

REPORT ON BOILERS.

No. 33684

Received at London Office

11 MAY 1943

Date of writing Report

When handed in at Local Office

7 May 1943

Port of

SUNDERLAND.

No. in Reg. Book.

Survey held at

SUNDERLAND.

Date, First Survey

Last Survey

5 May 1943

1943

on the

H.M. EMPIRE DEED

(Number of Visits)

Gross

6766

Tons

Net 4639

Built at Sunderland.

By whom built

Bartram & Sons, Ltd.

Yard No. 295

When built 1943

Engines made at

Glasgow

By whom made

James Stewart & Co. Ltd.

Engine No. 150

When made 1943

Boilers made at

Sunderland.

By whom made

H.E. Mar. Eng. Co. (1938), Ltd.

Boiler No. 4036

When made 1943

Nominal Horse Power

510

Owners

H. J. Campbell & Co. Ltd. Port belonging to Sunderland

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

Manufacturers of Steel

Colvilles Ltd.

(Letter for Record S)

Total Heating Surface of Boilers

4832 sq ft 7248

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

3 Cylindrical Single-ended Multitubular

Working Pressure

220 lb.

Tested by hydraulic pressure to

380 lb.

Date of test

15.2.43

No. of Certificate

4480

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

55 sq ft

No. and Description of safety valves to each boiler

2 Improved High Lift

Area of each set of valves per boiler

per Rule 6.515 sq in

as fitted 7.952 sq in

Pressure to which they are adjusted

220 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

24"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

24"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

15'-0 1/8"

Length

11'-8 1/32"

Shell plates: Material

steel

Tensile strength

29/33

Thickness

1 5/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

J.R.L.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/2"

Pitch of rivets

4 1/8"

Percentage of strength of circ. end seams

plate

63.6

rivets

46.1

Percentage of strength of circ. intermediate seam

plate

—

rivets

—

Percentage of strength of longitudinal joint

plate

85.5

rivets

86.2

combined

88.3

Thickness of butt straps

outer

1 1/8"

inner

1 1/4"

No. and Description of Furnaces in each Boiler

3 Slighten. Stephan-gurday mks.

Material

steel

Tensile strength

26/30

Smallest outside diameter

3'-9 3/4"

Length of plain part

top

—

bottom

—

Thickness of plates

crown

1 1/16"

bottom

—

Description of longitudinal joint

weld

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

End plates in steam space: Material

steel

Tensile strength

26/30

Thickness

1 1/32"

Pitch of stays

19 3/4" x 19 5/8"

How are stays secured

double nuts

Tube plates: Material

front

steel

back

—

Tensile strength

26/30

Thickness

15/16"

25/32"

Mean pitch of stay tubes in nests

9 7/8"

Pitch across wide water spaces

14" x 8 1/4"

Girders to combustion chamber tops: Material

steel

Tensile strength

28/32

Depth and thickness of girder

at centre

10 1/2" x 1 3/8"

Length as per Rule

3 1/2"

Distance apart

9 1/4"

No. and pitch of stays

in each

3 @ 8"

Combustion chamber plates: Material

steel

Tensile strength

26/30

Thickness: Sides

25/32"

Back

25/32"

Top

1 1/16"

Bottom

7/8"

Pitch of stays to ditto: Sides

9 1/4" x 8"

Back

9 7/8" x 9 3/4"

Top

9 1/4" x 8"

Are stays fitted with nuts or riveted over

nuts fitted

Front plate at bottom: Material

steel

Tensile strength

26/30

Thickness

15/16"

Lower back plate: Material

steel

Tensile strength

26/30

Thickness

15/16"

Pitch of stays at wide water space

14 1/8" x 9 7/8"

Are stays fitted with nuts or riveted over

nuts fitted

Main stays: Material

steel

Tensile strength

28/32

Diameter

At body of stay,

3 1/8"

Over threads

3 1/2"

No. of threads per inch

6

Screw stays: Material

steel

Tensile strength

26/30

Diameter

At turned off part,

1 1/8"

Over threads

—

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, 2" or Over threads

No. of threads per inch 9

Tubes: Material Steel External diameter { Plain 3" Stay Thickness { 8. H. G. 5/16" + 3/8" No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in End shell plate 16" x 12" Section of compensating ring — No. of rivets and diameter of rivet holes —

Outer row rivet pitch at ends — Depth of flange if manhole flanged 4 1/4" 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 — 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 Smoke tube Manufacturers of Tubes Stewart & Lloyd Steel forgings } applied to Frothingham Steel castings }

Number of elements 177 Material of tubes S. D. Steel Internal diameter and thickness of tubes 15 1/4" 2 1/2"

Material of headers Forged steel Tensile strength 26/30 Thickness 1 1/8" Can the superheater be shut off and the boiler be worked separately yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes

Area of each safety valve 3.14 sq" Are the safety valves fitted with easing gear yes

Pressure to which the safety valves are adjusted 225 lb. Hydraulic test pressure: tubes 1500 lb. forgings and castings 660 lb. and after assembly in place 500 lb. Are drain cocks or valves fitted to free the superheater from water where necessary yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes.

The foregoing is a correct description,

Dates of Survey { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building { During erection on board vessel - - } Total No. of visits

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.)

These boilers have been constructed under Special Survey in accordance with the approved plans, Secretary's letters and the requirements of the Rules. Workmanship and materials are good. In recommendation please see Rpt. 4.

Survey Fee ... £ : : When applied for, 19

Travelling Expenses (if any) £ : : When received, 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUES. 18 MAY 1943

Assigned

See fe. mach. rft.



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