

# REPORT ON BOILERS.

Received at London Office

Date of writing Report 19 When handed in at Local Office 2/8/1934, Port of Belfast visits included in F.E. incl.

No. in Survey held at Belfast Date, First Survey Last Survey 28 Aug 1934

Reg. Book. 87481 on the TWIN SCREW WAIWERA (Number of Visits) Tons } Gross } Net }

Built at Belfast By whom built Harland & Wolff Ltd. Yard No. 922 When built 1934

Engines made at Belfast By whom made Harland & Wolff Ltd. Engine No. 922 When made 1934

Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 922 When made 1934

Shaw Savill & Albion Co. Ltd. Port belonging to Southampton

## VERTICAL DONKEY BOILER.

at Belfast By whom made Harland & Wolff Ltd. Boiler No. 922 When made 1934 Where fixed Upper deck in Motor Room

Manufacturers of Steel Colvilles Ltd.

Heating Surface of Boiler 275 sq ft (for one boiler) Is forced draught fitted No. Coal or Oil fired Yes

Description of Boilers Two Clarkson Thimble type waste heat Working pressure 100 lbs sq in

Tested by hydraulic pressure to 200 lbs sq in Date of test 7.5.34 28.5.34 No. of Certificate 972-973

of Firegrate in each Boiler No. and Description of safety valves to each boiler Two Spring-loaded

of each set of valves per boiler } per rule 3.54 sq in } as fitted 0.8 sq in } Pressure to which they are adjusted 100 lbs sq in } Are they fitted with easing gear Yes

Whether steam from main boilers can enter the donkey boiler Is oil fuel carried in the double bottom under boiler Smallest distance between boiler or uptake and bunkers

Is the base of the boiler insulated Largest internal dia. of boiler 5'-11 1/2" Height overall 15'-0"

Material Steel Tensile strength 28-32 Tons Thickness 3/32"

Shell plates welded or flanged at butt ends Description of riveting: circ. seams { end Single 1 1/2" Double bottom } inter Single } long. seams double

rivet holes in { circ. seams 25/32" } Pitch of rivets { 1 3/16" } Percentage of strength of circ. seams { plate 16.9 } of Longitudinal joint { plate 72.8 } rivets 12.5 } combined 108.8

Working pressure of shell by rules 113 lbs sq in Thickness of butt straps { outer 3/8" } inner 3/8"

Crown: Whether complete hemisphere, dished partial spherical, or flat Yes Material Steel

Strength 26-30 Tons Thickness 3/32" Radius 5'-6" Working pressure by rules 118 lbs sq in

Position of Furnace: Plain, spherical, or dished crown Yes Material Steel Tensile strength 26/30 Tons

External diameter { top 74" } Length as per rule Working pressure by rules

Support stays circumferentially and vertically Are stays fitted with nuts or riveted over

Radius of spherical or dished furnace crown 5'-6" Working pressure by rule 100 lbs sq in

Diameter of Ogee Ring Diameter as per rule Working pressure by rule

Position Chamber: Material Steel Tensile strength 26/30 Tons Thickness of top plate 7/8"

Dished 36" Working pressure by rule Thickness of back plate 11/16" Diameter if circular 36"

Pitch of stays 6" Val. 5.337" height Are stays fitted with nuts or riveted over

Thickness No. 9. W.G. Working pressure of back plate by rules 210 lbs sq in

Material Tensile strength Thickness Mean pitch of stay tubes in nests

Pitch in outer vertical rows Dia. of tube holes FRONT { stay BACK } plain

Working pressure by rules

Material Tensile strength

Length as per rule

No. and pitch of stays in each Working pressure by rule



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**Crown stays:** Material \_\_\_\_\_ Tensile strength \_\_\_\_\_ Diameter  $\left\{ \begin{array}{l} \text{at body of stay,} \\ \text{or} \\ \text{over threads} \end{array} \right.$  \_\_\_\_\_  
 No. of threads per inch \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_

**Screw stays:** Material \_\_\_\_\_ Tensile strength \_\_\_\_\_ Diameter  $\left\{ \begin{array}{l} \text{at turned off part,} \\ \text{or} \\ \text{over threads} \end{array} \right.$  \_\_\_\_\_ No. of threads per inch \_\_\_\_\_  
 Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ Are the stays drilled at the outer ends \_\_\_\_\_

**Tubes:** Material \_\_\_\_\_ External diameter  $\left\{ \begin{array}{l} \text{plain} \\ \text{stay} \end{array} \right.$  \_\_\_\_\_ Thickness \_\_\_\_\_  
 No. of threads per inch \_\_\_\_\_ Pitch of tubes \_\_\_\_\_ Working pressure by rules \_\_\_\_\_

**Manhole Compensation:** Size of opening in shell plate  $16" \times 12"$  ✓ Section of compensating ring  $4 \frac{3}{4}" \times 1 \frac{1}{16}"$  ✓ No. of rivets and diameter \_\_\_\_\_  
 of rivet holes  $38 - \frac{13}{16}"$  ✓ Outer row rivet pitch at ends  $2 \frac{7}{8}"$  ✓ Depth of flange of <sup>Shell crown</sup> manhole flanged  $3"$  ✓

**Uptake:** External diameter  $21 \frac{1}{16}"$  ✓ Thickness of uptake plate  $1 \frac{1}{32}"$  ✓

**Cross Tubes:** No. \_\_\_\_\_ External diameters \_\_\_\_\_ Thickness of plates \_\_\_\_\_

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes.

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

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Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right.$  \_\_\_\_\_ Is the approved plan of boiler forwarded herewith \_\_\_\_\_  
 while building  $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right.$  \_\_\_\_\_ (If not state date of approval.) \_\_\_\_\_  
 Total No. of visits \_\_\_\_\_

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

These Boilers were constructed under Special Survey & to an approved design. They were tested by hydraulic pressure in accordance with the rules, were efficiently installed and fastened on an upper deck in the motor room of the vessel. The safety valves were adjusted under steam. The accumulation noted under oil-burning did not exceed 5 lbs and at the maximum output of exhaust gas from the main engines there was no apparent accumulation. The workmanship & materials are good & they are eligible, in my opinion, for use on a classed vessel.

Survey Fee  $\pounds$  ~~8.8~~ : : When applied for, 31/8/34 1934.  
 Travelling Expenses (if any)  $\pounds$  : : When received, \_\_\_\_\_ 19 \_\_\_\_\_

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

Committee's Minute FRI. 14 SEP 1934  
 Assigned See F.B. Rpt.

