

REPORT ON BOILERS.

No. 82790

Received at London Office

25 MAY 1928

Date of writing Report 21-5-1928 When handed in at Local Office 24-5-1928 Port of Newcastle-on-Tyne

No. in Survey held at Jarrow Date, First Survey 30 Dec 1927 Last Survey 16 May 1928

40341 (Sup) on the S.S. "CARONI" (Number of Visits ---) Tons { Gross 3163.81 Net 1671

Master Built at Hebburn By whom built Palmers Co. Ltd Yard No. 983 When built 1928
Engines made at Jarrow By whom made Palmers Co. Ltd Engine No. 983 When made 1928
Boilers made at " By whom made Palmers Co. Ltd Boiler No. 983 When made 1928
Nominal Horse Power 248 Owners Venezuela Gulf Oil Co. Ltd Port belonging to Maracaibo

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 4808 Is forced draught fitted No ✓ Coal or Oil fired OIL ✓

No. and Description of Boilers Two (S.E.) CYLINDRICAL MULTITUBULAR Working Pressure 180 LBS. ✓

Tested by hydraulic pressure to 320 LBS. Date of test 25.4.28 No. of Certificate 268-9 Can each boiler be worked separately YES ✓

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 18.49" as fitted 19.24" Pressure to which they are adjusted 180 LBS 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 1' 6" Is oil fuel carried in the double bottom under boilers No ✓

Smallest distance between shell of boiler and tank top plating 2' 1 1/2" Is the bottom of the boiler insulated YES ✓

Largest internal dia. of boilers 15' 0" Length 11' 6" MEAN Shell plates: Material STEEL ✓ Tensile strength 28-32 TONS

Thickness 1 1/4" Are the shell plates welded or flanged No ✓ Description of riveting: circ. seams { end D.R.L. inter. ---

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 3/8" long. seams 1 1/4" Pitch of rivets { 3.954" 8 1/16" ✓

Percentage of strength of circ. end seams { plate 65.2% rivets 49.6% Percentage of strength of circ. intermediate seam { plate --- rivets ---

Percentage of strength of longitudinal joint { plate 85.6% rivets 87.1% combined 88.5% Working pressure of shell by Rules 183.9 LBS. 30cf. ✓

Thickness of butt straps { outer 3/32" inner 1/32" No. and Description of Furnaces in each Boiler 3 CORRUGATED, DEIGHTON SECTION

Material STEEL Tensile strength 26-30 TONS ✓ Smallest outside diameter 3' 7 1/8" ✓

Length of plain part { top 10 1/2" bottom 10 1/2" Thickness of plates { crown 9/16" bottom 9/16" Description of longitudinal joint WELD ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 187 LBS. ✓

End plates in steam space: Material STEEL ✓ Tensile strength 26-30 TONS ✓ Thickness 1 1/4" ✓ Pitch of stays 21" x 21" ✓

How are stays secured NUTS & WASHERS ✓ Working pressure by Rules 182 LBS. ✓

Tube plates: Material { front STEEL back " Tensile strength { 26-30 TONS " Thickness { 15/16" 27/32" ✓

Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 1' 2" ✓ Working pressure { front 186 LBS. back 202 " ✓

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

at centre 10" x 1 3/8" ✓ Length as per Rule 2' 10 1/2" ✓ Distance apart 10" ✓ No. and pitch of stays

in each 3 @ 8 3/4" Working pressure by Rules 182 LBS. ✓ Combustion chamber plates: Material STEEL ✓

Tensile strength 26-30 TONS ✓ Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4" ✓

Pitch of stays to ditto: Sides 8 3/4" x 8 1/4" Back 9" x 8" Top 10" x 8 3/4" Are stays fitted with nuts or riveted over NUTS ON MARGINAL STAYS ✓

Working pressure by Rules 182 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 29/32" ✓

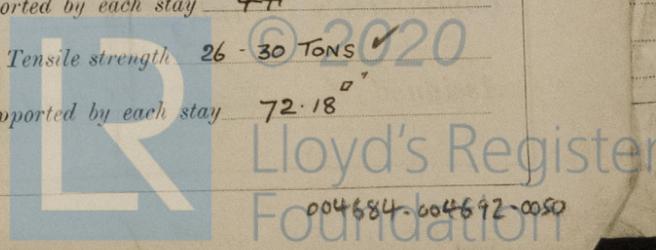
Pitch of stays at wide water space d = 19.5" 14 x 9" ✓ Are stays fitted with nuts or riveted over NUTS ✓

Working Pressure 184 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 44" ✓

Working pressure by Rules 183 LBS. ✓ Screw stays: Material STEEL ✓ Tensile strength 26-30 TONS ✓

Diameter { At turned off part, 1 5/8" ✓ No. of threads per inch 9 ✓ Area supported by each stay 72.18" ✓



Working pressure by Rules 211 LBS° Are the stays drilled at the outer ends No Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \frac{3}{4}'' \quad 2''$

No. of threads per inch 9 Area supported by each stay $99'' \quad 123.75''$ Working pressure by Rules $183 \text{ LBS}^{\circ} \quad 201 \text{ LBS}^{\circ}$

Tubes: Material W. IRON External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 2\frac{1}{2}'' \quad 2\frac{1}{2}''$ Thickness $\left\{ \begin{array}{l} 9 \text{ S.L.C.} \\ \frac{9}{16}'' \quad \frac{3}{8}'' \quad \frac{7}{16}'' \end{array} \right. \text{No. of threads per inch } 9$

Pitch of tubes $3\frac{3}{4}'' \times 3\frac{3}{4}''$ Working pressure by Rules 230 LBS° Manhole compensation: Size of opening in shell plate $20' \times 16'$ Section of compensating ring $2' 11\frac{1}{2}'' \times 2' 8'' \times 1\frac{1}{4}''$ No. of rivets and diameter of rivet holes $40 @ 1\frac{1}{4}''$

Outer row rivet pitch at ends $8\frac{11}{16}''$ Depth of flange if manhole flanged $4\frac{1}{2}''$ Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \text{No. and diameter of stays}$

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

Number of elements Material of tubes Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right. \text{Internal diameter and thickness of tubes}$

Material of headers Tensile strength Thickness Can the superheater be shut off and the boiler be worked separately

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**

Palmers The foregoing is a correct description,

W. Brown Manufacturer.
Manager, Engine Works

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \left\{ \begin{array}{l} \text{During erection on board vessel} \end{array} \right. \text{See Machinery Report.}$

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) *Plans sent in London.*

Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers were built under Special Survey, the materials and workmanship are good.*

Survey Fee £ : : } When applied for, 192

Travelling Expenses (if any) £ : : } When received, 192

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

Committee's Minute **WED. 30 MAY 1928**

Assigned *See Report attached*



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