

# REPORT ON BOILERS.

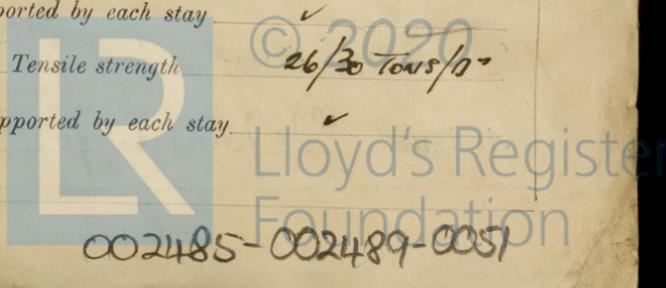
No. 65647

Received at London Office 17 JUN 1942

Date of writing Report 9<sup>th</sup> June 1942 When handed in at Local Office 16.6.42 Port of Glasgow  
 No. in Reg. Book. Glasgow Survey held at Glasgow Date, First Survey 2.3.42 Last Survey 28<sup>th</sup> May 1942  
 on the "EMPIRE PIBROCH" (Number of Visits 7)  
 Master Port Glasgow Built at Port Glasgow By whom built Messrs Lithgows' Ltd Yard No. 980 When built 1942  
 Engines made at Greenock By whom made Messrs Rankin & Blackmore Engine No. 488 When made 1942  
 Boilers made at Glasgow By whom made Messrs David Rowan & Co Boiler No. 0468 When made 1942  
 Nominal Horse Power \_\_\_\_\_ Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles Ltd (Letter for Record S)  
 Total Heating Surface of Boilers 2416 sq ft Is forced draught fitted Yes Coal or Oil fired Coal  
 No. and Description of Boilers One Single Ended Working Pressure 220 lbs/sq  
 Tested by hydraulic pressure to 380 lbs Date of test 8-5-42 No. of Certificate 21056 Can each boiler be worked separately \_\_\_\_\_  
 Area of Firegrate in each Boiler 55 sq ft No. and Description of safety valves to each boiler one 3" double, spring loaded  
 Area of each set of valves per boiler 12.85 sq ft Pressure to which they are adjusted 14.12 sq Are they fitted with easing gear \_\_\_\_\_  
 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 \_\_\_\_\_ Is oil fuel carried in the double bottom under boilers \_\_\_\_\_  
 Smallest distance between shell of boiler and tank top plating \_\_\_\_\_ Is the bottom of the boiler insulated \_\_\_\_\_  
 Largest internal dia. of boilers 15'-0 7/8" Length 11'-6" Shell plates: Material S Tensile strength 29/33 TONS/sq  
 Thickness 1 7/16" Are the shell plates welded or flanged No Description of riveting: circ. seams {end OR. Lap  
 long. seams T.R.O.B.S. Diameter of rivet holes in {circ. seams 1 3/8" F, 1 1/2" B  
 Percentage of strength of circ. end seams {plate 60.0 F, 63.68 B rivets 47.8 F, 47.2 B Percentage of strength of circ. intermediate seam {plate \_\_\_\_\_ rivets \_\_\_\_\_  
 Percentage of strength of longitudinal joint {plate 85.36 rivets 89.0 combined 88.5 Working pressure of shell by Rules \_\_\_\_\_  
 Thickness of butt straps {outer 1 3/32" inner 1 1/32" No. and Description of Furnaces in each Boiler 3 Leighton Section  
 Material S Tensile strength 26/30 TONS/sq Smallest outside diameter 3'-9 3/8"  
 Length of plain part {top \_\_\_\_\_ bottom \_\_\_\_\_ Thickness of plates {crown 1 1/16" bottom \_\_\_\_\_ Description of longitudinal joint Welded  
 Dimensions of stiffening rings on furnace or c.c. bottom \_\_\_\_\_ Working pressure of furnace by Rules \_\_\_\_\_  
 End plates in steam space: Material S Tensile strength 26/30 TONS/sq Thickness 1 3/8" Pitch of stays 20" x 19"  
 How are stays secured Double nuts Working pressure by Rules \_\_\_\_\_  
 Tube plates: Material {front S back \_\_\_\_\_ Tensile strength { 26/30 TONS/sq Thickness { 1 5/16" 25" / 32  
 Mean pitch of stay tubes in nests 9.7" Pitch across wide water spaces 14" Working pressure {front \_\_\_\_\_ back \_\_\_\_\_  
 Girders to combustion chamber tops: Material S Tensile strength 28/32 TONS/sq Depth and thickness of girder  
 at centre 2 @ 8 3/4" x 7/8" Length as per Rule 2'-9 1/2" Distance apart 8" W, 7 1/4" C No. and pitch of stays  
 in each 3 @ 8 1/4" Working pressure by Rules \_\_\_\_\_ Combustion chamber plates: Material S  
 Tensile strength 26/30 TONS/sq Thickness: Sides 2 1/32" Back 2 3/32" Top 2 1/32" Bottom 1 3/16"  
 Pitch of stays to ditto: Sides 8 1/4" x 8" Back 8" x 10" Top 8 1/4" x 8 1/4"; 7 1/4" x 8 1/4" Are stays fitted with nuts or riveted over Nuts  
 Working pressure by Rules \_\_\_\_\_ Front plate at bottom: Material S Tensile strength 26/30 TONS/sq  
 Thickness 1 5/16" Lower back plate: Material S Tensile strength 26/30 TONS/sq Thickness 1 3/16"  
 Pitch of stays at wide water space 13 7/16" Are stays fitted with nuts or riveted over Nuts  
 Working Pressure \_\_\_\_\_ Main stays: Material S Tensile strength 28/32 TONS/sq  
 Diameter {At body of stay, 4 @ 3 1/4", 6 @ 3" No. of threads per inch 6 Area supported by each stay \_\_\_\_\_  
 Working pressure by Rules \_\_\_\_\_ Screw stays: Material S Tensile strength 26/30 TONS/sq  
 Diameter {At turned off part, 1 5/8" & 1 3/4" No. of threads per inch 9 Area supported by each stay \_\_\_\_\_



Working pressure by Rules  Are the stays drilled at the outer ends  Margin stays: Diameter <sup>At turned off part.</sup> <sub>Over threads</sub>  $1\frac{7}{8}$ ,  $2$  &  $2\frac{1}{4}$ "

No. of threads per inch 9 Area supported by each stay  Working pressure by Rules  Back top

Tubes: Material S External diameter <sup>Plain</sup> 3" <sub>Stay</sub> 3" Thickness <sup>8 N.B.</sup>  $\frac{1}{4}$ ,  $\frac{5}{16}$ ,  $\frac{3}{8}$ " No. of threads per inch 9

Pitch of tubes  $4\frac{3}{16}$ " x  $4\frac{1}{8}$ " Working pressure by Rules  Manhole compensation: Size of opening i

END shell-plate 16" x 12" Section of compensating ring  No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends  Depth of flange if manhole flanged 4" Steam Dome: Material

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 o

stays Inner radius of crown Working pressure by Rules

How connected to shell Size of doubling plate under dome Diameter of rivet holes and pite

of rivets in outer row in dome connection to shell

Type of Superheater Manufacturers of <sup>Tubes</sup> <sub>Steel forgings</sub> <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 casing gear Working pressure as per

Rules Pressure to which the safety valves are adjusted Hydraulic test pressure

tubes forgings and castings and after assembly in place Are drain cocks on

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 David Rowan & Co. Ltd.  
Arch. W. Grierson Manufacture

Dates of Survey <sup>During progress of</sup> <sub>work in shops - -</sub> 1942 Mar. 2, 16-31 Apr. 15 May: Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building <sup>During erection on</sup> <sub>board vessel - - -</sub> 8.11.28 Total No. of visits 7

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 built under special survey and in accordance with the Rules. The materials and workmanship are good. On completion it has been tested by hydraulic pressure with satisfactory results.

It has been despatched to Port Glasgow for installing on board ship.

This boiler was one of those originally intended for Rowan's contract no 1097, under which all the material was ordered and delivered. As the remaining boilers have not yet been completed, the invoices are being withheld meantime.

The requirements of the M.O.S. specification have been satisfactorily carried out.

Survey Fee ... £ 16 : 2 : 0 When applied for, 16 JUN 1942

Travelling Expenses (if any) £ : : : When received, 19

A. P. Gibberon  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 16 JUN 1942

Assigned Referred for completion



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