

# REPORT ON BOILERS.

No. 86048

Received at London Office 8 AUG 1930

Date of writing Report 5/8/30. Port of Newcastle-on-Tyne  
 No. in Survey held at Hebburn Date, First Survey 8 May Last Survey 30 July 1930.  
 (Number of Visits 8) (Gross 640.48 Tons) (Net 246.98)  
 Built at Aberdeen By whom built J. Lewis & Sons Ltd. Yard No. 122 When built 1930  
 Engines made at Aberdeen By whom made J. Lewis & Sons Ltd. Engine No. 203 When made 1930  
 Boilers made at Hebburn By whom made Palmers Co. Ltd. Boiler No. 1154 When made 1930  
 Nominal Horse Power 118. Owners R. W. Miller & Co. Ltd. Port belonging to Sydney, N.S.W.

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

Manufacturers of Steel The Steel Company of Scotland Ltd. (Letter for Record)

Total Heating Surface of Boilers 2100 Is forced draught fitted No Coal or Oil fired COAL

No. and Description of Boilers ONE SINGLE ENDED 1SB Working Pressure 200 LBS.

Tested by hydraulic pressure to 350 LBS Date of test 21.7.30 No. of Certificate 485 Can each boiler be worked separately

Area of Firegrate in each Boiler 60 No. and Description of safety valves to each boiler Two spring loaded

Area of each set of valves per boiler per Rule 12.2. as fitted 14.13. Pressure to which they are adjusted 200 lb. Are they fitted with casing 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 abt 5 ft. Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 12" (dry tank) Is the bottom of the boiler insulated no

Largest internal dia. of boilers 15' 0" Length 10' 6" 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 D.R.L. inter.

Long. seams TR DBS Diameter of rivet holes in circ. seams 3/8" Pitch of rivets 4 1/8" 9 1/2"

Percentage of strength of circ. end seams plate 67.2% rivets 57.6% Percentage of strength of circ. intermediate seam plate 85.52% rivets 88.5% combined 88.7% Working pressure of shell by Rules 201 LBS.

Thickness of butt straps outer 1 1/8" inner 1 1/8" No. and Description of Furnaces in each Boiler THREE DEIGHTON 3cf

Material STEEL Tensile strength 26 - 30 TONS Smallest outside diameter 42.7"

Length of plain part top 10 1/2" bottom 10 1/2" Thickness of plates crown 19/32" bottom 19/32" Description of longitudinal joint WELD

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

Head plates in steam space: Material STEEL Tensile strength 26 - 30 TONS Thickness 1 1/4" Pitch of stays 19.5" x 20"

How are stays secured DOUBLE NUTS & WASHERS Working pressure by Rules 208 LBS.

Head plates: Material front STEEL Tensile strength 26 - 30 TONS Thickness 15/16" 3/4"

Can pitch of stay tubes in nests 9" x 9 1/2" Pitch across wide water spaces 14 1/2" Working pressure front 207 LBS. back 201 "

Orders to combustion chamber tops: Material STEEL Tensile strength 28 - 32 TONS Depth and thickness of girder

Centre 9" x 1 5/8" Length as per Rule 2' 7 1/2" Distance apart 9" No. and pitch of stays

Each 2 @ 9" Working pressure by Rules 250 LBS. Combustion chamber plates: Material STEEL

Tensile strength 26 - 30 TONS Thickness: Sides 11/16" Back 11/16" Top 11/16" Bottom 1"

Pitch 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 15/16" Lower back plate: Material STEEL Tensile strength 26 - 30 TONS Thickness 7/8"

Pitch of stays at wide water space d = 19" 14.5" x 9" Are stays fitted with nuts or riveted over NUTS

Working Pressure 225 LBS. Main stays: Material STEEL Tensile strength 28 - 32 TONS

Diameter At body of stay 3 1/4" No. of threads per inch 6 Area supported by each stay 30"

Working pressure by Rules 206 LBS. 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 8"

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

No. of threads per inch **9** Area supported by each stay **110.25** Working pressure by Rules **192 LBS.**

Tubes: Material **IRON** External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \mathbf{3\frac{1}{4}''}$  Thickness  $\left\{ \begin{array}{l} \text{8 W.G.} \\ \frac{1}{4}, \frac{5}{16} \end{array} \right. \mathbf{No. of threads per inch 9}$

Pitch of tubes **4\frac{1}{2} x 4\frac{3}{4}** Working pressure by Rules **230 LBS.** Manhole compensation: Size of opening

shell plate **16" x 20"** Section of compensating ring **2' 8" x 3' 0" x 1\frac{5}{16}"** No. of rivets and diameter of rivet holes **32 @ 1\frac{3}{8}"**

Outer row rivet pitch at ends **9\frac{1}{2}"** 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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \mathbf{-}$

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

Number of elements **-** Material of tubes **-** Internal diameter and thickness of tubes **-**

Material of headers **-** Tensile strength **-** Thickness **-** Can the superheater be shut off from the boiler **-**

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 **YES**

**Palmers Shipbuilding & Iron Co. Ltd.**  
The foregoing is a correct description,  
**A. Cameron** Manufacturer  
Manager, Hebburn Boiler Shop & Foundry

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \mathbf{1950}$   
 May 8. 16. June 11. 18. 30. July 15. 21. 30.  
 Sept 17. Oct 22. 23.  
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) **Yes**  
 Total No. of visits **8**  
 Installing, **3**

**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.**  
**The boiler has been satisfactorily fitted on board the steamer "BIRCHGROVE".**  
**The safety valves have been adjusted under steam & tried for accumulation, and the boiler examined under working conditions and found satisfactory.**

**P. Fitzgerald**  
**Aberdeen.**

Survey Fee ... £ **14 : 0 : 0** When applied for. **-7 AUG 1930**  
 Travelling Expenses (if any) £ : : When received. **Per Secretary's letter c.4. 30-9-30.**

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

Committee's Minute **TUE 11 NOV 1930**

Assigned **See other J.E. Rep  
Abn. 16346**



© 2020  
Lloyd's Register  
Foundation