

## REPORT ON BOILERS.

No. 12209

Received at London Office

SEP -2 1938

Date of writing Report 10 When handed in at Local Office 1. 9. 10<sup>38</sup> Port of Belfast

No. in Survey held at Belfast Date, First Survey 29<sup>th</sup> Nov, 1937 Last Survey 12<sup>th</sup> Aug. 1938

Reg. Book. on the Sc. M.V. "BRITISH FIDELITY" (Number of Visits 20) Gross 8465 Tons Net 4906

Master Built at Glasgow By whom built Harland & Wolff Ltd Card No. 1010 When built 1938

Engines made at Govan By whom made Harland & Wolff Ltd Engine No. 10106 When made 1938

Boilers made at Belfast By whom made Harland & Wolff Ltd Boiler No. 10106 When made 1938

Nominal Horse Power Owners British Tanker Co. Ltd 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 Coal or Oil fired oil gas

No. and Description of Boilers One cylindrical with exhaust gas flue in centre Working Pressure 150 lbs.

Tested by hydraulic pressure to 275 lbs Date of test 12 Aug 38 No. of Certificate 1048 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler One 2 3/4" double opening H.L. app.

Area of each set of valves per boiler {per Rule 9.55" as fitted 11.55" 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 well clear Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating above deck 18" Is the bottom of the boiler insulated ash mats

Largest internal dia. of boilers 13-4 3/16 Length 11'6" Shell plates: Material S Tensile strength 29/32

Thickness 2 3/32 Are the shell plates welded or flanged No Description of riveting: circ. seams {end DR. inter. 3.012"

long. seams T.P. 205 Diameter of rivet holes in {circ. seams 1 1/32 long. seams 3/32 Pitch of rivets {plate 7. rivets 8.

Percentage of strength of circ. end seams {plate 65.72 rivets 48.757 Percentage of strength of circ. intermediate seam {plate rivets

Percentage of strength of longitudinal joint {plate 86.147 rivets 86.67 combined 89.4 Working pressure of shell by Rules 153.3 lbs.

Thickness of butt straps {outer 1 1/2 inner 1 1/4 No. and Description of Furnaces in each Boiler Two Dighton

Material S Tensile strength 26/30 tons Smallest outside diameter 35 7/8"

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.c. bottom Working pressure of furnace by Rules 174 lbs.

End plates in steam space: Material S Tensile strength 26/30 tons Thickness 1/32 Pitch of stays 20 1/2 x 16 1/2

How are stays secured D.N. Working pressure by Rules 165 lbs.

Tube plates: Material {front back 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 lbs back 247 lbs

Girders to combustion chamber tops: Material S Tensile strength 25/32 tons Depth and thickness of girder

at centre 8" x 13 1/4 Length as per Rule 30 5/32 Distance apart 11 3/4 No. and pitch of stays

in each 3 @ 7 1/4 Working pressure by Rules 159 lbs. 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 Sides, nuts and ends Main Others - back and ends

Working pressure by Rules 167 lbs 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 15/16

Pitch of stays at wide water space 13" x 9" Are stays fitted with nuts or riveted over Nuts

Working Pressure 289 lbs Main stays: Material S Tensile strength 25/32 tons

Diameter {At body of stay, or Over threads 2 5/8 No. of threads per inch 6 Area supported by each stay 310"

Working pressure by Rules 160 lbs Screw stays: Material S Tensile strength 26/30 tons

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" 85.25"

Working pressure by Rules 165 lb Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads 1 5/8"  
 No. of threads per inch 9 Area supported by each stay 94" Working pressure by Rules 160  
 Tubes: Material W.I. External diameter { Plain 2 3/4 C. 2 1/2 W. Thickness { 10 LSC. 1/4 3/8 1/2 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 in shell plate 16 1/2" x 12 1/2" Section of compensating ring 2' 8" x 3' 0" x 1 3/4" No. of rivets and diameter of rivet holes 28 - 1 7/32"  
 Outer row rivet pitch at ends 9" Depth of flange if manhole flanged McNeil's door 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 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 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

FOR HARLAND AND WOLFF, LIMITED.

The foregoing is a correct description,

*W. Marshall* Manufacturer.  
 Secretary

Dates of Survey { During progress of work in shops - - 1937 1938  
 while building { During erection on board vessel - - - -  
 10.2.37 Dec 6.14 Feb 22 Mar 18  
 Apr 7.15 May 6.10 17 20 June 7.15 20 23 27  
 July 7. 28. 29 Aug 12  
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 Total No. of visits 20

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. Belfast N° 11987.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under Special survey, 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 use on a vessel building at Govan.

This boiler has been satisfactorily fitted on board, tried under full working conditions and found sound and tight. The safety valves have been adjusted under steam to 150 lbs. per sq. inch and is eligible in my opinion for the record + S.B. W.P. 150 lbs.

Survey Fee ... £ 17: 6 : When applied for, 1<sup>st</sup> Sept 1938

Travelling Expenses (if any) £ : : When received, 3/12 1938  
APR 5/12

*G. E. Murdoch*  
*Charles J. Hunter*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 25 OCT 1938

Assigned See No 60320



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