

# REPORT ON BOILERS.

50170  
No. 50029

Received at London Office 15 JAN 1930

26 FEB 1930

Date of writing Report 7-1 1930 When handed in at Local Office 11-1-30 Port of Glasgow

No. in Reg. Book. Survey held at Glasgow Date, First Survey 2-10-29 Last Survey 26-12-29

on the S.S. THE EMPEROR (Number of Visits 12) Tons {Gross 824 Net 405}

Master Built at Troon By whom built Ailsa S.B. Co. Ltd Yard No. 414 When built 1930

Engines made at Troon By whom made Ailsa S.B. Co. Ltd Engine No. 149 When made 1930

Boilers made at Glasgow By whom made Barclay Curle & Co. Ltd Boiler No. A10 When made 1929

Nominal Horse Power 115 Owners J. Hay & Sons Ltd Port belonging to Glasgow

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

Manufacturers of Steel Wm Beardmore & Co. Ltd. (Letter for Record (S.) ✓)

Total Heating Surface of Boilers 2021 sq. ft. ✓ Is forced draught fitted Coal or Oil fired Coal ✓

No. and Description of Boilers 1. S.B. ✓ Working Pressure 200. lbs. ✓

Tested by hydraulic pressure to 350 lbs. Date of test 26-12-29 No. of Certificate 18570 Can each boiler be worked separately

Area of Firegrate in each Boiler 57 1/2 sq. ft. No. and Description of safety valves to each boiler

Area of each set of valves per boiler {per Rule as fitted} Pressure to which they are adjusted 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" ✓ Length 10'-9" ✓ Shell plates: Material Steel ✓ Tensile strength 29-33 Tons ✓

Thickness 1 5/16" ✓ Are the shell plates welded or flanged no ✓ Description of riveting: circ. seams {end inter.} F 3-09 ✓ B 3-746 ✓

long. seams T.R - D.B.S. ✓ Diameter of rivet holes in {circ. seams F 1 3/16" - B 1 3/8" long. seams 1 3/8" Pitch of rivets 9 1/2" ✓

Percentage of strength of circ. end seams {plate rivets} F 61.5 B 63.2 F 42.9 B 48. Percentage of strength of circ. intermediate seam {plate rivets}

Percentage of strength of longitudinal joint {plate rivets combined} 85.5 88.1 88.7 Working pressure of shell by Rules 200. lbs. ✓

Thickness of butt straps {outer inner} 63/64" ✓ 1 7/64" ✓ No. and Description of Furnaces in each Boiler 3. Deighton Section ✓ 301-

Material Steel ✓ Tensile strength 26-30. ✓ Smallest outside diameter 3'-11 5/16" ✓

Length of plain part {top bottom} ✓ Thickness of plates {crown bottom} 2 1/32" ✓ Description of longitudinal joint weld ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 203. lbs. ✓

End plates in steam space: Material Steel ✓ Tensile strength 26-30 ✓ Thickness 1 9/32" ✓ Pitch of stays 19 1/2" x 19 5/8" ✓

How are stays secured D.N. ✓ Working pressure by Rules 200 lbs. ✓

Tube plates: Material {front back} Steel ✓ Tensile strength {26/30 Tons.} Thickness {29/32" 49/64" ✓}

Mean pitch of stay tubes in nests 10 1/4" ✓ Pitch across wide water spaces 14 1/4" ✓ Working pressure {front back} 202 lbs. 200. lbs. ✓

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

at centre 8 1/2" x 7/8" double Length as per Rule 33.5" ✓ Distance apart 9 1/2" ✓ No. and pitch of stays

in each 2 @ 10 3/8" Working pressure by Rules 203 lbs. ✓ Combustion chamber plates: Material Steel ✓

Tensile strength 26-30 Tons. ✓ Thickness: Sides 3/4" ✓ Back 2 1/32" ✓ Top 3/4" ✓ Bottom 3/4" ✓

Pitch of stays to ditto: Sides 10 3/8" x 9 1/4" Back 9 1/4" x 8" Top 10 3/8" x 9 1/2" Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 201 lbs. ✓ Front plate at bottom: Material Steel ✓ Tensile strength 26-30 Tons. ✓

Thickness 29/32" ✓ Lower back plate: Material Steel ✓ Tensile strength 26-30 Tons. ✓ Thickness 25/32" ✓

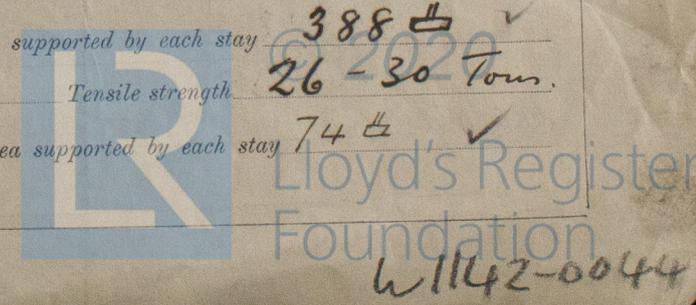
Pitch of stays at wide water space 13 1/2" ✓ Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 200. lbs. ✓ Main stays: Material Steel ✓ Tensile strength 28-32 Tons. ✓

Diameter {At body of stay, or Over threads} 3" ✓ 3 1/4" ✓ No. of threads per inch 6 ✓ Area supported by each stay 388 sq. in. ✓

Working pressure by Rules 202 lbs. ✓ Screw stays: Material Steel ✓ Tensile strength 26-30 Tons. ✓

Diameter {At turned off part, or Over threads} 1 5/8" - 1 7/8" ✓ No. of threads per inch 9 ✓ Area supported by each stay 74 sq. in. ✓



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Working pressure by Rules 206 lb Are the stays drilled at the outer ends no Margin stays: Diameter <sup>At turned off part,</sup> 1 3/4" - 1 7/8"  
 No. of threads per inch 9 Area supported by each stay 91 & 100 sq" Working pressure by Rules 200 & 213 lb  
 Tubes: Material Iron External diameter <sup>Plain</sup> 3 1/4" Thickness <sup>Stay</sup> 1/4" 5/16" 3/8" No. of threads per inch 9  
 Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 230 lb Manhole compensation: Size of opening in  
 shell plate 15 1/2" x 19 1/2" Section of compensating ring 9 1/4" x 1 5/16" No. of rivets and diameter of rivet holes 32 - 1 3/8"  
 Outer row rivet pitch at ends 9 1/4" 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 <sup>Plate</sup> \_\_\_\_\_  
 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 \_\_\_\_\_ Manufacturers of <sup>Tubes</sup> \_\_\_\_\_  
 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 22 inclusive for boilers been complied with \_\_\_\_\_

**FOR BARCLAY, CURLE & CO., LTD.**

*John Alexander*  
 GENERAL MANAGER ENGINE WORKS

The foregoing is a correct description,

Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup> 29 Oct 2 11 16 22 31 Are the approved plans of boiler and superheater forwarded herewith yes  
 while building <sup>During erection on board vessel - - -</sup> Dec 10 12 26 Total No. of visits 12

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, to approved plans and the Society's Rules. Materials and workmanship are good. It is intended for the Ailsa S.B. Co's No 414 vessel, then engine No 449.

Survey Fee £ 13/10/0 When applied for, 13. 1. 1930  
 Travelling Expenses (if any) £ \_\_\_\_\_ When received, 1. 3. 1930

*H. L. Lutherst.*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 14 JAN 1930**

Assigned **TRANSMIT TO LONDON**

