

## REPORT ON BOILERS.

No. 12580

Received at London Office 17 FEB 1926

Date of writing Report 12/2/1926 When handed in at Local Office 13/2/1926 Port of Middlesbrough

No. in Reg. Book. Survey held at Stockton-on-Tees. Date, First Survey 5. 11. 25 Last Survey 12-2-1926

(Number of Visits 15) Tons { Gross Net

Master Built at Chester By whom built J. Crichton &amp; Co. Ltd. Yard No. 413 When built

Engines made at By whom made Engine No. When made

Boilers made at Stockton By whom made Messrs Riley Bros Ltd Boiler No. {5639} {5640} When made 1926

Nominal Horse Power Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY~~, OR DONKEY.Manufacturers of Steel David Colville & Sons Ltd. South Durham Steel & Iron Coy. Ltd. (Letter for Record (S) ✓)   
 each 1480 ft ✓Total Heating Surface of Boilers Is forced draught fitted Coal or Oil fired Coal ✓   
 No. and Description of Boilers (2) Single End. Navy Type ✓ Working Pressure 180 lbs ✓

Tested by hydraulic pressure to 320 lbs Date of test 12-2-26 No. of Certificate 6500 Can each boiler be worked separately

Area of Firegrate in each Boiler 47.6 ft<sup>2</sup> No. and Description of safety valves to each boiler Two, direct spring. ✓Area of each set of valves per boiler {per Rule 9.48 ft<sup>2</sup>} {as fitted 9.82 ft<sup>2</sup>} Pressure to which they are adjusted 185 lb ✓ Are they fitted with easing gear 2 ✓

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 7'6" ✓ Is oil fuel carried in the double bottom under boilers 2 ✓

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated 2 ✓

Largest internal dia. of boilers 9'-7" ✓ Length 19'-9" ✓ Shell plates: Material Steel ✓ Tensile strength 28-32 tons ✓

Thickness 29/32" ✓ Are the shell plates welded or flanged NO Description of riveting: circ. seams {end LAP. OR.} {inter. ✓} ✓

long. seams {DOUBLE BUTT STRAPS} {TREBLE RIVETED} {SRIVETS IN PITCH} Diameter of rivet holes in {circ. seams 1 3/64" ✓} {long. seams 1" ✓} Pitch of rivets {3 1/4" ✓} {7 1/16" ✓}

Percentage of strength of circ. end seams {plate 67.8} {rivets 47.9} Percentage of strength of circ. intermediate seam {plate ✓} {rivets ✓}

Percentage of strength of longitudinal joint {plate 85.8} {rivets 95.0} Working pressure of shell by Rules 205 lbs ✓   
 {combined 90.6}

Thickness of butt straps {outer 14 7/8" x 23/32" ✓} {inner 14 7/8" x 27/32" ✓} No. and Description of Furnaces in each Boiler Two, Deightons ✓

Material Steel ✓ Tensile strength 26-30 tons ✓ Smallest outside diameter 45.187" ✓

Length of plain part {top ✓} {bottom ✓} Thickness of plates {crown 19/32" ✓} {bottom 1/32" ✓} Description of longitudinal joint Weld ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 191 lbs ✓

End plates in steam space: Material Steel ✓ Tensile strength 26-30 tons ✓ Thickness 15/16" (DOUBLED) ✓ Pitch of stays 17" (19 1/2" TUBES) ✓

How are stays secured Double Nuts ✓ Working pressure by Rules 239 lbs ✓

Tube plates: Material {front Steel ✓} {back Steel ✓} Tensile strength {26-30 tons ✓} {26-30 tons ✓} Thickness {30/32" ✓} {31/32" ✓}

Mean pitch of stay tubes in nests 11.56" Pitch across wide water spaces 13" x 4 5/8" ✓ Working pressure {front 229 lbs ✓} {back 256 lbs ✓}

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

at centre 10 1/4" x 1 13/16" ✓ Length as per Rule 48.064" ✓ Distance apart 7 1/4" ✓ No. and pitch of stays

in each 4 c 9 1/4" ✓ Working pressure by Rules 189 lbs &amp; 2 ✓ Combustion chamber plates: Material steel ✓

Tensile strength 26-30 tons ✓ Thickness: Sides 2 1/32" ✓ Back 2 1/32" ✓ Top 2 1/32" ✓ Bottom 15/16" ✓

Pitch of stays to ditto: Sides 9 1/4" x 8 3/4" ✓ Back 7 1/4" x 9 1/4" ✓ Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 185 lbs Front plate {bottom: Material Steel (DBLD) ✓} Tensile strength 26-30 tons ✓

Thickness 15/16" back plate: Material Steel (DBLD) ✓ Tensile strength 26-30 tons ✓ Thickness 15/16" ✓

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

Working Pressure ✓ Main stays: Material Steel ✓ Tensile strength 28-32 tons ✓

Diameter {At body of stay, 3 1/8" ✓} {Over threads 3 1/8" ✓} No. of threads per inch 6 ✓ Area supported by each stay 327 ft<sup>2</sup> ✓

Working pressure by Rules 225 lbs ✓ Screw stays: Material steel ✓ Tensile strength 26-30 tons ✓

Diameter {At turned off part, 1 5/8" ✓} {Over threads 1 5/8" ✓} No. of threads per inch 9 ✓ Area supported by each stay 80.94 ft<sup>2</sup> ✓

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Working pressure by Rules 188 lb Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, ☒ or Over threads ☒ No. of threads per inch ☒ Area supported by each stay ☒ Working pressure by Rules ☒ Tubes: Material S.D. steel External diameter { Plain 3 1/2" Stay 3 1/2" Thickness { 3/16" 9/8" No. of threads per inch 9 Pitch of tubes 4 5/8" x 4 7/8" Working pressure by Rules (308 lbs) Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 8" x 1" (meil) No. of rivets and diameter of rivet holes 42 - 1 1/16" Outer row rivet pitch at ends 8" 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**

Manufacturers of { Tubes Steel castings 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

FOR

**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 Nov. 5. 12. 19. 27. Dec. 9. 18. 24. 31. 1926 Jan. 7. 14. 20. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) yes while building { During erection on board vessel - - - 29 Feb. 5. 10. 12. Total No. of visits 15

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

These boilers have been constructed under Special Survey: are of good material & workmanship and on completion were tested by hydraulic pressure with satisfactory results.

Survey Fee ... .. £ 19 : 16 : - Travelling Expenses (if any) £ : : MONTHLY A/c.

When applied for, 192 When received, 192

W. A. Roberts

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

See dir. rpt. No 90094



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