

REPORT ON BOILERS.

No. 12837

Received at London Office

7 OCT 1929

Date of writing Report

2. 10. 1929

When handed in at Local Office

2. 10. 1929

Port of

MIDDLESBROUGH.

No. in Survey held at

STOCKTON.

Date, First Survey

16 April

Last Survey

1. 10. 1929.

No. in Book.

1768 Sup. on the sc. "PORTFIELD"

(Number of Visits)

Gross 4425
Tons Net 2661.

Master

Built at Thornaby on Tees. By whom built Craig Taylor & Co.

Yard No. 225. When built 1929.

Engines made at

Stockton

By whom made

Blain & Co. (1926) Ltd.

Engine No. 1983. When made 1929

Boilers made at

do.

By whom made

do.

Boiler No. 1983 When made 1929

Nominal Horse Power

Owners

Portfield S.S. Co Ltd.

Port belonging to Cardiff

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

James Dunlop & Co.

(Letter for Record S ✓)

Total Heating Surface of Boilers

6382 sq. ft.

Is forced draught fitted no

Coal or Oil fired Coal.

No. and Description of Boilers

2 S.B. ✓

Working Pressure 180 lbs.

Tested by hydraulic pressure to

320 lbs.

Date of test

3. 9. 29

No. of Certificate

6733.

Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler

77 sq. ft.

No. and Description of safety valves to each boiler

10.2

Pair Corbourn's Improved High Lift ✓

Area of each set of valves per boiler

per Rule 11.8

Pressure to which they are adjusted 185 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

2'-5"

Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating

3'-0"

Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers

17'-6 3/16"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

29/33.

Thickness

1 1/32"

Are the shell plates welded or flanged

no.

Description of riveting: circ. seams

end D.R.

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

Diameter of rivet holes in

circ. seams 1 7/16"

long. seams 1 7/16"

Pitch of rivets

4 1/8"

10"

Percentage of strength of circ. end seams

plate 65.1

rivets 44.3.

Percentage of strength of circ. intermediate seam

plate

rivets ✓

Percentage of strength of longitudinal joint

plate 85.5.

rivets 85.6

combined 88.3

Working pressure of shell by Rules 184 lbs.

Thickness of butt straps

outer 1 1/16"

inner 1 3/16"

No. and Description of Furnaces in each Boiler

4 Corrugated ✓

Material

Steel

Tensile strength

26/30.

Smallest outside diameter

3'-5 1/16"

Length of plain part

top ✓

bottom

Thickness of plates

crown 1 7/32"

bottom 3/32"

Description of longitudinal joint

weld.

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

✓

Working pressure of furnace by Rules

186 lbs.

d plates in steam space: Material

Steel

Tensile strength

26/30.

Thickness

1 1/32"

Pitch of stays 25 1/2" x 19 1/4"

Are stays secured

D.N.W. ✓

Working pressure by Rules 184 lbs.

d plates: Material

front Steel

back

Tensile strength

26/30.

Thickness

1 1/16"

13/16"

16"

front 188 lbs.

back 191 "

Pitch of stay tubes in nests

11 1/8"

Pitch across wide water spaces

14 1/2" x 9 1/2"

Working pressure

188 lbs.

191 "

d plates to combustion chamber tops: Material

Steel ✓

Tensile strength

28/32.

Depth and thickness of girder

centre 8 1/2" x 1" (double).

Length as per Rule

2'-9"

Distance apart

9 3/4"

No. and pitch of stays

each

3-8

Working pressure by Rules

217 lbs.

Combustion chamber plates: Material

Steel ✓

Tensile strength

26/30

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

1 1/16"

Bottom

13/16"

Pitch of stays to ditto: Sides

9 1/2" x 8 1/2"

Back

9 1/4" x 9"

Top

9 3/4" x 8"

Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules

198 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30.

Thickness

1 1/16"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

1 5/16"

Pitch of stays at wide water space

14" x 9"

Are stays fitted with nuts or riveted over no.

Working Pressure

277 lbs.

Main stays: Material

Steel

Tensile strength

28/32.

At body of stay,

3 1/2"

No. of threads per inch

6.

Area supported by each stay

481 sq. in.

Working pressure by Rules

197 lbs.

Screw stays: Material

Steel

Tensile strength

26/30.

At turned off part,

1 3/4"

No. of threads per inch

8

Area supported by each stay

81 sq. in.



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Working pressure by Rules 220 lbs. Are the stays drilled at the outer ends no. Margin stays: Diameter ^{At turned off part.} 1 7/8 or Over threads 1 7/8

No. of threads per inch 8 Area supported by each stay 97 lb Working pressure by Rules 212 lbs.

Tubes: Material iron External diameter ^{Plain} 3 1/2 ^{Stay} 3 1/2 ¹⁶ 3 3/4 Thickness 8 WG. No. of threads per inch 9

Pitch of tubes 4 7/8" x 4 3/4" Working pressure by Rules p. 216 lbs. s. 205 lbs. Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 8 1/4" x 1 1/32" No. of rivets and diameter of rivet holes 28 - 1 7/16"

Outer row rivet pitch at ends 10" 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 Yes.

The foregoing is a correct description,
For BLAIR & CO. (1926) LIMITED.

H. Chambers Manufacturer.
SECRETARY.

Dates of Survey ^{During progress of work in shops - -} See Machinery report Are the approved plans of boiler and superheater forwarded herewith Yes. (If not state date of approval.)

^{while building} ^{During erection on board vessel - -} Total No. of visits

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, securely fitted aboard and their safety valves have been adjusted and tested under steam with satisfactory results.

Survey Fee ... £ See Machinery Report When applied for, 192

Travelling Expenses (if any) £ : : When received, 192

P. J. Mann
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute See 11 OCT 1926

Assigned See 11 OCT 1926



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