

REPORT ON BOILERS.

No. 20514

Received at London Office MAR -2 1938

Date of writing Report 31. 12 1937 When handed in at Local Office 25th Feb. 1938. Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 14th March 1934 Last Survey 25th February 1938

on the T/Ss "Blau Buchanan" (Number of Visits) } Gross 7265.91
Tons } Net 3692.25

Master J.M. Built at Glasgow By whom built Glasgow Dockyard Ltd Yard No. 431 When built 1938

Engines made at Glasgow By whom made John & Waucaid & Co. Ltd Engine No. 690 When made 1938

Boilers made at ditto By whom made ditto Boiler No. 690 When made 1938

Nominal Horse Power Owners The Blau Line Steamers Ltd Port belonging to Glasgow
Cayzer & Irvine (Managers)

MULTITUBULAR BOILERS—MAIN, ~~FIXED OR DONKEY.~~

Manufacturers of Steel W. & A. Galloway & Co. of Scotland (Letter for Record S ✓)

Total Heating Surface of Boilers 14780 # ✓ Is forced draught fitted Yes ✓ Coal & Oil fired both ✓

No. and Description of Boilers 5 Single Ended ✓ Working Pressure 220 ✓

Tested by hydraulic pressure to 380 ✓ Date of test 10-12-37 No. of Certificate SA 2134 Can each boiler be worked separately Yes ✓

Area of Firegrate in each Boiler 80.5 # No. and Description of safety valves to each boiler 2 Boehm Improved high lift ✓

Area of each set of valves per boiler { per Rule 9.45 # / as fitted 9.82 # / 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 Yes ✓

Smallest distance between boilers or uptakes and bunkers or woodwork 1'-6" ✓ Is oil fuel carried in the double bottom under boilers Yes ✓

Smallest distance between shell of boiler and tank top plating 1'-10" ✓ Is the bottom of the boiler insulated Yes ✓

Largest internal dia. of boilers 16'-8 3/4" Length 12'-0" Shell plates: Material S ✓ Tensile strength 29.33 ✓

Thickness 1 5/8" Are the shell plates welded or flanged Yes ✓ Description of riveting: circ. seams { end DR / inter. ✓ /

Long. seams TR + D B S ✓ Diameter of rivet holes in { circ. seams 1 21/32" ✓ / long. seams 1 27/8" ✓ Pitch of rivets { 4 6/4 ✓ / 10 3/4" ✓

Percentage of strength of circ. end seams { plate 64.5 / rivets 45.4 ✓ Percentage of strength of circ. intermediate seam { plate 84.88 / rivets 88.1 ✓

Percentage of strength of longitudinal joint { plate 84.38 / rivets 84.38 ✓ Working pressure of shell by Rules 224

Thickness of butt straps { outer 1 1/4" / inner 1 3/8" ✓ No. and Description of Furnaces in each Boiler 4 Deightons ✓

Material S ✓ Tensile strength 26-30 ✓ Smallest outside diameter 3'-9 5/16" ✓

Length of plain part { top ✓ / bottom ✓ Thickness of plates { crown 2 1/32" / 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 221 ✓

End plates in steam space: Material S ✓ Tensile strength 26-30 ✓ Thickness 1 1/4" ✓ Pitch of stays 20x16 ✓

How are stays secured DN + Washers ✓ Working pressure by Rules 222

Tube plates: Material { front S / back S ✓ Tensile strength { 26-30 ✓ / Thickness { 15 1/16" ✓ / 25 1/32" ✓

Mean pitch of stay tubes in nests 9.666 ✓ Pitch across wide water spaces 14" ✓ Working pressure { front 224 / back 234 ✓

Girders to combustion chamber tops: Material S ✓ Tensile strength 29.33 ✓ Depth and thickness of girder at centre 10 1/4' x 3 1/4' (2) ✓ Length as per Rule 34.17 1/32" ✓ Distance apart 8 1/2" ✓ No. and pitch of stays in each 3 at 8 1/4" ✓ Working pressure by Rules 251 ✓ Combustion chamber plates: Material S ✓

Tensile strength 26-30 ✓ Thickness: Sides 1 1/16" ✓ Back 1 1/16" ✓ Top 1 1/16" ✓ Bottom 1 3/16" ✓

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

Working pressure by Rules 229 ✓ Front plate at bottom: Material S ✓ Tensile strength 26-30 ✓

Thickness 15 1/16" ✓ Lower back plate: Material S ✓ Tensile strength 26-30 ✓ Thickness 7/8" ✓

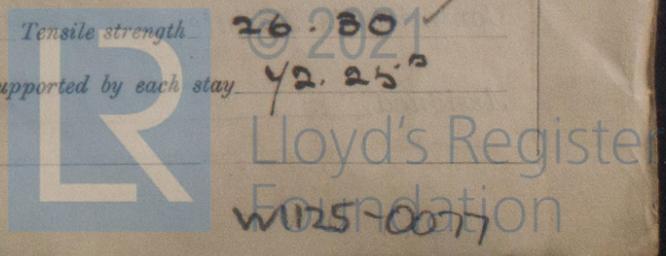
Pitch of stays at wide water space 14" ✓ Are stays fitted with nuts or riveted over Nuts ✓

Working Pressure 223 ✓ Main stays: Material S ✓ Tensile strength 28.32 ✓

Diameter { At body of stay, 3" ✓ / No. of threads per inch 6 ✓ / Area supported by each stay 320 # ✓

Working pressure by Rules 245 ✓ Screw stays: Material S ✓ Tensile strength 26-30 # ✓

Diameter { At turned off part, 1 3/4" ✓ / No. of threads per inch 9 ✓ / Area supported by each stay 42.25 # ✓



Working pressure by Rules **250** Are the stays drilled at the outer ends **90** Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{7}{8} \\ \text{or} \\ \text{Over threads } \checkmark \end{array} \right.$

No. of threads per inch **9** Area supported by each stay **95.5** Working pressure by Rules **224**

Tubes: Material **S** External diameter $\left\{ \begin{array}{l} \text{Plain } 3 \\ \text{Stay } \checkmark \end{array} \right.$ Thickness $\left\{ \begin{array}{l} \text{8 WG} \\ \text{9/32 } 11/32 \end{array} \right.$ No. of threads per inch **9**

Pitch of tubes **4 1/8" x 4 1/4"** Working pressure by Rules **231** Manhole compensation: Size of opening shell plate **16 1/2" x 20 1/2"** Section of compensating ring **3 3/8" x 3 5/8" x 1 1/8"** No. of rivets and diameter of rivet holes **36 at 1 1/2"**

Outer row rivet pitch at ends **1 1/4"** Depth of flange if manhole flanged **3 3/4"** Steam Dome: Material **✓**

Tensile strength _____ Thickness of shell _____ Description of longitudinal joint _____

Diameter of rivet holes _____ Pitch of rivets _____ Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

Internal diameter _____ Working pressure by Rules _____ Thickness of crown _____ No. and diameter 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 **North Eastern Marine** Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right.$

Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____

Material of headers **For particulars see Newcastle Bull. No. 5276** **attached** shut off from the boiler **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 **3.1416** Are the safety valves fitted with easing gear **yes** Working pressure as per Rules **220** Pressure to which the safety valves are adjusted **220** Hydraulic test pressure tubes **440 lb** forgings and castings **440 lb** and after assembly in place **yes** Are drain cock 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 JOHN G. KINCAID & CO. LIMITED.
W. G. Kincaid Director. Manufacture

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right. \end{array} \right.$ See **Machinery Report** Are the approved plans of boiler and Superheater forwarded herewith **yes** (If not state date of approval.) Total No. of visits _____

Is this Boiler a duplicate of a previous case **yes** If so, state Vessel's name and Report No. **T/S "Clayburning" 2048**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **These Boilers have been built under special survey in accordance with the approved plans & the workmanship & material are of good quality. They are now securely fitted on board. This Report accords with that of the Machinery Report.**

Survey Fee **Relieved on Machinery Report** } When applied for, 10
Travelling Expense (if any) _____ } When received, 10

W. G. Kincaid
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 1-MAR 1938**

Assigned **SEE ACCOMPANYING MACHINERY REPORT**

