

# REPORT ON BOILERS.

Received at London Office

25 APR 1925

Date of writing Report 21-4-1925 When handed in at Local Office 23/4/1925 Port of Middlesbrough

No. in Reg. Book 3488 Survey held at Stockton-on-Tees Date, First Survey 20<sup>th</sup> December 1924 Last Survey 21-4-1925

1273 on the S/S. "Willowpool" (Number of Visits 11) Tons {Gross 4815 Net 2978

Master \_\_\_\_\_ Built at Stockton By whom built Ropner S. B. Coy Yard No. 549 When built 1925

Engines made at Stockton By whom made Messrs Blain & Co. Ltd Engine No. 1964 When made 1925

Boiler made at Stockton By whom made Riley Bros Ltd Boiler No. 5581 When made 1925

Nominal Horse Power \_\_\_\_\_ Owners Sir R. Ropner & Co. Ltd Port belonging to W. Hartlepool

RETAIN

## MULTITUBULAR BOILERS - ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel Steel Coy of Scotland (Letter for Record (S))

Total Heating Surface of Boilers 975 sq ft Is forced draught fitted no Coal or Oil fired Coal

No. and Description of Boilers One Single End. Working Pressure 150 lbs

Tested by hydraulic pressure to 275 lbs Date of test 21-4-25 No. of Certificate 6454 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 34.3 sq ft No. and Description of safety valves to each boiler 2 direct Spring - High Lift.

Area of each set of valves per boiler {per Rule 4.64 as fitted 7.1} Pressure to which they are adjusted 148 lbs Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no

Smallest distance between boilers or uptakes and bunkers or woodwork In tween decks Is oil fuel carried in the double bottom under boilers yes

Smallest distance between shell of boiler and tank top plating \_\_\_\_\_ Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 126" Length 120" Shell plates: Material Steel Tensile strength 28-32 tons

Thickness 3/4" Are the shell plates welded or flanged no Description of riveting: circ. seams {end DR. LAP. inter. \_\_\_\_\_}

long. seams {Double Butt Straps Double Riveted 5 Rivets in a Pitch} Diameter of rivet holes in {circ. seams 1 1/16" long. seams 1 5/16"} Pitch of rivets {3/4" & 6 1/2" 6 1/8"}

Percentage of strength of circ. end seams {plate 67.4 rivets 45.0} Percentage of strength of circ. intermediate seam {plate \_\_\_\_\_ rivets \_\_\_\_\_}

Percentage of strength of longitudinal joint {plate 84.7 rivets 115.5 combined 92.5} Working pressure of shell by Rules 150 lbs

Thickness of butt straps {outer 14" x 19/32" inner 14" x 23/32"} No. and Description of Furnaces in each Boiler Two Plain.

Material Steel Tensile strength 26-30 tons Smallest outside diameter 39"

Length of plain part {top 74 3/4" bottom 81"} Thickness of plates {crown 1 1/16" bottom 1 1/16"} Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 156 lbs

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 25/32" Pitch of stays 15" TO 11" TUBES

How are stays secured Double Nuts & Loose Washers 8" x 9/16" Working pressure by Rules 151 lbs

Tube plates: Material {front Steel back Steel} Tensile strength {26-30 tons 26-30 tons} Thickness {25/32" 1 1/16"}

Mean pitch of stay tubes in nests 10.875" Pitch across wide water spaces 14" x 9" Working pressure {front 150 lbs back 161 lbs}

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder at centre 6 1/2" x 1 1/4"

Length as per Rule 28" Distance apart 7 1/2" No. and pitch of stays in each 2 c 8 3/4" Working pressure by Rules 152 lbs Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 1"

Pitch of stays to ditto: Sides 8 3/4" x 9 1/2" Back 8 7/8" x 10" Top 8 3/4" x 7 1/2" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 151 lbs Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 25/32" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 25/32"

Pitch of stays at wide water space 14" x 10" Are stays fitted with nuts or riveted over Nuts

Working Pressure 167 lbs Main stays: Material Steel Tensile strength 28-32 tons

Diameter {At body of stay, or Over threads} 2 1/4" No. of threads per inch 6 Area supported by each stay 202.5 sq in

Working pressure by Rules 171 lbs Screw stays: Material Steel Tensile strength 26-30 tons

Diameter {At turned off part, or Over threads} 1 5/8" No. of threads per inch 9 Area supported by each stay 88.75 sq in

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Working pressure by Rules 173 lbs Are the stays drilled at the outer ends no ✓ Margin stays: Diameter { At turned off part, 1 3/4" or Over threads

No. of threads per inch 9 ✓ Area supported by each stay 110 sq" Working pressure by Rules 164 lbs

Tubes: Material iron ✓ External diameter { Plain 3 1/4" Stay 3" Thickness { 8 W.G. 5/16" No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 1/2" ✓ Working pressure by Rules S 191. P 285. Manhole compensation: Size of opening in shell plate 16" x 20" Section of compensating ring 7 x 15/16" No. of rivets and diameter of rivet holes 36 - 1 1/16"

Outer row rivet pitch at ends 7" ✓ 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 \_\_\_\_\_

Area of each safety valve \_\_\_\_\_ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler \_\_\_\_\_

Rules \_\_\_\_\_ Are the safety valves fitted with easing gear \_\_\_\_\_ Working pressure as per \_\_\_\_\_ 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)

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

Dates of Survey { During progress of work in shops 1924. Dec 27, Feb. 6, 13, 19, Mar 2, 25, 30. Are the approved plans of boiler and superheater forwarded herewith yes. (If not state date of approval.)

while building { During erection on board vessel Apr. 5, 7, 17, 21. Total No. of visits 11

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

*This boiler will be fitted on board at this Port. Please return plan for 5584 and report for completion. 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 was placed on board at this Port, efficiently secured in position, mounted and safety valves adjusted under steam* ✓ W.H. mdt

Survey Fee ... £ 6 : 10 : - ✓ When applied for MONTHLY 102 A/c.

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

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

Committee's Minute FRI. 29 MAY 1925

Assigned \_\_\_\_\_

