

Rpt. 5a.

REPORT ON BOILERS.

Sld. No. 30561
New No. 86508
30 JAN 1931

Received at London Office -4 DEC 1930

Date of writing Report

1930

When handed in at Local Office

25/11/1930

Port of

Newcastle-on-Tyne

No. in Survey held at
Reg. Book.

Jarrows

Date, First Survey

3-6th.

Last Survey

Sld. 27 Jan '31
18 Jan 1930

on the

M.V. BRITISH SCIENCE

(Number of Visits 12.)

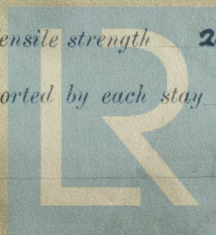
Gross
Tons
Net

Master Built at **Hebburn** By whom built **Palmers C. Ltd.** Yard No. **1003** When built **1930**
 Engines made at **Sunderland** By whom made **W. Doxford & Sons Ltd.** Engine No. **182** When made **1930**
 Boilers made at **Jarrows** By whom made **Palmers C. Ltd.** Boiler No. **8027** When made **1930**
 Nominal Horse Power Owners **British Tanker Co. Ltd.** Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **The Steel Company of Scotland Ltd.** (Letter for Record **S**)
 Total Heating Surface of Boilers **1365** Is forced draught fitted **Yes** Coal or Oil fired **Oil**
 No. and Description of Boilers **ONE SINGLE ENDED** Working Pressure **150 LBS.**
 Tested by hydraulic pressure to **275 LBS.** Date of test **31-10-30** No. of Certificate **520** Can each boiler be worked separately
 Area of Firegrate in each Boiler No. and Description of safety valves to each boiler **Two spring loaded.**
 Area of each set of valves per boiler {per Rule **12.4** as fitted **14.1372** Pressure to which they are adjusted **155** 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 **8'-0"** Is oil fuel carried in the double bottom under boilers **Fitted two decks.**
 Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated **Yes**
 Largest internal dia. of boilers **11' 4 7/16"** Length **11' 6"** Shell plates: Material **STEEL** Tensile strength **29-33 TONS.**
 Thickness **25/32"** Are the shell plates welded or flanged **No** Description of riveting: circ. seams {end **D.R.L.** inter.
 long. seams **TRDBS** Diameter of rivet holes in {circ. seams **1"** long. seams **7/8"** Pitch of rivets {**3-26"** **6 5/16"**
 Percentage of strength of circ. end seams {plate **69.3** rivets **48.9** Percentage of strength of circ. intermediate seam {plate **86.2** rivets
 Percentage of strength of longitudinal joint {plate **86.2** rivets **90.3** combined **90.45** Working pressure of shell by Rules **153 LBS.**
 Thickness of butt straps {outer **23/32"** inner **23/32"** No. and Description of Furnaces in each Boiler **TWO DEIGHTON**
 Material **STEEL** Tensile strength **26-30 TONS.** Smallest outside diameter **2'-8"**
 Length of plain part {top **10 1/2"** bottom **10 1/2"** Thickness of plates {crown **3/8"** bottom **3/8"** Description of longitudinal joint **WELD**
 Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules **165 LBS.**
 End plates in steam space: Material **STEEL** Tensile strength **26-30 TONS.** Thickness **15/16"** Pitch of stays **16" x 17"**
 How are stays secured **DOUBLE NUTS & WASHERS** Working pressure by Rules **151 LBS.**
 Tube plates: Material {front **STEEL** back **"** Tensile strength {**26-30 TONS.** Thickness {**27/32"** **25/32"**
 Mean pitch of stay tubes in nests **9-375"** Pitch across wide water spaces **1'-2"** Working pressure {front **154 LBS.** back **155 LBS.**
 Girders to combustion chamber tops: Material **STEEL** Tensile strength **29-33 TONS.** Depth and thickness of girder
 at centre **7 1/2" x 1"** Length as per Rule **2'-4 19/32"** Distance apart **8 1/4"** No. and pitch of stays
 in each **2 @ 10"** Working pressure by Rules **158 LBS.** Combustion chamber plates: Material **STEEL**
 Tensile strength **26-30 TONS.** Thickness: Sides **5/8"** Back **23/32"** Top **5/8"** Bottom **5/8"**
 Pitch of stays to ditto: Sides **8 1/4" x 10"** Back **7" x 8 1/2"** Top **8 1/4" x 10"** Are stays fitted with nuts or riveted over **BOTH**
 Working pressure by Rules **153 LBS.** Front plate at bottom: Material **STEEL** Tensile strength **26-30 TONS.**
 Thickness **27/32"** Lower back plate: Material **STEEL** Tensile strength **26-30 TONS.** Thickness **29/32"**
 Pitch of stays at wide water space **14" x 9-5"** Are stays fitted with nuts or riveted over **NUTS**
 Working Pressure **156 LBS.** Main stays: Material **STEEL** Tensile strength **28-32 TONS.**
 Diameter {At body of stay, **2 1/2"** or Over threads **-** No. of threads per inch **6** Area supported by each stay **272**
 Working pressure by Rules **163 LBS.** Screw stays: Material **STEEL** Tensile strength **26-30 TONS.**
 Diameter {At turned off part, **1 1/2"** or Over threads **-** No. of threads per inch **9** Area supported by each stay **82.5**

W11-0036

Lloyd's Register
Foundation

Working pressure by Rules 152 LBS. Are the stays drilled at the outer ends No Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}$

No. of threads per inch 9 Area supported by each stay 92 Working pressure by Rules 165 LBS.

Tubes: Material W. IRON External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 2\frac{1}{2}, 2\frac{1}{2}$ Thickness $\left\{ \begin{array}{l} 10 \text{ W.G.} \\ 3\frac{3}{8}, 5\frac{1}{16} \end{array} \right.$ No. of threads per inch 9

Pitch of tubes $3\frac{3}{4} \times 3\frac{3}{4}$ Working pressure by Rules 175 LBS. Manhole compensation: Size of opening in shell plate 20×16 Section of compensating ring $2' 8" \times 2' 9" \times \frac{25}{32}$ No. of rivets and diameter of rivet holes $40 @ 1\frac{1}{16}$

Outer row rivet pitch at ends $7\frac{3}{16}$ Depth of flange if manhole flanged 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 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 $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

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 22 inclusive for boilers been complied with YES

The foregoing is a correct description, *Palmer Superheater Co., Ltd.* Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right. 1930 \text{ Oct. 3, 12, 14, 17, 20, 21, 23, 31, Nov. 5, 6, 10, 18.}$ Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right.$ Total No. of visits 12.

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.

This boiler has been satisfactorily fitted in the vessel & the safety valves adjusted under steam for notation see machinery report.

Survey Fee ... £ 9 : 2 : 0

Travelling Expenses (if any) £ :

When applied for, 192

When received, 14/2/31

3 DEC 1930

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

Committee's Minute THE 10 FEB 1931

Assigned

See other Nwc J.E. Rpt.



© 2019

Lloyd's Register Foundation