

REPORT ON BOILERS.

No. 11910

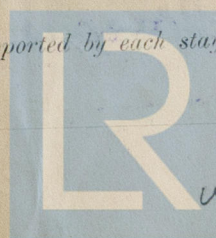
Received at London Office

80 MAR 1937

Date of writing Report 192 When handed in at Local Office 25. 3. 1937 Port of *Belfast*
 No. in Reg. Book. *Belfast* Date, First Survey *Visits included in accompanying report*
 on the *M.V. BOARDALE* Last Survey 19. 3. 37 192
 (Number of Visits) Gross 8334
 Net 4973
 Master *J.M.* 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. 9716. 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 2602 Is forced draught fitted *yes* Coal or Oil fired *exhaust gas*
 No. and Description of Boilers *One SE cylindrical with exhaust gas flue in centre* Working Pressure 150 lb
 Tested by hydraulic pressure to 275 lb Date of test 19. 3. 37 No. of Certificate 1029 Can each boiler be worked separately
 Area of Firegrate in each Boiler No. and Description of safety valves to each boiler *1-2 3/4" double opening High lift (app.)*
 Area of each set of valves per boiler *per Rule 19.7 as fitted 11.88* Pressure to which they are adjusted 150 lb 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 13-4 3/16" Length 11'6" Shell plates: Material *S* Tensile strength 29/33 tons
 Thickness 29/32" Are the shell plates welded or flanged *no* Description of riveting: circ. seams *end DR.*
 long. seams *T.R.O.B.* Diameter of rivet holes in circ. seams 1 1/16" Pitch of rivets 3.012
 Percentage of strength of circ. end seams *plate 64.5% rivets 50.6%* Percentage of strength of circ. intermediate seam *plate 85.7% rivets 92.6%*
 Percentage of strength of longitudinal joint *combined 89.9%* Working pressure of shell by Rules 152 lb
 Thickness of butt straps *outer 1 1/16" inner 1 3/16"* No. and Description of Furnaces in each Boiler *Two Dighton*
 Material *S* Tensile strength 26/30 Smallest outside diameter 2'-11 7/8"
 Length of plain part *top bottom* Thickness of plates *crowns 7/16" bottoms 7/16"* Description of longitudinal joint *Weld.*
 Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 174 lb
 End plates in steam space: Material *S* Tensile strength 26/30 tons Thickness 1 1/32" Pitch of stays 20 1/2" x 16 1/2"
 How are stays secured *Double nuts* Working pressure by Rules 165 lb
 Tube plates: Material *S* Tensile strength 26/30 tons Thickness 29/32" 13/16"
 Mean pitch of stay tubes in nests 9.8" Pitch across wide water spaces 13 3/4" Working pressure *front 163.6 lb back 247. lb*
 Girders to combustion chamber tops: Material *S* Tensile strength 28/32 tons Depth and thickness of girder
 at centre 8" x 13 1/4" Length as per Rule 30 15/32" Distance apart 11 3/4" No. and pitch of stays
 in each 30 7/4" Working pressure by Rules 159 lb Combustion chamber plates: Material *S*
 Tensile strength 26/30 tons Thickness: Sides 1 1/16" Back 23/32" Top 1 1/16" Bottom 3/4"
 Pitch of stays to ditto: Sides 7 1/4" x 10 1/2" Back 9 x 8" Top 11 3/4" x 7 1/4" Are stays fitted with nuts or riveted over *center stays riveted over, outside. All others nutted*
 Working pressure by Rules 167 lb Front plate at bottom: Material *S* Tensile strength 26/30 tons
 Thickness 29/32" Lower back plate: Material *S* Tensile strength 26/30 tons Thickness 1 5/16"
 Pitch of stays at wide water space 13" Are stays fitted with nuts or riveted over *Nuts*
 Working Pressure 289 lb Main stays: Material *S* Tensile strength 28/32 tons
 Diameter *At body of stay, or Over threads* 2 5/8" No. of threads per inch 6 Area supported by each stay 310 in.
 Working pressure by Rules 160 lb Screw stays: Material *S* Tensile strength 26/30
 Diameter *At turned off part, or Over threads* 1 1/2" 1 5/8" 2" No. of threads per inch 9 Area supported by each stay 76 in. 85.25 in.



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Working pressure by Rules 165 lb Are the stays drilled at the outer ends No. ✓ Margin stays: Diameter { At turned off part, 1 3/8" or Over threads

No. of threads per inch 9 Area supported by each stay 94 Working pressure by Rules 160 lb

Tubes: Material W.I. ✓ External diameter { Plain 2 3/4" 2 1/2" Wing. ✓ Thickness { 10 L.S.G. 1 1/2" 3/8" 1 3/4" No. of threads per inch 9

Pitch of tubes 4 x 3 7/8" 3 3/4" x 3 5/8" Working pressure by Rules 178 lb Manhole compensation: Size of opening

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

Outer row rivet pitch at ends 9" Depth of flange if manhole flanged

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 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 from the boiler

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

FOR HARLAND AND WOLFF, LIMITED

The foregoing is a correct description,

A. S. Marshall Assistant Secretary

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 Yes 20.8.37 (If not state date of approval.)

Total No. of visits

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

JR. Dale

Survey Fee ... £ 17 : 6 : When applied for, 25 3- 1937

Travelling Expenses (if any) £ : : When received, 19 4- 1937 (per hour fee)

Charles J. Hunter

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **GLASGOW 13 JUL 1937**

Assigned See Glasgow Report No. 58570



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