

REPORT ON BOILERS.

No. 12454

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 **10th 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 **Crabtree & 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.** ✓

Long. seams { **Double Runt Straps** } Diameter of rivet holes in { circ. seams } **15/16"** Pitch of rivets { **3" & 6"** } ✓

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** { combined } **92.4**

Percentage of strength of longitudinal joint { plate } **82.0** { rivets } **85.2** { combined } **92.4** Working pressure of shell by Rules **131 lbs**

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" tubes**

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** { back } **Steel** Tensile strength { **26-30 tons** } { **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**

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" ✓
 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" Thickness 10 W.G. 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. steel 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
 Internal diameter Working pressure by Rules Thickness of crown Rivets 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 { Tubes
 Number of elements Material 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 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

RILEY BROS. (BOILERMAKERS) LIMITED
 The foregoing is a correct description,
J. H. 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 yes
 while building { 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

