

Rpt. 5a.

REPORT ON BOILERS.

No. 80522

Received at London Office

20 JUL 1926

Date of writing Report 12th July 1926 When handed in at Local Office 16th July 1926 Port of

NEWCASTLE-ON-TYNE.

No. in Reg. Book.

Survey held at

Jarrow

Date, First Survey

23rd Oct 1925

Last Survey

7th July

1926

(Number of Visits)

Gross 7200

Tons Net 4300

S.S.

38250

on the

S.S. "BRITISH INVENTOR"

Master

Built at

Jarrow

By whom built

Palmer S. & J. Co. Ltd

Yard No. 959

When built 1926

Engines made at

Jarrow

By whom made

Palmer S. & J. Co. Ltd

Engine No. 959

When made 1926

Boilers made at

Jarrow

By whom made

Palmer S. & J. Co. Ltd

Boiler No. 959

When made 1926

Nominal Horse Power

567

Owners

British Tanker Co. Ltd.

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel STEEL COMPANY OF SCOTLAND LTD.

(Letter for Record S)

Total Heating Surface of Boilers

8317 ft^2

Is forced draught fitted

YES

Coal or Oil fired

OIL

No. and Description of Boilers

3 Cyl. S.E., MULTITUBULAR

Working Pressure 180 LBS.

Tested by hydraulic pressure to

320 LBS.

Date of test 11th 6th 26

No. of Certificate 9996, 9999

Can each boiler be worked separately

YES

Area of Firegrate in each Boiler

-

No. and Description of safety valves to each boiler

Two

SPRING LOADED

Area of each set of valves per boiler

per Rule 21.32

as fitted 21.09

Pressure to which they are adjusted

180 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

1' 6"

Is oil fuel carried in the double bottom under boilers

YES

Smallest distance between shell of boiler and tank top plating

2' 2"

Is the bottom of the boiler insulated

YES

Largest internal dia. of boilers

15' 6"

Length

11' 9 $\frac{3}{4}$ "

Shell plates: Material

STEEL

Tensile strength

28 - 32 TONS

Thickness

1 $\frac{1}{2}$ "

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

D.R.

long. seams

T.R., D.B.S.

Diameter of rivet holes in

circ. seams

1 $\frac{1}{2}$ "

Pitch of rivets

4' 03"

Percentage of strength of circ. end seams

plate 63.5%

rivets 79.1%

Percentage of strength of circ. intermediate seam

plate

-

Percentage of strength of longitudinal joint

plate 85.39%

rivets 93.7%

combined 97.1%

Working pressure of shell by Rules

182 LBS

Thickness of butt straps

outer 1"

inner 1 $\frac{1}{2}$ "

No. and Description of Furnaces in each Boiler

3 DEIGHTON

Material

STEEL

Tensile strength

26 - 30 TONS

Smallest outside diameter

3' 10 $\frac{7}{8}$ "

Length of plain part

top 10"

bottom 10"

Thickness of plates

coron 10"

bottom 10"

Description of longitudinal joint

WELD

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

NONE

Working pressure of furnace by Rules

186 LBS.

End plates in steam space: Material

STEEL

Tensile strength

26 - 30 TONS

Thickness

1 $\frac{1}{2}$ "Pitch of stays 23" x 22 $\frac{1}{2}$ "

How are stays secured

DOUBLE NUTS, WASHERS

Working pressure by Rules

183 LBS.

Tube plates: Material

front STEEL

back STEEL

Tensile strength

26 - 30 TONS

Thickness

1 $\frac{1}{2}$ "

25"

Mean pitch of stay tubes in nests

9' 37 $\frac{5}{8}$ "

Pitch across wide water spaces

1' 1 $\frac{3}{4}$ "

Working pressure

front 303 LBS.

back 246 LBS.

Girders to combustion chamber tops: Material

STEEL

Tensile strength

28 - 32 TONS

Depth and thickness of girder

at centre

9" x 14"

Length as per Rule

2' 9"

Distance apart

8"

No. and pitch of stays

in each

2 @ 10 $\frac{3}{4}$ "

Working pressure by Rules

204 LBS.

Combustion chamber plates: Material

STEEL

Tensile strength

26 - 30 TONS

Thickness: Sides

1 $\frac{1}{2}$ "

Back

1 $\frac{1}{2}$ "

Top

1 $\frac{1}{2}$ "

Bottom

1 $\frac{1}{2}$ "

Pitch of stays to ditto: Sides

10 $\frac{3}{4}$ " x 8"

Back

9 $\frac{5}{8}$ " x 8 $\frac{1}{2}$ "

Top

10 $\frac{3}{4}$ " x 8"

Are stays fitted with nuts or riveted over

NUTS

Working pressure by Rules

184 LBS.

Front plate at bottom: Material

STEEL

Tensile strength

26 - 30 TONS

Thickness

1 $\frac{1}{2}$ "

Lower back plate: Material

STEEL

Tensile strength

26 - 30 TONS

Thickness

2 $\frac{1}{2}$ "

Pitch of stays at wide water space

19"

Are stays fitted with nuts or riveted over

NUTS

Working Pressure

215 LBS.

Main stays: Material

STEEL

Tensile strength

28 - 32 TONS

Diameter

At body of stay, or Over threads

3 $\frac{1}{2}$ "

No. of threads per inch

6

Area supported by each stay

517.5"

Working pressure by Rules

183 LBS.

Screw stays: Material

STEEL

Tensile strength

26 - 30 TONS

Diameter

At turned off part, or Over threads

1 $\frac{5}{8}$. 1 $\frac{3}{4}$ "

No. of threads per inch

9

Area supported by each stay

98.28"

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W346-1003

REPORT ON BOILERS

Working pressure by Rules **185 LBS.** Are the stays drilled at the outer ends **No** ✓ Margin stays: Diameter { At turned off part, **1 7/8"** ✓
 No. of threads per inch **9** ✓ Area supported by each stay **108.28** ✓ Working pressure by Rules **192 LBS.**
 Tubes: Material **STEEL** ✓ External diameter { Plain **2 1/2"** ✓ Thickness { **9 W.G.** ✓ No. of threads per inch **9** ✓
 Pitch of tubes **3 3/4" x 3 3/4"** ✓ Working pressure by Rules **230 LBS.** Manhole compensation: Size of opening in Reg. Bo **36 @ 1 3/8"** ✓
 shell plate **20" x 16"** ✓ Section of compensating ring **2 1/2" x 2 9" x 1 1/8"** ✓ No. of rivets and diameter of rivet holes **36 @ 1 3/8"** ✓
 Outer row rivet pitch at ends **9 1/2"** ✓ 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 **-** ✓
 Internal diameter **-** Working pressure by Rules **-** Thickness of crown **-** No. and diameter of **-**
 stays **-** Inner radius of crown **-** Working pressure by Rules **-** Diameter of rivet holes and pitch **-**
 How connected to shell **-** Size of doubling plate under dome **-** of rivets in outer row in dome connection to shell **-**

Type of Superheater

Number of elements **-** Material of tubes **-** Manufacturers of { Tubes **-**
 Material of headers **-** Tensile strength **-** Steel castings **-** Internal diameter and thickness of tubes **-**
 the boiler be worked separately **-** Thickness **-** Can the superheater be shut off and **-**
 Area of each safety valve **-** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **-**
 Rules **-** Are the safety valves fitted with easing gear **-** Working pressure as per **-**
 tubes **-** Pressure to which the safety valves are adjusted **-** Hydraulic test pressure: **-**
 to free the superheater from water where necessary **-** and after assembly in place **-** Are drain cocks or valves fitted **-**

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with **YES** ✓

The foregoing is a correct description.

Palmer's Shipbuilding & Iron Co. Ltd. Manufacturer.

Dates of Survey { During progress of work in shops - -
 while building { During erection on board vessel - - -

See Mach. Report

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

Total No. of visits **282** ✓

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

These boilers were built under Special Survey. The materials and workmanship are good.

Survey Fee ... **£ See Mach. Report** When applied for, **192**
 Travelling Expenses (if any) **£** When received, **192**

Thomas Napier

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 23 JUL 1925

Assigned

See Mach. Report attached



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