

REPORT ON BOILERS.

No. 32173

AUG 20 1937

Received at London Office

Date of writing Report

1937

When handed in at Local Office

14 Aug 1937

Port of

SUNDERLAND.

No. in
eg. Book.

Survey held at

Sunderland

Date, First Survey

Last Survey

9 Aug 1937

on the

GOODWOOD

(Number of Visits)

Tons

Gross

279.6

Net

1627

Master

Built at

Sunderland

By whom built

S. P. Austin & Son Ltd. Yard No. 343

When built 1937

Engines made at

Sunderland

By whom made

N. E. Marine Engineering Co. Ltd.

Engine No. 2882

When made 1937

Boilers made at

Sunderland

By whom made

N. E. Marine Engineering Co. Ltd.

Boiler No. 2882

When made 1937

Nominal Horse Power

Owners

W. France Fenwick & Co. Ltd. Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland

(Letter for Record)

Total Heating Surface of Boilers

3400 sq ft

Is forced draught fitted

yes

Coal or Oil fired

Coal

No. and Description of Boilers

Two cylindrical multitubular

Working Pressure 220 lbs.

Tested by hydraulic pressure to

380 lbs

Date of test 18.7.37

No. of Certificate

4233/4

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

30.5 sq ft

No. and Description of safety valves to each boiler

2 Direct Spring

Area of each set of valves per boiler

per Rule 9.18 sq ft

as fitted 9.8 sq ft

Pressure to which they are adjusted

220 lbs

Are they fitted with easing gear

yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

none

Smallest distance between boilers or uptakes and bunkers or woodwork

2'-9"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2'-8"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

12'-9 1/2"

Length

11'-0"

Shell plates: Material

Steel

Tensile strength

29/33 tons/sq in

Thickness

1 1/8"

Are the shell plates welded or flanged

not

Description of riveting: circ. seams

D. R. L.

Long. seams

T. R. D. B. S.

Diameter of rivet holes in

circ. seams

1 9/32"

Pitch of rivets

3 3/4"

Percentage of strength of circ. end seams

plate

65.8

rivets

43.8

Percentage of strength of circ. intermediate seam

plate

—

rivets

—

Percentage of strength of longitudinal joint

plate

85.76

rivets

86.36

combined

88.79

Working pressure of shell by Rules

220.9

Thickness of butt straps

outer

15/16"

inner

1 1/16"

No. and Description of Furnaces in each Boiler

Three corrugated "Brighton" Stephen

Material

Steel

Tensile strength

26/30 tons/sq in

Smallest outside diameter

2'-11 1/2"

Length of plain part

top

—

bottom

—

Thickness of plates

crown

3/16"

bottom

3/16"

Description of longitudinal joint

weld.

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

Working pressure of furnace by Rules

224 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

1 9/32"

Pitch of stays 17/8" x 15 3/4"

How are stays secured

Simple nuts

Working pressure by Rules

223 lbs.

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26/30 tons/sq in

Thickness

3/32"

13/16"

Lean pitch of stay tubes in nests

10.3"

Pitch across wide water spaces

14 1/2" x 8 3/4"

Working pressure

front 225 lbs.

back 223 lbs.

Orders to combustion chamber tops: Material

Steel

Tensile strength

28/32 tons/sq in

Depth and thickness of girder

Centre

8 1/4" x 1 1/16"

Length as per Rule

30.4"

Distance apart

9 3/8"

No. and pitch of stays

Each

2 x 9 1/2"

Working pressure by Rules

227 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 1/4" x 9 1/2"

Back

10 5/8" x 9"

Top

9 3/8" x 9 1/2"

Are stays fitted with nuts or riveted over

nut fitted

Working pressure by Rules

220.4 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

3/32"

Lower back plate: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

29/32"

Pitch of stays at wide water space

15" x 9"

Are stays fitted with nuts or riveted over

nut fitted

Working Pressure

220.2 lbs.

Main stays: Material

Steel

Tensile strength

28/32 tons/sq in

Diameter

At body of stay,

2 5/8"

Over threads

3"

No. of threads per inch

6

Area supported by each stay

17/8" x 15 3/4"

Working pressure by Rules

220 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 1/4" x 9 1/2"

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Foundation

548-043

Working pressure by Rules 220 lbs. Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part.} 2" x 2 1/8" ^{Over threads} ✓
 No. of threads per inch 9 Area supported by each stay 10 1/4" x 9 1/4" 13.8 sq" Working pressure by Rules 244 lbs.
 Tubes: Material Hot. Iron External diameter ^{Plain} 3 1/4" Thickness ^{Stay} 8.4.6. No. of threads per inch 9 ✓
 Pitch of tubes 2 1/6" x 4 3/8" Working pressure by Rules 223 lbs. Manhole compensation: Size of opening
 shell plate 20" x 16" ✓ Section of compensating ring 2 1/2" x 1 1/2" No. of rivets and diameter of rivet holes 32, 1 3/32" ✓
 Outer row rivet pitch at ends 10" ✓ 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
 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 Stewart & Lydell, Ltd.
Steel castings Fordingham Steel Co. Ltd. ✓
 Number of elements 62 Material of tubes Solid drawn steel Internal diameter and thickness of tubes 1 5/8" 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 ✓
 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 1/4 sq. in. Are the safety valves fitted with easing gear yes ✓ Working pressure as —
 Rules 220 lbs. Pressure to which the safety valves are adjusted 225 lbs. ✓ Hydraulic test pressure —
 tubes 1500 lbs. castings 660 lbs. and after assembly in place 1450 lbs. ✓ Are drain cocks or valves fit
 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.

Manufactured by

Dates of Survey ^{During progress of work in shops - -}
^{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 constructed under special survey in accordance with the approved plans, Secretary's letters and the requirements of the Rules. Workmanship & materials are good. The boilers have been efficiently fitted on board and their safety valves adjusted under steam in accordance with the requirements of the Rules.

It is recommended please see Rpt. 4.

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

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 27 AUG 1937

Assigned

See F.E. mch. rpt.



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