

# REPORT ON BOILERS.

No. 12167

29 NOV 1924

Received at London Office

Date of writing Report

192

When handed in at Local Office

27/11/24

192

Port of

Middlesbrough

No. in Survey held at

Stockton-on-Tees

Date, First Survey

While Building

Last Survey

192

on the

Steel screw steamer "DRAKEPOOL"

(Number of Visits

Gross Tons  
Net

Master

Built at

Stockton

By whom built

Rapner S. B. & Co Ltd

Yard No. 546

When built 1924

Engines made at

Stockton

By whom made

Thos Blair & Co Ltd

Engine No. 1957

When made 1924

Boilers made at

Stockton

By whom made

Thos Blair & Co Ltd

Boiler No. 1957

When made 1924

Indicated Horse Power

437

Owners

Port belonging to

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

Manufacturers of Steel

D. Dobbin & Sons Ltd & Steel Co of Scotland Ltd

(Letter for Record (S))

Total Heating Surface of Boilers

7526 sq ft

Is forced draught fitted

no

Coal or Oil fired

coal

No. and Description of Boilers

3 single ended

Working Pressure 180 lbs

Tested by hydraulic pressure to

320

Date of test

25.10.24

No. of Certificate

6405

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

63.3 sq ft

No. and Description of safety valves to each boiler

2 Direct spring - "High lift"

Area of each set of valves per boiler

per Rule 10.72

as fitted 11.88

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

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

2'-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

no

Largest internal dia. of boilers

15'-9 3/8"

Length

11'-0"

Shell plates: Material

steel

Tensile strength

28-32

Thickness

1 1/2"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end 2 Riv. laps

Long. seams

2 Butt - 3 Riveted

Diameter of rivet holes in

circ. seams 1 3/8"

long. seams 1 1/2"

Pitch of rivets

4 3/8"

8 3/4"

Percentage of strength of circ. end seams

plate 68.57

rivets 42.3

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.02

rivets 90.5

combined 88.15

Working pressure of shell by Rules

184 lbs

Thickness of butt straps

outer 19 3/8" x 1 1/2"

inner 19 3/8" x 1 1/4"

No. and Description of Furnaces in each Boiler

3 Dighton

Material

steel

Tensile strength

26-30 tons

Smallest outside diameter

45 1/2"

Length of plain part

top

bottom

Thickness of plates

crown 19"

bottom 32"

Description of longitudinal joint

weld

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

none

Working pressure of furnace by Rules

186 lbs

Stays and plates in steam space: Material

steel

Tensile strength

26-30 tons

Thickness

1 1/4"

Pitch of stays

20 3/4" x 22"

How are stays secured

nuts and 12 1/2" x 1" cone washers

Working pressure by Rules

189

Stays and plates: Material

front steel

back steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Working pressure

188 lbs

Mean pitch of stay tubes in nests

11 9/16"

Pitch across wide water spaces

14 1/2" x 9 1/2"

Working pressure

180 "

Stays and plates to combustion chamber tops: Material

steel

Tensile strength

28-32 tons

Depth and thickness of girder

7 3/4" x 1 1/2"

Centre

7 3/4" x 1 1/2"

Length as per Rule

30"

Distance apart

9 1/2"

No. and pitch of stays

Each

2 @ 9 1/2"

Working pressure by Rules

197 lbs

Combustion chamber plates: Material

steel

Tensile strength

26-30 tons

Thickness: Sides

1/2"

Back

2 1/2"

Top

1 1/2"

Bottom

7/8"

Pitch of stays to ditto: Sides

8 1/2" x 10 1/2"

Back

9 1/2" x 9"

Top

9 1/2" x 9 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

182 lbs

Front plate at bottom: Material

steel

Tensile strength

26-30 tons

Thickness

1"

Lower back plate: Material

steel

Pitch of stays at wide water space

14" x 9"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

279 lbs

Main stays: Material

steel

Tensile strength

28-32 tons

Diameter

At body of stay, 3 1/2"

Over threads, 3 1/2"

No. of threads per inch

6

Working pressure by Rules

202 lbs

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 3/4"

Over threads, 1 3/4"

No. of threads per inch

8

Working pressure by Rules

202 lbs

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 3/4"

Over threads, 1 3/4"

No. of threads per inch

8

Working pressure by Rules

202 lbs

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 3/4"

Over threads, 1 3/4"

No. of threads per inch

8

Working pressure by Rules

202 lbs

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 3/4"

Over threads, 1 3/4"

No. of threads per inch

8

Working pressure by Rules

202 lbs

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 3/4"

Over threads, 1 3/4"

No. of threads per inch

8

Working pressure by Rules

202 lbs

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 3/4"



Working pressure by Rules 218 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" Over threads 1 7/8"

No. of threads per inch 8 Area supported by each stay 99 Working pressure by Rules 210 lbs

Tubes; Material iron External diameter { Plain 3 1/2" Stay 3 1/2" Thickness { N. 8 - S. W. 3 No. of threads per inch 9

Pitch of tubes 4 7/8" x 4 3/4" Working pressure by Rules 215 + 207 Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 8" x 1 1/2" No. of rivets and diameter of rivet holes 27 @ 1 1/2"

Outer row rivet pitch at ends 9" Depth of flange if manhole flanged ✓ Steam Dome: Material iron

Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint { Plate \_\_\_\_\_ Rivets \_\_\_\_\_

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 23 inclusive for boilers been complied with yes

The foregoing is a correct description,  
**BLAIR & Co., LIMITED** A. P. Hamilton Manufacturer.

Dates of Survey { During progress of work in shops - - } See Engine 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.) These boilers have been built under special survey are of good material and workmanship and on completion were tested by hydraulic pressure with satisfactory results.

The boilers have now been fitted on board in accordance with the Rules examined under steam and safety valves adjusted

Survey Fee ... £ 192 When applied for, 192

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

Wm. Morrison  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 2 DEC 1924

Assigned \_\_\_\_\_