

## REPORT ON BOILERS.

No. 18057

JUL -1 1940

Received at London Office

Date of writing Report 28/6/40 10 When handed in at Local Office 28/6/1940 Port of WEST HARTHEPOOL

No. in Survey held at WEST HARTHEPOOL Date, First Survey 22<sup>nd</sup> February Last Survey 24<sup>th</sup> June 194089967 on the STUART PRINCE (Number of Visits 25) Gross 1911.15 Tons Net 919.16

Master Built at South Bank By whom built Smiths Dock Co. Yard No. 1069 When built 1940  
Engines made at South Bank By whom made Smiths Dock Co. Ltd Engine No. 531 When made 1940  
Boilers made at Hartlepool By whom made Richardsons Westgarth & Co. Boiler No. D531 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 Is forced draught fitted yes Coal or Oil fired Coal.  
No. and Description of Boilers 2. Cylindrical multitubular Working Pressure 220 lbs.  
Tested by hydraulic pressure to 380 lbs Date of test 31.5.40 No. of Certificate 3913 Can each boiler be worked separately yes  
Area of Firegrate in each Boiler 62½ sq No. and Description of safety valves to each boiler Double Spring Loaded Corbourn Macnicol  
Area of each set of valves per boiler {per Rule 9.5 sq as fitted 11.88 sq 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 -  
Smallest distance between boilers and bunkers 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  
Thickness 1 13/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams {end D.R. 24" inter. 24" }  
long. seams TR Double butts Diameter of rivet holes in {circ. seams 1 1/2" long. seams 1 1/8" Pitch of rivets { 11" }  
Percentage of strength of circ. end seams {plate 62.5% rivets 44% } Percentage of strength of circ. intermediate seam {plate 85.2% rivets 87.8% }  
Percentage of strength of longitudinal joint {plate 87.9% rivets 87.9% } Working pressure of shell by Rules 222 lbs.  
Thickness of butt straps {outer 1 3/32" inner 1 1/32" } No. and Description of Furnaces in each Boiler 3 Deighton section.  
Material Steel Tensile strength 26/30 tons Smallest outside diameter 3'-10 1/16"  
Length of plain part {top 23" bottom 32" } Thickness of plates {crown 23" bottom 32" } Description of longitudinal joint Welded.  
Dimensions of stiffening rings on furnace or c.c. bottom 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 3/4"  
How are stays secured Double nuts Working pressure by Rules 224 lbs.  
Tube plates: Material {front Steel back Steel } Tensile strength { 26/30 tons 26/30 tons } Thickness { 3 1/2" 13" }  
Mean pitch of stay tubes in nests 10 1/4" Pitch across wide water spaces 14 1/4" Working pressure {front 224 lbs back 226 lbs }  
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 1/32" Distance apart 9" No. and pitch of stays in each 3 @ 8 1/2"  
Tensile strength 26/30 tons Thickness: Sides 1 1/16" Back 1 1/16" Top 2 3/32" 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 1/32"  
Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 3 1/32"  
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 sq  
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 sq



Working pressure by Rules 237 lbs Are the stays drilled at the outer ends No Margin stays: Diameter At turned off part, 1 1/8"  
No. of threads per inch 9 Area supported by each stay 102.8" Working pressure by Rules 220 lbs  
Tubes: Material Iron External diameter 3 1/2" Thickness 8 1/16" 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" rivets  
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 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 Smoke tube Manufacturers of See Superheater Co. Ltd  
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 Mch Rpt 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 1.46 sq" 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 1,000 lbs forgings and castings 660 lbs and after assembly in place 660 lbs Are drain cocks  
valves 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,

W.E. Gamage Manufacturer.

Dates of Survey During progress of 1940. Feb. 22. 29. March 4. 12. 14. 18. Are the approved plans of boiler and superheater forwarded herewith  
while building work in shops - - April 1. 3. 9. 10. 19. 23. 29. May 1. 2. 9. 13. 14. 16. 22. 23. (If not state date of approval.)  
During erection on 28. 31. June 18. 24. Total No. of visits 25  
board vessel - - -

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. D528. War Ste RMA. 17981.  
D529. " " " 17922.  
D530. " " " 18037.

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 1069.  
The boilers securely fitted on board, & found in order.

Survey Fee ... £ 32 : 7 : 0 } When applied for, 19  
Travelling Expenses (if any) £ : : } When received, 7<sup>th</sup> August 1940

Arthur W. Oxford John W. Bannell  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

TUE 5 NOV 1940

See Mch. J.E. 16917



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Foundation