

REPORT ON BOILERS.

No. 85624

Received at London Office

25 APR 1930

NEWCASTLE-ON-TYNE

Date of writing Report

192

When handed in at Local Office

24/4/1930 Port of

No. in
Reg. Book

Survey held at

St. Peter's, Hebburn.

Date, First Survey

25 Oct 129

Last Survey

15 April

1930.

on the

Two cylindrical boilers for the ferry "NORTHUMBRIAN"

(Number of Visits)

Gross

344

Net

154

Master

Built at

Hebburn.

By whom built

Hawthorn Leslie & Co. Ltd.

Yard No.

543 When built

1930.

Engines made at

St. Peter's

By whom made

Hawthorn Leslie & Co. Ltd.

Engine No.

3464 When made

1930.

Boilers made at

- do -

By whom made

- do -

Boiler No.

3464 When made

1930.

Nominal Horse Power

Owners Type Improvement & Laminar Port belonging to J. Shiel & Co

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

D. Colville & Sons.

(Letter for Record

S.

Total Heating Surface of Boilers

1902 sq

Is forced draught fitted

No

Coal or Oil fired

Coal.

No. and Description of Boilers

2 single ended marine

Working Pressure 180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

13.1.30 No. of Certificate

421

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

34.5 sq

No. and Description of safety valves to each boiler

1 pair Lockburn high lift

Area of each set of valves per boiler

per Rule

3.52

Pressure to which they are adjusted

180 lbs

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

12" FROM BOILER TOP
TO DECK (DECK
(INSULATED).

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

6" open floor

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

10-0"

Length

11-6"

Shell plates: Material

Steel

Tensile strength

28/32 Tons.

Thickness

24/32

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

inter.

D.R. Lap

long. seams

S. R. D. R. S.

Diameter of rivet holes in

circ. seams

15/16

Pitch of rivets

3 1/2

Percentage of strength of circ. end seams

plate

66%

rivets

46%

Percentage of strength of circ. intermediate seam

plate

88.5%

Percentage of strength of longitudinal joint

plate

94%

rivets

90.4%

Working pressure of shell by Rules

181 lbs

Thickness of butt straps

outer 21/32
inner 15/32

No. and Description of Furnaces in each Boiler

2 Horizontal. 2cf

Material

Steel

Tensile strength

26/30 Tons

Smallest outside diameter

2-10 1/16"

Length of plain part

top

bottom

Thickness of plates

crown

bottom

15/32

Description of longitudinal joint

Weld.

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

None.

Working pressure of furnace by Rules

192 lbs

End plates in steam space: Material

Steel

Tensile strength

26/30 Tons

Thickness

1 1/16"

Pitch of stays

14 1/4"

How are stays secured

Double nuts.

Working pressure by Rules

191 lbs

Tube plates: Material

front Steel.
back Steel.

Tensile strength

26/30 Tons

Thickness

1 1/16"

Mean pitch of stay tubes in nests

10"

Pitch across wide water spaces

15"

Working pressure

front 224 lbs
back 234 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 Tons

Depth and thickness of girder

at centre

9" x 3 1/4"

Length as per Rule

26"

Distance apart

9"

No. and pitch of stays

in each

3 @ 8"

Working pressure by Rules

182 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26/30 Tons

Thickness: Sides

5/8"

Back

5/8"

Top

5/8"

Bottom

4/8"

Pitch of stays to ditto: Sides

9" x 8"

Back

9" x 8"

Top

9" x 8"

Are stays fitted with nuts or riveted over

None

Working pressure by Rules

211 lbs

Front plate at bottom: Material

Steel

Tensile strength

26/30 Tons

Thickness

1 1/16"

Lower back plate: Material

Steel

Tensile strength

26/30 Tons

Thickness

1 1/16"

Pitch of stays at wide water space

15 3/4"

Are stays fitted with nuts or riveted over

None.

Working Pressure

283 lbs

Main stays: Material

Steel

Tensile strength

28/32 Tons

Diameter

At body of stay,
or
Over threads

2 7/8"

No. of threads per inch

6

Area supported by each stay

289 sq

Working pressure by Rules

210 lbs

Screw stays: Material

Steel

Tensile strength

26/30 Tons

Diameter

At turned off part,
or
Over threads

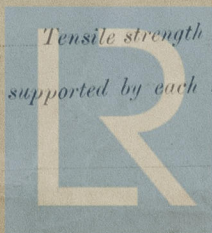
1 5/8"

No. of threads per inch

9

Area supported by each stay

42 sq



Working pressure by Rules 211 Are the stays drilled at the outer ends Yes Margin stays: Diameter ^{At turned off part.} 1 1/8"
No. of threads per inch 9 Area supported by each stay 99 sq" Working pressure by Rules 215 lbs
Tubes: Material Iron External diameter ^{Plain} 3 1/4" ^{Stay} 3 1/4" Thickness 3/8" - 5/16" No. of threads per inch 9
Pitch of tubes 4 1/2" - 4 3/8" Working pressure by Rules 205 lbs Manhole compensation: Size of opening in
shell plate 21" x 14" Section of compensating ring 8 1/2" x 7 1/8" No. of rivets and diameter of rivet holes 42 @ 1 1/16"
Outer row rivet pitch at ends 4" Depth of flange if manhole flanged 4" Steam Dome: Material Iron
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.
FOR R. & W. BENTLEY, LESLIE & CO. LD. Manufacturer.
R. J. Armstrong
Dates of Survey ^{During progress of} ^{work in shops - -} ^{while} ^{building} ^{During erection on} ^{board vessel - -} See Machinery Report
Are the approved plans of boiler and superheater forwarded herewith Yes.
(If not state date of approval.)
Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The Boilers have been
built under special survey in accordance with the
approved plans & the Rules of the Society, have
been securely fitted in the vessel & their safety
valves adjusted under steam to working
pressure.
The workmanship & materials are of good
quality throughout

Survey Fee £ 100 : 192 When applied for,
Travelling Expenses (if any) £ 100 : 192 When received,
Committee's Minute TUE. 29 APR 1930
Assigned See attached &c.
Hed. A. Ferguson.
Engineer Surveyor to Lloyd's Register of Shipping.

