

REPORT ON BOILERS.

No. 18057

JUL -1 1940

Received at London Office

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

No. in Survey Reg. Book. 89967 on the S/S STUART PRINCE Date, First Survey 22nd February Last Survey 24th June 1940

(Number of Visits 25) Gross Tons 1911.15 Net Tons 919.16

Master South Bank Built at South Bank By whom built Smiths Dock Co. Ltd 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 Richardson's Westgarth & Co. Ltd 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 See 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 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 62 1/2 sq ft No. and Description of safety valves to each boiler Double Spring Loaded Corburn Macnicol

Area of each set of valves per boiler per Rule 9.5 sq ft as fitted 11.88 sq ft 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 no

Smallest distance between boilers 10" 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 1/32" Are the shell plates welded or flanged no Description of riveting: circ. seams DR. & S. inter. stone

long. seams TR Double butts Diameter of rivet holes in 1 1/2" Pitch of rivets 11"

Percentage of strength of circ. end seams plate 62.5% rivets 44% Percentage of strength of circ. intermediate seam plate - rivets -

Percentage of strength of longitudinal joint plate 85.2% rivets 87.8% combined 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 23/32" 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 Thickness 3 1/2"

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" Working pressure by Rules 230 lbs Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 1 1/16" Back 1 1/16" 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 1/32" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 3 1/32"

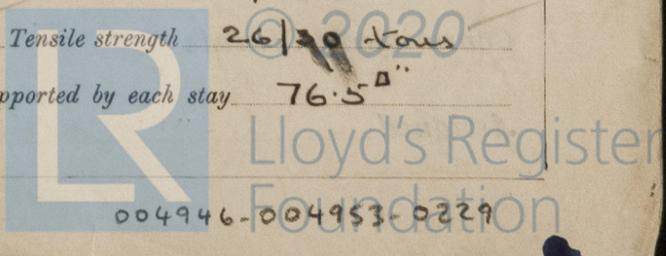
Pitch of stays at wide water space 15" x 8 3/4" Are stays fitted with nuts or riveted over Nuts

Working Pressure 256 lbs Main stays: Material Steel Tensile strength 28/32 tons

Diameter At body of stay, 3 1/2" or Over threads, 3 1/2" No. of threads per inch 6 Area supported by each stay 422.6 sq in

Working pressure by Rules 222 lbs Screw stays: Material Steel Tensile strength 26/30 tons

Diameter At turned off part, 1 3/4" or Over threads, 1 3/4" No. of threads per inch 9 Area supported by each stay 76.5 sq in



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" _{or} ^{Over threads}

No. of threads per inch 9 Area supported by each stay 102.8" Working pressure by Rules 220 lbs

Tubes: Material Iron External diameter ^{Plain} 3 1/2" Thickness ^{8 LWG.} 7/16, 3/8, 5/16 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 ^{Tubes} See Superheater Co. Ltd ^{Steel forgings} Do. ^{Steel castings} 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 rolled steel Tensile strength See Mdb 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 1.464" Are the safety valves fitted with easing gear Yes Working pressure as per Rules 220 lbs 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 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,
W. E. Gouge Manufacturer.

Dates of Survey ^{During progress of work in shops - -} 1940. Feb. 22-29. March 4-12-14-18 Are the approved plans of boiler and superheater forwarded herewith ^(If not state date of approval.) April 1-3-9-10-19-23-29. May 1-2-9-13-14-16-22-23

^{During erection on board vessel - - -} 28-31. June 18-24. Total No. of visits 25

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, etc.) 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 seaweely fitted on board, & found in order.

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

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

Committee's Minute TUE 5 NOV 1940

Assigned See Mdb. J.C. 16917

