

## REPORT ON BOILERS.

No. 7150.

Received at London Office 29 DEC 1930

Writing Report 28 Nov 1930 When handed in at Local Office 1930 Port of Kobe  
 Survey held at Osaka Date, First Survey 28 October 29 Last Survey 7 October 1930  
 on the T.M.V. "HEIAN MARU" (Number of Visits 17) Tons { Gross  
 Net  
 Built at Osaka By whom built Osaka Iron Works Yard No. 1128 When built 1930  
 Engine No. 1628 When made 1930  
 By whom made Burnistie & Wain  
 By whom made Osaka Iron Works Boiler No. 1128 When made 1930  
 Owners Nippon Yusen Kaisha Port belonging to Tokyo  
 Horse Power ✓

LITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel David Colville & Co Ltd. (Letter for Record S)  
 Heating Surface of Boilers 1513.8 sq ft Is forced draught fitted no Coal or Oil fired oil  
 Description of Boilers 2 Single ended Working Pressure 120 lbs sq in  
 Tested by hydraulic pressure to 230 lbs sq in Date of test 7.1.30 No. of Certificate ✓ Can each boiler be worked separately yes  
 No. and Description of safety valves to each boiler 2 Spring loaded  
 of each set of valves per boiler { per Rule 8.4 as fitted 9.8 Pressure to which they are adjusted 120 lbs sq in Are they fitted with easing gear yes  
 Use of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓  
 Test distance between boilers or uptakes and bunkers or woodwork 3'-11" Is oil fuel carried in the double bottom under boilers yes  
 Test distance between shell of boiler and tank top plating 2'-2 1/2" Is the bottom of the boiler insulated yes  
 Test internal dia. of boilers 9'-6" Length 8'-6" Shell plates: Material Steel Tensile strength 28 to 30 tons  
 Thickness 1 1/16" Are the shell plates welded or flanged Flanged Description of riveting: circ. seams { end double inter ✓  
 seams D.B.S.D.R. Diameter of rivet holes in { circ. seams 1 1/16" Pitch of rivets { 3 7/8"  
 Percentage of strength of circ. end seams { plate 66.1 rivets 67.75 Percentage of strength of circ. intermediate seam { plate ✓ rivets ✓  
 Percentage of strength of longitudinal joint { plate 75.75 rivets 79.8 combined 91.6 Working pressure of shell by Rules 135.2 lbs sq in  
 Thickness of butt straps { outer 1 1/16" inner 1 1/16" No. and Description of Furnaces in each Boiler 2 Deighton's type  
 Tensile strength 26 to 30 tons Smallest outside diameter 32.875"  
 Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 7/16" bottom 7/16" Description of longitudinal joint Weld  
 Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 190 lbs sq in  
 Plates in steam space: Material Steel Tensile strength 26 to 30 Thickness 3/4" Pitch of stays 13 1/2" x 13 1/2"  
 How are stays secured Double nuts and washers Working pressure by Rules 139.5 lbs sq in  
 Front plates: Material { front Steel back Steel Tensile strength { 26 to 30 tons Thickness { 5/8"  
 Pitch of stay tubes in nests 9.406" Pitch across wide water spaces 13 5/8" Working pressure { front 139.5 lbs sq in back 155 lbs sq in  
 Orders to combustion chamber tops: Material Steel Tensile strength 28 to 32 tons Depth and thickness of girder  
 centre 5 1/2" x 1 1/4" Length as per Rule 24.8125" Distance apart 6 3/4" No. and pitch of stays  
 each 2 @ 8" Working pressure by Rules 158.5 lbs sq in Combustion chamber plates: Material Steel  
 Tensile strength 26 to 30 tons Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 5/8"  
 Pitch of stays to ditto: Sides 8 1/8" x 8" Back 8 1/4" x 8 1/4" Top 6 3/4" x 8" Are stays fitted with nuts or riveted over nuts  
 Working pressure by Rules 149 lbs sq in Front plate at bottom: Material Steel Tensile strength 26 to 30 tons  
 Thickness 1 1/16" Lower back plate: Material Steel Tensile strength 26 to 30 tons Thickness 1 1/16"  
 Pitch of stays at wide water space 13 5/8" Are stays fitted with nuts or riveted over nuts  
 Working Pressure 144.5 lbs sq in Main stays: Material Steel Tensile strength 28 to 32 tons  
 Diameter { At body of stay, 2" No. of threads per inch 6 Area supported by each stay 168.8 sq in  
 Over threads 1 5/16"  
 Working pressure by Rules 163.5 lbs sq in Screw stays: Material Steel Tensile strength 26 to 30 tons  
 Diameter { At turned off part, 1 1/2" No. of threads per inch 9 Area supported by each stay 72.2 sq in  
 Over threads 1 1/2"



Working pressure by Rules 174 lbs Are the stays drilled at the outer ends NO Margin stays: Diameter { At turned off part, 1 5/8" or Over threads  
No. of threads per inch 9 Area supported by each stay 95.6 sq" Working pressure by Rules 159 lbs  
Tubes: Material S.D.S. External diameter { Plain 3" Stay 3" Thickness { 9/16" 3/8" No. of threads per inch 9  
Pitch of tubes 9.17 Working pressure by Rules 163 lbs Manhole compensation: Size of opening in  
shell plate 12 x 16" Section of compensating ring 10.6 sq" No. of rivets and diameter of rivet holes 44 @ 1 1/16"  
Outer row rivet pitch at ends 5 Depth of flange if manhole flanged 3 1/2" 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 ✓ 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 ✓ Manufacturers of { Tubes ✓ Steel castings ✓  
Number of elements ✓ Material of tubes ✓ 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.

OSAKA IRON WORKS, LTD.

The foregoing is a correct description,

S. Kaneko

Manufacturer.

Dates of Survey { During progress of work in shops - - Oct. 28, Nov. 7, 11, 14, 20 Dec 3, 11, 17, 26 Are the approved plans of boiler and superheater forwarded herewith ✓  
while building { During erection on board vessel - - - Jan 1930, 9" (If not state date of approval.)  
1930 Jan 22, March 8, April 4, April 4 Total No. of visits 17  
Aug 26, Oct 7"

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The boilers have been constructed under special survey in accordance with the requirements of the Rules and approved plans; the workmanship and materials are good and on completion were tested by hydraulic pressure to 230 lbs per sq inch and found to be tight and sound; the boilers were afterwards efficiently installed in the vessel and their safety valves adjusted under steam to 120 lbs per sq inch - eligible in our opinion to have the record of Q.D.B. 120 lbs.

Survey Fee ... .. £ 227.

Travelling Expenses (if any) £ See bill sent.

When applied for, 21st Nov. 1929

When received, 1st Dec. 1929

A. K. Garnett A. Morris

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 13 JAN 1931

Assigned See other report



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