

# REPORT ON BOILERS.

No. 102876

Received at London Office

29 MAY 1945

Date of writing Report

19

When handed in at Local Office

26/5/1945

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

South Shields

Date, First Survey

(1944) May 25<sup>th</sup>

Last Survey

April 30<sup>th</sup> 1945

(Number of Visits 111)

Gross 7309.41

Net 5138.71

964 on the

S. S. SHAHRISTAN

built at

S. Shields

By whom built

J. Readhead & Sons Ltd

Yard No. 544

When built 1945

engines made at

South Shields

By whom made

J. Readhead & Sons Ltd

Engine No. 544

When made 1945

boilers made at

South Shields

By whom made

J. Readhead & Sons Ltd

Boiler No. 544

When made 1945

nominal Horse Power

Owners

Strick Line (1923) Ltd

Port belonging to

London

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

Manufacturers of Steel

The Steel Company of Scotland Ltd

(Letter for Record

S

Total Heating Surface of Boilers

7248 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Both

No. and Description of Boilers

3 Single Ended Multitubular

Working Pressure 220 lb sq in

Tested by hydraulic pressure to

380 lb sq in

Date of test

5-14-11-44

No. of Certificate

S-1134

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

54.67 sq ft

No. and Description of safety valves to each boiler

2 Double Spring loaded Imperial H.L.

Area of each set of valves per boiler

per Rule 6.425 sq in

as fitted 7.94 sq in

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

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

1'-6"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2'-0"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15'-0 1/16"

Length

11'-6"

Shell plates: Material

S.W. Steel

Tensile strength 29-30 Tons sq in

Thickness

1 15/32"

Are the shell plates welded or flanged

Yes

Description of riveting: circ. seams

end D.R.L.J. inter. Yes

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

4.07"

10 3/8"

Percentage of strength of circ. and seams

plate 63.1

rivets 46.8

Percentage of strength of circ. intermediate seam

plate 85.5

rivets 86.0

Percentage of strength of longitudinal joint

plate 85.5

rivets 86.0

combined 88.3

Thickness of butt straps

outer 1 1/8"

inner 1 1/4"

No. and Description of Furnaces in each Boiler

3 Drighlton Type

Material

S.W. Steel

Tensile strength

26-30 Tons sq in

Smallest outside diameter

45 1/8"

Length of plain part

top 11"

bottom 11"

Thickness of plates

1 1/16"

Description of longitudinal joint

Yes

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

End plates in steam space

Material S.W. Steel

Tensile strength

26-30 Tons sq in

Thickness

1 13/32"

Pitch of stays

20" x 21"

How are stays secured

Double nuts

Tube plates

Material

front S.W. Steel

back S.W. Steel

Tensile strength

26-30 Tons sq in

Thickness

1 5/16"

2 5/32"

Clear pitch of stay tubes in nests

9 3/4"

Pitch across wide water spaces

14"

Girders to combustion chamber tops

Material S.W. Steel

Tensile strength

28-32 Tons sq in

Depth and thickness of girder

10 1/2" x 1 3/8"

centre

10 1/2" x 1 3/8"

Length as per Rule

2'-9 17/32"

Distance apart

9 1/4"

No. and pitch of stays

each 328

Combustion chamber plates

Material S.W. Steel

Tensile strength

26-30 Tons sq in

Thickness: Sides

1/16"

Back 1/16"

Top 1/16"

Bottom

1 13/16"

Pitch of stays to ditto

Sides 9 1/4" x 8"

Back 9 1/4" x 8"

Top 9 1/4" x 8"

Are stays fitted with nuts or riveted over

Nuts

Front plate at bottom

Material

S.W. Steel

Tensile strength

26-30 Tons sq in

Thickness

1 5/16"

Lower back plate

Material S.W. Steel

Tensile strength

26-30 Tons sq in

Thickness

2 7/32"

Pitch of stays at wide water space

14" x 8"

Are stays fitted with nuts or riveted over

Nuts

Main stays

Material

S.W. Steel

Tensile strength

28-32 Tons sq in

Diameter

At body of stay, or over threads

3 1/2"

No. of threads per inch

6

Fore stays

Material

S.W. Steel

Tensile strength

26-30 Tons sq in

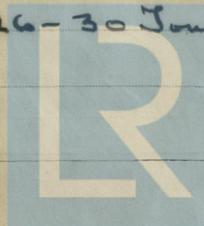
Diameter

At turned off part, or over threads

1 3/4"

No. of threads per inch

9



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Are the stays drilled at the outer ends No Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right\} 1\frac{1}{8}"$

No. of threads per inch 9

Tubes: Material Steel External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right\} \left\{ \begin{array}{l} 3" \\ 3" \end{array} \right\}$  Thickness  $\left\{ \begin{array}{l} \text{S.L.S.G.} \\ 5\frac{1}{16} - 3/8" \end{array} \right\}$  No. of threads per inch 9

Pitch of tubes 4 1/4 x 4 1/2 Manhole compensation: Size of opening in shell plate 16 x 12 Section of compensating ring  No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends  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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right\} \left\{ \begin{array}{l} \\ \end{array} \right\}$

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 The Superheater Co. Ltd Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right\} \left\{ \begin{array}{l} \text{See approved plans} \\ \text{certificated for tubes} \\ \end{array} \right\}$

Number of elements 53 Material of tubes S.P. Steel Internal diameter and thickness of tubes 1 7/8 - 2.5 1/2

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 1.76 sq Are the safety valves fitted with easing gear Yes

Pressure to which the safety valves are adjusted 225 lbs Hydraulic test pressure tubes 1000 lbs forgings and castings 660 lbs and after assembly in place 450 lbs Are drain cocks of 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,  
H.M. Coatsworth Manufacturer  
Director.

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right\}$  See Machinery report Are the approved plans of boiler and superheater forwarded herewith 11-7-44  
 $\left\{ \begin{array}{l} \text{while} \\ \text{building} \end{array} \right\} \left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right\}$   
(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 CURZON. 101930

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 and steam & the safety valves adjusted to the approved pressure.

Survey Fee ... .. £ See Machinery report When applied for, 19  
Travelling Expenses (if any) £ See Machinery report When received, 19

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

Committee's Minute FRI. 22 JUN 1945

Assigned See F.E. Machy. sph.