

# REPORT ON BOILERS.

Sld. No. 30141  
Mab No. 13783.

Received at London Office

27 SEP 1929

Date of Report

9-8-1929

When handed in at Local Office

9-8-1929

Port of MIDDLESBROUGH.

26<sup>th</sup> Sept. 1929  
9-8-1929

No. in Reg. Book

Survey held at STOCKTON.

Date, First Survey 21st June 1929 Last Survey

(Number of Visits 13.)

Gross Tons

Net

on the boiler for Hawthorn Leslie & Co. 367. S.S. "WILLIAM CASH"

Built at Newcastle-on-Tyne

By whom built R. W. Hawthorn Leslie & Co. Ltd

Yard No. 367

When built 1929

Engines made at Sunderland

By whom made The North Eastern Marine Eng<sup>g</sup> Co. Ltd

Engine No. 2730

When made 1929

Boilers made at Stockton

By whom made Riley Bros. (Boilermakers) Ltd

Boiler No. 5931

When made 1929.

Owners Stephenson Clarke & Associated Companies, Ltd. Port belonging to London.

## VERTICAL DONKEY BOILER.

Made at Stockton By whom made Riley Bros. Boiler No. 5931. When made 1929. Where fixed Stoketold recess.

Manufacturers of Steel Appleby Iron Co.

Total Heating Surface of Boiler

315 sq. ft.

Is forced draught fitted no.

Coal or Oil fired Coal.

No. and Description of Boilers

1 Vertical Riley Type

Working pressure 100 lbs.

Tested by hydraulic pressure to

200 lbs.

Date of test

9-8-29

No. of Certificate 6734

Area of Firegrate in each Boiler

18 sq. ft.

No. and Description of safety valves to each boiler Two direct Spring loaded.

Area of each set of valves per boiler

per rule 3.42 sq. in.  
as fitted 4.14 sq. in.

Pressure to which they are adjusted 108 lbs. sq. in.

Are they fitted with easing gear Yes

State whether steam from main boilers can enter the donkey boiler no.

Smallest distance between boiler and bunkers

Is oil fuel carried in the double bottom under boiler

Is the base of the boiler insulated Yes

Smallest distance between base of boiler and tank top plating

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

ends 3/8"   
 centre 3/4"

Are the shell plates welded or flanged

no.

Description of riveting: circ. seams

end S.R.   
 inter D.R.

long. seams

ends D.R. lap.   
 centre T.R. lap.

Dia. of rivet holes in

circ. seams 29/32   
 long. seams E. 13/16   
 C. 1 1/32

Pitch of rivets

E. 2 1/8"   
 C. 1 3/8"   
 E. 1 2 1/2"   
 C. 1 3/8"

Percentage of strength of circ. seams

plate E 57.3   
 rivets E 69.8   
 C 90.1

of Longitudinal joint

plate E 69.3   
 rivets E 71.5   
 C. 73.5   
 combined.

Working pressure of shell by rules

104 lbs.

Thickness of butt straps

outer   
 inner

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat

dished

Material Steel

Tensile strength

26/30

Thickness

2 1/32

Radius

14'-11 1/2"

Working pressure by rules

105 lbs.

Description of Furnace: Plain, spherical, or dished crown

spherical

Material Steel

Tensile strength

26/30

Thickness

19/32

External diameter

5'-1"

Length as per rule

Working pressure by rules

167 lbs.

Pitch of support stays circumferentially

and vertically

Are stays fitted with nuts or riveted over

Diameter of stays over thread

Radius of spherical or dished furnace crown

2'-5 1/2"

Working pressure by rule 167 lbs.

Thickness of Ogee Ring

19/32

Diameter as per rule

5'-5 1/4"   
 4'-11 1/4"

Working pressure by rule

115 lbs.

Combustion Chamber: Material

Steel

Tensile strength

26/30

Thickness of top plate

9/16

Radius if dished

Working pressure by rule 132 lbs.

Thickness of back plate

19/32

Radius

Diameter if circular 2'-6 1/2"

Length as per rule

Pitch of stays

10 1/2" x 10 1/2"

Are stays fitted with nuts or riveted over

no.

Diameter of stays over thread

1 1/2"

Working pressure of back plate by rules

110 lbs.

Tube Plates: Material

front Steel   
 back

Tensile strength

26/30

Thickness

7/8"

Mean pitch of stay tubes in nests

8 7/8"

If comprising shell, Dia. as per rule

front   
 back

Pitch in outer vertical rows

3 3/4" x 5' 7 1/2"

dia. of tube holes FRONT

stay 2 3/4"   
 plain 2 7/16"

BACK

stay 2 1/2"   
 plain 2 1/2"

Is each alternate tube in outer vertical rows a stay tube

Yes.

Working pressure by rules

front 115 lbs.   
 back 165 lbs.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32

Depth and thickness of girder at centre

5 1/2" x 7/8" (double).

Length as per rule

1'-10 7/8"

Distance apart

10"

No. and pitch of stays in each

2-8"

Working pressure by rule

132 lbs.



Crown stays: Material Steel Plate Tensile strength 28/32 ✓ Diameter 16" x 1/2" ✓  
 No. of threads per inch ✓ Area supported by each stay 190" ✓ Working pressure by rules app<sup>d</sup> 100 lbs.  
 Screw stays: Material Steel Tensile strength 26/30 ✓ Diameter 1 1/2" ✓ No. of threads per inch 9  
 Area supported by each stay 108 1/2" Working pressure by rules 115 lbs. Are the stays drilled at the outer ends no.  
 Tubes: Material Steel External diameter 2 1/2" 1 6 2 3/4" ✓ Thickness 11 WG.  
 No. of threads per inch 9 Pitch of tubes 3 1/4" x 5"; 3 1/4" x 3 1/4" Working pressure by rules p. 125 lbs. 5. 110 lbs.  
 Manhole Compensation: Size of opening in shell plate 16" x 12" ✓ Section of compensating ring 5 1/4" x 9" No. of rivets and diameter  
 of rivet holes 48 - 25/32 ✓ Outer row rivet pitch at ends 5" Depth of flange if manhole flanged ✓  
 Uptake: External diameter ✓ Thickness of uptake plate ✓  
 Cross Tubes: No. ✓ External diameters ✓ Thickness of plates ✓

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

The foregoing is a correct description,  
**HILEY BROS. (BOILERMAKERS, LIMITED).**

Manufacturer.

J. G. Shields

SECRETARY

Dates of Survey 14/29  
 During progress of work in shops - June 21-25, 28, July 1, 2, 5, 9, 12, 17, 19, 24, 30, Aug 9  
 while building During erection on board vessel - -

Is the approved plan of boiler forwarded herewith Yes  
 (If not state date of approval.)

Total No. of visits 13

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

The materials and workmanship are good.  
 This boiler has been built under special survey in accordance with the Rules and Approved Plan. It is being installed at Newcastle.

The Donkey Boiler has been satisfactorily fitted in the vessel and its safety valves adjusted to 105 lbs. D. under steam. For notation please see Machinery Report.

Survey Fee ... £ 4-4-0 When applied for Monthly  
 Travelling Expenses (if any) £ : : When received, 19

P. I. Man  
 Engineer-Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 4 OCT 1929  
 Assigned See J. L. Rep.

Lloyd's Register Foundation