

REPORT ON BOILERS.

No. 297/0

28 APR 1928

Received at London Office

Date of writing Report 1928 When handed in at Local Office 27 APR 1928 Port of Sunderland.

No. in Survey held at Sunderland Date, First Survey Last Survey 20th Apr 1928

10054 on the S.S. "BACTRIA" (Number of Visits) Gross 2402 Tons Net 1209

Master Built at Sunderland By whom built John L. Thompson & Sons Ltd. No. 561 When built 1928

Engines made at Sunderland By whom made John Dickinson & Sons Ltd. Engine No. 892 When made 1928

Boilers made at -do- By whom made -do- Boiler No. 1096 When made 1928

Nominal Horse Power 403 Owners America-levant line Ltd. Port belonging to London.

MULTITUBULAR BOILER ~~MAIN~~ ~~AUXILIARY~~ ~~OR~~ DONKEY.

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

Total Heating Surface of Boiler 1041 sq ft Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers One-Single Ended Marine Type - Plain Furnaces Working Pressure 180 lbs sq

Tested by hydraulic pressure to 320 lbs sq Date of test 13-3-28 No. of Certificate 3983 Can each boiler be worked separately

Area of Firegrate in each Boiler 31.9 sq ft No. and Description of safety valves to each boiler Two - Direct Spring loaded.

Area of each set of valves per boiler {per Rule 6.86 sq" as fitted 9.82 sq"} Pressure to which they are adjusted 185 lbs sq Are they fitted with easing gear Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No - Non-return valve fitted.

Smallest distance between boilers ~~or uptakes~~ and bunkers ~~or woodwork~~ 1'-7" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2'-8" Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 10'-10 3/16" Length 10'-6" (full) Shell plates: Material Steel Tensile strength 28 to 32 tons sq

Thickness 29/32" Are the shell plates welded or flanged No Description of riveting: circ. seams {end D.R. Lap as fitted 2 7/8" inter. } long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1" long. seams 1" Pitch of rivets { 4 1/16" }

Percentage of strength of circ. end seams {plate 65.2 rivets 49.6 Percentage of strength of circ. intermediate seam {plate / rivets /

Percentage of strength of longitudinal joint {plate 85.8 rivets 94.4 combined 90.6 Working pressure of shell by Rules 181.2 lbs sq

Thickness of butt straps {outer 1 1/16" inner 1 3/16" No. and Description of Furnaces in each Boiler Two - Plain Furnaces.

Material Steel Tensile strength 26 to 32 tons sq Smallest outside diameter 3'-2"

Length of plain part {top / bottom / Thickness of plates {crown 3/4" bottom 3/4" Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 191.3 lbs sq

End plates in steam space: Material Steel Tensile strength 26 to 30 tons sq Thickness 7/8" Pitch of stays 15" x 14 1/2"

How are stays secured Double nuts & washers. Working pressure by Rules 181 lbs sq

Tube plates: Material {front / back } Steel. Tensile strength { 26 to 30 tons sq Thickness { 7/8" 7/8" }

Mean pitch of stay tubes in nests 1 1/4" Pitch across wide water spaces 13 3/4" Working pressure {front 182.5 lbs sq (in W. Space) back 219 lbs sq

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

at centre 6 1/4" x 13 1/4" Length as per Rule 29 7/8" Distance apart 7 1/2" No. and pitch of stays

in each 2 x 10" Working pressure by Rules 181.5 lbs sq Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons sq Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 15/16"

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

Working pressure by Rules Sides 182.5 lbs sq Backs 180.2 lbs sq Top 211.4 lbs sq Front plate at bottom: Material Steel Tensile strength 26 to 30 tons sq

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26 to 30 tons sq Thickness 7/8"

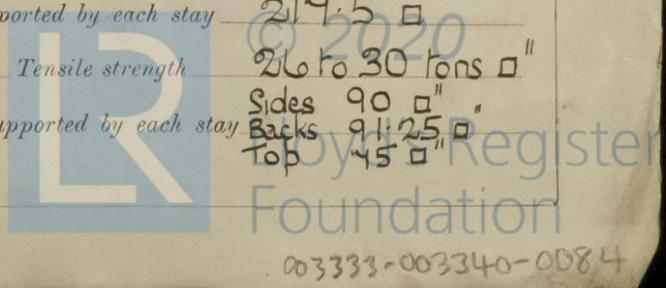
Pitch of stays at wide water space 14" x 10" Are stays fitted with nuts or riveted over Fitted with nuts.

Working Pressure 212 lbs sq Main stays: Material Steel Tensile strength 28 to 32 tons sq

Diameter {At body of stay, 2 3/8" No. of threads per inch 6 Area supported by each stay 217.5 sq

Working pressure by Rules 180.5 lbs sq Screw stays: Material Steel Tensile strength 26 to 30 tons sq

Diameter {At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay Sides 90 sq Backs 91.25 sq Top 45 sq



Working pressure by Rules ^{Sides 201.8 lbs sq} ^{Backs 198.8 lbs sq} ^{Tops 242 lbs sq} are the stays drilled at the outer ends No Margin stays: Diameter ^{At turned off part, 1 7/8} or ^{Over threads} 1 7/8

No. of threads per inch 9 Area supported by each stay 115 sq" Working pressure by Rules 185.5 lbs sq

Tubes: Material Wrought Iron External diameter ^{Plain 3 1/4} ^{Stay 3 1/4} 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 Plain 230 lbs sq Stay 220 lbs sq Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 8" x 29/32" No. of rivets and diameter of rivet holes 30 @ 1" dia

Outer row rivet pitch at ends 4 1/16" (max.) 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

How connected to shell Inner radius of crown Working pressure by Rules

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

Number of elements Material of tubes Manufacturers of ^{Tubes} ^{Steel castings} 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 Yes. For John Dickinson & Sons, Limited. The foregoing is a correct description, S. Dickinson Manufacturer/Director.

Dates of Survey ^{During progress of work in shops - -} ^{During erection on board vessel - - -} Please see Machinery Report. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Total No. of visits

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

The materials and workmanship are good.
 The Donkey Boiler has been constructed under Special Survey, and satisfactorily fitted in the vessel.
 For notations see Machinery Report.

Survey Fee ... £ Please see Machinery Report When applied for, 192
 Travelling Expenses (if any) £ Please see Machinery Report When received, 192

A. H. Griffith.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 4 MAY 1928

Assigned See ypt. attached



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