

REPORT ON BOILERS.

No. 33374

Received at London Office 20 APR 1942

Date of writing Report

19

When handed in at Local Office

15 April 1942

Port of

Sunderland.

No. in Survey held at
Reg. Book.

Sunderland

Date, First Survey

Last Survey 14 April 1942

on the

"EMPIRE BARRIE"

(Number of Visits

Gross

7168

Tons

Net 4253

Built at

Sunderland

By whom built J. P. Thompson & Son Ld.

Yard No.

615

When built

1942

Engines made at

Sunderland

By whom made

G. Clark (1938) Ld.

Engine No.

1254

When made

1942

Boilers made at

Sunderland

By whom made

G. Clark (1938) Ld.

Boiler No.

1254

When made

1942

Nominal Horse Power

509

Owners

Ministry of War Transport

Port belonging to

Sunderland.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colville Ld.

(Letter for Record

S.

Total Heating Surface of Boilers

4248 sq. ft.

Is forced draught fitted

Yes.

Coal or Oil fired

Coal

No. and Description of Boilers

Three Single Ended Multitubular return tubes

Working Pressure

220.

Tested by hydraulic pressure to

380

Date of test

21/1/42

No. of Certificate

4402

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 Lockport Imp. High Lift.

Area of each set of valves per boiler

per Rule

6.4 sq. ft.

as fitted

4.95 sq. ft.

Pressure to which they are adjusted

220

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

Is oil fuel carried in the double bottom under boilers

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

15'-0 1/8"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

29/33.

Thickness

1 15/32"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

DR. Dep.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/2"

long. seams

1 1/2"

Pitch of rivets

4 1/8"

inter.

10 3/8"

Percentage of strength of circ. end seams

plate

63.6

rivets

46.2

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

Three Corrugated (Leighton)

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

welded.

Dimensions of stiffening rings on furnace or p.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 3/8"

How are stays secured

Double nuts.

Tube plates:

Material

Steel

Tensile strength

26/30

Thickness

15/16"

25/32"

Mean pitch of stay tubes in nests

9 1/4"

Pitch across wide water spaces

14" x 8 1/2"

Girders to combustion chamber tops:

Material

Steel

Tensile strength

28/32

Depth and thickness of girder

at centre

10 1/2" x 13/8 (2)

Length as per Rule

2'-9 1/2"

Distance apart

9'-4"

No. and pitch of stays

in each

3 @ 8"

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

1 1/16"

Bottom

1 1/8"

Pitch of stays to ditto:

Sides

9 1/4" x 8"

Back

9 1/4" x 8"

Top

9 1/4" x 8"

Are stays fitted with nuts or riveted over

nuts.

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

2 1/32"

Pitch of stays at wide water space

14" x 8"

Are stays fitted with nuts or riveted over

nuts.

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay

3 1/4"

or

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 3/4"

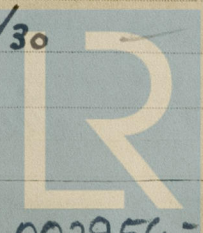
or

Over threads

1 3/4"

No. of threads per inch

9.



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Are the stays drilled at the outer ends *no.*

Margin stays: Diameter { At turned off part, *1 7/8"* or *2"* Over threads

No. of threads per inch *9.*

Tubes: Material *S.D. Steel* External diameter { Plain *3"* Stay *3"* Thickness { *8 WG.* *5/16"* *3/8"* No. of threads per inch *9.*

Pitch of tubes *4 1/4" x 4 1/4" Centre, 4 1/4" x 4 1/8" wings.* Manhole compensation: Size of opening in

shell plate *(In End plate)* 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 *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 *-* 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 casing 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.*

Yes. GEORGE CLARK (1938) LTD. The foregoing is a correct description,

A. J. Berry Manufacturer. DIRECTOR & GENERAL MANAGER

Dates of Survey { During progress of work in shops -- *Please see Rpt. of* 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 plan, Specification & the rule requirements of the Society. The materials & workmanship are good. On completion they were tested by hydraulic pressure of 380 lbs. & found tight & sound at that pressure.

They have been securely fixed on board the vessel & the safety valves adjusted to working pressure in accordance with rule requirements.

In recommendation please see mach. Rpt.

Survey Fee ... £ *See mach. Rpt.* When applied for, 19

Travelling Expenses (if any) £ *-* When received, 19

J. H. Fraser.

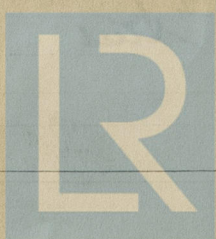
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 28 APR 1942

Assigned

See Std. No. 33374



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