

# REPORT ON BOILERS.

No. 77804

SAT. APR. 26 1924

Received at London Office

Date of writing Report

192

When handed in at Local Office

3/4/1924

1924

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

Newcastle

Date, First Survey

9 July 1923

Last Survey

1 April

1924

88529 on the

Steel Co.

"CAMBERWELL"

(Number of Visits 26)

Gross 1570

Net 900

Master

Built at Newcastle

By whom built

Jane Sam S.S. Co. Ltd

Yard No. 227

When built 1924

Engines made at

Newcastle

By whom made

North Eastern Marine Eng. Co. Ltd

Engine No. 2556

When made 1924

Boilers made at

Newcastle

By whom made

North Eastern Marine Eng. Co. Ltd

Boiler No. 2556

When made 1924

Nominal Horse Power

187

South Metropolitan Gas Co.

Owners

Port belonging to London

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

Manufacturers of Steel

Spencer & Sons Ltd

(Letter for Record 5)

Total Heating Surface of Boilers

3260 sq

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

Two Single End Cylindrical

Working Pressure

180 lbs

Tested by hydraulic pressure to

320 lbs

Date of test

4.2.24

No. of Certificate

9807

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

45 sq

No. and Description of safety valves to each boiler

Two Spring loaded

Cockburn's High Lift valves

Area of each set of valves per boiler

per Rule as fitted

7.952 sq

Pressure to which they are adjusted

185 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

7'-4"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

32"

Is the bottom of the boiler insulated

No

Largest internal dia. of boilers

13'-0 7/8"

Length

10'-6"

Shell plates: Material

Steel

Tensile strength 26 1/2 to 32 1/2

Thickness

1 7/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end Double

Long. seams

Double D.T.S.

Diameter of rivet holes in

circ. seams 1 1/4"

long. seams 1 1/8"

Pitch of rivets

8"

Percentage of strength of circ. end seams

plate 63

rivets 42.1

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.9

rivets 88.7

combined 89.3

Working pressure of shell by Rules

181 lbs

Thickness of butt straps

outer 7/8"

inner 1"

No. and Description of Furnaces in each Boiler

Three Deighton

Material

Steel

Tensile strength

26/30 Tons

Smallest outside diameter

36 1/16"

Length of plain part

top

bottom

Thickness of plates

crown 1 1/2"

bottom 1 3/4"

Description of longitudinal joint

weld

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

Working pressure of furnace by Rules

183 lbs

Stays in steam space: Material

Steel

Tensile strength

26/30 Tons

Thickness

1 1/8"

Pitch of stays 21" x 17"

How are stays secured

Double nuts + washers

Working pressure by Rules

183 lbs

End plates: Material

front Steel

back Steel

Tensile strength

26/30 Tons

Thickness

1 5/16"

3/4"

Minimum pitch of stay tubes in nests

9.5"

Pitch across wide water spaces

14 1/2"

Working pressure

front 182 lbs

back 210 lbs

Stays to combustion chamber tops: Material

Steel

Tensile strength

28/32 Tons

Depth and thickness of girder

Centre

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

Length as per Rule

30"

Distance apart

10 1/2"

No. and pitch of stays

Each

Two 9 1/2"

Working pressure by Rules

187 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26/30 Tons

Thickness: Sides

2 3/32"

Back

2 3/32"

Top

1 3/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

10 1/2" x 9 1/2"

Back

11 1/4" x 8 1/2"

Top

10 1/2" x 9 1/2"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

181 lbs

Front plate at bottom: Material

Steel

Tensile strength

26/30 Tons

Thickness

7/16"

Lower back plate: Material

Steel

Tensile strength

26/30 Tons

Thickness

7/8"

Pitch of stays at wide water space

14 1/2" x 8 1/2"

Are stays fitted with nuts or riveted over

Fitted with nuts

Working Pressure

220 lbs

Main stays: Material

Steel

Tensile strength

28/32 Tons

Pitch of stays

At body of stay

2 3/4"

No. of threads per inch

Six

Area supported by each stay

35.2 sq

Over threads

Screw stays: Material

Steel

Tensile strength

26/30 Tons

Working pressure by Rules

183 lbs

At turned off part

Over threads

1 3/4"

No. of threads per inch

Nine

Area supported by each stay

11 1/4" x 8 1/2"

# REPORT ON BOILERS

Working pressure by Rules 190 lbs Are the stays drilled at the outer ends no ✓ Margin stays: Diameter { At turned off part, 1 7/8" ✓ or Over threads

No. of threads per inch nine ✓ Area supported by each stay 12 7/8" x 8 1/2" Working pressure by Rules 195 lbs

Tubes: Material Iron ✓ External diameter { Plain 3 1/4" ✓ Stay 3 1/2" ✓ Thickness { No. 8 W.G. ✓ 5/16" + 1/4" ✓ No. of threads per inch nine ✓

Pitch of tubes 4 1/2" ✓ Working pressure by Rules plain 230 lbs. stay 192 lbs Manhole compensation: Size of opening in shell plate 20 x 16" ✓ Section of compensating ring 34 1/4" x 30 1/4" x 1 1/8" No. of rivets and diameter of rivet holes 36 - 1 5/16" ✓

Outer row rivet pitch at ends 9 1/2" ✓ Depth of flange if manhole flanged 4" ✓ Steam Dome: Material none ✓

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 none 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,  
 THE NORTH EASTERN MARINE ENGINEERING CO., LTD.  
 Manufacturer.

Dates of Survey { During progress of work in shops - - } See Machinery Report Are the approved plans of boiler and superheater forwarded herewith Yes ✓  
 while building { During erection on board vessel - - - }  
 (If not state date of approval.)  
 Total No. of visits \_\_\_\_\_

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) These Boilers were constructed under Special Survey. The materials and workmanship are sound and good. They were tested by hydraulic pressure with satisfactory results, subsequently installed on the vessel, efficiently fastened and the safety valves adjusted under steam. In my opinion the vessel is eligible for notation - L.M.C.H. 24 in the Society's Register Book.

Survey Fee ... See Machinery Report When applied for, 192  
 Travelling Expenses (if any) ... When received, 192

R. Lee Armes  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. APR. 29 1914

Assigned \_\_\_\_\_

