

Rpt. 5a.

# REPORT ON BOILERS.

Std. No. 33655

Que No. 100921

14 MAY 1943

18 DEC 1942

2 APR 1943

Received at London Office

Date of writing Report

19

When handed in at Local Office

14/12/1942

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at  
Reg. Book.

Date, First Survey

6<sup>th</sup> July

Last Survey

10<sup>th</sup> Dec

1942

on the

SS "EMPIRE RUPERT"

(Number of Visits

12

Gross

Tons

Net

388

Yard No. 887 When built

Built at

Goole

By whom built

Goole S.B. Co Ltd

Engines made at

Wigan

By whom made

Walker Bros

Engine No. 43291

When made

1942

Boilers made at

Wallaseid.

By whom made

Ch. E. Marine Eng Co (1938) Ltd

Boiler No. 3045

When made

1942

Nominal Horse Power

Owners

Port belonging to

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

Manufacturers of Steel Colvilles Ltd &amp; Steel Co of Scotland Ltd.

(Letter for Record S.

Total Heating Surface of Boilers

3020

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

1 S.B.

Working Pressure

215

Tested by hydraulic pressure to

373

Date of test

19.11.42

No. of Certificate

1018

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

16.4

No. and Description of safety valves to each boiler

1 Double

3 3/4"

Area of each set of valves per boiler

as fitted

22.08

Pressure to which they are adjusted

215 lb/sq in

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

23 3/4"

Is oil fuel carried in the double bottom under boilers

No DB

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

16'-8 1/16"

Length

11'-0"

Shell plates: Material

S.

Tensile strength

30-34

Thickness

1 1/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end DR

long. seams

T.R. D.B.S.

Diameter of rivet holes in

circ. seams

1 1/32"

long. seams

1 1/32"

Pitch of rivets

4 3/8"

inter.

10 3/8"

Percentage of strength of circ. end seams

plate

65

rivets

42.1

Percentage of strength of circ. intermediate seam

plate

plate

84.89

rivets

85.2

Percentage of strength of longitudinal joint

combined

86.84

Thickness of butt straps

outer

1 3/16"

inner

1 9/16"

No. and Description of Furnaces in each Boiler

3 cf.

Material

Steel

Tensile strength

26-30

Smallest outside diameter

4'-3 9/16"

Length of plain part

top

bottom

Thickness of plates

crown

2 5/32"

bottom

3/32"

Description of longitudinal joint

weld

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

End plates in steam space: Material

S

Tensile strength

26-30

Thickness

1 9/16"

Pitch of stays

1'-10" x 1'-6 3/8"

How are stays secured

Double nuts &amp; 12 1/4 x 7/8 washers.

Tube plates: Material

front

back

Steel

Tensile strength

26-30

Thickness

1 9/16"

7/8"

Mean pitch of stay tubes in nests

10 7/8"

Pitch across wide water spaces

1'-1 3/4" x 8 1/2"

Girders to combustion chamber tops: Material

S

Tensile strength

29-33

Depth and thickness of girder

at centre

9 1/2" x 7/8 Dble.

Length as per Rule

2'-9 3/32"

Distance apart

9 1/2"

No. and pitch of stays

in each

3 @ 8"

Combustion chamber plates: Material

S.

Tensile strength

26-30

Thickness: Sides

2 3/32"

Back

2 3/32"

Top

2 3/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

9 1/2" x 8"

Back

8 3/4" x 8 3/4"

Top

9 1/2" x 8"

Are stays fitted with nuts or riveted over

nuts

Front plate at bottom: Material

S.

Tensile strength

26-30

Thickness

1 9/16"

Lower back plate: Material

S

Tensile strength

26-30

Thickness

7/8"

Pitch of stays at wide water space

1'-1 3/4" x 8 3/4"

Are stays fitted with nuts or riveted over

nuts

Main stays: Material

S.

Tensile strength

28-32

Diameter

At body of stay,

or

Over threads

3 1/2"

No. of threads per inch

6

Screw stays: Material

S

Tensile strength

26-30

Diameter

At turned off part,

or

Over threads

1 3/4"

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 <sup>At turned off part.</sup> 2 1/8 or Over threads 2 1/8

No. of threads per inch 9

Tubes: Material SD. Steel External diameter <sup>Plain</sup> 3" <sup>Stay</sup> Thickness 3/16" 3/8" 7/16" No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 1/4" Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 29" x 1 1/32" No. of rivets and diameter of rivet holes 16 x 1 1/8 Dia

Outer row rivet pitch at ends 10 1/2" Depth of flange if manhole flanged 1 1/2" 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 <sup>Plate</sup> <sup>Rivets</sup>

Internal diameter Thickness of crown No. and diameter of stays

How connected to shell Inner radius of crown

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 none Manufacturers of <sup>Tubes</sup> <sup>Steel forgings</sup> <sup>Steel castings</sup>

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

**THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.**  
*The foregoing is a correct description,*  
*Harry Hunter* **DIRECTOR** Manufacturer.

1942  
 Dates of Survey <sup>During progress of work in shops - -</sup> July 6. 21. 28. Aug 11. 12. 21. 31. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) yes  
<sup>while building</sup> <sup>During erection on board vessel - - -</sup> Sep. 4. 17. Nov. 4. 19. Dec. 10.  
 Total No. of visits 13

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.) This boiler has been constructed in accordance with the approved plan & the requirements of the Rules & Specification  
The Materials & Workmanship are good & the boiler proved satisfactory under hydraulic test.  
Mountings & uptakes have been fitted, boiler seating completed & boiler fitted on board & secured & permanently stayed  
The vessel is to be towed to Sunderland where the installation of the Machinery will be completed.

Safety valves adjusted & accumulation test carried out  
J. Griev  
27/3/43

3/5 Survey Fee + 25% £ 25 : 3 : 4. When applied for, 19  
 Travelling Expenses (if any) £ : : When received, 19

**196 DEC 1942**

*R. Moffitt*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 28 MAY 1943  
 Assigned See Hul 52008