

REPORT ON BOILERS.

Std. No. 33637

Hull No. 100876

Received at London Office

27 NOV 1942

Date of writing Report

19

When handed in at Local Office

24/11/1942

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at
Reg. Book.

Date, First Survey

17th April 1941

Last Survey

19th Nov.

19 42

"EMPIRE BARDOLPH."

(Number of Visits 12.)

Gross 7017

Tons Net 4758

Built at Sunderland. By whom built Short Bros Ltd.

Yard No. 474

When built 1942

Engines made at Wallsend

By whom made N.E. Marine Eng Co (1938) Ltd

Engine No. 3031

When made 1942

Boilers made at Wallsend

By whom made Wallsend Slipway & Cold

Boiler No. 396B

When made 1942

Nominal Horse Power

Owners Ministry of War Transport

Port belonging to

Sunderland

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colvilles Ltd.

(Letter for Record S)

Total Heating Surface of Boilers

5452 sq. ft.

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

2 S.B.

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

10.8.42

No. of Certificate

994.

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

67.5 sq. ft.

No. and Description of safety valves to each boiler

1 Double

Area of each set of valves per boiler

{ per Rule 14.9

{ as fitted 16.58.

Pressure to which they are adjusted

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

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Largest internal dia. of boilers

15'-11⁵/₁₆"

Length

12'-4¹/₂"

Shell plates: Material

S

Tensile strength

29-33

Thickness

1⁷/₃₂"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

{ end DR

{ inter. ✓

long. seams

T.R. D.B.S.

Diameter of rivet holes in

{ circ. seams 1⁹/₁₆"

{ long. seams

Pitch of rivets

4.108

10³/₁₆"

Percentage of strength of circ. end seams

{ plate 62.

{ rivets 48.6

Percentage of strength of circ. intermediate seam

{ plate 85.5

{ rivets 86

Percentage of strength of longitudinal joint

{ plate 85.5

{ rivets 86

Thickness of butt straps

{ outer 1³/₁₆"{ inner 1⁵/₁₆"

No. and Description of Furnaces in each Boiler

3 c.f.

Material

Steel

Tensile strength

26-30

Smallest outside diameter

3'-11¹/₄"

Length of plain part

{ top

{ bottom

Thickness of plates

{ crown 4⁷/₁₆"{ bottom 4⁷/₁₆"

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

1¹/₂"

Pitch of stays

23" x 30" 1³/₁₆"

How are stays secured

Double nuts

Tube plates: Material

{ front Steel

{ back Steel

Tensile strength

26-30

Thickness

1⁵/₁₆"7¹/₈"

Mean pitch of stay tubes in nests

8.87"

Pitch across wide water spaces

14¹/₄" x 14¹/₈"

Girders to combustion chamber tops: Material

Steel

Tensile strength

29-33.

Depth and thickness of girder

at centre

11¹/₂" x 1" dble.

Length as per Rule

46¹/₂"

Distance apart

8¹/₂"

No. and pitch of stays

in each

3 @ 11¹/₈"

Combustion chamber plates: Material

Steel

Tensile strength

26-30

Thickness: Sides

2⁵/₁₆" x 5¹/₁₆"

Back

2⁵/₁₆"

Top

3¹/₂" x 5¹/₁₆"

Bottom

2⁹/₁₆"

Pitch of stays to ditto: Sides

11¹/₈" x 8⁷/₈"

Back

10¹/₂" x 7³/₄"

Top

11¹/₈" x 8¹/₂"

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

3¹/₃₂"

Pitch of stays at wide water space

15¹/₈" x 14¹/₂"

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 3¹/₂"

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

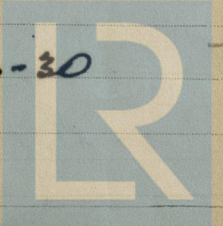
26-30

Diameter

{ At turned off part, or Over threads 1³/₄. 1⁷/₈. 2"

No. of threads per inch

9.



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Lloyd's Register
Foundation

Are the stays drilled at the outer ends no. Margin stays: Diameter { At turned off part, 2 1/8" or Over threads

No. of threads per inch 9.

Tubes: Material S.D. Steel External diameter { Plain 3" Stay 3" Thickness { 8 L.S.G. No. of threads per inch 9

Pitch of tubes 5 1/8 x 4 1/8, 4 3/4 x 4 1/8 + 4 7/8 x 4 1/8 Manhole compensation: Size of opening in shell plate none. Section of compensating ring End plate 4 7/8 x 3 1/2 No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends 4 7/8 Depth of flange if manhole flanged 3 1/2 Steam Dome: Material none

Tensile strength 47 1/2 Thickness of shell 1 1/2 Description of longitudinal joint butt

Diameter of rivet holes 1 1/2 Pitch of rivets 1 1/2 Percentage of strength of joint { Plate 100 Rivets 100

Internal diameter 1 1/2 Thickness of crown 1 1/2 No. and diameter of stays 1 1/2 Inner radius of crown 1 1/2

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 1 1/2

Type of Superheater N.E. MARINE. Smoke tube Manufacturers of { Tubes Talbot Stead Steel forgings Appleby Frodingham Steel Co. Steel castings Appleby Frodingham Steel Co.

Number of elements 116 Material of tubes S.D. Steel Internal diameter and thickness of tubes 17 1/4 2 1/2 thick

Material of headers 8. Forged Steel Tensile strength 26-30 Thickness 1 1/2 Can the superheater be shut off and the boiler be worked separately yes

Area of each safety valve 3.14 Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes

Pressure to which the safety valves are adjusted 220 lbs. Are the safety valves fitted with easing gear yes

tubes 1500 lbs. forgings and castings 660 lbs and after assembly in place 440 lbs Hydraulic test pressure: 440 lbs 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

FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED The foregoing is a correct description, T. McPherson Manufacturer.

Dates of Survey { During progress of work in shops - - 1941 Apr 17, Sep 16-26, Dec 31, Mar 20, 1942 May 5, 27, June 12, July 8, 14, 16, Nov 19. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) yes

while building { During erection on board vessel - - - Total No. of visits 11

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These main boilers & superheater have been made under Special Survey in accordance with the approved plan. The requirements of the Rules & the Specification. The materials & workmanship are good & the boilers proved sound & tight under hydraulic test.

The boilers are to be shipped to Sunderland where they will be installed by Messrs G. Clark & Co. in Short Road SS No 474.

These boilers have been securely fixed on board the vessel & safety valves adjusted to working pressure in accordance with Rule Requirements.

M. J. H. H. H.

Survey Fee +25% £ 38 : 6 : 0 When applied for, 126 NOV 1942

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

Engineer Surveyor Lloyd's Register of Shipping.

Committee's Minute

WED. 31 MAR 1943

Assigned

See Mtd. J.E. 33637