

# REPORT ON BOILERS.

Received at London Office DEC -7 1938

Date of writing Report **3. 10 38** When handed in at Local Office **2<sup>nd</sup> Dec. 1938.** Port of **Glasgow**

No. in Reg. Book. **1529.31** Survey held at **Glasgow** Date, First Survey **20<sup>th</sup> January 1938** Last Survey **1 - 12 1938**

on the **T/S's Blair Forbes** (Number of Visits **1**) Tons **Gross 1529.31**  
**Net 3524.04**

Master **Glasgow** Built at **Glasgow** By whom built **Glasgow Dockyard Ltd** Yard No. **434** When built **1938**

Engines made at **Glasgow** By whom made **John McCreadie & Co** Engine No. **693** When made **1938**

Boilers made at **ditto** By whom made **ditto** Boiler No. **693** When made **1938**

Nominal Horse Power **-** Owners **Robt Blair & Co Steamers Ltd**  
**Bayne Irvine (Mauger)** Port belonging to **Glasgow**

## MULTITUBULAR BOILERS—MAIN, ~~XXXXXXXXXXXXXXXXXXXX~~

Manufacturers of Steel **Steel Co of Scotland & Colvilles** (Letter for Record **S**)

Total Heating Surface of Boilers **17780** # 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 **7. 9. 38** No. of Certificate **CF 2162**  
**SF 2160**  
**PF 2161**  
**CA 2157**  
**PA 2156** 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 Cochran 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 **no**

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 **DR**  
**inter. -**

long. seams **TR + DBS** Diameter of rivet holes in **circ. seams 1 2/32"**  
**long. seams 1 5/8"** Pitch of rivets **4.644**  
**10 3/4"**

Percentage of strength of circ. end seams **plate 64.5**  
**rivets 45.4** Percentage of strength of circ. intermediate seam **plate 84.58**  
**rivets 86.1**

Percentage of strength of longitudinal joint **plate 84.58**  
**rivets 86.1** 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 Deighton**

Material **S** Tensile strength **26-30** Smallest outside diameter **3'-7 5/16"**

Length of plain part **top -**  
**bottom -** Thickness of plates **crowns 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 **228**

End plates in steam space: Material **S** Tensile strength **26-30** Thickness **1 1/4"** Pitch of stays **20" 16"**

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

Tube plates: Material **S** Tensile strength **26-30** Thickness **1 5/16"**  
**2 5/32"**

Mean pitch of stay tubes in nests **9.686"** Pitch across wide water spaces **14"** Working pressure **front 227**  
**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. 17/32"** 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 **1 5/16"** 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"**  
**Over threads -** 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"**  
**Over threads -** No. of threads per inch **9** Area supported by each stay **72.25"**



Working pressure by Rules 250 Are the stays drilled at the outer ends No Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{7}{8}'' \\ \text{or} \\ \text{Over threads } \end{array} \right. \checkmark$   
 No. of threads per inch 9 Area supported by each stay 95" Working pressure by Rules 224  
 Tubes: Material S External diameter  $\left\{ \begin{array}{l} \text{Plain } 3'' \\ \text{Stay} \end{array} \right. \checkmark$  Thickness  $\left\{ \begin{array}{l} \text{8 WG} \\ 9\frac{1}{32}'' \text{ } 11\frac{1}{32}'' \end{array} \right. \checkmark$  No. of threads per inch 9  
 Pitch of tubes 4\frac{1}{8}'', 4\frac{1}{4}' Working pressure by Rules 231 Manhole compensation: Size of opening in shell plate 16\frac{1}{2}'', 20\frac{1}{2}'' Section of compensating ring 3-3-3-0 + 15\frac{1}{8}'' No. of rivets and diameter of rivet holes 36 at 1\frac{2}{3}''  
 Outer row rivet pitch at ends 11\frac{1}{4}' Depth of flange if manhole flanged 3\frac{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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \checkmark$   
 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 North Eastern Marine Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right. \checkmark$   
 Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ Internal diameter and thickness of tubes \_\_\_\_\_  
 Material of headers For particular Tenon Glasgow Cast 90 4466 attached superheater be shut off and 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 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 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 JOHN G. KINCAID & CO. LIMITED. Director Manufacturer.

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - -} \end{array} \right. \end{array} \right. \checkmark$  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/Ss "Blau Buchanan" Ent 12/1/91: 20514

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been built under Special Survey in accordance with the rules, approved plans & the workmanship, material are of good quality, they have now been securely fitted on board. Plus Report accounts with that of the Machinery.

Survey Fee charged on Machinery } When applied for, 10  
 Travelling Expenses (if any) £ } When received, 10

W. Gordon Maclean  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 6-DEC 1938

Assigned Su F. C. Macley Report



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