

REPORT ON BOILERS.

No. 30186

Received at London Office 8 NOV 1929

Date of writing Report 5th Nov. 1929 When handed in at Local Office 6th Nov. 1929 Port of SunderlandNo. in Ship held at Sunderland Date, First Survey Last Survey 4 Nov 1929
Reg. Book. S.S. "RAJAHSTAN" (Number of Visits) Gross 6390.89
on the Tons Net 3875.45Master Built at Sunderland By whom built Bartram & Sons. Ltd. Yard No. 267 When built 1929
Engines made at Sunderland By whom made J. Dickinson & Sons. Ltd. Engine No. 900 When made 1929
Boilers made at Sunderland By whom made J. Dickinson & Sons. Ltd. Boiler No. 900 When made 1929
Nominal Horse Power 442 Owners Hindustan Steam Shipping Co. Ltd. Port belonging to Newcastle-on-Tyne

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland, Limited. (Letter for Record (S) ✓)
Total Heating Surface of Boilers 6130 sq. ft. Is forced draught fitted Yes ✓ Coal or Oil fired Coal ✓
No. and Description of Boilers Two Single Ended Marine Type 2SB Working Pressure 220 lbs. sq. in.
Tested by hydraulic pressure to 380 lbs. sq. in. Date of test 12.9.29 No. of Certificate 4057 Can each boiler be worked separately Yes ✓
Area of Firegrate in each Boiler 79 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 16.3 sq. in. Pressure to which they are adjusted 225 lbs. sq. in. Are they fitted with easing gear Yes ✓
as fitted 19.242 sq. in.In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓
Smallest distance between boilers and bunkers or woodwork 2'-2" Is oil fuel carried in the double bottom under boilers No.
Smallest distance between shell of boiler and tank top plating 2'-6 1/2" Is the bottom of the boiler insulated Yes ✓
Largest internal dia. of boilers 17'-6" Length 12'-1 1/2" (Full) Shell plates: Material Steel Tensile strength 30-34 tons sq. in.
Thickness 1 5/8" Are the shell plates welded or flanged No. Description of riveting: circ. seams {inter. 4 3/8" ✓
long. seams T.R.D.B.S. ✓ Diameter of rivet holes in {circ. seams 1 1/16" ✓ Pitch of rivets {plate 11 3/8" ✓
Percentage of strength of circ. end seams {plate 61.4 ✓ Percentage of strength of circ. intermediate seam {plate 48.2 ✓
rivets 48.2 ✓ Working pressure of shell by Rules 221 lbs. sq. in.
Percentage of strength of longitudinal joint {plate 85.16 ✓
rivets 86.8 ✓
combined 87.6 ✓Thickness of butt straps {outer 1 1/4" ✓
inner 1 3/8" ✓ No. and Description of Furnaces in each Boiler Four Corrugated Torison Section.
Material Steel Tensile strength 26-30 tons sq. in. Smallest outside diameter 3'-10 1/16" ✓
Length of plain part {top 1 1/4" ✓
bottom 1 3/8" ✓ Thickness of plates {crown 23 3/32" ✓
bottom 23 3/32" ✓ Description of longitudinal joint Weld.
Dimensions of stiffening rings on furnace or c.e. bottom ✓ Working pressure of furnace by Rules 227 lbs. sq. in.
End plates in steam space: Material Steel Tensile strength 26-30 tons sq. in. Thickness 1 1/32" ✓ Pitch of stays 24 1/2" x 18 1/2" ✓
How are stays secured Double Nuts & Washers ✓ Working pressure by Rules 222 lbs. sq. in.
Tube plates: Material {front Steel Tensile strength 26-30 tons sq. in. Thickness 15 1/16" ✓
back Steel Tensile strength 26-30 tons sq. in. Thickness 7/8" ✓
Mean pitch of stay tubes in nests 11 1/16" Pitch across wide water spaces 13 3/4" ✓ Working pressure {front 223 lbs. (H.W. SPACE) ✓
back 226 lbs. sq. in. ✓Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons sq. in. Depth and thickness of girder
at centre 7 3/8" x 2 1/4" Length as per Rule 32" Distance apart 9 1/4" No. and pitch of stays
in each 2 @ 10 1/4" Working pressure by Rules 225 lbs. sq. in. Combustion chamber plates: Material Steel
Tensile strength 26-30 tons sq. in. Thickness: Sides 27 3/32" ✓ Back 3/4" ✓ Top 27 3/32" ✓ Bottom 27 3/32" ✓
Pitch of stays to ditto: Sides 10 1/2" x 10 1/2" Back 11" x 1 1/2" Top 10 1/4" x 9 1/4" Are stays fitted with nuts or riveted over Fitted with nuts ✓
Working pressure by Rules 222 lbs. sq. in. (4 BACKS) LEAST Front plate at bottom: Material Steel Tensile strength 26-30 tons sq. in.
Thickness 15 1/16" Lower back plate: Material Steel Tensile strength 26-30 tons sq. in. Thickness 29 3/32" ✓
Pitch of stays at wide water space 13 3/4" x 10 3/4" Are stays fitted with nuts or riveted over Fitted with nuts ✓
Working Pressure 221 lbs. sq. in. Main stays: Material Steel Tensile strength 26-30 tons sq. in.Diameter {At body of stay, 3 5/8" ✓
Over threads No. of threads per inch 6 ✓ Area supported by each stay 453.75 sq. in. ✓
Working pressure by Rules 226 lbs. sq. in. Screw stays: Material Steel Tensile strength 26-30 tons sq. in. ✓
Diameter {At turned off part, 1 5/8" + 1 3/4" ✓
Over threads No. of threads per inch 9 ✓ Area supported by each stay 110.25 sq. in. (Sides) ✓

Working pressure by Rules 220 lb sq Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 1/8" x 2" ✓
(SIDES LEAST)
No. of threads per inch 9 Area supported by each stay 110.5 sq Working pressure by Rules 221 lb sq
Tubes: Material Wrot Iron External diameter { Plain 3 1/4" Thickness { 7/16" & 3/8" No. of threads per inch 9 ✓
Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules PLAIN 280 lb sq STAY 226 + 260 lb sq Manhole compensation: Size of opening
END
Shell plate 16" x 12" Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓
Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 4 1/8" 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
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 Type by the Superheater Co. Ltd. Tubes The Superheater Co. Ltd.
Number of elements 120 (TOTAL) Material of tubes Solid Drawn Steel Internal diameter and thickness of tubes 1 7/16" x 3 1/16"
Material of headers Forged Steel Tensile strength 26-30 tons sq. Thickness 1" (1/16") 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 1.767 sq. Are the safety valves fitted with easing gear Yes Working pressure as per
Rules 220 lb sq. Pressure to which the safety valves are adjusted 228 lb sq. Hydraulic test pressure
tubes 660 lb sq. (At MAKERS HOOKS) 660 lb sq. (At MAKERS HOOKS) and after assembly in place 440 lb sq. Are drain cocks or 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,

Dates of Survey { During progress of work in shops - - - Please see Machinery Rpt. Are the approved plans of boiler and superheater forwarded herewith Yes
while building { During erection on board vessel - - -
Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The Boilers have been built under
Special Survey and Satisfactorily fitted in the vessel. The Materials & Workmanship are good.
For notation please see Machinery Report.

Survey Fee £

Travelling Expenses (if any) £

When applied for, 192

When received, 192

Committee's Minute

Assigned

THE 12 NOV 1929

See Rpt. attached

Alfred Bee

Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation