

REPORT ON BOILERS.

Std. No. 33488

Mab. No. 17305.

Received at London Office

13 AUG 1942 21 SEP 1942

Date of writing Report

When handed in at Local Office

10 Aug

1942

Port of

MIDDLESBROUGH

No. in Survey held at

Stockton

Date, First Survey

15/5/42

Last Survey

3/8

1942

Reg. Book.

"HARDINGHAM"

(Number of Visits)

8

Gross

72.69

Tons

50.41

on the

Built at

Sunderland

By whom built

Wm. Harford & Son Ld.

Yard No.

692

When built

1942

Engines made at

Sunderland

By whom made

Wm. Harford & Son Ld.

Engine No.

692

When made

1942

Boilers made at

Stockton

By whom made

Stockton Chem. Engs. & Rely. Works Ld.

Boiler No.

6620

When made

1942

Nominal Horse Power

516.

Owners

J. & C. Harrison & Co Ld.

Port belonging to

London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Appley & Hodgkinson C. L.

Total Heating Surface of Boilers

2130.

Is forced draught fitted

Yes.

(Letter for Record)

S.

Coal or Oil fired

Oil fired

No. and Description of Boilers

1 SE. Marine

Working Pressure

120 lb/sq. in.

Tested by hydraulic pressure to

230

Date of test

3/8/42

No. of Certificate

7054

Can each boiler be worked separately

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

19.4 sq. ft. = 9.8 sq. ft.

Two direct Spring (Lockbury type) (Rift)

Area of each set of valves per boiler

(per Rule)

as fitted

10.1 sq. ft.

Pressure to which they are adjusted

120

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' 3"

Is oil fuel carried in the double bottom under boiler

No.

Smallest distance between shell of boiler and tank top plating

2' 3"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

12' 10 1/2"

Length

11' 6"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

23/32"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D.R.

long. seams

TR. - D.B.S.

Diameter of rivet holes in

circ. seams

1 1/16"

long. seams

3/16"

Pitch of rivets

3.238

5 15/16"

Percentage of strength of circ. end seams

plate

67.19%

rivets

60.4%

Percentage of strength of circ. intermediate seam

plate

-

rivets

Percentage of strength of longitudinal joint

plate

86.31%

rivets

98.53%

combined

87.84%

Thickness of butt straps

outer

9 1/16"

inner

1 1/16"

No. and Description of Furnaces in each Boiler

3. Dighton.

Material

Steel

Tensile strength

26/30

Smallest outside diameter

3' 0 1/4"

Length of plain part

top

bottom

Thickness of plates

crown

3/8"

bottom

3/8"

Description of longitudinal joint

Welded.

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

Yes.

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

29/32"

Pitch of stays

18" x 16"

How are stays secured

D. nuts & washers.

Tube plates: Material

front

Steel

back

Tensile strength

26/30

Thickness

1 1/16"

1 1/16"

Mean pitch of stay tubes in nests

9 3/8"

Pitch across wide water spaces

13 1/2"

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32

Depth and thickness of girder

at centre

7 1/4"

22 5/8"

Length as per Rule

2' 5 3/4"

Distance apart

10"

No. and pitch of stays

in each

2. 9 1/4"

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

19/32"

Back

9/16"

Top

19/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

10" x 9"

Back

10" x 8 1/4"

Top

10" x 9 1/4"

Are stays fitted with nuts or riveted over

nuts.

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

1 1/16"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

1 1/16"

Pitch of stays at wide water space

13 1/2"

Are stays fitted with nuts or riveted over

nuts.

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay

or

Over threads

2 3/8"

No. of threads per inch

6.

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part

or

Over threads

1 5/8" - 1 1/2" - 1 3/8"

No. of threads per inch

9.



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Foundation

Are the stays drilled at the outer ends no. Margin stays: Diameter ^{At turned off part,} 1 1/2" or Over threads

No. of threads per inch 9.

Tubes: Material Sim. Lap Welded External diameter ^{Plain} 2 3/4" ^{Stay} 2 3/4" Thickness ^{8 W.G.} 5/16" No. of threads per inch 9.

Pitch of tubes 3 3/4" x 3 3/4" Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 7" x 1" No. of rivets and diameter of rivet holes 44 - 15/16"

Outer row rivet pitch at ends 6" Depth of flange if manhole flanged ✓ Steam Dome: Material hous.

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 _____ Thickness of crown _____ No. and diameter of stays _____ Inner radius of crown _____

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 forgings} ^{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 _____

Pressure to which the safety valves are adjusted _____ Hydraulic test pressure: _____

tubes _____ forgings and 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 22 inclusive for boilers been complied with yes and on behalf of

STOCKTON CHEMICAL ENGINEERS & RULE POWERS LTD.
The foregoing is a correct description,

G. W. Riley Manufacturer

Dates of Survey ^{During progress of work in shops - -} 1942 May 15, June 2, 10, 23 July 13, 17 Are the approved plans of boiler and superheater forwarded herewith No. 23/11
^{while building} ^{During erection on board vessel - -} 28. Aug. 3. (If not state date of approval.)

Total No. of visits Eight.

Is this Boiler a duplicate of a previous case _____ If so, state Vessel's name and Report No. _____

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

This boiler has been constructed under special survey & in accordance with the Rule Requirements & approved plan.

The materials & workmanship are good & on completion the boiler was hydraulically tested to 230 lbs/sq. in. & found satisfactory.

This boiler has been forwarded to Messrs Wm. Doulton & Sons Ltd. - Sunderland for their Contract No. 692.

This boiler has been securely fitted on board the vessel.
The safety valves have been adjusted to working pressure.
In recommendation please see Machinery Rpt.

D. H. Fraser

Survey Fee ... £ 14 : 4 : 0 When applied for, 11/8/ 1942
Travelling Expenses (if any) £ : : When received, 19

L. Norman Stuart
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 25 SEP 1942

Assigned

See Std. J.E. 93488



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