

REPORT ON BOILERS.

No. 77617

Received at London Office TUE 4 MAR 1924

Date of writing Report 1924 When handed in at Local Office 1/3/1924 Port of NEWCASTLE-ON-TYNE.

No. in Survey held at Newcastle Date, First Survey 24 April 1923 Last Survey 22 Feb 1924

40371 on the Steel S. OVERSTONE (Number of Visits) Gross 5205 Tons Net 3247

Master Built at Newcastle By whom built Northumberland Sh. Co. Ltd. Yard No. 384 When built 1924

Engines made at Newcastle By whom made North Eastern Marine Eng. Co. Ltd. Engine No. 2545 When made 1924

Boilers made at Newcastle By whom made North Eastern Marine Eng. Co. Ltd. Boiler No. 2545 When made 1924

Nominal Horse Power 381 Owners (C. Radcliffe & Co. Imps.) Port belonging to Cardiff.

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Spencer & Son Ltd. (Letter for Record S.)

Total Heating Surface of Boilers 6330 sq ft Is forced draught fitted No. Coal or Oil fired Coal

No. and Description of Boilers 3 Single-End Cylindrical Working Pressure 180 lbs

Tested by hydraulic pressure to 320 lbs Date of test 5.12.23 No. of Certificate 9797 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 50 sq ft No. and Description of safety valves to each boiler Two Spring Loaded

Area of each set of valves per boiler per Rule 13.50 sq ft as fitted 14.12 sq ft Pressure to which they are adjusted 18.5 lbs 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 boiler uptakes and bunkers on woodwork 30" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 33 1/2" Is the bottom of the boiler insulated No

Largest internal dia. of boilers 14'-3 1/16" Length 11'-0" Shell plates: Material Steel Tensile strength 28 1/2 - 32 1/2

Thickness 1 7/32" Are the shell plates welded or flanged No Description of riveting: circ. seams end Double inter.

Long. seams Double D.S. Diameter of rivet holes in circ. seams 1 7/16" Pitch of rivets 3 3/8" 8 9/16"

Percentage of strength of circ. end seams plate 61 rivets 43 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 85.7 rivets 89.1 combined 89.3 Working pressure of shell by Rules 181 lbs

Thickness of butt straps outer 7/8" inner 1" No. and Description of Furnaces in each Boiler Three Deighton 3cf

Material Steel Tensile strength 26/30 Tons Smallest outside diameter 39 3/4"

Length of plain part top bottom Thickness of plates crown bottom 1/2" Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 181 lbs

End plates in steam space: Material Steel Tensile strength 26/30 Tons Thickness 1 1/32" Pitch of stays 20 1/2" x 25"

How are stays secured Double nuts & washers Working pressure by Rules 181 lbs 15 1/16"

Tube plates: Material front Steel back Steel Tensile strength 26/30 Tons Thickness 3/4"

Lean pitch of stay tubes in nests 98" Pitch across wide water spaces 14 1/2" Working pressure front 182 lbs back 241 lbs

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 Tons Depth and thickness of girder

at centre 9" x 1 1/2" Length as per Rule 32" Distance apart 10 3/4" No. and pitch of stays

each Two 9" Working pressure by Rules 182 Combustion chamber plates: Material Steel Thickness: Sides 23 1/32" Back 23 1/32" Top 23 1/32" Bottom 15 1/16"

Pitch of stays to ditto: Sides 10 1/2" x 9" Back 10 1/2" x 9 1/2" Top 10 3/4" x 9" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 181 lbs Front plate at bottom: Material Steel Tensile strength 26/30 Tons Thickness 15 1/16" 27 1/32"

Lower back plate: Material Steel Tensile strength 26/30 Tons Thickness 27 1/32"

Pitch of stays at wide water space 14 1/2" Are stays fitted with nuts or riveted over nuts

Working Pressure 197 lbs Main stays: Material Steel Tensile strength 28/32 Tons

diameter At body of stay 3 1/4" No. of threads per inch Six Area supported by each stay 512.5 sq in

Working pressure by Rules 181 lbs Screw stays: Material Steel Tensile strength 26/30 Tons

diameter At turned off part 1 3/4" No. of threads per inch Nine Area supported by each stay 99.75 sq in



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Working pressure by Rules 182 lbs 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 *nine* ✓ Area supported by each stay *137.750* Working pressure by Rules 180 lbs
 Tubes: Material *Iron* ✓ External diameter { Plain *3 1/4*" ✓ Stay *3 1/4*" } Thickness { *No. 8 W.G.* ✓ *7/16*" *7/4*" ✓ } No. of threads per inch *nine* ✓
 Pitch of tubes *4 7/8*" x *4 1/2*" ✓ Working pressure by Rules 198 lbs Manhole compensation: Size of opening in shell plate *16*" x *12*" ✓ Section of compensating ring *Flanged* ✓ No. of rivets and diameter of rivet holes *4 1/4*" *Top* *3 1/4*" *Bottom* ✓
 Outer row rivet pitch at ends _____ Depth of flange if manhole flanged _____ Steam Dome: Material *Iron* ✓
 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 _____ Working pressure by Rules _____ Thickness of crown _____ No. and diameter of 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 *none* Manufacturers of { Tubes _____ 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 _____ Working pressure as per Rules _____ Pressure to which the safety valves are adjusted _____ Hydraulic test pressure: tubes _____, 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 23 inclusive for boilers been complied with _____

The foregoing is a correct description,
 THE NORTH EASTERN MARINE ENGINEERING CO. LTD. *J. G. Johnson* Manufacturer.

Dates of Survey { During progress of work in shops - - } *See Vichy Report* Are the approved plans of boiler and superheater forwarded herewith _____
 while building { During erection on board vessel - - - } _____
 Total No. of visits _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These Boilers were constructed under Special Survey. The workmanship & materials are sound & good. They were subjected to satisfactory hydraulic pressure tests and the safety valves were adjusted under steam to the pressure above stated. They were efficiently installed on the Steamer "Overstone" and, in my opinion, are eligible for a classed vessel.

Survey Fee £ : : When applied for, 192
 Travelling Expenses (if any) £ : : When received, 192

R. Lee Annes
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRIMAR +71924* *FRIMAR 141924*

Assigned _____

