

# REPORT ON BOILERS.

No. 47322

Received at London Office 14 DEC 1927

Date of writing Report 1927 When handed in at Local Office 5.12.1927 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 10.2.27 Last Survey 3-12-1927

on the new steel S/S "CYMBELINE" (Number of Visits 57) Gross Tons Net

Built at Port Glasgow By whom built Wm Hamilton & Co Ltd Yard No. 399 When built 1927

Engines made at Glasgow By whom made David Rowan & Co Ltd Engine No. 859 When made 1927

Boilers made at Glasgow By whom made David Rowan & Co Ltd Boiler No. 859 When made 1927

Nominal Horse Power 572 Owners Port belonging to

RETAIN

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Aug Thyssen Hütte Gewerkschaft Hülheim Rühr (Letter for Record S)

Total Heating Surface of Boilers 5478 sq ft Is forced draught fitted yes Coal or Oil fired oil & coal

No. and Description of Boilers Two single ended marine. The two after boilers Working Pressure 220

Tested by hydraulic pressure to 380 Date of test 5-10-27 No. of Certificate 47616 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 60 sq ft No. and Description of safety valves to each boiler two direct spring

Area of each set of valves per boiler (per Rule 17.48 sq ft as fitted 19.24 sq ft Pressure to which they are adjusted 225 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 4-6" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2-6" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 15-6" Length 11-9" Shell plates: Material steel Tensile strength 30-34 tons

Thickness 1 7/16" Are the shell plates welded or flanged no Description of riveting: circ. seams (end DR inter. F 3.428. B 4.08

Long. seams DBSTR Diameter of rivet holes in (circ. seams F 1 3/8" B 1 1/2" long. seams 1 1/2" Pitch of rivets 10 1/16"

Percentage of strength of circ. end seams (plate F 59.9 B 63.2 rivets F 46.4 B 46.2 Percentage of strength of circ. intermediate seam (plate rivets)

Percentage of strength of longitudinal joint (plate 85.09 rivets 87.5 combined 87.7 Working pressure of shell by Rules 220

Thickness of butt straps (outer 1 3/32" inner 1 7/32" No. and Description of Furnaces in each Boiler Three Dighton 3cf

Material steel Tensile strength 26-30 tons Smallest outside diameter 45 1/8"

Length of plain part (top bottom) Thickness of plates (crown 1 1/16" bottom 1 1/16" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 223

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 7/16" Pitch of stays 19 3/4" x 22"

How are stays secured D.N. Working pressure by Rules 222

End plates: Material (front steel back " Tensile strength 26-30 tons Thickness 7/8" 3/4"

Can pitch of stay tubes in nests 9 1/4" Pitch across wide water spaces 13 1/2" Working pressure (front 223 back 234

Orders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

centre 2 @ 9 3/4" x 7 1/8" Length as per Rule 34.6" Distance apart 9 3/4" No. and pitch of stays

each 3 @ 8 1/2" Working pressure by Rules 222 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 23/32" Back 21/32" Top 23/32" Bottom 29/32"

Pitch of stays to ditto: Sides 8 1/2" x 9 3/4" Back 8" x 8 1/2" Top 8 1/2" x 9 3/4" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 220 Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 7/8" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 53/64"

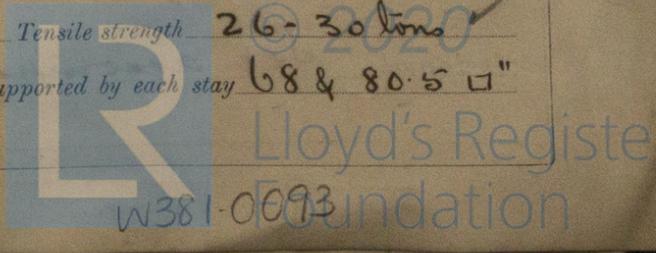
Pitch of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over nuts

Working Pressure 220 Main stays: Material steel Tensile strength 28-32 tons

Diameter (At body of stay, 3 1/2" & 3 1/4" No. of threads per inch 6 Area supported by each stay 460 & 405 sq in

Working pressure by Rules 235 & 229 Screw stays: Material steel Tensile strength 26-30 tons

Diameter (At turned off part, 1 5/8" & 1 3/4" No. of threads per inch 9 Area supported by each stay 68 & 80.5 sq in



Working pressure by Rules **22A & 22S** Are the stays drilled at the outer ends **no** Margin stays: Diameter <sup>At turned off part.</sup> **17/8"** <sub>or Over threads</sub> **17/8"** ✓  
 No. of threads per inch **9** ✓ Area supported by each stay **125.30"** Working pressure by Rules **239** ✓  
 Tubes: Material **Iron** ✓ External diameter <sup>Plain</sup> **2 1/2"** ✓ <sub>Stay</sub> **2 1/2"** ✓ Thickness <sup>8 W.S.</sup> **5/16"** **3/8"** **7/16"** ✓ No. of threads per inch **9** ✓  
 Pitch of tubes **3 3/4" x 398"** ✓ Working pressure by Rules **300** ✓ Manhole compensation: Size of opening in **19 1/2" x 15 1/2"** ✓  
 shell plate **19 1/2" x 15 1/2"** ✓ Section of compensating ring **8 3/4" x 1 7/16"** ✓ No. of rivets and diameter of rivet holes **34 @ 1 1/2"** ✓  
 Outer row rivet pitch at ends **10 1/4"** ✓ Depth of flange if manhole flanged **3"** ✓ Steam Dome: Material **none** ✓  
 Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_  
 Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint <sup>Plate</sup> \_\_\_\_\_ <sub>Rivets</sub> \_\_\_\_\_  
 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 **none** Manufacturers of <sup>Tubes</sup> \_\_\_\_\_ <sub>Steel castings</sub> \_\_\_\_\_  
 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 23 inclusive for boilers been complied with **yes** ✓

The foregoing is a correct description,  
 For David Rowan & Co. Ltd. Manufacturer  
 Arch. W. Grierson

Dates of Survey <sup>During progress of</sup> **See Accompanying** <sub>work in shops - - -</sub> Are the approved plans of boiler and superheater forwarded herewith \_\_\_\_\_  
 while <sup>During erection on</sup> **machinery report** <sub>board vessel - - -</sub> (If not state date of approval.)  
 building \_\_\_\_\_ Total No. of visits **57**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
**The materials and workmanship are good**  
**The boilers have been constructed under Special Survey in accordance with the Rules, satisfactorily fitted in the vessel and their safety valves adjusted under steam.**

**A.B.**  
**5/12/27**

Survey Fee ... .. £ **See Machinery Report** } When applied for, 192  
 Travelling Expenses (if any) £ : : } When received, 192

**S. Davis**  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 13 DEC 1927**

Assigned **See accompanying mach<sup>y</sup> report.**

