

## REPORT ON BOILERS.

No. 13670

4 MAY 1929

Received at London Office

Date of writing Report

1.5.1929

When handed in at Local Office

1.5.1929

Port of

MIDDLESBROUGH

No. in  
Reg. Book.

Survey held at

STOCKTON

Date, First Survey

1 March

Last Survey

1.5.1929

on the

boiler for Plenty &amp; Son. "S" IRON STROKE

(Number of Visits 10)

(Gross Tons)

Master

Built at

Bristol

By whom built

C. Hill

Yard No.

174

When built

1929

Engines made at

Newbury.

By whom made

Plenty &amp; Son.

Engine No.

2612

When made

1929

Boilers made at

Stockton

By whom made

Riley Bros. (Boilermakers) Ltd

Boiler No.

5890

When made

1929

Nominal Horse Power

84.

Owners

Messrs Osborn &amp; Wallis

Port belonging to

Bristol

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

Manufacturers of Steel

Appleby Iron Co Ltd.

(Letter for Record S. ✓)

Total Heating Surface of Boilers

1600 sq ft ✓

Is forced draught fitted

no ✓

Coal or Oil fired

Coal.

No. and Description of Boilers

1 S.B. ✓

Working Pressure

180 lbs.

Tested by hydraulic pressure to

320 lbs.

Date of test

1.5.29

No. of Certificate

6706.

Can each boiler be worked separately

✓

Area of Firegrate in each Boiler

5 1/2 sq ft

No. and Description of safety valves to each boiler

2 Spring loaded

Area of each set of valves per boiler

per Rule 9.6 (10.3)

as fitted

14 1/2 ✓

Pressure to which they are adjusted

185

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

12"

Is oil fuel carried in the double bottom under boilers

✓

Smallest distance between shell of boiler and tank top plating

✓

Is the bottom of the boiler insulated

✓

Largest internal dia. of boilers

13'-0" ✓

Length

10'-6" ✓

Shell plates: Material

Steel

Tensile strength

29/33.

Thickness

1 1/2" ✓

Are the shell plates welded or flanged

no.

Description of riveting: circ. seams

end D.R

long. seams

T.R.D.B.S. (Sriveto)

Diameter of rivet holes in

circ. seams 1 1/4"

long. seams 1 1/6"

Pitch of rivets

3 1/2" - 6 1/2"

Percentage of strength of circ. end seams

plate 62.2

rivets 42.7.

Percentage of strength of circ. intermediate seam

plate 85.6

rivets 87.0

Percentage of strength of longitudinal joint

plate 85.6

rivets 87.0

combined 88.5.

Working pressure of shell by Rules

180 lbs.

Thickness of butt straps

outer 25/32"

inner 29/32"

No. and Description of Furnaces in each Boiler

3 Plain

3 P.F.

Material

Steel

Tensile strength

26/30

Smallest outside diameter

3'-3"

Length of plain part

top 6'-5" ✓

bottom 6'-10 3/4" ✓

Thickness of plates

crown 3/4"

bottom 3/4" ✓

Description of longitudinal joint

weld.

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

✓

Working pressure of furnace by Rules

184 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

1"

Pitch of stays

18 1/2" x 16 1/2"

How are stays secured

D.N. &amp; W.

Working pressure by Rules

181 lbs.

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30

Thickness

7/8"

3/4"

Mean pitch of stay tubes in nests

10 7/16"

Pitch across wide water spaces

14" x 9"

Working pressure

front 189 lbs.

back 184 "

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32

Depth and thickness of girder

at centre 10" x 7/8" (double)

Length as per Rule

2'-7" ✓

Distance apart

11"

No. and pitch of stays

in each

3 - 7 1/2"

Working pressure by Rules

183 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

2 1/2" x 1 1/2"

Back

7/8"

Top

2 1/2" x 1 1/2"

Bottom

1" ✓

Pitch of stays to ditto: Sides

10 1/2" x 7 1/2"

Back

9 1/2" x 8"

Top

11" x 7 1/2"

Are stays fitted with nuts or riveted over

nuts.

Working pressure by Rules

181 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

1 1/2"

Pitch of stays at wide water space

14" x 9 1/4" ✓

Are stays fitted with nuts or riveted over

nuts

Working Pressure

191 lbs.

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay, 2 3/4" ✓

or Over threads

No. of threads per inch

6 ✓

Area supported by each stay

305 sq

Working pressure by Rules

181 lbs.

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part, 1 1/2"

or Over threads

No. of threads per inch

9 ✓

Area supported by each stay

69 sq

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Working pressure by Rules 180 lbs. Are the stays drilled at the outer ends no. Margin stays: Diameter { At turned off part. or 1 3/4" Over threads }  
No. of threads per inch 9 Area supported by each stay 101 Working pressure by Rules 180 lbs.  
Tubes: Material Iron External diameter { Plain 3 1/4" 16 3/16" Stay 3" 16 3/16" Thickness { 9/16" No. of threads per inch 9.  
Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules p. 180 lbs. s. 180 lbs. Manhole compensation: Size of opening in  
shell plate 20" x 16" Section of compensating ring 9" x 1 1/2" No. of rivets and diameter of rivet holes 52 - 1 1/16"  
Outer row rivet pitch at ends 7 3/8" 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 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 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

The foregoing is a correct description,

J. B. Shields.

Manufacturer.

Dates of Survey { During progress of work in shops - 1929: Mar. 13, 18, Apr. 5, 8, 11, 14, 26 May 1 Are the approved plans of boiler and superheater forwarded herewith Yes.  
while building { During erection on board vessel - July 4, 20, 23, 30, Aug. 2, Total No. of visits 15.  
(If not state date of approval.)

#### 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.

This boiler has now been fitted & secured on board.

Survey Fee ... £ 10 - 14 - 0 When applied for, Monthly 1929  
Travelling Expenses (if any) £ : When received, 1929

John L. Guymer  
P. J. Mac  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 20 AUG 1929

TUE. 29 OCT 1929

Assigned

See p. 6 of (Pro 12243) attached



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Foundation