

REPORT ON BOILERS.

No. 31880

7 AUG 1936

Received at London Office

Date of writing Report

1936

When handed in at Local Office

5 AUG 1936

Port of

Sunderland

No. in Survey held at

Sunderland

Date, First Survey

Last Survey 24 July 1936

Reg. Book.

on the

S.S. "SPRINGWOOD"

(Number of Visits

Tons

Gross 1177

Net 657

Master

Built at

Sunderland

By whom built

Messrs. Shaw & Sons Ltd

Yard No.

446

When built

1936

Engines made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd

Engine No.

2834

When made

1936

Boilers made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd

Boiler No.

2834

When made

1936

Nominal Horse Power

119

Owners

The Springwell Shipping Co Ltd

Port belonging to

Sunderland

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Messrs. The Steel Co of Scotland

(Letter for Record

5

Total Heating Surface of Boilers

1820 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

Two - Cylindrical Multitubular Type

Working Pressure

200 lbs/sq in

Tested by hydraulic pressure to

350 lbs/sq in

Date of test

12/6/36

No. of Certificate

4184

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

40.6 sq ft

No. and Description of safety valves to each boiler

2 - Direct Spring

Area of each set of valves per boiler

per Rule 6.377 sq ft

as fitted

6.28 sq ft

Pressure to which they are adjusted

200 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

Smallest distance between boilers or uptakes and bunkers or woodwork

16"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2' 1 1/2"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

10' 0"

Length

10' 6"

Shell plates: Material

Steel

Tensile strength

29/33 tons/sq in

Thickness

57/64"

Are the shell plates welded or flanged

Description of riveting: circ. seams

end

D.R. Lap.

long. seams

T. R. D. B. Straps

Diameter of rivet holes in

circ. seams 31/32"

long. seams 31/32"

Pitch of rivets

3"

6 15/16"

Percentage of strength of circ. end seams

plate 67.7%

rivets 43.7%

Percentage of strength of circ. intermediate seam

plate 86.6%

rivets 88.7%

Percentage of strength of longitudinal joint

plate 88.7%

rivets 89.7%

Working pressure of shell by Rules

200 lbs/sq in

Thickness of butt straps

outer 11/16"

inner 13/16"

No. and Description of Furnaces in each Boiler

2 - Corrugated Rectangular Section S.B.G. backboilers

Material

Steel

Tensile strength

26-30 tons/sq in

Smallest outside diameter

2' 8 7/16"

Length of plain part

top

bottom

Thickness of plates

crown 15/32"

bottom 15/32"

Description of longitudinal joint

Weld.

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

Working pressure of furnace by Rules

207 lbs/sq in

End plates in steam space: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

15/16"

Pitch of stays

14" x 13 1/2"

How are stays secured

Riveted nuts

Working pressure by Rules

213.6 200.6 lbs/sq in

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30 tons/sq in

Thickness

15/16"

Mean pitch of stay tubes in nests

9.7"

Pitch across wide water spaces

14"

Working pressure

front 200.5 lbs/sq in

back 230

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 tons/sq in

Depth and thickness of girder

at centre

7 1/2" x 1 9/16"

Length as per Rule

30"

Distance apart

8"

No. and pitch of stays

in each

2 @ 9 3/4"

Working pressure by Rules

204 lbs/sq in

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness: Sides

25/32"

Back

25/32"

Top

25/32"

Bottom

25/32"

Pitch of stays to ditto: Sides

10 3/4" x 9 3/4"

Back

10 3/8" x 9 5/8"

Top

9 3/4" x 8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

204, 205, 215, 270 lbs/sq in

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26/30 tons

Thickness

15/16"

Pitch of stays at wide water space

14 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

226.6 204 lbs/sq in

Main stays: Material

Steel

Tensile strength

28/32 tons/sq in

Diameter

At body of stay, or over threads

2 1/8"

No. of threads per inch

6

Area supported by each stay

14" x 13 1/2"

Working pressure by Rules

201 lbs/sq in

Screw stays: Material

Steel

Tensile strength

26/30 tons/sq in

Diameter

At turned off part, or over threads

1 7/8"

1 3/4"

No. of threads per inch

9

Area supported by each stay

10 1/4" x 9 1/4", 9 1/4" x 8"

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Working pressure by Rules $202, 228/100$ are the stays drilled at the outer ends 40 . Margin stays: Diameter 2 "
No. of threads per inch 9 . Area supported by each stay $11\frac{1}{16} \times 10\frac{3}{8}$ Working pressure by Rules $200-2/100$
Tubes: Material *Seamless Steel* External diameter 3 " Thickness $3/8$ " No. of threads per inch 9
Pitch of tubes $4\frac{1}{4} \times 4\frac{1}{8}$ Working pressure by Rules $230, 200\frac{1}{4}, 205, 211/100$ Manhole compensation: Size of opening in
shell plate 16×12 Section of compensating ring $2\frac{1}{2} \times 2\frac{1}{2} \times 1$ No. of rivets and diameter of rivet holes 32 at $1\frac{1}{8}$ dia
Outer row rivet pitch at ends 8 Depth of flange if manhole flanged $3\frac{1}{2}$ Steam Dome: Material
Tensile strength Thickness of shell Description of longitudinal joint
Diameter of rivet holes Pitch of rivets Percentage of strength of joint
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. of Smokestack* Manufacturers of Tubes *Messrs. Talbot Stead*
Number of elements 48 Material of tubes *S.O. Steel* Steel castings *Messrs. Juddingham Steel Co.*
Material of headers *Mild Steel* Tensile strength $26/30$ tons per sq. inch Thickness $1\frac{1}{8}$ "
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 3.140 Are the safety valves fitted with easing gear *Yes* Working pressure as per
Rules 200 lbs. per sq. inch Pressure to which the safety valves are adjusted 205 lbs. per sq. inch Hydraulic test pressure:
tubes 1500 lbs. per sq. inch, castings 600 lbs. per sq. inch and after assembly in place 450 lbs. per sq. inch 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,
FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD.

Manufacturer.

Dates of Survey { During progress of work in shops - - } *Please see Machy. Rpt.*
while building { During erection on board vessel - - }

Are the approved plans of boiler and superheater forwarded herewith
(If not state date of approval.)
Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These boilers have been built under Special Survey and the materials and workmanship are good. On completion the boilers were tested hydraulically to rule requirements, namely fixed on board the vessel, examined under steam, the safety valves adjusted to the working pressure, and the accumulation test satisfactorily carried out.

For notation please see Machy Report.

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

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

Committee's Minute TUE. 11 AUG 1936

Assigned

See Std. J.E. 31880



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Foundation