

G.

Rpt. 5a.

REPORT ON BOILERS.

NEWCASTLE-ON-TYNE, No.

102336
No. 10092

Received at London Office 6th Oct. 1943.

Date of writing Report

13.9.43

When handed in at Local Office

30th Sept. 43

Port of

NEWCASTLE-ON-TYNE LIVERPOOL

No. in Survey held at

Birkenhead

Date, First Survey

26/3/42

Last Survey

10/9/1943

Reg. Book.

(Number of Visits)

30

Gross

7046

Net

4747

on the **1/5 EMPIRE LADY.**

Master

Built at

Newcastle

By whom built

Shipby Corp (Tyne Branch)

Yard No.

8

When built

1944-8

Engines made at

Newcastle

By whom made

N.E. M.A.E. Co (1938) Ltd

Engine No.

3057

When made

1944.

Boilers made at

Birkenhead

By whom made

Cammell Laird & Co. Ltd.

Boiler No.

2239

When made

1943

and nominal Horse Power

483

Owners

Min. of War Transport

Port belonging to

Newcastle.

ONE AUX. BLR.

LLOYD'S TEST NO 2609
13-8-43. R.O.B.

Fitted on 1/5 EMPIRE LADY.

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colvilles Ltd.

(Letter for Record (S) ✓)

Total Heating Surface of Boilers

7248 sq. ft. (3) Is forced draught fitted

Yes.

Coal or Oil fired

Coal fired

No. and Description of Boilers

Three single-ended

boilers

- one now utilised for Empire Lady

Working Pressure

220 lbs.

Tested by hydraulic pressure to

380 lbs

Date of test

13.8.43

No. of Certificate

2609

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

54.84

No. and Description of safety valves to each boiler

6.68 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

1'6"

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

2'0 1/2"

11' - 9.19/32"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15' - 0.1/16"

Length

10' - 1.1/32"

Shell plates: Material

Steel

Tensile strength

29-33 tons

Thickness

1.15/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D.R.

g. seams

T.R. - D.B.S.

Diameter of rivet holes in

circ. seams

long. seams

1 1/2"

Pitch of rivets

4.07"

10.375"

Percentage of strength of circ. end seams

plate

63.1

rivets

46.7

Percentage of strength of circ. intermediate seam

plate

85.5

rivets

Percentage of strength of longitudinal joint

plate

86

combined

87

Working pressure of shell by Rules

225 lbs.

Thickness of butt straps

outer 1 1/8"

inner 1 1/4"

No. and Description of Furnaces in each Boiler

Three - Deighton Section

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

45 1/4"

Length of plain part

top -

bottom -

Thickness of plates

crown 11/16"

bottom

Description of longitudinal joint

weld

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

-

Working pressure of furnace by Rules

d plates in steam space: Material

Steel

Tensile strength

26 - 30 tons

Thickness

1.13/32"

Pitch of stays

20" x 21"

How are stays secured

D.N.

Working pressure by Rules

Front plates: Material

front Steel

back

Tensile strength

26 - 30 tons

Thickness

15/16"

25/32"

Pitch of stay tubes in nests

-

Pitch across wide water spaces

14"

Working pressure

front

back

Boilers to combustion chamber tops: Material

Steel

Tensile strength

28 - 32 tons

Depth and thickness of girder

-

No. and pitch of stays

-

Centre

10 1/2" x 11/16"

Length as per Rule

2' - 9.17/32"

Distance apart

9 1/4"

Combustion chamber plates: Material

Steel

Each

3 @ 8"

Working pressure by Rules

-

Tensile strength

26 - 30 tons

Thickness

Sides 11/16"

Back 11/16"

Top 11/16"

Bottom 13/16"

Pitch of stays to ditto: Sides

8" x 9 1/4"

Back

8" x 9 1/4"

Top

8" x 9 1/4"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

-

Front plate at bottom: Material

Steel

Tensile strength

26 - 30 tons

Thickness

27/32"

Are stays fitted with nuts or riveted over

Nuts

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26 - 30 tons

Thickness

27/32"

Are stays fitted with nuts or riveted over

Nuts

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

28 - 32 tons

Area supported by each stay

21" x 20"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Steel

Tensile strength

26 - 30 tons

Area supported by each stay

74" x 11"

Pitch of stays at wide water space

14"

Working pressure

-

Main stays: Material

Working pressure by Rules ☒ Are the stays drilled at the outer ends ☒ No Margin stays: Diameter ☒ At turned off part, or Over threads 1.7/8" corners

No. of threads per inch 9 Area supported by each stay 93" margin Working pressure by Rules 8 w.g. No. of threads per inch 9

Tubes: Material S.D. Steel External diameter Plain 3" Thickness 5/8" - 5/16" Manhole compensation: Size of opening

Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules

end plate 16" x 12" Section of compensating ring flanged in end 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

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 Nil 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

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

Rules Pressure to which the safety valves are adjusted Hydraulic test pressure

tubes forgings and castings and after assembly in place Are drain cocks

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

The foregoing is a correct description,
CAMELL LAIRD & CO. LIMITED
Director & Engineering Manager

Dates of Survey: During progress of work in shops - 1942. Mar. 26, May 28, 29, 30, July 8, 27, Aug. 24.
During erection on board vessel - Sept. 8, 18, 29, Oct. 12, 29, Nov. 13, Dec. 3, 28, Jan. 6, 14, Feb. 11, Mar. 5, 16, Apr. 13, 26, Sept. 10
Total No. of visits 30

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 built under Special Survey to approved plans in accordance with the Society's Rules. Materials and workmanship are good. They are intended for "B" Class standard vessels.

One of these three Boilers, marked has been fitted as an AUXILIARY BOILER on board the S/S "EMPIRE LADY" Shipbuilding Corp (Tyne Branch). Yard No 8. The SV's were adjusted to 220 lbs. and the boilers tested under working conditions with satisfactory results.

No 2609
LLOYD'S TEST
380 LBS
WP 220 LBS
13-8-43 R.O.B.

A Watt
Newcastle on Tyne
2nd Sept 1944.

Survey Fee N.B. £ 36 : 13 : 0 When applied for, 30 Sept 1943
Travelling Expenses (if any) £ : : When received, 19

(Signed) H. Sutherst
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute LIVERPOOL 5th Oct. 1943.

Assigned Transmit to London

TUES. 19 SEP 1944
see minute on JERpt.