

# REPORT ON BOILERS.

No. 16583

Received at London Office

Date of writing Report

192

When handed in at Local Office

16.12.1927

Port of

West Hartlepool

No. in g. Book.

Survey held at

Hartlepool

Date, First Survey

23rd May

Last Survey

14th Dec 1927

(Number of Visits)

Gross Tons Net

on the *Twin S.S. No 494.*

Master Built at *Lewis, Quebec* By whom built *Davie S.B. & Rep Co. Ld.* Yard No. *494* When built *1927*

Engines made at *Hartlepool* By whom made *Richardsons Westgarth & Co* Engine No. *2669* When made *1927*

Boilers made at *ditto* By whom made *ditto* Boiler No. *2669* When made *1927*

Nominal Horse Power \_\_\_\_\_ Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_

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

Manufacturers of Steel *D Colville & Sons Ltd.* (Letter for Record *S*)

Total Heating Surface of Boilers *12656 sq. ft* Is forced draught fitted *yes* Coal or Oil fired *Coal or oil.*

No. and Description of Boilers *Six single ended* Working Pressure *190 lbs*

Tested by hydraulic pressure to *335* Date of test *14.9.27(3)* No. of Certificate *3712(3)* Can each boiler be worked separately *yes*

Area of Firegrate in each Boiler *55 sq. ft* No. and Description of safety valves to each boiler *2 direct spring*

Area of each set of valves per boiler *per Rule 72.88 sq. in.* Pressure to which they are adjusted *16.58 sq. in.* Are they fitted with easing gear \_\_\_\_\_

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 \_\_\_\_\_

Largest internal dia. of boilers *13'-9 1/16"* Length *11'-6"* Shell plates: Material *Steel* Tensile strength *29/33*

Thickness *1 3/32"* Are the shell plates welded or flanged *no* Description of riveting: circ. seams *end 2 R Lap*

Long. seams *Tri. riv. D.B.S.* Diameter of rivet holes in *circ. seams 1 3/16"* Pitch of rivets *3 3/8"*

Percentage of strength of circ. end seams *plate 64.8 rivets 66.6* Percentage of strength of circ. intermediate seam *plate \_\_\_\_\_ rivets \_\_\_\_\_*

Percentage of strength of longitudinal joint *plate 85.3 rivets 87.25 combined 88.25* Working pressure of shell by Rules *190 lbs*

Thickness of butt straps *outer 5/8" inner 1"* No. and Description of Furnaces in each Boiler *3 Deightons*

Material *Steel* Tensile strength *26/30* Smallest outside diameter *3'-5 1/8"*

Length of plain part *top \_\_\_\_\_ bottom \_\_\_\_\_* Thickness of plates *crowns 9/16"* Description of longitudinal joint *welded*

Dimensions of stiffening rings on furnace or c.c. bottom \_\_\_\_\_ Working pressure of furnace by Rules *198 lbs*

End plates in steam space: Material *Steel* Tensile strength *26/30* Thickness *1 1/8"* Pitch of stays *19" x 16"*

How are stays secured *Double nuts* Working pressure by Rules *190 lbs*

End plates: Material *front Steel back Steel* Tensile strength *26/30* Thickness *27/32" 3/4"*

Lean pitch of stay tubes in nests *11 5/8" x 7 1/4"* Pitch across wide water spaces *13 1/2"* Working pressure *front 207 lbs back 220 lbs*

Girders to combustion chamber tops: Material *Steel* Tensile strength *28/32* Depth and thickness of girder \_\_\_\_\_

Distance apart *9 1/4" x 1 5/8"* Length as per Rule *2'-9 1/2"* Distance apart *10"* No. and pitch of stays \_\_\_\_\_

Working pressure by Rules *194* Combustion chamber plates: Material *Steel*

Tensile strength *26/30* Thickness: Sides *11/16"* Back *2 1/32"* Top *2 1/32"* Bottom *11/16"*

Pitch of stays to ditto: Sides *9" x 8"* Back *9" x 8 3/4"* Top *8" x 9 5/8"* Bottom *8" x 10"* Are stays fitted with nuts or riveted over *nuts*

Working pressure by Rules *190 lbs* Front plate at bottom: Material *Steel* Tensile strength *26/30*

Thickness *27/32"* Lower back plate: Material *Steel* Tensile strength *26/30* Thickness *25/32"*

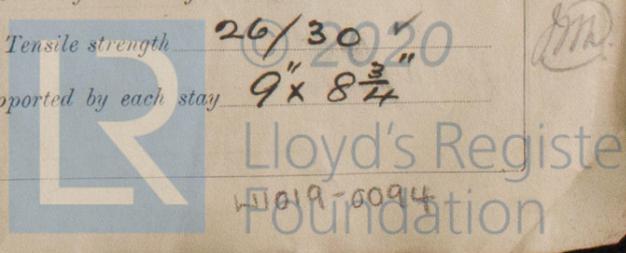
Pitch of stays at wide water space *13 1/2" x 8 3/4"* Are stays fitted with nuts or riveted over *nuts*

Working Pressure *191 lbs* Main stays: Material *Steel* Tensile strength *28/32*

Diameter *At body of stay 2 3/4" 2 7/8"* No. of threads per inch *6* Area supported by each stay *16" x 19"*

Working pressure by Rules *201 lbs* Screw stays: Material *Steel* Tensile strength *26/30*

Diameter *At turned off part 1 5/8"* No. of threads per inch *9* Area supported by each stay *9" x 8 3/4"*



Working pressure by Rules 193 lb Are the stays drilled at the outer ends yes Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part.} \\ \text{or} \\ \text{Over threads} \end{array} \right. \left. \begin{array}{l} \checkmark \\ \checkmark \\ 1\frac{3}{8}'' \end{array} \right.$

No. of threads per inch 9 Area supported by each stay 11\frac{1}{2}'' x 9'' Working pressure by Rules 206

Tubes: Material Iron External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \left. \begin{array}{l} 2\frac{1}{2}'' \\ 2\frac{1}{2}'' \end{array} \right. \checkmark$  Thickness  $\left\{ \begin{array}{l} 9 \text{ V V G} \\ 5\frac{1}{16}'' \text{ x } 3\frac{3}{8}'' \end{array} \right. \checkmark$  No. of threads per inch 9

Pitch of tubes 3\frac{5}{8}'' x 3\frac{5}{8}'' Working pressure by Rules 224 lb Manhole compensation: Size of opening in shell plate 20\frac{1}{4}'' x 16\frac{1}{4}'' Section of compensating ring 21\frac{5}{8}'' x 1\frac{5}{32}'' No. of rivets and diameter of rivet holes 42 1\frac{3}{16}''

Outer row rivet pitch at ends 8\frac{1}{8}'' Depth of flange if manhole flanged ✓ 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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \checkmark$

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 none Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right. \checkmark$

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 23 inclusive for boilers been complied with yes

The foregoing is a correct description,  
For RICHARDSONS, WESTGARTH & Co. LIMITED  
Manufacturer.

M. J. Guthrie GENERAL MANAGER.  
(HARTLEPOOL WORKS)  
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) ✓  
Total No. of visits 1  
Forwarded with rpt on 26th

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \left. \begin{array}{l} \text{---} \\ \text{---} \end{array} \right. \left. \begin{array}{l} \text{See report on machinery.} \\ \text{---} \end{array} \right.$

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
See accompanying machinery report.

Survey Fee ... .. £ : : | When applied for, 192  
Travelling Expenses (if any) £ : : | When received, 192

R.D. Shilston.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 14 AUG 1928  
Assigned See incl 76 2907