

REPORT ON BOILERS.

No. 97322

Date of writing Report

19

When handed in at Local Office

31/3/1939

Port of

Received at London Office

APR 4 1939

NEWCASTLE-ON-TYNE

No. in
Reg. Book.

Survey held at

South Shields

Date, First Survey

2 May 1938

Last Survey

Mar 21 1939

1939

90254 on the

S. S. THORNIEBANK

(Number of Visits)

Gross

5568.54

Tons

Net 3249.39

Master

Built at

S. Shields

By whom built

J. Readhead & Sons Ltd

Card No.

515

When built

1939

Engines made at

South Shields

By whom made

J. Readhead & Sons Ltd

Engine No.

515

When made

1939

Boilers made at

South Shields

By whom made

J. Readhead & Sons Ltd

Boiler No.

515

When made

1939

Nominal Horse Power

Owners

Bank Line Ltd

Port belonging to

Glasgow

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland

(Letter for Record)

S

Total Heating Surface of Boilers

5486 sq

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

2 Single ended multitubular

Working Pressure

220 lb/sq in

Tested by hydraulic pressure to

380 lb/sq in

Date of test

P-10-1-39

No. of Certificate

P-809

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

60 sq

No. and Description of safety valves to each boiler

2 Double spring loaded

Area of each set of valves per boiler

per Rule 9.72 sq

Pressure to which they are adjusted

220 lb/sq in

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

1'-7"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2'-1"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15'-6"

Length

11'-9"

Shell plates: Material

S. M. Steel

Tensile strength

29-33 lb/sq in

Thickness

1 1/2"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D. R. L. J.

long. seams

T. R. D. B. S.

Diameter of rivet holes in

circ. seams 1 1/2"

long. seams 1 1/2"

Pitch of rivets

4 1/4"

Percentage of strength of circ. end seams

plate 64.8

rivets 44.0

Percentage of strength of circ. intermediate seam

plate 85.0

Percentage of strength of longitudinal joint

rivets 87.6

combined 87.5

Working pressure of shell by Rules

221.7 lb/sq in

Thickness of butt straps

outer 1 3/16"

inner 1 1/16"

No. and Description of Furnaces in each Boiler

3 Dighton Type

Material

S. M. Steel

Tensile strength

26-30 lb/sq in

Smallest outside diameter

3'-9 1/8"

Length of plain part

top 1'-0"

bottom 1'-0"

Thickness of plates

crown 1/16"

bottom 1/16"

Description of longitudinal joint

✓

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

Working pressure of furnace by Rules

223 lb/sq in

End plates in steam space: Material

S. M. Steel

Tensile strength

26-30 lb/sq in

Thickness

1 1/16"

Pitch of stays

20 1/2 x 20 1/4"

How are stays secured

Double nut washers outside (12 1/2 dia x 1 1/2 thick)

Working pressure by Rules

229.9 lb/sq in

Tube plates: Material

front S. M. Steel

back S. M. Steel

Tensile strength

26-30 lb/sq in

Thickness

15/16"

Mean pitch of stay tubes in nests

9 13/16"

Pitch across wide water spaces

14"

Working pressure

front 224 lb/sq in

back 244 lb/sq in

Girders to combustion chamber tops: Material

S. M. Steel

Tensile strength

29-33 lb/sq in

Depth and thickness of girder

at centre 8 1/2" x 1 3/4"

Length as per Rule

2'-7 1/2"

Distance apart

9 7/8"

No. and pitch of stays

in each

209

Working pressure by Rules

222 lb/sq in

Combustion chamber plates: Material

S. M. Steel

Tensile strength

26-30 lb/sq in

Thickness: Sides

3/4"

Back

3/4"

Top

3/4"

Bottom

7/8"

Pitch of stays to ditto: Sides

9 1/2" x 9 3/8"

Back

9 1/16" x 9"

Top

9" x 9 1/8"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

220.5 lb/sq in

Front plate at bottom: Material

S. M. Steel

Tensile strength

26-30 lb/sq in

Thickness

15/16"

Lower back plate: Material

S. M. Steel

Pitch of stays at wide water space

14" x 9"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

226 lb/sq in

Main stays: Material

S. M. Steel

Tensile strength

28-32 lb/sq in

Diameter

At body of stay, 3 1/2"

Over threads

No. of threads per inch

6

Area supported by each stay

416 sq in

Working pressure by Rules

227 lb/sq in

Screw stays: Material

S. M. Steel

Tensile strength

26-30 lb/sq in

Diameter

At turned off part, 1 7/8"

Over threads

No. of threads per inch

9

Area supported by each stay

89.2 sq in

Working pressure by Rules $239 \frac{lb}{sq. in.}$ Are the stays drilled at the outer ends ☒ No Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part} \\ \text{or} \\ \text{Over threads} \end{array} \right\} 2"$
No. of threads per inch 9 Area supported by each stay $108"$ Working pressure by Rules $229 \frac{lb}{sq. in.}$
Tubes: Material 9 rows External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right\} 3"$ Thickness $\left\{ \begin{array}{l} 9.1.3.4 \\ 5/16, 3/8 \end{array} \right\}$ No. of threads per inch 9
Pitch of tubes $11 \frac{1}{2} \times 8 \frac{1}{2}"$ Working pressure by Rules $238 \frac{lb}{sq. in.}$ Manhole compensation: Size of opening in
shell plate $16 \times 12"$ Section of compensating ring $8 \times 1 \frac{1}{2}"$ No. of rivets and diameter of rivet holes $20 \times 1 \frac{1}{2}"$
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 $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right\}$ ☒
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 *The Superheater Co. Ltd.* Manufacturers of

Tubes *See approved plans*
Steel forgings *a certificate for tests.*
Steel castings
Number of elements 66 Material of tubes $S.S. Steel$ Internal diameter and thickness of tubes $1 \frac{1}{2}" - 2.5"/m.$
Material of headers *Forged Steel* Tensile strength ☒ Thickness ☒ Can the superheater be shut off and
the boiler be worked separately ☒ Yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler ☒ Yes
Area of each safety valve $3.97"$ Are the safety valves fitted with easing gear ☒ Yes Working pressure as per
Rules $220 \frac{lb}{sq. in.}$ Pressure to which the safety valves are adjusted $225 \frac{lb}{sq. in.}$ Hydraulic test pressure:
tubes $1000 \frac{lb}{sq. in.}$ forgings and castings $660 \frac{lb}{sq. in.}$ and after assembly in place $450 \frac{lb}{sq. in.}$ Are drain cocks or
valves fitted to free the superheater from water where necessary ☒ Yes
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with ☒ Yes

For JOHN READHEAD & SONS, LTD.

The foregoing is a correct description,

Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right\}$
while building $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right\}$

Are the approved plans of boiler and superheater forwarded herewith ☒ Yes
(If not state date of approval.)

Total No. of visits

Is this Boiler a duplicate of a previous case ☒ Yes If so, state Vessel's name and Report No. *S.S. SUTHERLAND. 96205.*

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

The boilers have been built under special survey in accordance with rule requirements & approved plan. Materials & workmanship are good. Hydraulic test satisfactory. They have been efficiently installed & fixed in vessel, examined under steam & the safety valves adjusted to the approved pressure.

Survey Fee £

Travelling Expenses (if any) £

When applied for,

19

When received,

19

J. W. Matthews
Engineer Surveyor to Lloyd's Register of Shipping.

WED 12 APR 1939

Committee's Minute

Assigned

See Minc. 76 97322



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Lloyd's Register
Foundation