

# REPORT ON BOILERS.

No. 64862

1 JAN 1942

Received at London Office

Date of writing Report 26.12.41 When handed in at Local Office 26.12.41 Port of Glasgow

No. in Survey held at Reg. Book. 36364 on the S.S. Empire Balm Date, First Survey 27.12.40 Last Survey 22.12.41

(Number of Visits 49) Tons }  
Gross }  
Net }

Master Built at Glasgow By whom built Blythwood S.S. Co. Yard No. 67 When built

Engines made at Glasgow By whom made D. Rowan & Co. Ltd. Engine No. 1080 When made 1941

Boilers made at do. By whom made do. Boiler No. 1080 When made 1941

Nominal Horse Power 139. Owners Ministry of War Transport. Port belonging to Glasgow.

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

Manufacturers of Steel Steel Company of Scotland (Letter for Record 5)

Total Heating Surface of Boilers 2100 sq ft Is forced draught fitted Y/No. Coal or Oil fired oil.

No. and Description of Boilers 1 Single ended Working Pressure 190 lbs.

Tested by hydraulic pressure to 335 lbs Date of test 29/8/41 No. of Certificate 20843 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 1 Double Spring loaded

Area of each set of valves per boiler { per Rule 12.80 } Pressure to which they are adjusted (335) Are they fitted with easing gear Y/No.  
{ as fitted 16.580 }

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 will blow. Is oil fuel carried in the double bottom under boilers No P.B.

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated Y/No

Largest internal dia. of boilers 14'-6" Length 11'-6" Shell plates: Material S Tensile strength 29-33 Tons

Thickness 1 3/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end DR. overlap. }  
{ inter. B 3-528; F 3-2 }  
long. seams DBS. TR. Diameter of rivet holes in { circ. seams 1 5/16" } Pitch of rivets { 8 1/16" }  
{ long. seams 1 5/16" }

Percentage of strength of circ. end seams { plate B 62.7; F 62.9 } Percentage of strength of circ. intermediate seam { plate }  
{ rivets B 50.1; F 45.0 }

Percentage of strength of longitudinal joint { plate 85.3 } Working pressure of shell by Rules  
{ rivets 92.5 }  
{ combined 89.1 }

Thickness of butt straps { outer 2 3/4" } No. and Description of Furnaces in each Boiler 3 Blythton.  
{ inner 1 3/4" } Tensile strength 26-30 Tons Smallest outside diameter 42 1/8"

Material S Thickness of plates { crown 9/16" } Description of longitudinal joint weld.  
{ bottom 9/16" }

Length of plain part { top } Thickness of plates { crown } Description of longitudinal joint weld.  
{ bottom }

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 Thickness 1 1/4" Pitch of stays 20 1/2" x 18 1/2"

How are stays secured double nuts Working pressure by Rules

Tube plates: Material { front S } Tensile strength { 26-30 Tons } Thickness { 2 1/8" }  
{ back S } Thickness { 3/4" }

Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 13 3/4" Working pressure { front }  
{ back }

Girders to combustion chamber tops: Material S Tensile strength 28-32 Tons Depth and thickness of girder

at centre 10" x 1 3/4" Length as per Rule 39 1/16" Distance apart 9 1/4" No. and pitch of stays

in each 3 @ 10" Working pressure by Rules

Tensile strength 26-30 Tons Thickness: Sides 23/32" Back 11/16" Top 23/32" Bottom 23/32"

Pitch of stays to ditto: Sides 10" x 9 1/4" Back 8 1/4" x 9 1/4" Top 10" x 9 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

Thickness 2 1/32" Lower back plate: Material S Tensile strength 26-30 Tons Thickness 25/32"

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

Working Pressure

Main stays: Material S Tensile strength 28-32 Tons

Diameter { At body of stay, 2 3/4" + 3 } No. of threads per inch 6 Area supported by each stay  
{ Over threads 3 1/4" x 3 }

Working pressure by Rules

Screw stays: Material S 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  
{ Over threads 1 5/8" + 1 3/4" }

Working pressure by Rules Are the stays drilled at the outer ends *No.* Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part. } 1\frac{1}{8}'' \\ \text{or } 1\frac{1}{4}'' \\ \text{Over threads } 1\frac{1}{8}'' + 2'' \end{array} \right. / \frac{3}{4}$

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

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

Pitch of tubes  $4 \times 3\frac{1}{8}''$  Working pressure by Rules Manhole compensation: Size of opening in

shell plate  $19\frac{1}{2}'' \times 15\frac{1}{2}''$  Section of compensating ring  $9\frac{1}{2}'' \times 1\frac{1}{2}''$  No. of rivets and diameter of rivet holes *34 @ 1\frac{5}{16}''*

Outer row rivet pitch at ends  $8\frac{15}{16}''$  Depth of flange if manhole flanged *3''* 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 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**

Number of elements Material of tubes Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right.$  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 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 David Rowan T.C. & L.P.*  
*Arch. H. Greenwood* Manufacturer.

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building} \end{array} \right. \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right.$

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

**SEE ACCOMPANYING MACHINERY REPORT.**

Total No. of visits

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 licence and in accordance with the Rules. The materials & workmanship are good. The safety valves have been adjusted under steam and the boiler examined under steam & found in order.*

Survey Fee ... *£100* When applied for, 19

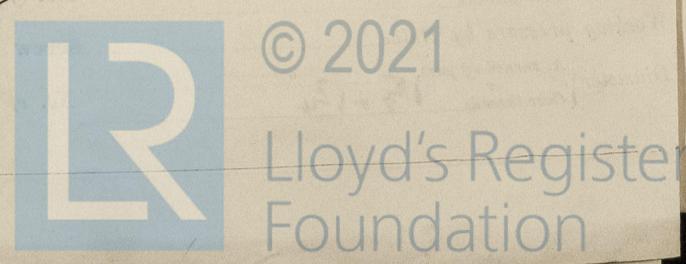
Travelling Expenses (if any) £ When received, 19

*A. J. Brown & W. Russell*  
 Engineer Surveyor to Lloyd's Register of Shipping.

GLASGOW 30 DEC 1941

Committee's Minute

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**



© 2021  
 Lloyd's Register  
 Foundation