

REPORT ON BOILERS.

No. 81608

Received at London Office

3 AUG 1927

Date of writing Report 26 - 7 - 1927

When handed in at Local Office

30 - 7 - 1927

Port of Newcastle-on-Tyne

No. in Survey held at

Hebburn

Date, First Survey

18 May 1927

Last Survey

20 July

1927

Book.

(Number of Visits

7

Gross

Tons

Net

on the

Master

Built at Dartmouth

By whom built Philips & Sons

Yard No. 718

When built

Engines made at

By whom made

Engine No.

When made

Boilers made at

Hebburn

By whom made

Palmers Co. Ltd

Boiler No. 1079

When made 1927

Nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

William Beardmore & Co. Ltd.

(Letter for Record

S

Total Heating Surface of Boilers

1600 sq. ft.

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

ONE S.E. MULTITUBULAR

Working Pressure

150 LBS.

Tested by hydraulic pressure to

275 LBS.

Date of test

22.7.27

No. of Certificate

172

Can each boiler be worked separately

Area of Firegrate in each Boiler

55.8 sq. ft.

No. and Description of safety valves to each boiler

Area of each set of valves per boiler

per Rule

Pressure to which they are adjusted

Are they fitted with easing gear

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

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Largest internal dia. of boilers

13' 6"

Length

10' 6" $\frac{15}{16}$

Shell plates: Material

STEEL

Tensile strength

28-32 TONS

Thickness

 $\frac{15}{16}$

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

 $\frac{1}{16}$

long. seams

1"

Pitch of rivets

3 $\frac{1}{2}$ "7 $\frac{1}{4}$ "

Percentage of strength of circ. end seams

plate

69.6%

rivets

45%

Percentage of strength of circ. intermediate seam

Percentage of strength of longitudinal joint

plate

86.2%

rivets

88.9%

combined

90.4%

Working pressure of shell by Rules

152 LBS.

Thickness of butt straps

outer

 $\frac{13}{16}$

inner

 $\frac{13}{16}$

No. and Description of Furnaces in each Boiler

3 PLAIN

Material

STEEL

Tensile strength

26-30 TONS

Smallest outside diameter

3' 6 $\frac{1}{4}$ "

Length of plain part

top

Thickness of plates

crown

 $\frac{3}{4}$

bottom

 $\frac{3}{4}$

Description of longitudinal joint

WELD

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

Working pressure of furnace by Rules

163 LBS.

End plates in steam space: Material

STEEL

Tensile strength

26-30 TONS

Thickness

1"

Pitch of stays 18 $\frac{1}{2}$ " x 18 $\frac{1}{2}$ "

How are stays secured

DOUBLE NUTS & WASHERS

Working pressure by Rules

152 LBS.

Tube plates: Material

front

STEEL

back

STEEL

Tensile strength

26-30 TONS

Thickness

 $\frac{15}{16}$

Mean pitch of stay tubes in nests

10 $\frac{1}{2}$ "

Pitch across wide water spaces

14"

Working pressure

front 290 LBS.

back 152 LBS.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32

Depth and thickness of girder

at centre

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

Length as per Rule

2' 4" $\frac{23}{32}$

Distance apart

9"

No. and pitch of stays

in each

2 @ 8 $\frac{3}{4}$ "

Working pressure by Rules

206 LBS.

Combustion chamber plates: Material

STEEL

Tensile strength

26-30 TONS

Thickness: Sides

 $\frac{19}{32}$

Back

 $\frac{19}{32}$

Top

 $\frac{19}{32}$

Bottom

 $\frac{3}{4}$

Pitch of stays to ditto: Sides

8 $\frac{3}{4}$ " x 9"

Back

8 $\frac{3}{4}$ " x 9"

Top

8 $\frac{3}{4}$ " x 9"

Are stays fitted with nuts or riveted over

NUTS

Working pressure by Rules

155 LBS.

Front plate at bottom: Material

STEEL

Tensile strength

26-30 TONS

Thickness

 $\frac{15}{16}$

Lower back plate: Material

STEEL

Tensile strength

26-30 TONS

Thickness

 $\frac{13}{16}$

Pitch of stays at wide water space

d = 26"

14"

Are stays fitted with nuts or riveted over

NUTS

Working Pressure

193 LBS.

Main stays: Material

STEEL

Tensile strength

28-32 TONS

Diameter

At body of stay,

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

Over threads

No. of threads per inch

6

Area supported by each stay

342.25 sq. in.

Working pressure by Rules

161 LBS.

Screw stays: Material

STEEL

Tensile strength

26-30 TONS

Diameter

At turned off part,

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

Over threads

No. of threads per inch

9

Area supported by each stay

78.75 sq. in.

002876-002882 0017

Lloyd's Register
Foundation

Working pressure by Rules 159 LBS. Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, -
 No. of threads per inch 9 Area supported by each stay 105" Over threads 1 3/4"
 Tubes: Material IRON External diameter { Plain 3 1/2" Thickness { 9 W.G. Working pressure by Rules 172 LBS.
 Pitch of tubes 4 3/4" x 4 3/4" Stay 3 1/2" 4 5/16" No. of threads per inch 9
 shell plate 1' 8" x 1' 4" Section of compensating ring 2' 5 1/2" x 2' 9 1/2" x 1' No. of rivets and diameter of rivet holes 32 @ 1 3/32"
 Outer row rivet pitch at ends 7" Depth of flange if manhole flanged 3 1/2" Manhole compensation: Size of opening
 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 - Rivets -
 stays - Inner radius of crown - Thickness of crown - No. and diameter
 How connected to shell - 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 p

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

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

For **Palmer's Shipbuilding & Iron Co., Ltd.**
 The foregoing is a correct description,
J. Cameron
 Manager, Hobburn Boiler Shop & Foundry, Manufacture

Dates of Survey { During progress of work in shops - - 1927
 while building { During erection on board vessel - - - May 18, Jun. 3, 14, 27, Jul. 5, 12, 20
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Yes
 Total No. of visits 7+

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under Special Survey, the materials and workmanship are good.

Survey Fee ... £ 10 : 13 : 0
 Travelling Expenses (if any) £ : :
 When applied for, 1927
 When received, 24th Sept. 1927

Thomas Napier
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 16 MAR 1928 TUES. 27 MAR 1928
 Assigned *See Reg. 18 Sept. No. 6619*