

REPORT ON BOILERS.

No. 11910

Received at London Office

30 MAR 1937

Date of writing Report

192

When handed in at Local Office

25-3-1937

Port of Belfast

No. in Survey held at

Belfast

Date, First Survey 3rd Aug. 1936 Last Survey 19-3-37. 192

of opening Reg. Book.

on the

M.V. BOARDALE

(Number of Visits 31)

Gross 8334

Net 4973

Master Built at Glasgow. By whom built Harland & Wolff Ltd Yard No. 9716. When built 1937

Engines made at Govan By whom made Harland & Wolff Ltd. Engine No. 9716. When made 1937

Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 9714 When made 1937

Nominal Horse Power Owners The Admiralty Port belonging to London.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles Ltd. (Letter for Record S)

Total Heating Surface of Boilers 1495^{ft} Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers One SE. cylindrical Working Pressure 150 lbs

Tested by hydraulic pressure to 275^{lb} Date of test 19-3-37 No. of Certificate 1029. Can each boiler be worked separately Yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler One 2" double spring High lift (Opp.)

Area of each set of valves per boiler (per Rule 11-325) Pressure to which they are adjusted 150 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 boilers or uptakes and bunkers or woodwork Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 11'-4^{3/32}" Length 11'-7" Shell plates: Material S. Tensile strength 29/33 tonsThickness 5^{1/4}" Are the shell plates welded or flanged No Description of riveting: circ. seams end doubleLong. seams R.P.D.B. Diameter of rivet holes in (circ. seams 1" long. seams 1^{1/8}" Pitch of rivets 2.993"

Percentage of strength of circ. end seams (plate 66.77 rivets 48.42 Percentage of strength of circ. intermediate seam (plate rivets)

Percentage of strength of longitudinal joint (plate 85.22 rivets 100.12 Working pressure of shell by Rules 155 lbs.

Thickness of butt straps (outer 5^{1/8}" inner 3^{1/4}" No. and Description of Furnaces in each Boiler Two DightonMaterial S. Tensile strength 26/30 tons Smallest outside diameter 35^{7/8}"Length of plain part (top bottom) Thickness of plates (crown 7^{1/16}" bottom 7^{1/16}" Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 174 lbs

End plates in steam space: Material S. Tensile strength 26/30 tons Thickness 3^{1/32}" Pitch of stays 16"x16"

How are stays secured Double nuts Working pressure by Rules 168 lbs

Tube plates: Material (front S back S) Tensile strength 26/30 Thickness 3^{1/32}"Mean pitch of stay tubes in nests 9.375" Pitch across wide water spaces 13^{1/2}" Working pressure (front 167.5 back 269)

Girders to combustion chamber tops: Material S. Tensile strength 28/32 tons Depth and thickness of girder

At centre 8^{3/4}" x 13^{1/4}" Length as per Rule 34^{1/2}" Distance apart 11^{1/2}" No. and pitch of stays

At each 3 @ 9" Working pressure by Rules 157.3 lbs Combustion chamber plates: Material S

Tensile strength 26/30 Thickness: Sides 1^{1/16}" Back 1^{1/16}" Top 1^{1/16}" Bottom 3^{1/4}"Pitch of stays to ditto: Sides 9x9" Back 8^{3/8}" x 8^{3/8}" Top 9x11^{1/2}" Are stays fitted with nuts or riveted over C.C. stays riveted over inside. All others riveted

Working pressure by Rules 155 lbs Front plate at bottom: Material S Tensile strength 26/30 tons

Thickness 3^{1/32}" Lower back plate: Material S Tensile strength 24/30 tons Thickness 3^{1/32}"Pitch of stays at wide water space 13" x 8^{3/8}" Are stays fitted with nuts or riveted over Nuts

Working Pressure 208 lbs Main stays: Material S Tensile strength 28/32 tons

Diameter (At body of stay, 2^{1/2}" No. of threads per inch 6 Area supported by each stay 240 sq"

Working pressure by Rules 184.6 lbs Screw stays: Material S Tensile strength 24/30 tons

Diameter (At turned off part, 1^{1/2}" 1^{3/8}" 1^{3/4}" No. of threads per inch 9 Area supported by each stay 81.70 sq"Lloyd's Register
Foundation

Working pressure by Rules 154.64. Are the stays drilled at the outer ends No. ✓ Margin stays: Diameter { At turned off part, 1 5/8" or Over threads

No. of threads per inch, 9. ✓ Area supported by each stay, 89.4" ✓ Working pressure by Rules 170.66

Tubes: Material W.I. ✓ External diameter { Plain 2 1/2" ✓ Thickness { 104.56 1/4" 1/32" 5/16" ✓ No. of threads per inch 9. ✓

Pitch of tubes 3 3/4" x 3 3/4" ✓ Working pressure by Rules 166.54 ✓ Manhole compensation: Size of opening

shell plate 12" x 16" ✓ Section of compensating ring 2'8" x 3'0" x 3/4" ✓ No. of rivets and diameter of rivet holes 28 - 1 3/16" ✓

Outer row rivet pitch at ends 9" ✓ 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 Working pressure by Rules Thickness of crown No. and diameter

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 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 22 inclusive for boilers been complied with

HARLAND AND WOLFF, LIMITED

The foregoing is a correct description,

A. S. Marshall Assistant Secretary

1936
 Dates of Survey { During progress of work in shops - - - 3, 10, 20, 25, 25 Sept 1, 3, 8, 14, 15, 16, 17
 while building { During erection on board vessel - - - 18, 20, 24, 29 Dec 1, 7, 14, 16, 21, 23
 Are the approved plans of boiler and superheater forwarded herewith Yes 20-5
 (If not state date of approval.)
 Total No. of visits 31

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

This boiler has been constructed under special survey and to an approved design. The workmanship & materials are good. It has been tested by hydraulic pressure in accordance with the Rules and is eligible in my opinion for use on a vessel classed with the Society. It is intended for a vessel building at Govan.

This boiler has been efficiently secured in position in the M.V. "BOARDALE"; examined under working conditions & found satisfactory.

The safety valves have been adjusted under steam and tried for accumulation with satisfactory results.

JR Dale

Survey Fee ... £ 10 : - : - When applied for, 25. 3. 1937
 Travelling Expenses (if any) £ : : : When received, 19. 4. 1937
 (per L.R. 56)

Charles Y. Hunter
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute GLASGOW 13 JUL 1937
 Assigned See Glasgow Report No. 58570