

## REPORT ON BOILERS.

No. 30263

23 JAN 1930

Received at London Office

Date of writing Report

192

When handed in at Local Office

22 JAN. 1930

Port of

Sunderland

No. in Survey held at

Sunderland

Date, First Survey

Last Survey

22 Jan 1930

eg. Book.

on the

S S "ENGLAND"

(Number of Visits

Gross 2297

Tons Net 1359

Master

Built at

Sunderland

By whom built

Messrs. Hunter &amp; Wigham

Richmond

Yard No. 1415

When built 1930

Engines made at

Sunderland

By whom made

Messrs. N.E. Marine Eng. Co. Ltd.

Engine No. 2728

When made 1930

Boilers made at

Sunderland

By whom made

Messrs. N.E. Marine Eng. Co. Ltd.

Boiler No. 2728

When made 1930

Nominal Horse Power

201

Owners

Alfred Christensen

Port belonging to

KØBENHAYN

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Appleby Iron Co. Ltd. &amp; The Steel Co. of Scotland

(Letter for Record

(5)

Total Heating Surface of Boilers

3340 sq ft

Is forced draught fitted

No.

Coal or Oil fired

Coal

No. and Description of Boilers

Two, S.E. Marine Type, 2 SB

Working Pressure

180 lbs/sq in

Tested by hydraulic pressure to

320 lbs/sq in

Date of test

12.12.29

No. of Certificate

4077

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

40 sq ft

No. and Description of safety valves to each boiler

2 - Spring loaded

Area of each set of valves per boiler

per Rule

10.70 sq ft

as fitted

11.86 sq ft

Pressure to which they are adjusted

185 lbs/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'-8"

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

1'-11 1/2"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

13'-0 29/32"

Length

10'-9" full

Shell plates: Material

Steel

Tensile strength

29.33 tons/sq in

Thickness

1 3/4"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D. R. Lap.

Long. seams

T. R. D.B.S.

Diameter of rivet holes in

circ. seams

1 1/8"

long. seams

1 1/2"

Pitch of rivets

3 1/2"

7 1/8"

Percentage of strength of circ. end seams

plate

68.

rivets

43.

Percentage of strength of circ. intermediate seam

plate

✓

rivets

✓

Percentage of strength of longitudinal joint

plate

85.7.

rivets

89.8.

combined

89.4.

Working pressure of shell by Rules

181.3 lbs/sq in

Thickness of butt straps

outer

13 1/16"

inner

15 1/16"

No. and Description of Furnaces in each Boiler

2. Corrugated Right Hand Section, 2 cf.

Material

Steel

Tensile strength

26.30 tons/sq in

Smallest outside diameter

3'-8 3/8"

Length of plain part

top

✓

bottom

✓

Thickness of plates

crown

9 1/16"

bottom

✓

Description of longitudinal joint

Weld.

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

✓

Working pressure of furnace by Rules

183.6 lbs/sq in

End plates in steam space: Material

Steel

Tensile strength

26.30 tons/sq in

Thickness

1 1/4"

Pitch of stays

22 1/4" x 17 3/4"

How are stays secured

Double Nuts

Working pressure by Rules

180.2 lbs/sq in

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26.30 tons/sq in

Thickness

7/8"

25/32"

Mean pitch of stay tubes in nests

10'-9"

Pitch across wide water spaces

14 1/2" x 9"

Working pressure

front

192.1 lbs/sq in

back

183.1 lbs/sq in

Girders to combustion chamber tops: Material

Steel

Tensile strength

28.32 tons/sq in

Depth and thickness of girder

at centre

8" x 1 7/8"

Length as per Rule

31.5"

Distance apart

11"

No. and pitch of stays

in each

2 @ 9 3/4"

Working pressure by Rules

188 lbs/sq in

Combustion chamber plates: Material

Steel

Tensile strength

26.30 tons/sq in

Thickness: Sides

25/32"

Back

23/32"

Top

25/32"

Bottom

25/32"

Pitch of stays to ditto: Sides

12" x 9 3/4"

Back

10 13/16" x 9 3/16"

Top

11" x 9 3/4"

Are stays fitted with nuts or riveted over

Nuts.

Working pressure by Rules

180 lbs/sq in (back/Back)

Front plate at bottom: Material

Steel

Tensile strength

26.30 tons/sq in

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26.30 tons/sq in

Thickness

29/32"

Pitch of stays at wide water space

14 1/2" x 10 13/16"

Are stays fitted with nuts or riveted over

Nuts.

Working Pressure

216 lbs/sq in

Main stays: Material

Steel

Tensile strength

28.32 tons/sq in

Diameter

At body of stay,

or

Over threads

2 7/8" 3 1/4"

No. of threads per inch

6

Area supported by each stay

394.9 sq in

Working pressure by Rules

181.8 lbs/sq in

Screw stays: Material

Steel

Tensile strength

26.30 tons/sq in

Diameter

At turned off part,

or

Over threads

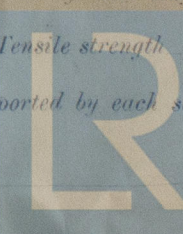
1 3/4" 8 1 7/8"

No. of threads per inch

9

Area supported by each stay

100.8/117 sq in

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Working pressure by Rules  $180 \text{ lbs/sq. in.}$  Are the stays drilled at the outer ends *No* Margin stays: Diameter *2"* (At turned off part or Over threads)  
 No. of threads per inch *9* Area supported by each stay  $129.7 \text{ sq. in.}$  Working pressure by Rules  $190 \text{ lbs/sq. in.}$   
 Tubes: Material *Samuel Steel* External diameter *3 1/4"* Thickness *8 W.G.* No. of threads per inch *9*  
 Pitch of tubes  $4 1/2" \times 4 1/2"$  Working pressure by Rules  $230, 192.8, 200 \text{ lbs/sq. in.}$  Manhole compensation: Size of opening in  
 END plate  $16" \times 12"$  Section of compensating ring *flanged* No. of rivets and diameter of rivet holes *-*  
 Outer row rivet pitch at ends *-* Depth of flange if manhole flanged  $3 7/8"$  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 *-* 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 *N.E.M. Smoke Tube Type* Manufacturers of Tubes *Messrs. Talbot Studd.*  
 Number of elements *64* Material of tubes *S.D. Steel* Headers *Frodingham Steel Co.*  
 Material of headers *Mild Steel* Tensile strength  $26,300 \text{ lbs/sq. in.}$  Thickness  $3/4"$  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  $3.14 \text{ sq. in.}$  Are the safety valves fitted with easing gear *Yes* Working pressure as per  
 Rules  $180 \text{ lbs/sq. in.}$  Pressure to which the safety valves are adjusted  $188 \text{ lbs/sq. in.}$  Hydraulic test pressure:  
 tubes  $1500 \text{ lbs/sq. in.}$  Headers  $540 \text{ lbs/sq. in.}$  and after assembly in place  $400 \text{ lbs/sq. in.}$  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*

The foregoing is a correct description.

THE NORTH EASTERN MARINE ENGINEERING CO. LTD.

*John Nall* Manager.

Dates of Survey: During progress of work in shops - - *Please see Machinery Report* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 while building: During erection on board vessel - - *-* Total No. of visits *-*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been built under Special Survey & the Material and Workmanship are good. On completion they were satisfactorily fitted in the Vessel, and the Safety Valves adjusted under steam. For recommendation regarding notation see Machinery Report.

Survey Fee ... £ *on Machinery Report* When applied for, 192  
 Travelling Expenses (if any) £ *-* When received, 192

*Matthew Caldwell*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 24 JAN 1930*

Assigned *See other report*



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