

## REPORT ON BOILERS.

No. 101831

31 JAN 1944

Received at London Office

Date of writing Report 21/1/44 19

When handed in at Local Office 21/1/44 19

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

Wallsend.

Date, First Survey

15<sup>th</sup> January 1943

Last Survey

17<sup>th</sup> January 1944

1944

(Number of visits 10)

Gross  
Tons  
Net

23469 on the M.V. "EMPIRE. INVENTOR"

Built at Sunderland

By whom built

Sir J. Laing &amp; Son Ltd

Yard No. 749

When built 1944

Engines made at

Wallsend

By whom made

N.E. Marine Eng Co (1938) Ltd

Engine No. 3034

When made 1944

Boilers made at

"

By whom made

"

Boiler No. 3045

When made 1944

Nominal Horse Power

Owners

Ministry of War Transport

Port belonging to

Sunderland

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

Manufacturers of Steel

Steel Co of Scotland Ltd

(Letter for Record S)

Total Heating Surface of Boilers

4076 sq ft.

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

2 DB

Working Pressure

180

Tested by hydraulic pressure to

320

Date of test

22.6.43

No. of Certificate

1048 Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

✓

No. and Description of safety valves to each boiler

1 Double

Area of each set of valves per boiler

{ per Rule 13.2  
as fitted 14.14

Pressure to which they are adjusted

185

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

yes

Largest internal dia. of boilers

12-9 1/16

Length

11-6"

Shell plates: Material

S

Tensile strength

29-33

Thickness

1 1/2"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

inter.

long. seams

T.R. DBS.

Diameter of rivet holes in

{ circ. seams 1 1/8"  
long. seams

Pitch of rivets

3 1/4"

7 1/16"

Percentage of strength of circ. end seams

{ plate 65.3.  
rivets 47.0

Percentage of strength of circ. intermediate seam

{ plate  
rivets

Percentage of strength of longitudinal joint

{ plate 85.6  
rivets 91.4

combined 89.5

Thickness of butt straps

{ outer 13/16"  
inner 1 1/16"

No. and Description of Furnaces in each Boiler

3 cf.

Material

S

Tensile strength

26-30

Smallest outside diameter

2'-8 1/2"

Length of plain part

{ top  
bottom

Thickness of plates

{ crown 7/16"  
bottom

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 1/4"

Pitch of stays 18"x19"

How are stays secured

Double nuts

Tube plates: Material

{ front S  
back

Tensile strength

26-30

Thickness

29/32"

27/32"

Mean pitch of stay tubes in nests

10 1/4"

Pitch across wide water spaces

14 1/2" x 8"

Girders to combustion chamber tops: Material

S.

Tensile strength

29.33

Depth and thickness of girder

at centre

7 1/2" x 2 5/32" Dblt

Length as per Rule

2'-6"

Distance apart

9

No. and pitch of stays

in each

2 at 9"

Combustion chamber plates: Material

S

Tensile strength

26-30

Thickness: Sides

2 1/32"

Back

2 3/32"

Top

2 1/32"

Bottom

2 1/32"

Pitch of stays to ditto: Sides

9x9"

Back

10x10"

Top

9x9"

Are stays fitted with nuts or riveted over

nuts

Front plate at bottom: Material

S

Tensile strength

26-30

Thickness

29/32"

Lower back plate: Material

S

Tensile strength

26-30

Thickness

7/8"

Pitch of stays at wide water space

14 1/2" x 10"

Are stays fitted with nuts or riveted over

nuts

Main stays: Material

S

Tensile strength

28-32

Diameter

{ At body of stay, 3"

{ Over threads 3 1/4"

No. of threads per inch

6

Screw stays: Material

S

Tensile strength

26-30

Diameter

{ At turned off part, 1 5/8"

{ Over threads 1 3/4"

No. of threads per inch

9

003479-003486-0143

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Are the stays drilled at the outer ends no. ✓ Margin stays: Diameter { At turned off part, ✓  
or  
Over threads 2 ✓  
No. of threads per inch 9 ✓  
Tubes: Material SD Steel External diameter { Plain 2 3/4 ✓ Thickness { 9 W 9 ✓ No. of threads per inch 9 ✓  
Stay 2 3/4 ✓ 3/8 x 9/16 ✓  
Pitch of tubes 4" x 4" ✓ Manhole compensation: Size of opening in  
shell plate none Section of compensating ring No. of rivets and diameter of rivet holes  
Outer row rivet pitch at ends Depth of flange if manhole flanged 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 none 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 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 LONDON LLOYD'S REGISTER OF SHIPPING CO. (1936) LTD.

John Neill

Manufacturer.

DIRECTOR.

Dates of Survey { During progress of  
work in shops - -  
while building { During erection on  
board vessel - - -

Are the approved plans of boiler and superheater forwarded herewith  
(If not state date of approval.)

Total No. of visits 10 approx.

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These donkey boilers have been constructed & installed 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 & satisfactory under steam

Survey Fee ... .. £ See Mech Report When applied for, 19  
Travelling Expenses (if any) £ When received, 19

R. C. Hoffitt  
Engineer Surveyor Lloyd's Register of Shipping.

Committee's Minute

FRI. 25 FEB 1944

Assigned

See fe machy st. No 33876



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