

REPORT ON BOILERS.

Received at London Office 19 SEP 1927

Date of writing Report

192

When handed in at Local Office

11-9

1927

Port of

Newcastle-on-Tyne

No. in Survey held at
of Book.

Walsend-on-Tyne

Date, First Survey

4 March 1927

Last Survey

8 Sept. 1927

on the

New Steel S.S. "Sir David"

(Number of Visits

Gross 1275

Net 697

Master

Built at

South Shields

By whom built

John Readhead & S. Ltd.

Yard No.

485

When built

1924

Engines made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd

Engine No.

2631

When made

1924

Boilers made at

Newcastle

By whom made

North Eastern Marine Eng Co Ltd

Boiler No.

2631

When made

1924

Nominal Horse Power

158

Owners

Port belonging to

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

Manufacturers of Steel

The Steel Company of Scotland Ltd.

(Letter for Record

S.

Total Heating Surface of Boilers

2550 sq ft

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

One single ended.

Working Pressure

180 lbs

Tested by hydraulic pressure to

320

Date of test

13-5-27

No. of Certificate

145

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

43 sq ft

No. and Description of safety valves to each boiler

2 spring loaded

Area of each set of valves per boiler

per Rule 16.4

as fitted 19.2

Pressure to which they are adjusted

185

Are they fitted with easing gear

yes

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

no

Smallest distance between boilers or uptakes and bunkers or woodwork

7'-0"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

21"

Is the bottom of the boiler insulated

no

Largest internal dia. of boilers

16'-3"

Length

10'-6"

Shell plates: Material

Steel

Tensile strength

28-32

Thickness

1 1/2"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end D.R.

Long. seams

T. R. D. S.

Diameter of rivet holes in

circ. seams 1 3/8"

long. seams 1 3/8"

Pitch of rivets

4"

9 9/16"

Percentage of strength of circ. end seams

plate 65.4

rivets 45.8

Percentage of strength of circ. intermediate seam

plate 85.6

rivets 90.2

Percentage of strength of longitudinal joint

plate 89.2

combined 89.2

Working pressure of shell by Rules

180 lbs

Thickness of butt straps

outer 1"

inner 1 1/8"

No. and Description of Furnaces in each Boiler

4 corrugated (Doughton)

Material

Steel

Tensile strength

26 to 30 tons

Smallest outside diameter

3'-3 3/4"

Length of plain part

top 1 1/2"

bottom 1 1/2"

Thickness of plates

crown 1 1/2"

bottom 1 1/2"

Description of longitudinal joint

weld

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

Working pressure of furnace by Rules

181 lbs

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons

Thickness

1 1/2"

Pitch of stays 2'-0 1/2" x 1'-10 1/2"

How are stays secured

Double Nuts

Working pressure by Rules

183.5 lbs

Tube plates: Material

front Steel

back Steel

Tensile strength

26 to 30 tons

Thickness

3/32"

2 1/32"

3/4"

Mean pitch of stay tubes in nests

10'-3 1/4"

Pitch across wide water spaces

1'-2 1/2"

Working pressure

front 194 lbs

back 186 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

28 to 32 tons

Depth and thickness of girder

at centre

2 @ 9" x 1/8"

Length as per Rule

2'-9"

Distance apart

11 1/8"

No. and pitch of stays

in each

2 @ 9 1/8"

Working pressure by Rules

186 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons

Thickness: Sides

25/32"

Back

25/32"

Top

25/32"

Bottom

1"

Pitch of stays to ditto: Sides

9 1/8" x 9 1/8"

Back

11 1/4" x 10 1/4"

Top

9 1/8" x 11 1/8"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

181 lbs

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons

Thickness

3/32"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons

Thickness

7/8"

Pitch of stays at wide water space

1'-2 1/2" x 10 1/4"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

198 lbs

Main stays: Material

Steel

Tensile strength

28 to 32 tons

Diameter

At body of stay, 3 3/8"

or Over threads 3 3/4"

No. of threads per inch

6

Area supported by each stay

551.2 sq in

Working pressure by Rules

226 lbs

Screw stays: Material

Steel

Tensile strength

26 to 30 tons

Diameter

At turned off part, 1 7/8"

or Over threads 1 7/8"

No. of threads per inch

9

Area supported by each stay

114.5 sq in

Working pressure by Rules 182 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 128.18 sq" Working pressure by Rules 193 lbs

Tubes: Material Iron External diameter ^{Plain} 3 1/4" Thickness ^{Stay} 5/16 + 1/4" No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules 186 lbs. Manhole compensation: Size of opening in shell plate 16" x 10" Section of compensating ring none No. of rivets and diameter of rivet holes ✓

Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 4 1/16" 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 Working pressure by Rules

How connected to shell Inner radius of crown Working pressure by Rules

of rivets in outer row in dome connection to shell Size of doubling plate under dome Diameter of rivet holes and pitch

Type of Superheater Manufacturers of ^{Tubes} _{Steel castings}

Number of elements Material of tubes Internal diameter and thickness of tubes

Material of headers Tensile strength Thickness Can the superheater be shut off and the boiler be worked separately Is a safety valve fitted to every part of the superheater which can be shut off from the boiler

Area of each safety valve Are the safety valves fitted with easing gear Working pressure as per Rules Pressure to which the safety valves are adjusted Hydraulic test pressure: tubes, castings and after assembly in place Are drain cocks or valves fitted to free the superheater from water where necessary

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes.

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD.
 The foregoing is a correct description,
G. Stephenson Manufacture
 Commercial Manager

Dates of Survey ^{During progress of work in shops - -} _{while building} ^{During erection on board vessel - - -} See Index Report

Are the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)

Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This Boiler has been built under special survey. Materials & workmanship good, Hydraulic test satisfactory. The Boiler has been examined under steam & its safety valves adjusted.

Survey Fee £ See 1st Survey report When applied for, 192

Travelling Expenses (if any) £ report When received, 192

William Butler
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 23 SEP 1927

Assigned See Report attached



Date of writing Report

No. in Survey Reg. Book. on the

Master

Boiler made at

Owners

VERTICAL

Made at Ann

tested by hydraulic

No. of safety valve

enter the donkey b

strength 2 1/2

Lap of plating 3

Radius of do. 2'

Thickness of furn

plates 1/2"

Thickness of wate

Dates of Survey while building

During work

During board

Total

GENERAL

under

Material

This

and

Survey Fee

Travelling

Committee

Assigned