

# REPORT ON BOILERS

No. 11808

8 SEP 1936

Received at London Office

Date of writing Report

When handed in at Local Office 1<sup>st</sup> Sept 1936 Port of Belfast

No. in Reg. Book

Survey held at Belfast

Date, First Survey 12<sup>th</sup> Feb, 1936 Last Survey 21 Aug 1936

on the M.V. "BRITISH POWER"

(Number of Visits 21) Tons Gross 8334 Net 4973

Master \_\_\_\_\_ Built at Gouan By whom built Harland & Wolff Yard No. 968G When built 1936  
 Engines made at Glasgow By whom made Harland & Wolff, Ltd. Engine No. 968G When made 1936  
 Boilers made at Belfast By whom made Harland & Wolff, Ltd. Boiler No. 968G When made 1936  
 Nominal Horse Power \_\_\_\_\_ Owners British Tanker, Co. Ltd. Port belonging to London

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colville L<sup>t</sup>

Total Heating Surface of Boilers 2602 (Letter for Record S)

No. and Description of Boilers One S.E. cylindrical with exhaust gas flue Is forced draught fitted Yes Coal or Oil fired or exh gas

Tested by hydraulic pressure to 275 lbs Date of test 31-7-36 No. of Certificate 1021 Working Pressure 150 lbs

Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler 1-2 3/4" double opening High lift (app<sup>t</sup>) Can each boiler be worked separately Yes

Area of each set of valves per boiler per Rule 19.71 as fitted 11.88 Pressure to which they are adjusted X 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 1'-6" Is oil fuel carried in the Cross Bunkers double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 1'-6" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 13'-4 3/16" Length 11'-6" Shell plates: Material Steel Tensile strength 29/33 tons

Thickness 29/32 Are the shell plates welded or flanged No Description of riveting: circ. seams end double

long. seams treble Diameter of rivet holes in circ. seams 1 1/16 inter. - 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 - rivets 7%

Percentage of strength of longitudinal joint plate 85.7% rivets 92.6% combined 89.9% Working pressure of shell by Rules 152 lbs

Thickness of butt straps outer 1 1/16 inner 1 3/16 No. and Description of Furnaces in each Boiler 2 Dighton

Material Steel Tensile strength 26/30 tons Smallest outside diameter 2'-11 7/8"

Length of plain part top - bottom - Thickness of plates crunch 7/16 bottom 7/16 Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.e. bottom ✓ Working pressure of furnace by Rules 159 lbs

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

How are stays secured Double nuts Working pressure by Rules 165 lbs

Tube plates: Material Steel Tensile strength 26/30 tons Thickness 29/32 1 3/16

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 Steel Tensile strength 28/32 tons Depth and thickness of girder

at centre 8" x 1 3/4" Length as per Rule 30 15/32 Distance apart 11 3/4" No. and pitch of stays

in each 3 at 7 1/4" Working pressure by Rules 159 lbs Combustion chamber plates: Material Steel

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 CC Centre stays riveted over inside, all others nutted

Working pressure by Rules 167 lbs Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 29/32 Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 15/16

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

Working Pressure 289 lbs Main stays: Material Steel Tensile strength 28/32 tons

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

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

Diameter At turned off part, 1 1/2" 1 5/8" 2" Over threads - No. of threads per inch 9 Area supported by each stay 76" 5 1/2"

Working pressure by Rules 165 lb. Are the stays drilled at the outer ends No Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{5}{8}'' \\ \text{or} \\ \text{Over threads} \end{array} \right.$

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

Tubes: Material W.I. External diameter  $\left\{ \begin{array}{l} \text{Plain } 2\frac{3}{4}'' \text{ c. } 2\frac{1}{2}'' \text{ w.} \\ \text{Stay } 2\frac{3}{4}'' \text{ c. } 2\frac{1}{2}'' \text{ w.} \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 10 \text{ L.S.G.} \\ \frac{1}{4}'' \frac{5}{16}'' \frac{3}{8}'' \frac{1}{2}'' \frac{5}{8}'' \frac{3}{4}'' \end{array} \right.$  No. of threads per inch 9

Pitch of tubes 4" x 3 7/8" c. 3 3/4" x 3 5/8" w. Working pressure by Rules 178 lb Manhole compensation: Size of opening in shell plate 16 x 12" Section of compensating ring 2'8" x 3'0" x 1 3/4" No. of rivets and diameter of rivet holes 28 - 1 1/4"

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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

Internal diameter Working pressure by Rules Thickness of crown No. and diameter of stays

How connected to shell Inner radius of crown Working pressure by Rules

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  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

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

The foregoing is a correct description,  
 For HARLAND AND WOLFF, LIMITED, Manufacturer.  
*A. Marshall*  
 Assistant Secretary.

1936  
 Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops - - } \text{Feb 12 Mar 26 May 11 13 18 25 June 3} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - - } \text{18 22 30 July 6 9 14 21 23 27 29 30 31 Aug 19 21} \end{array} \right. \end{array} \right.$  Are the approved plans of boiler and superheater forwarded herewith Yes  
 (If not state date of approval.)  
 Total No. of visits 21

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.)

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 a vessel building at Govan.

This boiler has been efficiently secured on board the M.V. "British Power". The safety valves have been adjusted under steam and tested for accumulation of pressure, and the boiler tried under working conditions and found satisfactory.

H.H. Campbell.  
 Glasgow.

Survey Fee ... .. £ 17 : 6 : 0 When applied for, 7<sup>th</sup> Sept, 19 36  
 Travelling Expenses (if any) £ : : When received, 26. 9. 19 36 (per Lou ltr)

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

Committee's Minute GLASGOW 22 DEC 1936

Assigned SEE ACCOMPANYING MACHINERY REPORT



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