

Received at London Office 11 SEP 1929

Date of writing Report 1929 When handed in at Local Office 9.9.1929 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 6.11.28 Last Survey 29.8.1929
 on the new steel S/S "BAHABUR" (Number of Visits 67) Gross 5024 Tons Net 3397
 Master Built at Port Glasgow By whom built Lithgows Ltd Yard No. 823 When built 1929
 Engines made at Glasgow By whom made David Rowan & Co. Ltd Engine No. 895 When made 1929
 Boilers made at Glasgow By whom made David Rowan & Co. Ltd Boiler No. 895 When made 1929
 Nominal Horse Power 446 Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Wrappers plates by Jas Dunlop & Co Ltd Furnaces by Leeds Forge Co Ltd
 Wilkowitzky Bergbau und Eisenhütten Gesellschaft (Letter for Record (S))
 Total Heating Surface of Boilers 5972 sq ft Is forced draught fitted yes Coal or Oil fired coal
 No. and Description of Boilers Two single ended 250 Working Pressure 210
 Tested by hydraulic pressure to 365 Date of test 12/6/29 No. of Certificate 18324 Can each boiler be worked separately yes
 Area of Firegrate in each Boiler 154 sq ft No. and Description of safety valves to each boiler two improved high lift
 Area of each set of valves per boiler per Rule 8.3 sq ft as fitted 9.8 sq ft Pressure to which they are adjusted 215 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 15" 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 17-1 1/2" Length 12-0" Shell plates: Material steel Tensile strength 30-34 tons
 Thickness 1 1/2" Are the shell plates welded or flanged no Description of riveting: circ. seams end WR
 Long. seams UB S. TR Diameter of rivet holes in circ. seams F 1 3/8" B 1 9/16" Pitch of rivets F 3.47" B 4.362"
 Percentage of strength of circ. end seams plate F 60.3 B 64 rivets F 43.8 B 45 Percentage of strength of circ. intermediate seam plate
 Percentage of strength of longitudinal joint rivets 86 Working pressure of shell by Rules 210 tons ST
 Thickness of butt straps outer 1 3/16" inner 1 5/16" No. and Description of Furnaces in each Boiler Four Deighton 4 C.F.T.
 Material steel Tensile strength 26-30 tons Smallest outside diameter 43.375"
 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 228
 End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 15/32" Pitch of stays 25" x 18 1/2"
 How are stays secured D.N Working pressure by Rules 211
 Tube plates: Material front steel back " Tensile strength 26-30 tons Thickness 7/8" 25" / 32" (Centre 1/16" thick)
 Mean pitch of stay tubes in nests 9.8" Pitch across wide water spaces 13 3/4" Working pressure front 225 back 228
 Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder
 At centre 2 @ 9 1/4" x 7/8" Length as per Rule 37.56" Distance apart 7 7/8" No. and pitch of stays
 On each 3 @ 9" Working pressure by Rules 211 Combustion chamber plates: Material steel
 Tensile strength 26-30 tons Thickness: Sides 21" / 32" Back 21" / 32" Top 21" / 32" Bottom 25" / 32"
 Pitch of stays to ditto: Sides 7 7/8" x 9" Back 8 5/8" x 8 1/2" Top 7 7/8" x 9" Are stays fitted with nuts or riveted over nuts
 Working pressure by Rules 210 Front plate at bottom: Material steel Tensile strength 26-30 tons
 Thickness 1" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 13" / 16"
 Pitch of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over nuts
 Working Pressure 214 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 470 & 390 sq in
 Working pressure by Rules 230 & 235 lb Screw stays: Material steel Tensile strength 26-30 tons
 Diameter At turned off part 1 3/4" No. of threads per inch 9 Area supported by each stay 71 sq in



REPORT ON BOILERS

Working pressure by Rules **255** Are the stays drilled at the outer ends **no** Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part} \\ \text{or} \\ \text{Over threads} \end{array} \right. \text{ } 2''$

No. of threads per inch **9** Area supported by each stay **910"** Working pressure by Rules **271**

Tubes: Material **Iron** External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \text{ } \left. \begin{array}{l} 2\frac{3}{4}'' \\ 2\frac{3}{4}'' \end{array} \right.$ Thickness $\left\{ \begin{array}{l} 8 \text{ w.g.} \\ \frac{5}{16}'' \frac{3}{8}'' \frac{1}{16}'' \end{array} \right.$ No. of threads per inch **9**

Pitch of tubes **3\frac{1}{8}'' x 4''** Working pressure by Rules **275** Manhole compensation: Size of opening **19\frac{1}{2}'' x 15\frac{1}{2}''**

shell plate **19\frac{1}{2}'' x 15\frac{1}{2}''** Section of compensating ring **10\frac{1}{2}'' x 1\frac{1}{2}''** No. of rivets and diameter of rivet holes **34 @ 1\frac{1}{16}''**

Outer row rivet pitch at ends **10\frac{5}{8}''** Depth of flange if manhole flanged **3''** Steam Dome: Material **None**

Tensile strength **800** Thickness of shell **1\frac{1}{2}''** Description of longitudinal joint **Butt joint**

Diameter of rivet holes **1\frac{1}{16}''** Pitch of rivets **1\frac{1}{2}''** Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \text{ } 80\%$

Internal diameter **20\frac{1}{2}''** Working pressure by Rules **275** Thickness of crown **1\frac{1}{2}''** No. and diameter of stays **34 @ 1\frac{1}{16}''**

How connected to shell **Butt joint** Size of doubling plate under dome **2\frac{1}{2}''** Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell **1\frac{1}{16}'' @ 1\frac{1}{2}''**

Type of Superheater **None** Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

Number of elements **1** Material of tubes **Iron** Internal diameter and thickness of tubes **2\frac{3}{4}'' x 1\frac{1}{16}''**

Material of headers **Iron** Tensile strength **800** Thickness **1\frac{1}{2}''** Can the superheater be shut off from the boiler **Yes**

the boiler be worked separately **Yes** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **Yes**

Area of each safety valve **1\frac{1}{2}''** Are the safety valves fitted with easing gear **Yes** Working pressure as Rules **255** Pressure to which the safety valves are adjusted **255** Hydraulic test pressure **382\frac{1}{2}**

tubes **castings** and after assembly in place **castings** Are drain cocks or valves fitted to free the superheater from water where necessary **Yes**

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **Yes**

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

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \text{ } \left\{ \begin{array}{l} \text{See Accompanying} \\ \text{machinery Report} \end{array} \right.$ Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) **Yes**

Total No. of visits **67**

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

The materials and workmanship are good. The boiler has been constructed under special survey in accordance with the Rules, satisfactorily fitted in the vessel and the safety valves adjusted under steam.

A.B.
9/9/29

Survey Fee **£ 100-00** When applied for, **192**

Travelling Expenses (if any) **£ 50-00** When received, **192**

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

Committee's Minute **GLASGOW 10 SEP 1929**

Assigned **See Accompanying Machinery Report**

