

# REPORT ON BOILERS.

No. 12493

Received at London Office -2 NOV 1925

Date of writing Report 30-10-1925 When handed in at Local Office 30-10-1925 Port of Middlesbrough

No. in Survey held at Stockton-on-Tees Date, First Survey 7<sup>th</sup> August Last Survey 28<sup>th</sup> October 1925

40766 on the SS. ROBERT L. HOLT (Number of Visits 8.) Gross 2909 Tons Net 1687

Master Built at South Bank By whom built Smith's Dock & Co. Yard No. 822 When built 1926

Engines made at South Bank By whom made Smith's Dock Coy Ltd. Engine No. 290 When made 1926

Boilers made at Stockton By whom made Thos Sudron & Co. Ltd. Boiler No. 5195 When made 1925.

Nominal Horse Power 256 Owners John Holt & Co (Liverpool) Port belonging to Liverpool

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

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

Total Heating Surface of Boilers 820 sq ft Is forced draught fitted No. Coal or Oil fired coal

No. and Description of Boiler Single End Working Pressure 100 lbs

Tested by hydraulic pressure to 200 lbs Date of test 28-10-25 No. of Certificate 6492 Can each boiler be worked separately

Area of Firegrate in each Boiler 29 sq ft No. and Description of safety valves to each boiler Two direct spring

Area of each set of valves per boiler {per Rule 8.8 sq ft as fitted 9.82 sq ft} Pressure to which they are adjusted 105 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 18" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 20" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 10'-0" Length 10'-0" Shell plates: Material steel Tensile strength 29-33 tons

Thickness 9/16" Are the shell plates welded or flanged No Description of riveting: circ. seams SR-LAP.

long. seams {LAP TREBLE RIVETED 3 Rivets in PITCH} Diameter of rivet holes in {circ. seams 15/16" long. seams 15/16"} Pitch of rivets {2 1/8" 3 9/16"}

Percentage of strength of circ. end seams {plate 55.7 rivets 45.8} Percentage of strength of circ. intermediate seam {plate rivets}

Percentage of strength of longitudinal joint {plate 73.68 rivets 82.0 combined} Working pressure of shell by Rules 100 lbs

Thickness of butt straps {outer inner} 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 74" bottom 65 1/2"} Thickness of plates {crown 9/16" bottom 9/16"} Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.e. bottom Working pressure of furnace by Rules 118 lbs

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 13/16" Pitch of stays 17" {18" 5" TUBES}

How are stays secured Double nuts and loose washers 8" x 7/8" Working pressure by Rules 101 lbs

Tube plates: Material {front back} steel Tensile strength {26-30 tons 26-30 tons} Thickness {3/16" 11/16"}

Mean pitch of stay tubes in nests 12.716 Pitch across wide water spaces 14" x 13 1/8" Working pressure {front 106 lbs back 103 lbs}

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

at centre 5 1/2" x 1 1/4" Length as per Rule 25 3/16" Distance apart 8 1/2" No. and pitch of stays

in each one at 8 1/2" Working pressure by Rules 102 lbs Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 19/32" Back 1/2" Top 19/32" Bottom 3/4"

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

Working pressure by Rules 104 lbs Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 13/16" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 13/16"

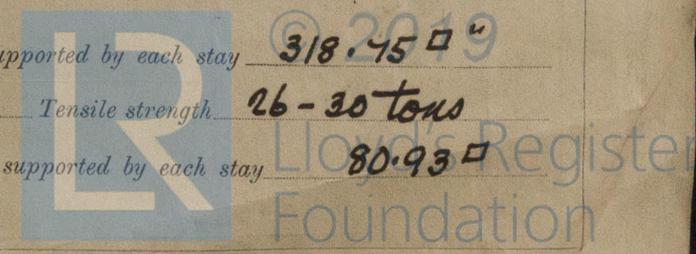
Pitch of stays at wide water space 14" x 8 3/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 197 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 318.75 sq in

Working pressure by Rules 108 lbs Screw stays: Material steel Tensile strength 26-30 tons

Diameter {At turned off part or Over threads} 1 1/4" No. of threads per inch 9 Area supported by each stay 80.93 sq in



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Working pressure by Rules **98.6** Are the stays drilled at the outer ends **NO** Margin stays: Diameter  At turned off part, **1 1/2"** or  Over threads

No. of threads per inch **9** Area supported by each stay **97.5 sq"** Working pressure by Rules **128 lbs**

Tubes: Material **WON** External diameter  Plain **3 1/4"**  Stay **3 1/4"** Thickness **10 W.G.**  5/16"  1/4" No. of threads per inch **9**

Pitch of tubes **4 3/4" x 4 3/8"** Working pressure by Rules **139 & 130 lbs** Manhole compensation: Size of opening in shell plate **12" x 16"** Section of compensating ring **5 1/2" x 3/4"** No. of rivets and diameter of rivet holes **36 - 1 5/16"**

Outer row rivet pitch at ends **3 9/16"** 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 **None** 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

The foregoing is a correct description,  
 THOMAS BURNON & CO. LIMITED  
 Manufacturer.

*A. W. Johnston*

Dates of Survey  During progress of work in shops - - **1925. Aug 7-14. Sep. 9-21. 23-28. Oct 8-28** Are the approved plans of boiler and superheater forwarded herewith  Yes  
 while building  During erection on board vessel - - -  
 Total No. of visits **3**

**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. (Will be fitted on board at this Port) This boiler has now been fitted & secured on board in accordance with the Rules, examined under steam and safety valves adjusted.*  
*W. Oxford.*

Survey Fee ... .. £ **5 : 10 : -** When applied for, **MONTHLY A/C** 192  
 Travelling Expenses (if any) £ : : When received, 192

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

Committee's Minute **TUES. 27 APR 1926**  
 Assigned *See Report attached*