

REPORT ON BOILERS.

No. 101648

E-3 NOV 1943

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Received at London Office 15 NOV 1943

Date of writing Report

19

When handed in at Local Office

19

Port of

NEWCASTLE-ON-TYNE

No. in Reg. Book.

Survey held at

Walleend

Date, First Survey

15th June 1942

Last Survey

5th October 1943

1943

(Number of Visits

61

Gross 7024

Tons

Net 4734

37252 on the SS "EMPIRE FLAG"

Built at Walker

By whom built

Armstrong Whitworth & Co Ltd

Yard No. 4

When built 1943

Engines made at

Walleend

By whom made

V.E. Marine Eng Co (1938) Ltd

Engine No. 3032

When made 1943

Boilers made at

"

By whom made

"

Boiler No. 3032

When made 1943

Nominal Horse Power

542

Owners

Ministry of War Transport

Port belonging to

Newcastle

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Co of Scotland Ltd & Colvill's Ltd.

(Letter for Record S.

Total Heating Surface of Boilers

5558

17

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

2 SB

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

31.12.42

No. of Certificate

1027

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

67.5

No. and Description of safety valves to each boiler

1 Double

Area of each set of valves per boiler

per Rule

14.9

14.78

Pressure to which they are adjusted

225

Are they fitted with easing gear

yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

yes

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

yes

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

15'-11 7/16"

Length

12'-4 1/2"

Shell plates: Material

S

Tensile strength

29-33

Thickness

1 7/32"

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 9/16"

Pitch of rivets

4-1

10 13/16"

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

combined

88.2

Thickness of butt straps

outer

1 3/16"

inner

1 9/16"

No. and Description of Furnaces in each Boiler

3 cf.

Material

S

Tensile strength

26-30

Smallest outside diameter

3'-11 1/4"

Length of plain part

top

bottom

yes

Thickness of plates

crown

4 7/16"

bottom

1 6/16"

Description of longitudinal joint

weld

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

yes

End plates in steam space: Material

S

Tensile strength

26-30

Thickness

1 1/2"

Pitch of stays

23'-20 13/16"

How are stays secured

Double nuts

Tube plates: Material

front

back

S

Tensile strength

26-30

Thickness

1 5/16"

7/8"

Mean pitch of stay tubes in nests

8.87

Pitch across wide water spaces

14 1/4" x 4 1/8"

Girders to combustion chamber tops: Material

S

Tensile strength

29-35

Depth and thickness of girder

at centre

11 1/2" x 1" dble

Length as per Rule

46 1/2"

Distance apart

8 1/2"

No. and pitch of stays

in each

32 11 1/8"

Combustion chamber plates: Material

S

Tensile strength

26-30

Thickness: Sides

2 5/32"

5 1/64"

Back

2 5/32"

Top

2 5/32"

5 1/64"

Bottom

2 5/32"

Pitch of stays to ditto: Sides

11 1/8" x 8 7/8"

Back

10 1/2" x 7 3/4"

Top

11 1/8" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Front plate at bottom: Material

S

Tensile strength

26-30

Thickness

1 5/16"

Lower back plate: Material

S

Tensile strength

26-30

Thickness

3/16"

Pitch of stays at wide water space

15 1/8" x 14 1/2"

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"

1 7/8"

2"

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, or Over threads 2 1/8"

No. of threads per inch 9

Tubes: Material SD Steel External diameter { Plain 3" Stay 3" Thickness { 8 W.G. 3/8" & 7/16" No. of threads per inch 9

Pitch of tubes 5 3/8" 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 _____ No. of rivets and diameter of rivet holes _____

Outer row rivet pitch at ends _____ Depth of flange if manhole flanged _____ 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 smoke tube Manufacturers of { Tubes Tubes Ltd Steel forgings Appleby Frosling Law Steel Co Steel castings _____

Number of elements 126 Material of tubes SD Steel Internal diameter and thickness of tubes 17 1/4" 2 1/4"

Material of headers Forged Steel Tensile strength 26-30 Thickness 7/8" Can the superheater be shut off and the boiler be worked separately yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes

Area of each safety valve 3.14 Are the safety valves fitted with easing gear yes

Pressure to which the safety valves are adjusted 225 Hydraulic test pressure: tubes 1500 forgings and castings 660 and after assembly in place 440 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,

John Neill

Manufacturer.

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

See Machinery Rpt.

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

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 & superheaters have been constructed under Special Survey in accordance with the Requirements of the Rules, the Approved Plan & the Specification

The materials & workmanship are good & the boilers proved sound & tight under hydraulic test & satisfactory under steam

Survey Fee ... £ See Machinery Rpt.

When applied for, 19 _____

Travelling Expenses (if any) £ _____

When received, 19 _____

Robert J. Pitt
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUES. 30 NOV 1943

Assigned

See fe. machy rpt.



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