

See Glasgow Report No. 4765

5a.

REPORT ON BOILERS.

No. 82355

Received at London Office 10 FEB 1928

Writing Report 26-1-1928 When handed in at Local Office 31-1-1928 Port of **NEWCASTLE-ON-TYNE**

Survey held at **Hebburn** Date, First Survey **30 Sept.** Last Survey **24 Jan 1928**
 (Number of Visits **10.**) (Gross **739.**)
 on the **"MIRANI"** Tons (Net **381**)

Built at **Grangemouth** By whom built **Grangemouth Dockyard** Yard No. **415** When built **1928**

Made at **Glasgow** By whom made **McKie & Baxter** Engine No. **1209** When made **1928**

Made at **Hebburn** By whom made **Palmets S. & J. Co. Ltd** Boiler No. **1087** When made **1928**

Net Horse Power Owners **Burns Philips & Co** Port belonging to **Sydney, N.S.W.**

WATER-TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **Withowitz Bergbau & Eisenhütten-Gewerkschaft** (Letter for Record **(S)**)

Heating Surface of Boilers **1995 sq ft** Is forced draught fitted **No** Coal or Oil fired **COAL**

Kind and Description of Boilers **1 SINGLE ENDED** Working Pressure **200 LBS.**

Tested by hydraulic pressure to **350 LBS** Date of test **24.1.28** No. of Certificate **231** Can each boiler be worked separately **Yes**

No. of Firegrate in each Boiler **-** No. and Description of safety valves to each boiler **-**

No. of each set of valves per boiler {per Rule **-** as fitted **-** Pressure to which they are adjusted **-** Are they fitted with easing gear **-**

Use of donkey boilers, state whether steam from main boilers can enter the donkey boiler **-**

Least distance between boilers or uptakes and bunkers or woodwork **-** Is oil fuel carried in the double bottom under boilers **-**

Least distance between shell of boiler and tank top plating **-** Is the bottom of the boiler insulated **Yes**

Least internal dia. of boilers **14' 6"** Length **10' 6"** Shell plates: Material **STEEL** Tensile strength **28 - 32 TONS**

Thickness **1 5/16"** Are the shell plates welded or flanged **No** Description of riveting: circ. seams {end **D.R.L.** inter. **-**

Seams **T.R. - D.B.S.** Diameter of rivet holes in {circ. seams **1 5/16"** long. seams **1 5/16"** Pitch of rivets { **4"** **9 1/8"**

Percentage of strength of circ. end seams {plate **67.25%** rivets **49.0%** Percentage of strength of circ. intermediate seam {plate **-** rivets **-**

Percentage of strength of longitudinal joint {plate **85.6%** rivets **86.1%** combined **-** Working pressure of shell by Rules **200.4 LBS.**

Thickness of butt straps {outer **1 1/8"** inner **1 1/8"** No. and Description of Furnaces in each Boiler **3 MORISON SECTION**

Material **STEEL** Tensile strength **26 - 30 TONS** Smallest outside diameter **3' 6 3/4"**

Thickness of plain part {top **10 1/2"** bottom **10 1/2"** Thickness of plates {crown **5/8"** bottom **5/8"** Description of longitudinal joint **WELD**

Dimensions of stiffening rings on furnace or c.c. bottom **-** Working pressure of furnace by Rules **213 LBS.**

Stays in steam space: Material **STEEL** Tensile strength **26 - 30 TONS** Thickness **1 3/16"** Pitch of stays **18 1/2" x 19"**

Are stays secured **DOUBLE NUTS & WASHERS** Working pressure by Rules **215 LBS.**

Front plates: Material {front **STEEL** back **"** Tensile strength { **26 - 30 TONS** Thickness { **1 1/32"** **3/4"**

Pitch of stay tubes in nests **9.4"** Pitch across wide water spaces **14"** Working pressure {front **442 LBS.** back **228 LBS.**

Boilers to combustion chamber tops: Material **STEEL** Tensile strength **26 - 30 TONS** Depth and thickness of girder **-**

Centre **9" x 1 1/2"** Length as per Rule **2' 7 3/4"** Distance apart **9"** No. and pitch of stays **-**

Each **2 @ 9"** Working pressure by Rules **226 LBS.** Combustion chamber plates: Material **STEEL**

Tensile strength **26 - 30 TONS** Thickness: Sides **11/16"** Back **11/16"** Top **11/16"** Bottom **7/8"**

Thickness of stays to ditto: Sides **9" x 9"** Back **9" x 9"** Top **9" x 9"** Are stays fitted with nuts or riveted over **NUTS**

Working pressure by Rules **204 LBS.** Front plate at bottom: Material **STEEL** Tensile strength **26 - 30 TONS**

Thickness **1 1/32"** Lower back plate: Material **STEEL** Tensile strength **26 - 30 TONS** Thickness **29/32"**

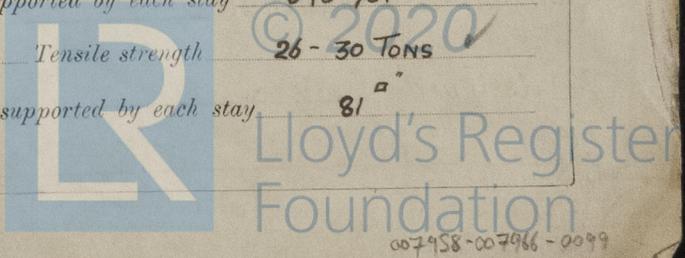
Thickness of stays at wide water space **d = 19"** Are stays fitted with nuts or riveted over **NUTS**

Working Pressure **215 LBS.** Main stays: Material **STEEL** Tensile strength **28 - 32 TONS**

Thickness of stay {At body of stay, **3 1/4"** No. of threads per inch **6** Area supported by each stay **346.75 sq in**

Working pressure by Rules **231 LBS.** Screw stays: Material **STEEL** Tensile strength **26 - 30 TONS**

Thickness of stay {At turned off part, **1 3/4"** No. of threads per inch **9** Area supported by each stay **81 sq in**



Working pressure by Rules **224 LBS** Are the stays drilled at the outer ends **No** Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{7}{8}'' \\ \text{or} \\ \text{Over threads} \end{array} \right.$

No. of threads per inch **9** Area supported by each stay **130.5** Working pressure by Rules **221 LBS**

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

Pitch of tubes **4\frac{1}{4} x 4\frac{1}{8}** Working pressure by Rules **250 LBS** Manhole compensation: Size of opening in shell plate **20" x 16"** Section of compensating ring **3' 0" x 2' 8" x 1\frac{5}{16}** No. of rivets and diameter of rivet holes **32 @ 1\frac{5}{16}**

Outer row rivet pitch at ends **9\frac{1}{8}** Depth of flange if manhole flanged **3\frac{1}{2}** 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

How connected to shell Inner radius of crown Working pressure by Rules

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 $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

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 23 inclusive for boilers been complied with **YES**

For **Palmer's Shipbuilding & Iron Co. Ltd.** The foregoing is a correct description, **A. Cameron** per **W.B.** Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right.$ **1927** **Sept. 30. Oct. 7. 12. Nov. 22. Dec. 7. 13.** Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

19. 1928 Jan. 6. 10. 24. Total No. of visits **10.**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This boiler has been built under Special Survey, the materials and workmanship are good.*

Letter on board the S. Mirani - Glasgow Report No. 47865

Survey Fee £ **13 : 6 : 0** } When applied for, **9 FEB. 1928**

Travelling Expenses (if any) £ : : } When received, **Don't 28/3/28**

Thomas Napier
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 1 MAY 1928**

Assigned *See accompanying*
Sketch Report - G.S. No. 47865

