

REPORT ON BOILERS.

No. 12300

Received at London Office

31 MAR 1925

Date of writing Report 27/3 When handed in at Local Office 28/3/1925 Port of Middlesbrough

No. in Survey held at Stockton-on-Tees Date, First Survey 20/12/24 Last Survey 27/3/1925

on the (Number of Visits 14) Gross Tons Net

Master ✓ Built at Chester By whom built J. Cuckton & Co Yard No. When built

Engines made at Newbury By whom made Plenty & Son Engine No. When made

Boilers made at Stockton By whom made Messrs Riley Bros Ltd Boiler No. 5582 When made 1925

Nominal Horse Power Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 1480 ϕ ✓ Is forced draught fitted No Coal or Oil fired coal ✓

No. and Description of Boilers One Single End Navy type. 1 B. ✓ Working Pressure 180 lbs ✓

Tested by hydraulic pressure to 320 lbs Date of test 25-3-25 No. of Certificate 6445 ✓ Can each boiler be worked separately No

Area of Firegrate in each Boiler 47.6 ϕ ✓ No. and Description of safety valves to each boiler two, direct spring ✓

Area of each set of valves per boiler {per Rule 9.48 ϕ ✓ as fitted 9.82 ϕ ✓ Pressure to which they are adjusted 185 lb Are they fitted with easing gear No

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 7'0" 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 No

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

Thickness 27/32" ✓ Are the shell plates welded or flanged ✓ Description of riveting: circ. seams {end Lat OR ✓ inter. 3/4" ✓ long. seams {circ. seams 55/64" ✓ 1 3/4" ✓ Pitch of rivets {long. seams 55/64" ✓ 1 3/64" ✓ plate 3/4" ✓ rivets 6/8" ✓

Percentage of strength of circ. end seams {plate 67.78 ✓ rivets 51.5 ✓ Percentage of strength of circ. intermediate seam {plate ✓ rivets ✓

Percentage of strength of longitudinal joint {plate 85.97 ✓ rivets 86.39 ✓ combined 89.23 ✓ Working pressure of shell by Rules 190 lbs ✓

Thickness of butt straps {outer 13 1/4" x 2 1/32" ✓ inner 13 1/4" x 25/32" ✓ No. and Description of Furnaces in each Boiler Two Deighton ✓

Material Steel ✓ Tensile strength 26-30 tons ✓ Smallest outside diameter 45 3/16" ✓

Length of plain part {top ✓ bottom ✓ Thickness of plates {crown 19/32" ✓ bottom 19/32" ✓ Description of longitudinal joint weld. ✓

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

End plates in steam space: Material Steel ✓ Tensile strength 26-30 tons ✓ Thickness 19/16" ✓ Pitch of stays 17 x 19 1/2 tubes ✓

How are stays secured Double Nuts ✓ Working pressure by Rules 220 lbs ✓

Tube plates: Material {front Steel ✓ back Steel ✓ Tensile strength {front 26/20 tons ✓ back 26/20 tons ✓ Thickness {front 15/16" ✓ back 27/32" ✓

Mean pitch of stay tubes in nests 11 9/16" ✓ Pitch across wide water spaces 13" x 4 5/8" ✓ Working pressure {front 229 lbs ✓ back 192 lbs ✓

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

at centre 8" x 1 1/4" ✓ Length as per Rule 48 5/16 50" ✓ Distance apart 7 1/4" ✓ No. and pitch of stays

in each 4 c 9 1/4" ✓ Working pressure by Rules 68 lbs ✓ Combustion chamber plates: Material steel ✓

Tensile strength 26/30 tons ✓ Thickness: Sides 21/32" ✓ Back ✓ Top 21/32" ✓ Bottom 15/16" ✓

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

Working pressure by Rules 185 lbs ✓ Front plate at bottom: Material Steel ✓ Tensile strength 26-30 tons ✓

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

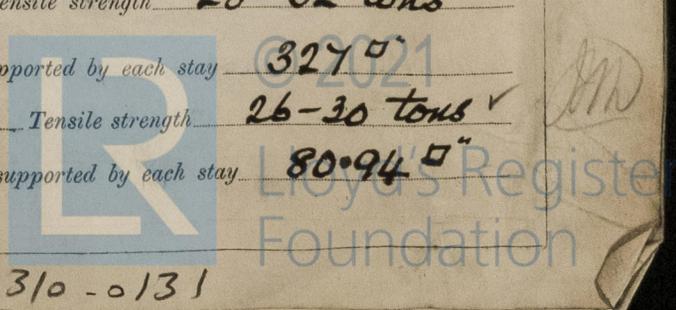
Pitch of stays at wide water space ✓ Are stays fitted with nuts or riveted over ✓

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

Diameter {At body of stay, 3 1/8" ✓ or ✓ No. of threads per inch 6 ✓ Area supported by each stay 327 ϕ 21 ✓ Over threads. ✓

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

Diameter {At turned off part, 5/8" ✓ or ✓ No. of threads per inch 9 ✓ Area supported by each stay 80.94 ϕ 5 ✓ Over threads. ✓



Working pressure by Rules 188 lbs 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" Thickness 3/16" No. of threads per inch 9

Pitch of tubes 4 5/8" x 4 5/8" Working pressure by Rules 308 lbs Stay Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 8" x 1" Metric No. of rivets and diameter of rivet holes 42 - 1 1/16"

Outer row rivet pitch at ends 7" 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 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. (ENGINEERS) LIMITED
The foregoing is a correct description,

J. H. Shields **SECRETARY**

Dates of Survey During progress of work in shops - - - 1924 Dec. 20, 1925 Jan. 28, 26, 29, Feb. 6, 12, 19, 27 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval)

During erection on board vessel - - - Mar. 2, 10, 12, 20, 25, 27 Total No. of visits 11

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

This boiler has been constructed under special survey; is of good material & workmanship and on completion was tested by hydraulic pressure with satisfactory results.

Survey Fee £ 9 : 18 - When applied for, MONTHLY A/C, 192

Travelling Expenses (if any) £ : : When received, 192

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

Committee's Minute _____

Assigned See Mack's rpt.