

# REPORT ON BOILERS.

Received at London Office MAY - 7 1940

Date of writing Report 4<sup>th</sup> May 1940 When handed in at Local Office 4<sup>th</sup> May 1940 Port of WEST HARTLEPOOL.

No. in Reg. Book. 5258 on the S/S "TUDOR PRINCE" Survey held at HARTLEPOOL S. Bank Date, First Survey 8<sup>th</sup> February Last Survey 4<sup>th</sup> May 1940

(Number of Visits 27) Tons { Gross 1913.72 Net 919.51

Master Built at South Bank By whom built Smith's Dock & Co. Yard No. 1068 When built 1940-

Engines made at South Bank By whom made Smith's Dock & Co. Ltd Engine No. 530 When made 1940

Boilers made at Hartlepool By whom made Messrs Richardson, Westgate & Co. Boiler No. D530 When made 1940.

Nominal Horse Power Owners Prince Line Ltd Port belonging to London

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

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

Total Heating Surface of Boilers 5968 sq ft Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers Two cylindrical multitubular Working Pressure 220 lbs

Tested by hydraulic pressure to 380 lbs Date of test 11-4-40 No. of Certificate 3911 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 62 1/2 sq ft No. and Description of safety valves to each boiler Double Spring Loaded, Locksmith's Mechanical Area of each set of valves per boiler {per Rule 9.500 as fitted 11.880} Pressure to which they are adjusted 220 lbs Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 10" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 17" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 16'6" Length 11'9" Shell plates: Material Steel Tensile strength 29/33 tons Description of riveting: circ. seams {end D.R. Sep. inter. -}

Thickness 1 1/2" Are the shell plates welded or flanged No. Diameter of rivet holes in {circ. seams 1 1/2" long. seams 1 3/8" Pitch of rivets {4" 11"}

Percentage of strength of circ. end seams {plate 62.5% rivets 44%} Percentage of strength of circ. intermediate seam {plate 85.22% rivets 87.8% combined 87.9% Working pressure of shell by Rules 222 lbs

Thickness of butt straps {outer 1 3/2" inner 1 1/2" No. and Description of Furnaces in each Boiler Three Deighton section Material Steel Tensile strength 26/30 tons Smallest outside diameter 3'-10 1/16"

Length of plain part {top - bottom -} Thickness of plates {crown 23/32 bottom 23/32 Description of longitudinal joint welded Working pressure of furnace by Rules 226 lbs

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 7/16" Pitch of stays 23 x 18 1/2" How are stays secured Double nuts Working pressure by Rules 224 lbs

Tube plates: Material {front Steel back Steel} Tensile strength {26/30 tons Thickness {3 1/2" 13/16" Working pressure {front 224 lbs back 226 lbs

Mean pitch of stay tubes in nests 10 1/4" Pitch across wide water spaces 14 1/4" Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Depth and thickness of girder at centre 9 3/4", 2-3/8" plates Length as per Rule 2'-11 1/2" Distance apart 9" No. and pitch of stays in each 3 @ 8 1/2" Working pressure by Rules 230 lbs

Combustion chamber plates: Material Steel Tensile strength 26/30 tons Thickness: Sides 11/16" Back 11/16" Top 23/32" Bottom 1"

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

Working pressure by Rules 236 lbs Front plate at bottom: Material Steel Tensile strength 26/30 tons Thickness 3 1/2"

Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 3 1/2" Pitch of stays at wide water space 15 x 8 3/4" Are stays fitted with nuts or riveted over Nuts

Working Pressure 256 lbs Main stays: Material Steel Tensile strength 28/32 tons Diameter {At body of stay, or Over threads 3 1/2" No. of threads per inch 6 Area supported by each stay 422.6

Working pressure by Rules 222 lbs Screw stays: Material Steel Tensile strength 26/30 tons Diameter {At turned off part, or Over threads 1 3/4" No. of threads per inch 9 Area supported by each stay 76.5

Working pressure by Rules 237 lbs Are the stays drilled at the outer ends No Margin stays: Diameter <sup>At turned off part,</sup> 1 3/8"  
 No. of threads per inch 9 Area supported by each stay 102.8 Working pressure by Rules 220 lbs  
 Tubes: Material Ston External diameter <sup>Plain</sup> 3 1/2" Thickness <sup>Stay</sup> 3/4" <sup>8 1/4"</sup> 7/16" <sup>3/8"</sup> 3/16" No. of threads per inch 9  
 Pitch of tubes 4 5/8" x 4 1/2" Working pressure by Rules 230 lbs Manhole compensation: Size of opening in shell plate 16 x 12 Section of compensating ring 2-9" x 2-5" x 1 1/2" No. of rivets and diameter of rivet holes 28 @ 1 1/8"  
 Outer row rivet pitch at ends 11" 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 <sup>Plate</sup> \_\_\_\_\_ <sup>Rivets</sup> \_\_\_\_\_  
 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 Smoke tube Manufacturers of <sup>Tubes</sup> The Superheater Co & Co <sup>Steel forgings</sup> Do. <sup>Steel castings</sup> Do.  
 Number of elements 57 Material of tubes SD steel Internal diameter and thickness of tubes 17 1/4" x 3 1/4"  
 Material of headers  mild steel Tensile strength See spec Thickness 1" Can the superheater be shut off and the boiler be worked separately Yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes  
 Area of each safety valve 1.760 Are the safety valves fitted with easing gear Yes Working pressure as per Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted 220 lbs Hydraulic test pressure: tubes 1000 lbs forgings and castings 660 lbs and after assembly in place 660 lbs Are drain cocks yes fitted to free the superheater from water where necessary Yes  
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

The foregoing is a correct description.  
 RICHARDSON, WEBSTER & Co, Limited.  
 W. E. D. Gamage Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup> 1940. Feb. 8. 12. 14. 15. 19. 21. 22. 26. 29. March 4 Are the approved plans of boiler and superheater forwarded herewith No  
<sup>while building</sup> <sup>During erection on board vessel - - -</sup> 5. 6. 8. 11. 12. 14. 18. 28. April. 1. 3. 4. 7. 11. 30. May 2. 3. 4. (If not state date of approval.) 8/6/39  
 Total No. of visits 27

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. D 52899 West Hill. RMA No 17981-1792

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under special survey and in accordance with the approved plans for a working pressure of 220 lbs per square inch.  
The materials and workmanship have been found good.  
Upon completion the boilers were tested in the presence of the undersigned to 380 lbs per square inch hydraulic pressure and found sound and tight in every respect at that pressure.

These boilers are intended for Smiths Dock Co Southbank, Middlesbrough, their Yard No 1068.  
The boilers securely fitted on board, & found in order.  
 R.J.F.

Survey Fee ... .. £ 32 : 7 : 0 When applied for, 19  
 Travelling Expenses (if any) £ : : When received, 5-6-1940

R. J. Easthope  
 Arthur W. Osgood  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 13 AUG 1940  
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