

# REPORT ON BOILERS.

No. 16378

Received at London Office

24 JAN 1924

Port of LIVERPOOL.

Survey held at Birkenhead Date, First Survey 3rd Oct/23 Last Survey 25-1-1923

Boiler for S.S. "LA PLAYA" (DIESEL ELECTRIC SHIP) (Number of Visits ) Tons {Gross 3687 Net 2144

Built at Birkenhead By whom built Cammell Laird & Co Ltd Yard No. 894 When built 1921-2

Engines made at Birkenhead By whom made Cammell Laird & Co Ltd Engine No. 894 When made 1921

Boilers made at Birkenhead By whom made Cammell Laird and Co Ltd Boiler No. 894 When made 1921

Indicated Horse Power 51 Owners Imperial SS Co Ltd (Clark & Lewis Mgrs) Port belonging to Glasgow.

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

Manufacturers of Steel Manchester Steel Co, Port Talbot Steel Co & John Spencer and Co Ltd (Letter for Record S.)

Total Heating Surface of Boilers 769 sq feet Is forced draught fitted No. Coal or Oil fired Oil.

Number and Description of Boilers One Cylindrical Multitubular Single ended Working Pressure 140 lbs.

Tested by hydraulic pressure to 260 lbs Date of test 25/1/23 No. of Certificate 2215 Can each boiler be worked separately

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

Area of each set of valves per boiler {per Rule 7.45 sq/in as fitted 7.95 sq/in Pressure to which they are adjusted 140 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 15" Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating  Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 9'-9" Length 9'-4" Shell plates: Material Steel Tensile strength 28-32 tons

Thickness 2 1/32" Are the shell plates welded or flanged  Description of riveting: circ. seams {end Double inter. 2.567"

Percentage of strength of circ. end seams {plate 68.4% rivets 50.5% Percentage of strength of circ. intermediate seam {plate 85.2% rivets 110.6%

Percentage of strength of longitudinal joint {plate 85.2% rivets 110.6% combined 92.5% Working pressure of shell by Rules 140.7 lbs.

Thickness of butt straps {outer 9/16" inner 3/4" No. and Description of Furnaces in each Boiler Two, corrugated Dighton section.

Material Steel Tensile strength 26-30 tons Smallest outside diameter 3'-2"

Length of plain part {top 1/2" bottom 1/2" Thickness of plates {crown 1/2" bottom 1/2" Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom  Working pressure of furnace by Rules 207.7 lbs.

Stays in steam space: Material Steel Tensile strength 26-30 tons Thickness 13/16" Pitch of stays 14" x 15"

How are stays secured Nuts and washers Working pressure by Rules 142.5 lbs.

End plates: Material {front Steel back Steel Tensile strength { 26-30 tons Thickness { 13/16" 3/4"

Span pitch of stay tubes in nests 8 1/4" Pitch across wide water spaces 14" Working pressure {front 149.1 lbs back 295.5 lbs.

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

centre 6" x 9/16" Length as per Rule 1'-10 1/16" Distance apart 7" No. and pitch of stays

each One Working pressure by Rules 149.7 lbs Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 3/4"

Pitch of stays to ditto: Sides 9" Back 9" x 8" Top 7" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 145.4 and 149 lbs. Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 13/16" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 13/16"

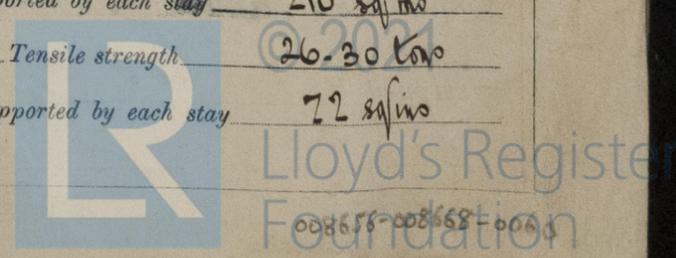
Pitch of stays at wide water space 14" x 9" Are stays fitted with nuts or riveted over Nuts

Working Pressure 194 lbs. Main stays: Material Steel Tensile strength 28-32 tons.

Diameter {At body of stay, 2 1/8" or Over threads 2 1/8" No. of threads per inch 6 Area supported by each stay 210 sq/in

Working pressure by Rules 144.1 lbs. Screw stays: Material Steel Tensile strength 26-30 tons

Diameter {At turned off part, 1 1/2" or Over threads 1 1/2" No. of threads per inch 9 Area supported by each stay 72 sq/in



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Working pressure by Rules 174 lbs Are the stays drilled at the outer ends  Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{1}{8}'' \\ \text{or} \\ \text{Over threads } 1\frac{1}{8}'' \end{array} \right.$

No. of threads per inch 9 Area supported by each stay 99 sq in Working pressure by Rules 153.6 lbs

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

Pitch of tubes A $\frac{1}{8}$ " x A $\frac{1}{8}$ " Working pressure by Rules 579 lbs and 212 lbs Manhole compensation: Size of opening 44 - 1 $\frac{1}{16}$ " dia

shell plate 21 $\frac{1}{4}$ " x 17 $\frac{1}{4}$ " Section of compensating ring 7 $\frac{5}{8}$ " x 3 $\frac{1}{4}$ " No. of rivets and diameter of rivet holes 44 - 1 $\frac{1}{16}$ " dia

Outer row rivet pitch at ends 6 $\frac{3}{8}$ " Depth of flange if manhole flanged 3 $\frac{1}{4}$ " 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 \_\_\_\_\_

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.

The foregoing is a correct description,  
*J. W. P. [Signature]* Manufacturer

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right.$  See report on machinery. Are the approved plans of boiler and superheater forwarded herewith Yes.

(If not state date of approval.)

Total No. of visits ✓

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)

This Boiler has now been built under special survey and in accordance with the approved plan and Secretary's letter E 24 August 1922. The material and workmanship are of a good quality and when tested to 260 lbs per sq inch was found tight and satisfactory in every respect. The Boiler has been fitted on board, examined under steam and safety valves adjusted to 140 lbs per sq inch. Size of compression washers  $\frac{5}{16}$  Dia.  $\frac{3}{8}$  Hpt. This Boiler is eligible in our opinion for notation + N.B. 1-24.

This Boiler has been fitted with an oil fuel installation in accordance with approved plans, Secretary's letter E August 30, 1923 and the rule requirements. On completion the installation was examined and tested under full working conditions and found satisfactory in every respect. The Boiler is eligible in our opinion to have notation "Fitted for oil fuel 1,24 FP above 150° F". For particulars of notation see Manchester report no 5181 attached.

Survey Fee ... £ 5 : 2 : 0 When applied for, 24 JAN 1924

Travelling Expenses (if any) £ : : When received, 24 JAN 1924

*John Dykes and J. L. Leicester*  
 Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute **LIVERPOOL** 25 JAN 1924

Assigned See report attached



not to be used for other purposes