

## REPORT ON BOILERS.

No. 99912

Received at London Office 10 NOV 1941

Date of writing Report

19

When handed in at Local Office

3/11/41

Port of

NEWCASTLE-ON-TYN.

No. in Survey held at  
Reg. Book.

South Shields ✓

Date, First Survey 26 March.

Last Survey 30 Oct

19 41

36314 on the

S. S. EMPIRE STEVENSON ✓

(Number of Visits

Tons

Gross 6209.14

Net 4221.60

Built at S. Shields ✓ By whom built

J. Readhead &amp; Sons Ltd

Yard No. 524

When built 1941

Engines made at

South Shields ✓

By whom made

J. Readhead &amp; Sons Ltd

Engine No. 524

When made 1941

Boilers made at

South Shields ✓

By whom made

J. Readhead &amp; Sons Ltd

Boiler No. 524

When made 1941

Nominal Horse Power

Owners

Ministry of War Transport

Port belonging to

S. Shields

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

Manufacturers of Steel

The Steel Company of Scotland Ltd

(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

Tested by hydraulic pressure to

380 lb/sq

Date of test

P-22-8-41

No. of Certificate

P-908

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

(H. L.)

Area of each set of valves per boiler

per Rule 9.72 sq

as fitted 9.8 sq

Pressure to which they are adjusted

220 lb/sq

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

3'-3"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2'-2"

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

29-30 Tons/sq

Thickness

1 1/2"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D. R. L. J.

inter.

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"

10"

Percentage of strength of circ. end seams

plate 64.8

rivets 44.0

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.0

rivets 87.6

combined 87.5

Thickness of butt straps

outer 1 3/16"

inner 1 7/16"

No. and Description of Furnaces in each Boiler

3 Daighton Type

3 c

Material

S. M. Steel

Tensile strength

26-30 Tons/sq

Smallest outside diameter

3'-9 1/8"

Length of plain part

top

bottom

✓

Thickness of plates

crown 1 1/16"

bottom 1 1/16"

Description of longitudinal joint

✓

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

✓

End plates in steam space: Material

S. M. Steel

Tensile strength

26-30 Tons/sq

Thickness

1 5/16"

Pitch of stays

20 1/2 x 20 1/4"

How are stays secured

Double nuts &amp; washers outside (12 1/2" dia) x 1" thick

Tube plates: Material

front S. M. Steel

back S. M. Steel

Tensile strength

26-30 Tons/sq

Thickness

15 1/16"

13 1/16"

Mean pitch of stay tubes in nests

9 1/16"

Pitch across wide water spaces

14"

Girders to combustion chamber tops: Material

S. M. Steel

Tensile strength

29-30 Tons/sq

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 1/8"

No. and pitch of stays

in each

229

Combustion chamber plates: Material

S. M. Steel

Tensile strength

26-30 Tons/sq

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 7/8"

Are stays fitted with nuts or riveted over

Nuts

Front plate at bottom: Material

S. M. Steel

Tensile strength

26-30 Tons/sq

Thickness

1 5/16"

Lower back plate: Material

S. M. Steel

Tensile strength

26-30 Tons/sq

Thickness

7/8"

Pitch of stays at wide water space

14 x 9"

Are stays fitted with nuts or riveted over

Nuts

Main stays: Material

S. M. Steel

Tensile strength

26-32 Tons/sq

Diameter

At body of stay, or Over threads 3 1/2"

No. of threads per inch

6

Screw stays: Material

S. M. Steel

Tensile strength

26-30 Tons/sq

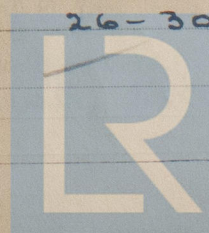
Diameter

At turned off part, or Over threads 1 7/8"

No. of threads per inch

9

W1181-0098



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Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, } 2" ✓  
No. of threads per inch 9 ✓  
Tubes: Material Iron ✓ External diameter { Plain 3" ✓  
Stay 3" ✓ Thickness { 8.1.5.9 ✓ No. of threads per inch 9 ✓  
Pitch of tubes 11 1/2 x 8 1/2 ✓ 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 28 2 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 { Plate ✓  
Rivets ✓ ✓  
Internal diameter ✓ Thickness of crown ✓ No. and diameter of  
stays ✓ Inner radius of crown ✓  
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 forgings \_\_\_\_\_  
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 \_\_\_\_\_  
Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure: \_\_\_\_\_  
tubes \_\_\_\_\_ forgings and 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 \_\_\_\_\_

FOR JOHN READHEAD & SONS LTD.

The foregoing is a correct description,

C. H. Matthews Manufacturer. 28.10.41.

Dates of Survey { During progress of work in shops - - }  
while building { During erection on board vessel - - }

See Yachting Report.

Are the approved plans of boiler and superheater forwarded herewith 24-9-40  
(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. EMPIRE SCOTT. 49755.

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 plans. 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 ... .. £

When applied for, 19

Travelling Expenses (if any) £

When received, 19

J. H. Matthews

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRL 14 NOV 1941

Assigned

See Nwc. 26. 99912



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