARTERHAGUE"

(Number of Visits 37)

Gross 2538.

Tons Net 1425.

Built at

Sheffield

By whom built

Mannings &amp; Co.

Hull No.

When built 1920.

made at

Mannings &amp; Co.

By whom made

Met Vickers &amp; Co. Ltd.

Engine No.

When made

made at

Sunderland

By whom made

Richardson &amp; Westgarth

Boiler No.

When made 1927.

Horse Power

322

Owners

Charter Hagg &amp; Co. Ltd. (Lewis &amp; Green)

Port belonging to

Cardiff.

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

Makers of Steel

Wm. Beardmore &amp; Co. Ltd.

(Letter for Record S.)

Painting Surface of Boilers

4616 ft.

Is forced draught fitted

No

Coal or Oil fired

Coal

Description of Boilers

Two cylindrical multi.

Working Pressure

200 lbs.

Hydraulic pressure to

350 lbs.

Date of test

28/5/27

No. of Certificate

3940

Can each boiler be worked separately

Yes

Firegrate in each Boiler

114 ft.

No. and Description of safety valves to each boiler

Two spring loaded.

Each set of valves per boiler

per Rule

as fitted

7.07 x 2

Pressure to which they are adjusted

205 lbs.

Are they fitted with easing gear

Yes

For donkey boilers, state whether steam from main boilers can enter the donkey boiler

No.

Distance between boilers or uptakes and bunkers or woodwork

5' 9"

Is oil fuel carried in the double bottom under boilers

No

Distance between shell of boiler and tank top plating

2' 4 5/8"

Is the bottom of the boiler insulated

Yes

External dia. of boilers

15' 6"

Length

11' 0"

Shell plates: Material

STEEL

Tensile strength

28.5 to 32.5

1 3/8"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end J.R.L.

T.R. J.B.S.

Diameter of rivet holes in

circ. seams

1 1/4"

Pitch of rivets

3 3/8" &amp; 4 5/8"

of strength of circ. end seams

plate

63.0%

rivets

42.7%

Percentage of strength of circ. intermediate seam

plate

68.1%

of strength of longitudinal joint

plate

85.53%

rivets

86.7%

Working pressure of shell by Rules

200 lbs.

butt straps

outer

1 3/8"

inner

1 3/8"

No. and Description of Furnaces in each Boiler

Three Morion Suspension.

STEEL

Tensile strength

26 to 30 tons.

Smallest outside diameter

46 5/8"

Main part

top

bottom

Thickness of plates

crown

2 1/2"

Description of longitudinal joint

WELDED.

of stiffening rings on furnace or c.c. bottom

Yes

Working pressure of furnace by Rules

208 lbs.

In steam space: Material

STEEL

Tensile strength

26 to 30 tons

Thickness

1 1/4" &amp; 1 3/8"

Pitch of stays

1 1/2" x 20 1/2"

Stays secured

J. NUTS

Working pressure by Rules

200.5 lbs.

Stays: Material

front

STEEL

back

STEEL

Tensile strength

26 to 30 tons.

Thickness

FRONT 3/2"

BACK 3/2"

of stay tubes in nests

1 1/4"

Pitch across wide water spaces

14 5/8"

Working pressure

front 201.0 lbs.

back 202.5 lbs.

Combustion chamber tops: Material

STEEL

Tensile strength

28 to 32 tons

Depth and thickness of girder

8" x 1 3/4"

Length as per Rule

3 1/2"

Distance apart

8 1/2"

No. and pitch of stays

3 @ 7 3/4"

Working pressure by Rules

209 lbs.

Combustion chamber plates: Material

STEEL

Length

26 to 30 tons

Thickness: Sides

3/4"

Back

5/8"

Top

5/8"

Bottom

3/4"

Stays to ditto: Sides

8 3/4" x 7 3/4"

Back

8 5/8" x 8"

Top

8 1/2" x 7 3/4"

Are stays fitted with nuts or riveted over

NUTS.

Pressure by Rules

204 lbs.

Front plate at bottom: Material

STEEL

Tensile strength

26 to 30 tons

Lower back plate: Material

STEEL

Tensile strength

26 to 30 tons

Thickness

1 3/8"

Stays at wide water space

14"

Are stays fitted with nuts or riveted over

NUTS.

Pressure

225 lbs.

Main stays: Material

STEEL

Tensile strength

28 to 32 tons

At body of stay,

3 1/4" x 3"

Screw threads

No. of threads per inch

6

Area supported by each stay

17 1/2" x 21 1/2"

Pressure by Rules

214 lbs.

Screw stays: Material

STEEL

Tensile strength

26 to 30 tons

At turned off part,

15 1/8"

No. of threads per inch

9

Area supported by each stay

8 1/2" x 7 1/2"



Working pressure by Rules  $224 \frac{485}{2}$  Are the stays drilled at the outer ends  $\checkmark$  No Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part} \\ \text{or} \\ \text{Over threads} \end{array} \right. \checkmark 1 \frac{3}{4}"$

No. of threads per inch  $9 \checkmark$  Area supported by each stay  $10 \frac{7}{8}" \times 8 \frac{5}{8}"$  Working pressure by Rules  $205.5 \frac{485}{2}$

Tubes: Material  $WROT \text{ IRON}$  External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \checkmark 3 \frac{1}{2}"$  Thickness  $\left\{ \begin{array}{l} \text{8 W.G.} \\ \text{7} \frac{1}{8}" \text{ 3} \frac{1}{8}" \text{ 3} \frac{1}{8}" \end{array} \right. \checkmark$  No. of threads per inch  $9 \checkmark$

Pitch of tubes  $4 \frac{1}{2}"$  Working pressure by Rules  $\text{PLAIN } 230 \text{ STAY } 226 \frac{485}{2}$  Manhole compensation: Size of shell plate  $16 \frac{1}{2}" \times 13"$  Section of compensating ring  $8" \times 1 \frac{3}{8}" \checkmark$  No. of rivets and diameter of rivet holes  $28 @ 1 \frac{3}{8}"$

Outer row rivet pitch at ends  $9 \frac{1}{2}" \checkmark$  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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

Internal diameter Working pressure by Rules Thickness of crown No. and stays Inner radius of crown Working pressure by Rules

How connected to shell Size of doubling plate under dome Diameter of rivet hole of rivets in outer row in dome connection to shell

<b>Type of Superheater</b>		<b>Manufacturers of</b>	
		<div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 5px;">}</div> <div>           Tubes            Steel castings         </div> </div>	
Number of elements	Material of tubes	Internal diameter and thickness of tubes	
Material of headers	Tensile strength	Thickness	Can the superheater be
the boiler be worked separately	Is a safety valve fitted to every part of the superheater which can be shut off from the boiler		
Area of each safety valve	Are the safety valves fitted with easing gear		Working pressure
Rules	Pressure to which the safety valves are adjusted		Hydraulic test
tubes	, castings	and after assembly in place	Are drain cocks or
to free the superheater from water where necessary			

*Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with*

For RICHARDSONS, WESTGARTH & Co. LIMITED

*The foregoing is a correct description*

Frederic S. Thumell

MANAGER, SUNDERLAND WORKS.	
Dates of Survey while building	<div> <div> During progress of work in shops - - </div> <div> 27. Feb. 4. 9. 10. 11. 22. 24. </div> <div> May. 1. 2. 3. 8. 10. 12. 14. </div> </div> <div> <div> During erection on board vessel - - </div> <div> 18. 22. 26. 31. </div> <div> Apr. 4. 6. 7. 8. 12. 13. 14. 20. 21. 22. 23. 26. 27. 29. </div> <div> May. 1. 2. 3. </div> </div>
	<div> Are the approved plans of boiler and superheater forwarded herewith. (If not state date of approval.) </div> <div> 28. 12. 26. </div>
	<div> Total No. of visits </div> <div> 37 </div>

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers were built under special survey & the materials & workmanship are  
On completion they were tested by hydraulic pressure  
450 lbs. & found sound & tight. The boilers were after-  
wards satisfactorily fitted in the vessel & the safety valves  
adjusted under steam to 205 lbs. Thickness of safety va-  
lves  $3\frac{3}{8}$ "  $3\frac{3}{8}$ "  $3\frac{3}{8}$ "  $3\frac{3}{8}$ ".

Survey Fee ... .. £ 27 : 18 : ..

Travelling Expenses (if any) £

When applied for, *13 May* 192

When received, 18 . 8 . 192

## Committee's Minute

FRI. 27 MAY 1927

*Assigned*

+ RB 5: 24

(See Ser 419. attached)

Engineer Surveyor to Lloyd's Register

Lloyd's Register  
Foundation