

## REPORT ON BOILERS.

No. 32408

JUN 24 1938

Received at London Office

Date of writing Report

1938

When handed in at Local Office

23 JUNE 1938

Port of

SUNDERLAND.

No. in Survey held at  
Reg. Book.

Sunderland

Date, First Survey

Last Survey

10 June 1938

(Number of Visits

Gross

1040

Tons

Net

572

Master

Built at

Sunderland

By whom built

H. Austin &amp; Sons, Ltd

Yard No. 348

When built 1938

Engines made at

Sunderland

By whom made

H. E. Marine Eng. Co. Ltd.

Engine No. 2905

When made 1938

Boilers made at

Sunderland

By whom made

H. E. Marine Eng. Co. Ltd.

Boiler No. 2905

When made 1938

Nominal Horse Power

141

Owners

Stephenson, Clarke &amp; Co. Ltd

Port belonging to

London

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

Manufacturers of Steel

The Steel Company of Scotland

(Letter for Record

S.

Total Heating Surface of Boilers

2113 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

One cylindrical multitubular

Working Pressure

200 lbs.

Tested by hydraulic pressure to

350 lbs.

Date of test

4/5/38

No. of Certificate

4271

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

47.6 sq ft

No. and Description of safety valves to each boiler

2 Direct Spring

Area of each set of valves per boiler

per Rule

12.5 sq ft

as fitted

14.13 sq ft

Pressure to which they are adjusted

200 lbs.

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

6'-0"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2'-1"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

13'-9 9/16"

Length

11'-0"

Shell plates: Material

Steel

Tensile strength

29/32 tons/sq in

Thickness

1 7/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

D.R.L.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/4"

Pitch of rivets

3 3/4"

inter.

8 3/4"

Percentage of strength of circ. end seams

plate

66.6

rivets

42.7

Percentage of strength of circ. intermediate seam

plate

85.7

rivets

85.6

Percentage of strength of longitudinal joint

plate

85.7

rivets

85.6

combined

88.5

Working pressure of shell by Rules

201 lbs.

Thickness of butt straps

outer

15/16"

inner

1 1/16"

No. and Description of Furnaces in each Boiler

3 Brighton. Stephen Gurney makes.

Material

Steel

Tensile strength

26/30 tons/sq in

Smallest outside diameter

3'-2 5/16"

Length of plain part

top

—

bottom

—

Thickness of plates

crown

17/32"

bottom

—

Description of longitudinal joint

weld

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

—

Working pressure of furnace by Rules

200.4 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

1 7/32"

Pitch of stays

19 1/2" x 17 1/2"

How are stays secured

double nuts

Working pressure by Rules

202 lbs.

Tube plates: Material

front

back

Steel

Tensile strength

26/30 tons/sq in

Thickness

15/16"

25/32"

Mean pitch of stay tubes in nests

10"

Pitch across wide water spaces

14" x 8 1/4"

Working pressure

front

228 lbs.

back

218 lbs.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 tons/sq in

Depth and thickness of girder

at centre

8" x 1 3/16"

Length as per Rule

31.94"

Distance apart

9 1/2"

No. and pitch of stays

in each

2.

10"

Working pressure by Rules

207 lbs.

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 1/8" x 10"

Back

10 1/8" x 10 1/8"

Top

10" x 9 1/2"

Are stays fitted with nuts or riveted over

nuts fitted

Working pressure by Rules

205 lbs.

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/sq in

Thickness

7/8"

Pitch of stays at wide water space

14 1/2" x 10 1/8"

Are stays fitted with nuts or riveted over

nuts fitted

Working Pressure

200 lbs.

Main stays: Material

Steel

Tensile strength

28/32 tons/sq in

Diameter

At body of stay,

2 7/8"

Over threads

3 1/4"

No. of threads per inch

6

Area supported by each stay

14 1/2" x 17 1/2"

Working pressure by Rules

210 lbs.

Screw stays: Material

Steel

Tensile strength

26/30 tons/sq in

Diameter

At turned off part,

1 7/8"

Over threads

—

No. of threads per inch

9

Area supported by each stay

10 1/8" x 10"



Working pressure by Rules 208 lbs Are the stays drilled at the outer ends no ✓ Margin stays: Diameter { At turned off part, 2" ✓  
or  
Over threads  
No. of threads per inch 9 ✓ Area supported by each stay 12 1/4" x 10 1/8" ✓ Working pressure by Rules 200 lbs  
Tubes: Material Steel External diameter { Plain 3" ✓  
Stay 3" ✓ Thickness { 8 W.G. ✓  
3/8", 5/16", 1/4" ✓ No. of threads per inch 9 ✓  
Pitch of tubes 4 1/4" x 4 1/8" ✓ Working pressure by Rules 202 lbs Manhole compensation: Size of opening in  
END 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 3 1/6" ✓ 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 Smoke tube ✓ Manufacturers of { Tubes Hunter Tubes Ltd.  
Steel castings Frederingham Steel Co. Ltd.  
Number of elements 49 ✓ Material of tubes S. D. Steel ✓ Internal diameter and thickness of tubes 15 1/4", 2 1/2"  
Material of headers forged steel Tensile strength 26,000 lbs/sq. in. Thickness 1 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 3.14 sq. in. Are the safety valves fitted with easing gear yes ✓ Working pressure as per  
Rules 200 lbs Pressure to which the safety valves are adjusted — Hydraulic test pressure:  
tubes 1500 lbs ✓, castings 600 lbs ✓ and after assembly in place 450 lbs ✓ 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. (1938) LTD.  
A. J. Bemp ✓ Manufacturer.

Dates { During progress of Please see tech. Rpt. Are the approved plans of boiler and superheater forwarded herewith  
of Survey { work in shops - - -  
while { During erection on  
building { board vessel - - -  
Total No. of visits —

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

*This boiler has been constructed under special  
survey in accordance with the approved plans, Surveyor's  
letters and the requirements of the Rules. Workmanship  
and materials are good. For recommendation please see Rpt. 4.*

Survey Fee	...	...	£	:	:	When applied for,	192
Travelling Expenses (if any)	£	:	:	:	:	When received,	192

*L. R. Horner*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 28 JUN 1938  
Assigned See Std J.E. 32408