

# REPORT ON BOILERS.

No. 17878

Received at London Office

9 JUL 1945

Date of writing Report 3<sup>rd</sup> July 1945 When handed in at Local Office 7<sup>th</sup> July 1945 Port of Middlesbrough

No. in Reg. Book. Surrey held at Stockton - a. J. Lee Date, First Survey 13<sup>th</sup> March Last Survey 25<sup>th</sup> June 1945

on the EMPIRE SENLAC (Number of Visits 10) Gross Tons } Net

Built at Sunderland By whom built J. L. Thompson & Sons Ltd Yard No. 642 When built 1945

Engines made at Sunderland By whom made Wm. Dupré Engine No. 245 When made 1945

Boilers made at Stockton - a. J. Lee By whom made Washin CC & Riley Mns. Ld. Boiler No. 6893 When made 1945

Nominal Horse Power \_\_\_\_\_ Owners Ministry of War Transport Port belonging to Sunderland

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

Manufacturers of Steel Appley Fitting & Steel Co. Ld. (Letter for Record 5)

Total Heating Surface of Boilers 1152 sq ft Is forced draught fitted no Coal or Oil fired oil

No. and Description of Boilers \_\_\_\_\_ Working Pressure 150 lbs.

Tested by hydraulic pressure to 275 lbs. Date of test 25/6/45 No. of Certificate 7147 Can each boiler be worked separately yes

Area of Firegrate in each Boiler \_\_\_\_\_ No. and Description of safety valves to each boiler 1 - 2" H.L. - Double Spring

Area of each set of valves per boiler { per Rule 5.7 as fitted 6.280 Pressure to which they are adjusted 150 lbs. 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 \_\_\_\_\_ 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 10'-9" Length 10'-6" Shell plates: Material Steel Tensile strength 28-32

Thickness 25/32" Are the shell plates welded or flanged no Description of riveting: circ. seams { end DR.L. inter. 2.98"

Long. seams TR. D.B.S. Diameter of rivet holes in { circ. seams 15/16" long. seams 15/16" Pitch of rivets { 6 1/4"

Percentage of strength of circ. end seams { plate 68.5% rivets 48.7 Percentage of strength of circ. intermediate seam { plate \_\_\_\_\_ rivets \_\_\_\_\_

Percentage of strength of longitudinal joint { plate 85 rivets 108.7 combined \_\_\_\_\_

Thickness of butt straps { outer 19/32" inner 23/32" No. and Description of Furnaces in each Boiler 2 Deep Iron Corrugated

Material Steel Tensile strength 26-30 Smallest outside diameter 3'-2 1/4"

Length of plain part { top \_\_\_\_\_ bottom \_\_\_\_\_ Thickness of plates { crown 13/32" bottom \_\_\_\_\_ Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom \_\_\_\_\_

End plates in steam space: Material Steel Tensile strength 26-30 Thickness FRONT 29/32" BACK 7/8" Pitch of stays 16" x 14"

How are stays secured Double nuts & washers screwed into bot. plates

Tube plates: Material { front Steel back \_\_\_\_\_ Tensile strength { 26-30 Thickness { 29/32" 13/16"

Mean pitch of stay tubes in nests 9.69" Pitch across wide water spaces 14"

Girders to combustion chamber tops: Material Steel Tensile strength 26-30 Depth and thickness of girder at centre 7" x 7/8" Length as per Rule 2'-4 3/32" Distance apart 5 1/8" No. and pitch of stays in each \_\_\_\_\_

Combustion chamber plates: Material Steel

Tensile strength 26-30 Thickness: Sides 5/8" Back 19/32" Top 5/8" Bottom 5/8"

Pitch of stays to ditto: Sides 9 1/2" x 8 3/4" Back 9" x 8 1/2" Top \_\_\_\_\_ Are stays fitted with nuts or riveted over nuts

Front plate at bottom: Material Steel Tensile strength 26-30

Thickness 29/32" Lower back plate: Material Steel Tensile strength 26-30 Thickness 7/8"

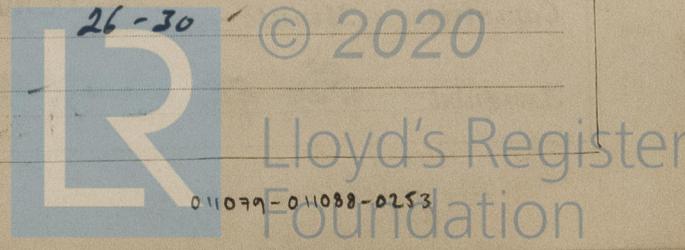
Pitch of stays at wide water space 14" Are stays fitted with nuts or riveted over nuts

Main stays: Material Steel Tensile strength 28-32

Diameter { At body of stay, or over threads 2 1/4" No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26-30

Diameter { At turned off part, or over threads 1 1/2" No. of threads per inch 9



Are the stays drilled at the outer ends No. Margin stays: Diameter <sup>At turned off part,</sup> 1 3/4" - 1 5/8"  
 or Over threads  
 No. of threads per inch 6.  
 Tubes: Material H.P. Weldless Steel External diameter <sup>Plain</sup> 3" Thickness <sup>95129.</sup> 5/16" No. of threads per inch 9.  
<sup>Stay</sup> 3"  
 Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in  
 shell plate 21" x 17" Section of compensating ring 7" x 1 1/8" No. of rivets and diameter of rivet holes 52. 1 1/16"  
 Outer row rivet pitch at ends 6 1/4" Depth of flange if manhole flanged 3 1/2" Steam Dome: Material None.  
 Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_  
 Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint <sup>Plate</sup> \_\_\_\_\_  
<sup>Rivets</sup> \_\_\_\_\_  
 Internal diameter \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diameter of  
 stays \_\_\_\_\_ Inner radius of crown \_\_\_\_\_  
 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 <sup>Tubes</sup> \_\_\_\_\_  
<sup>Steel forgings</sup> \_\_\_\_\_  
<sup>Steel castings</sup> \_\_\_\_\_  
 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 \_\_\_\_\_  
 Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure:  
 tubes \_\_\_\_\_ forgings and 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 For and on behalf of  
**STOKTON CHEMICAL ENGINEERS & BOILER MFG. CO. LTD.**  
*Geo. W. Riley* Manufacturer.  
 DIRECTOR

Dates of Survey <sup>March 13, 23, 24, April 6, 12, 25, May 30,</sup> \_\_\_\_\_ Are the approved plans of boiler and superheater forwarded herewith 23/11/44  
 while building <sup>June 11, 20, 25</sup> \_\_\_\_\_ (If not state date of approval.)  
 Total No. of visits 10

Is this Boiler a duplicate of a previous case \_\_\_\_\_ If so, state Vessel's name and Report No. \_\_\_\_\_

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)  
 This boiler has been constructed under Special Survey & in accordance with the  
 Requirements & approved plan.  
 The materials & workmanship are good & on completion the boiler was hydraulically  
 tested to 275 lb psi & found satisfactory.  
 This boiler is being forwarded to Sunderland for U.M.S. Transport Contract No. 245.  
 This boiler has been efficiently fitted on board and its safety  
 valves have been adjusted under steam.  
*L. R. Horne*

Survey Fee ... .. £ 7 : 14 : } When applied for, 7-7-1945.  
 Travelling Expenses (if any) £ : : } When received, 19

*L. R. Horne*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 16 NOV 1945  
 Assigned Su F.E. machy. rpt.

