

## REPORT ON BOILERS.

Std. No. 30244  
Mab No. 13835-5 OCT 1929  
-8 JAN 1930

Date of writing Report

192

When handed in at Local Office

192

Port of MIDDLESBROUGH

No. in Survey held at  
Reg. Book.

MIDDLESBROUGH

Date, First Survey 15 April

Last Survey 2 October 1929

7 January 1930

on the

S.S. "HADLEIGH"

(Number of Visits)

Tons

Net

Master

Built at Haverlin Hill on Tees By whom built Furness S.B. Co.

Yard No. 149

When built 1929

Engines made at

Sunderland

By whom made

Richardsons, Westgarth &amp; Co.

Engine No.

When made

Boilers made at

Middlesbrough

By whom made

Richardsons, Westgarth &amp; Co. Ltd.

Boiler No. 2581

When made 1929

Nominal Horse Power

527

Owners

Port belonging to

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

Manufacturers of Steel

Steel Company of Scotland

(Letter for Record S.)

Total Heating Surface of Boilers

7569 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

3 S.B.

Working Pressure 200 lbs.

Tested by hydraulic pressure to

350 lbs.

Date of test

P.S. 18.9.29  
CENTRE 27.9.29

No. of Certificate

P.S. 6735  
Centre 6738

Can each boiler be worked separately

Area of Firegrate in each Boiler

59.8 sq. ft.

No. and Description of safety valves to each boiler

Pair Cockburns Improved High Lift

Area of each set of valves per boiler

7.3 sq. ft.

Pressure to which they are adjusted

205 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

4'-0"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2'-6"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

14'-9 3/8"

Length

12'-0"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

1 5/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

D.R.

Long. seams

T.R.D.B.S. (5 rivets)

Diameter of rivet holes in

circ. seams 1 1/4"

long. seams 1 5/16"

Pitch of rivets

8 1/2"

Percentage of strength of circ. end seams

plate 64.3

rivets 42.5

Percentage of strength of circ. intermediate seam

plate 85.3

rivets 85.4

Percentage of strength of longitudinal joints

plate 85.4

rivets 87.7

Working pressure of shell by Rules

202 lbs.

Thickness of butt straps

outer 1"

inner 1 1/8"

No. and Description of Furnaces in each Boiler

3 Corrugated

3 C.F.

Material

Steel

Tensile strength

26/30

Smallest outside diameter

3'-8 3/4"

Length of plain part

top

Thickness of plates

crown 5/8"

bottom 5/8"

Description of longitudinal joint

weld

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

Working pressure of furnace by Rules

203 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

1 3/16"

Pitch of stays 16 1/2 x 19 1/2 (mean)

How are stays secured

D.N.'s

Working pressure by Rules

201 lbs.

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30

Thickness

27/32"

3/4"

Lean pitch of stay tubes in nests

9 5/16"

Pitch across wide water spaces

13 1/2 x 7 3/8 (united)

Working pressure

front 205 lbs.

back 231 "

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32

Depth and thickness of girder

At centre

8 x 7 3/8 (double)

Length as per Rule

2'-7 3/8"

Distance apart

8 1/2"

No. and pitch of stays

At each

3'-7 1/4"

Working pressure by Rules

207 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

3/4"

Back

5/8"

Top

5/8"

Bottom

3/4"

Pitch of stays to ditto: Sides

8 1/2 x 7 1/4"

Back

8 x 7 3/4"

Top

8 1/2 x 7 1/4"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

218 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

27/32"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

13/16"

Pitch of stays at wide water space

13 1/2 x 8"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

218 lbs.

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay,

3"

Over threads

No. of threads per inch

6

Area supported by each stay

315 sq. in.

Working pressure by Rules

213 lbs.

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part,

1 1/2"

Over threads

No. of threads per inch

9

Area supported by each stay

604 sq. in.



Working pressure by Rules 207 lbs. Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 3/4 or Over threads 1 3/4 ✓

No. of threads per inch 9 Area supported by each stay 83 5/8 Working pressure by Rules 218 lbs. ✓

Tubes: Material iron External diameter { Plain 2 1/2 Stay 2 1/2 Thickness { 5/16, 3/8 & 7/16 No. of threads per inch 9 ✓

Pitch of tubes 3 3/4 x 3 1/2 ✓ Working pressure by Rules p. 300 lbs. s. 205 lbs. Manhole compensation: Size of opening in shell plate 16 1/2 x 13 ✓ Section of compensating ring 8 x 1 9/16 ✓ No. of rivets and diameter of rivet holes 30-1 7/16 ✓

Outer row rivet pitch at ends 8 15/16 ✓ 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 { Plate Rivets

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

How connected to shell Inner radius of crown Working pressure by Rules

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 Manufacturers of { Tubes Steel castings

Number of elements Material of tubes Internal diameter and thickness of tubes

Material of headers Tensile strength Thickness Can the superheater be shut off and 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 as per Rules

Pressure to which the safety valves are adjusted Hydraulic test pressure: tubes, castings and after assembly in place Are drain cocks or valves fitted to free the superheater from water where necessary

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

The foregoing is a correct description,  
For RICHARDSON, WESTGARTH & Co. LIMITED Manufacturer.

Dates of Survey { During progress of work in shops - - 1929 Apr 15-22 30 May 1, 6, 9, 16, 23, 28 Jun Are the approved plans of boiler and superheater forwarded herewith Yes.  
(If not state date of approval.)  
while building { During erection on board vessel - - - 3, 6, 8, 11, 13, 15, 18, 25, 28, 30, 31, 9, 11, 12, 18, 30 Aug 1, 8, 12, 14, 19  
26, 28, 30, Sep 2, 5, 10, 11, 17, 18, 21, 26, 27 Oct 2 Total No. of visits 40

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

The materials and workmanship are good.  
These boilers have been built under special survey in accordance with the Rules and approved Plan. They will be fitted aboard at Sunderland.  
These boilers have been satisfactorily fitted in the vessel & the safety valves adjusted under steam.

Garth

Survey Fee 2 1/3 N.A.P. Fee £ 40-10-5  
Travelling Expenses (if any) £ :

When applied for, 4 Oct 1929  
When received, 31 Oct 1929

P. J. Mann

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 21 JAN 1930

Assigned

See Indb J.E. No. 13936



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Foundation