

# REPORT ON BOILERS.

Received at London Office - 4 SEP 1925

Date of writing Report **1-9-1925** When handed in at Local Office **1-9-1925** Port of **Middlesbrough**

No. in Reg. Book. Survey held at **Stockton on Tees** Date, First Survey **10<sup>th</sup> July** Last Survey **11/9/1925**

on the **Single end boiler for Messrs Crabtree & Co. Ltd.** (Number of Visits **7**) Tons { Gross } Net

Master Built at **Kings Lynn** By whom built **Kings Lynn Shipway Co.** Yard No. **207** When built **1925**

Engines made at **Great Yarmouth** By whom made **Beattie & Co Ltd** Engine No. **595** When made **1925**

Boiler made at **Stockton** By whom made **Messrs Riley Bros. Ltd** Boiler No. **5625** When made **1925**

Nominal Horse Power **41** Owners **Union Government of South Africa** Port belonging to **Cape Town**

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

Manufacturers of Steel **David Colville & Sons Ltd, South Durham S.S. Coy.** (Letter for Record **(S)**)

Total Heating Surface of Boilers **800 sq ft** **ISB.**  Is forced draught fitted **Coal or Oil fired** **Coal**

No. and Description of Boilers **One Single end** Working Pressure **130 lbs**

Tested by hydraulic pressure to **245 lbs** Date of test **1-9-25** No. of Certificate **6485** Can each boiler be worked separately

Area of Firegrate in each Boiler **28 3/4 sq ft** No. and Description of safety valves to each boiler **2**

Area of each set of valves per boiler { per Rule } { as fitted } **3.97 sq ft** Pressure to which they are adjusted **130 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 **9"** 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 **9'-6"** Length int **9'-6"** Shell plates: Material **Steel** Tensile strength **28-32 tons**

Thickness **5/8"** Are the shell plates welded or flanged **No** Description of riveting: circ. seams { end } **LAP. DR.** { inter. } **3" x 6"**

Long. seams { **Double Rupt Straps** } { **Double Riveted** } Diameter of rivet holes in { circ. seams } **15/16"** { long. seams } **13/16"** Pitch of rivets { **4 1/2"** }

Percentage of strength of circ. end seams { plate } **68.66** { rivets } **45.0** Percentage of strength of circ. intermediate seam { plate } **82.0** { rivets } **85.2** Working pressure of shell by Rules **131 lbs**

Percentage of strength of longitudinal joint { plate } **92.4** { rivets } **92.4** { combined }

Thickness of butt straps { outer } **17/32"** { inner } **21/32"** No. and Description of Furnaces in each Boiler **Two Plain**

Material **Steel** Tensile strength **26-30 tons** Smallest outside diameter **36"**

Length of plain part { top } **72.375** { bottom } **99.0** Thickness of plates { crown } **39/64"** { bottom } **39/64"** Description of longitudinal joint **Weld**

Dimensions of stiffening rings on furnace or c.c. bottom  Working pressure of furnace by Rules **132 lbs**

End plate steam space: Material **Steel** Tensile strength **26-30 tons** Thickness **27/32"** Pitch of stays **17" x 16" to 15" x 14" tabs**

How are stays secured **Double Nuts & loose washers 8 1/2" x 9/16"** Working pressure by Rules **130 lbs**

Tube plates: Material { front } **Steel** Tensile strength { back } **26-30 tons** Thickness **27/32"** **5/8"**

Mean pitch of stay tubes in nests **9 1/4"** Pitch across wide water spaces **13" x 8"** Working pressure { front } **151 lbs** { back } **160 lbs**

Girders to combustion chamber tops: Material **Steel** Tensile strength **28-32 tons** Depth and thickness of girder at centre **6 1/4" x 1 1/4"** Length as per Rule **27"** Distance apart **8 1/4"** No. and pitch of stays in each **2 @ 8 1/2"** Working pressure by Rules **140 lbs** Combustion chamber plates: Material **Steel**

Tensile strength **26-30 tons** Thickness: Sides **17/32"** Back **19/32"** Top **17/32"** Bottom **13/16"**

Pitch of stays to ditto: Sides **8 1/2" x 8 1/2"** Back **10" x 8 1/2"** Top **8 1/2" x 8 1/4"** Are stays fitted with nuts or riveted over **Nuts**

Working pressure by Rules **133 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 **27/32"**

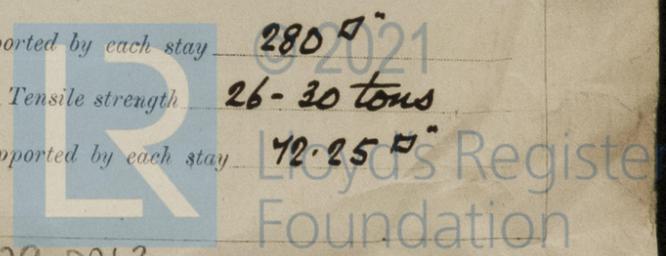
Pitch of stays at wide water space **13" x 8 1/2"** Are stays fitted with nuts or riveted over **Nuts**

Working Pressure **241 lbs** Main stays: Material **Steel** Tensile strength **28-32 tons**

Diameter { At body of stay, } **2 3/8"** { Over threads } **2 3/8"** No. of threads per inch **6** Area supported by each stay **280 sq in**

Working pressure by Rules **140 lbs** Screw stays: Material **Steel** Tensile strength **26-30 tons**

Diameter { At turned off part, } **1 3/8"** { Over threads } **1 3/8"** No. of threads per inch **9** Area supported by each stay **72.25 sq in**



Working pressure by Rules 140 lbs Are the stays drilled at the outer ends no Margin stays: 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 89.25 sq" Working pressure by Rules 140 lbs  
 Tubes: Material Iron External diameter { Plain 3" Stay 2 3/4" Thickness { 10 WG 5/16" No. of threads per inch 9  
 Pitch of tubes 4" x 4" Working pressure by Rules 140 & 214 lbs Manhole compensation: Size of opening in shell plate 16" x 20" Section of compensating ring 7" x 3/4" m.c. nail No. of rivets and diameter of rivet holes 36 - 5/16" ✓  
 Outer row rivet pitch at ends 6" ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material \_\_\_\_\_  
 Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_  
 Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint { Plate Rivets \_\_\_\_\_  
 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** \_\_\_\_\_  
 Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ Manufacturers of { Tubes Steel castings 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 \_\_\_\_\_

**RILEY BROS. (BOILERMAKERS) LIMITED**  
 The foregoing is a correct description,  
 J. G. Shields, Secretary, Manufacturer.

Dates of Survey { During progress of work in shops - - } 1925 Jul. 10, 16, 21, 27, Aug 7, 14, Sep 1 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) yes  
 { During erection on board vessel - - - }  
 Total No. of visits 7

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

This boiler has been constructed under Special Survey: is of good material and workmanship and on completion was tested by hydraulic pressure with satisfactory results.

This boiler has been examined under steam & the safety valves adjusted to 180 lbs.

Survey Fee ... .. £ 5 : 6 : - ✓ When applied for, **MONTHLY A/c.** 192  
 Travelling Expenses (if any) £ : : When received, 192

W. Roberts  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 18 DEC 1925**

Assigned

