

Rpt. 5a.

REPORT ON BOILERS.

No. 12000

THU. JUL 10 11

Received at London Office

Date of writing Report

192

When handed in at Local Office

8-7-24

192

Port of

Middlesbrough

No. in
Reg. Book.

Survey held at

Stockton-on-Tees

Date, First Survey

31st March

Last Survey

26th June

1924

on the

S.S. "HARTLEY"

(Number of Visits

24)

Tons {
Gross
Net

Master

Built at

South Bank

By whom built

Smith's Dock & Co. Ltd.

Yard No. 797

When built

Engines made at

South Bank

By whom made

Smith's Dock & Co. Ltd.

Engine No. 263

When made

Boilers made at

Stockton

By whom made

Thorn Blair & Co. Ltd.

Boiler No. A100

When made

1924

Nominal Horse Power

231.14

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Co. of Scotland Ltd.

(Letter for Record (S))

Total Heating Surface of Boilers

3947 sq ft

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

Two single ended.

Working Pressure

180

Tested by hydraulic pressure to

320

Date of test

26-6-24

No. of Certificate

6374

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

5 1/2 sq ft

No. and Description of safety valves to each boiler

Direct spring loaded

Area of each set of valves per boiler

per Rule 12.9

as fitted 14.92

Pressure to which they are adjusted

185 lb

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

2-0"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2-6"

Is the bottom of the boiler insulated

No

Largest internal dia. of boilers

14-6"

Length

10-6"

Shell plates: Material

S

Tensile strength

28-32

Thickness

1 1/2"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end 2R lap

inter.

long. seams

28-32 5 rivets

Diameter of rivet holes in

circ. seams 1 1/2"

long. seams 1 1/4"

Pitch of rivets

4"

Percentage of strength of circ. end seams

plate 67.25

rivets 46.6

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.71

rivets 91.00

combined 89.62

Working pressure of shell by Rules

180

Thickness of butt straps

outer 1 1/2"

inner 1 1/2"

No. and Description of Furnaces in each Boiler

3 Dighton

Material

S

Tensile strength

26-30

Smallest outside diameter

4 1/2"

Length of plain part

top

bottom

Thickness of plates

crown 1 1/2"

bottom 3/2"

Description of longitudinal joint

Weld

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

Working pressure of furnace by Rules

185

End plates in steam space: Material

S

Tensile strength

26-30

Thickness

1 1/2"

Pitch of stays

20" x 15 1/2"

How are stays secured

Nuts (10 1/2" x 1")

Working pressure by Rules

180

Tube plates: Material

front S

back S

Tensile strength

26-30

Thickness

1 1/2"

Mean pitch of stay tubes in nests

10 5/8"

Pitch across wide water spaces

14 1/4" x 9"

Working pressure

front 187

back 206

Girders to combustion chamber tops: Material

S

Tensile strength

28-32

Depth and thickness of girder

at centre

8 1/4" x 1 1/2"

Length as per Rule

32 1/2"

Distance apart

9"

No. and pitch of stays

in each

30 8 1/2"

Working pressure by Rules

194

Combustion chamber plates: Material

S

Tensile strength

26-30

Thickness: Sides

2 1/2"

Back

1 1/2"

Top

3 1/2"

Bottom

1"

Pitch of stays to ditto: Sides

9" x 8 1/2"

Back

9 1/4" x 9"

Top

9" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

196

Front plate at bottom: Material

S

Tensile strength

26-30

Thickness

1 1/2"

Lower back plate: Material

S

Tensile strength

26-30

Thickness

2 1/2"

Pitch of stays at wide water space

14 1/4" x 9"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

238

Main stays: Material

S

Tensile strength

28-32

Diameter

At body of stay, 3"

or

Over threads 3"

No. of threads per inch

6

Area supported by each stay

355

Working pressure by Rules

263

Screw stays: Material

S

Tensile strength

26-30

Diameter

At turned off part, 1 1/4"

or

Over threads 1 1/4"

No. of threads per inch

8

Area supported by each stay

83.25

Working pressure by Rules 215 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8 or Over threads 1 7/8 ✓
No. of threads per inch 8 ✓ Area supported by each stay 105.75 Working pressure by Rules 196
Tubes: Material S ✓ External diameter { Plain 3 1/4 Thickness 11/16 No. of threads per inch 9 ✓
Pitch of tubes 4 1/2 = 4 1/2 ✓ Working pressure by Rules 210 Manhole compensation: Size of opening
shell plate 16 * 12 ✓ Section of compensating ring 7 3/4 * 1 3/4 ✓ No. of rivets and diameter of rivet holes 28 @ 1 1/4 ✓
Outer row rivet pitch at ends 8 3/4 ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material none
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 _____ 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 at _____
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

The foregoing is a correct description,
BLAIR & CO., LIMITED, A. P. Hamilton Manufacturer

Dates of Survey { During progress of work in shops - - - 1924, Jan. 31, Apr. 3, 9, 14, 16, 23, 25, 29, May, 1, 6, 8, 12, 14, 15, 20, 22, 26, 27, June, 3, 5, 12, 18, 20, 26. Are the approved plans of boiler and superheater forwarded herewith yes
(If not state date of approval.)
while building { During erection on board vessel - - - _____ Total No. of visits 24 Return for duplicate

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey: are of good material and workmanship and on completion were tested by hydraulic pressure with satisfactory results
The boilers are to be fitted on board at this port

These boilers have now been fitted satisfactorily on board, examined under steam and safety valves adjusted
Chas. W. Aford

It is submitted that
this vessel is eligible for
THE RECORD.

Survey Fee ... £ 26-6-0 When applied for, 192
Travelling Expenses (if any) £ ✓ : : When received, 192

Wm Morrison & L. Desket.
Engineer Surveyors to Lloyd's Register of Shipping

Committee's Minute

FRI. 26 SEP 1924

Assigned



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Foundation