

REPORT ON BOILERS.

No. 31950

Received at London Office 29 OCT 1936

Date of writing Report

192

When handed in at Local Office

28 OCT. 1936

Port of

Sunderland

No. in Survey held at
Reg. Book.

Sunderland

Date, First Survey

Last Survey 22-10-1936

on the

"NORTHWOOD"

(Number of Visits)

Tons

Gross

Net

Master

Built at Bountisland

By whom built Bountisland S. S. Ltd.

No. 202 When built 1936

Engines made at

Sunderland

By whom made

The North Eastern Mar. Eng. Co. Ltd.

Engine No. 2833 When made 1936

Boilers made at

Sunderland

By whom made

The North Eastern Mar. Eng. Co. Ltd.

Boiler No. 2833 When made 1936

Nominal Horse Power

101.

Owners

J. Constantine S. S. Lines Ltd.

Port belonging to

Middlebrook

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland

(Letter for Record (5) ✓)

Total Heating Surface of Boilers

1871 sq. ft.

Is forced draught fitted

ho. ✓

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

10/9/36

No. of Certificate

H 202

Can each boiler be worked separately

Area of Firegrate in each Boiler

40.25 sq. ft.

No. and Description of safety valves to each boiler

Two - Direct Spring

Area of each set of valves per boiler

per Rule

11.07 sq. ft.

as fitted

11.875 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

ho. ✓

Smallest distance between boilers or uptakes and bunkers or woodwork

9 1/2"

Is oil fuel carried in the double bottom under boilers

ho. ✓

Smallest distance between shell of boiler and tank top plating

2' 3 3/4"

Is the bottom of the boiler insulated

Yes ✓

Largest internal dia. of boilers

14' 3 1/2"

Length

10' 6"

Shell plates: Material

Steel

Tensile strength

29/33 tons

Thickness

1 1/4"

Are the shell plates welded or flanged

ho. ✓

Description of riveting: circ. seams

end

3 7/8"

D.R. Lap

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 5/16"

long. seams

1 5/16"

Pitch of rivets

9 1/8"

Percentage of strength of circ. end seams

plate

66.1

rivets

44.4

Percentage of strength of circ. intermediate seam

plate

—

rivets

Percentage of strength of longitudinal joint

plate

85.6

rivets

88.1

combined

88.7

Working pressure of shell by Rules

200 lbs

Thickness of butt straps

outer

3 1/32"

inner

1 3/32"

No. and Description of Furnaces in each Boiler

3. Corrugated. Right in Section S.B.G. back ends

Material

Steel

Tensile strength

26/30 tons

Smallest outside diameter

3' 4 3/8"

Length of plain part

top

—

bottom

—

Thickness of plates

crown

9/16"

bottom

—

Description of longitudinal joint

Weld.

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

Working pressure of furnace by Rules

202 lbs

End plates in steam space: Material

Steel

Tensile strength

26/30 tons

Thickness

1 3/32"

Pitch of stays 1' 8 1/2" x 1' 6 1/2"

How are stays secured

Double nuts

Working pressure by Rules

201 lbs

Tube plates: Material

front

Steel

back

—

Tensile strength

26/30 tons

Thickness

29/32"

13/16"

Mean pitch of stay tubes in nests

10' 7 1/2"

Pitch across wide water spaces

14 1/2" x 9"

Working pressure

front

206 lbs

back

204 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 tons

Depth and thickness of girder

at centre

8 1/4" x 1 7/8"

Length as per Rule

34' 4"

Distance apart

9"

No. and pitch of stays

in each

2 - 10 3/4"

Working pressure by Rules

205 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons

Thickness: Sides

25/32"

Back

25/32"

Top

25/32"

Bottom

25/32"

Pitch of stays to ditto: Sides

9 7/8" x 10 3/4"

Back

10 1/2" x 10 1/8"

Top

10 3/4" x 9"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

204, 204, 218 lbs

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons

Thickness

29/32"

Lower back plate: Material

Steel

Tensile strength

26/30 tons

Thickness

29/32"

Pitch of stays at wide water space

14 1/2" x 10 1/8"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

216 lbs

Main stays: Material

Steel

Tensile strength

28/32 tons

Diameter

At body of stay,

3 1/8"

Over threads

3 1/2"

No. of threads per inch

6

Area supported by each stay

1' 8 1/2" x 1' 6 1/2"

Working pressure by Rules

225 lbs

Screw stays: Material

Steel

Tensile strength

26/30 tons

Diameter

At turned off part,

1 7/8"

Over threads

—

No. of threads per inch

9

Area supported by each stay

10 3/4" x 9 7/8"

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Working pressure by Rules 200.5/ks Are the stays drilled at the outer ends ho. Margin stays: Diameter ^{At turned off part,} 2" ^{or} 2" ^{Over threads}
 No. of threads per inch 9 Area supported by each stay 12 5/16" x 10 1/8" Working pressure by Rules 200.4/ks
 Tubes: Material Seamless Steel External diameter ^{Plain} 3 1/4" ^{Stay} 3 1/4" Thickness 3/8" 5/16" 1/4" No. of threads per inch 9"
 Pitch of tubes 4 5/8" x 4 1/2" Working pressure by Rules 240, 204, 245/ks Manhole compensation: Size of opening in
 shell plate 12" x 16" Section of compensating ring 2 1/2" x 2 7/8" x 1 1/2" No. of rivets and diameter of rivet holes 32 @ 1 1/16"
 Outer row rivet pitch at ends 10" Depth of flange if manhole flanged 4" 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. of Smokestack Manufacturers of ^{Tubes} Messrs Tubes Ltd. ^{Steel} headers Messrs Juddingham Steel Co.
 Number of elements 50 Material of tubes SS Steel Internal diameter and thickness of tubes 15 x 2 1/2" u/m.
 Material of headers Jangrel steel Tensile strength 26/30 tons 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 1/4 sq" Are the safety valves fitted with easing gear Yes Working pressure as per
 Rules 200/ks Pressure to which the safety valves are adjusted 200 lbs/sq" Hydraulic test pressure: _____
 tubes 1500 lbs. ^{headers} 600 lbs. ^{castings} 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,

Manufacturer.

Dates of Survey ^{During progress of} Please see Mech. Rpt. ^{work in shops - -} Are the approved plans of boiler and superheater forwarded herewith
^{while} _____ ^{During erection on} _____ ^{board vessel - -} (If not state date of approval.)
^{building} _____ 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 plan and the requirements of the Rules. Workmanship and materials are good.

On completion the boiler has been satisfactorily tested by hydraulic pressure and found sound and tight, securely fixed on board and examined under steam. The safety valves have been adjusted to the working pressure and accumulation tests carried out satisfactorily.

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

M. Caldwell & L. D. Horne
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 3 NOV 1936

Assigned See other Sld
J.E. Rpt. 31950



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