

# REPORT ON BOILERS.

No. 12128

APR 12 1938

Received at London Office

Date of writing Report 19 When handed in at Local Office 8-14-1938 Port of Belfast

Please see machinery report.

No. in Survey held at Belfast Date, First Survey Last Survey 2-4-38 19

Reg. Book 2182 on the STEEL TR. SC. CAPETOWN CASTLE (Number of Visits) Gross 26850 Net 16600 Tons

Built at Belfast By whom built Harland & Wolff Ltd Yard No. 986 When built 1938

Engines made at Belfast By whom made Harland & Wolff Ltd Engine No. 986 When made 1938

Boilers made at Belfast By whom made Harland & Wolff Ltd Boiler No. 986 When made 1938

Owners Union Castle Mail S. S. Co Ltd Port belonging to London

## VERTICAL DONKEY BOILER.

Made at Belfast By whom made Harland & Wolff Ltd Boiler No. 986 When made 1938 Where fixed Upper Deck ER

Manufacturers of Steel Colvilles Ltd

Total Heating Surface of Boiler 1800 Is forced draught fitted Coal or Oil fired Exhaust Gas.

No. and Description of Boilers Two Clarkson Waste Heat Bagat/1800 Working pressure 100 lbs

Tested by hydraulic pressure to 200 lbs per sq inch Date of test 29th Oct 1937 No. of Certificate 1038

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler Two 3" C.I. double opening marine imp HL

Area of each set of valves per boiler per rule 9.75 as fitted 14.14 Pressure to which they are adjusted 100 lbs Are they fitted with easing gear Yes

State whether steam from main boilers can enter the donkey boiler No Smallest distance between boiler or uptake and bunkers or woodwork

Is oil fuel carried in the double bottom under boiler Smallest distance between base of boiler and tank top plating

Is the base of the boiler insulated Largest internal dia. of boiler 9'-6 1/2" Height 22'-0"

Shell plates: Material S Tensile strength 38 3/32 tons Thickness 9/16

Are the shell plates welded or flanged Butt strap ends Description of riveting: circ. seams SR Long. seams DR

Dia. of rivet holes in circ. seams 63/64 Pitch of rivets 3/4 Percentage of strength of circ. seams 56.3% of Longitudinal joint rivets 88 combined 91.2

Working pressure of shell by rules 106 lbs Thickness of butt straps outer 1/2 inner 1/2

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat dished Material S

Tensile strength 24/30 tons Thickness 1" Radius 8'-6" Working pressure by rules 103 lbs

Description of Furnace: Plain, spherical, or dished crown Yes Material S Tensile strength 24/30 tons

Thickness of crown 27/32 External diameter top 6'-5 3/4 bottom Length as per rule Working pressure by rules

Pitch of support stays circumferentially 12" and vertically 7'-4 1/8 Are stays fitted with nuts or riveted over Nuts

Diameter of stays over thread 2" Radius of spherical or dished furnace crown 5'-9 27/32 Working pressure by rule 102.3 lbs

Thickness of Ogee Ring 19/32 Diameter as per rule D 9'-1 1/4 d 6'-5 3/4 Working pressure by rule 129 lbs

Combustion Chamber: Material S Tensile strength 24/30 tons Thickness of top plate 27/32

Radius if dished Working pressure by rule Thickness of back plate 1 3/8 Diameter if circular 6'-5 3/4

Length as per rule 16'-8 1/4 stayed mid length Pitch of stays Are stays fitted with nuts or riveted over

Diameter of stays over thread Working pressure of back plate by rules 167 lbs

Tube Plates: Material front back Tensile strength Thickness Mean pitch of stay tubes in nests

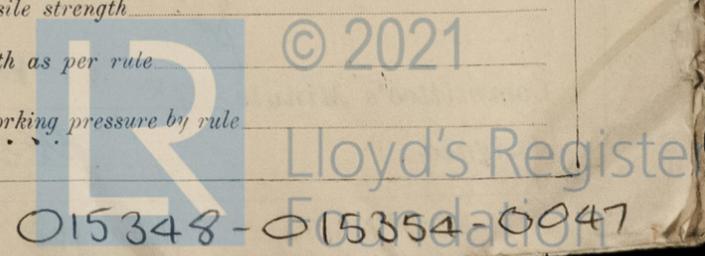
If comprising shell, Dia. as per rule front back Pitch in outer vertical rows Dia. of tube holes FRONT BACK

Is each alternate tube in outer vertical rows a stay tube Working pressure by rules front back

Girders to combustion chamber tops: Material Tensile strength

Depth and thickness of girder at centre Length as per rule

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



**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 \_\_\_\_\_  
**Thimbles** \_\_\_\_\_  
**Tubes:** Material *S* ✓ External diameter  $\left\{ \begin{array}{l} \text{---} \\ \text{---} \end{array} \right.$  *4* ✓ Thickness  $\left\{ \begin{array}{l} \text{---} \\ \text{---} \end{array} \right.$  *9 awg.* ✓  
 No. of threads per inch \_\_\_\_\_ Pitch of tubes *HP 7.988"* ✓ Working pressure by rules \_\_\_\_\_  
**Manhole Compensation:** Size of opening in shell plate *16x12"* ✓ Section of compensating ring *26 5/8" x 22 5/8" x 1 1/8"* ✓ No. of rivets and diameter \_\_\_\_\_  
 of rivet holes *40 - 15/16"* ✓ Outer row rivet pitch at ends *3.28"* ✓ Depth of flange if manhole flanged *16x12x3 1/2"* ✓  
**Uptake:** External diameter *3' 8 3/8"* ✓ Thickness of uptake plate *1/8"* ✓  
**Cross Tubes:** No. \_\_\_\_\_ External diameters  $\left\{ \begin{array}{l} \text{---} \\ \text{---} \end{array} \right.$  ✓ Thickness of plates \_\_\_\_\_

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.  
*A. J. Marshall* Manufacturer  
 Secretary

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 *Yes.*  
 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 \_\_\_\_\_

Is this Boiler a duplicate of a previous case *No.* If so, state Vessel's name and Report No. \_\_\_\_\_

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

*These boilers were constructed under special survey to an approved design. The materials and workmanship are good. They were tested by hydraulic pressure efficiently installed & fastened on an upper deck in the motor room. The safety valves were adjusted under steam accumulation tests were satisfactory. They are adapted for use of exhaust gas only. In our opinion they are eligible for use on a classed vessel.*

Survey Fee ... .. £ : ) When applied for, ..... 19  
 Travelling Expenses (if any) £ : : ) When received, ..... 19

*See on machinery report.*

*Charles J. Hunter, Rlee Arme*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
 Assigned

FRI. 22 APR 1938

*See Bel JE 12128*

