

REPORT ON BOILERS.

No. 291

Received at London Office.

20 APR 1954

Date of writing Report 12 Dec 1953 When handed in at Local Office 1953 Port of Kobe Shimomoseki
 No. in Survey held at Nagasaki Date, First Survey 21st May Last Survey 14th Nov 1953
 eg. Book. (Number of Visits 34) Gross 7620.32
 on the Twin Screw motor vessel "Victoria Mary" Tons Net 4362.11
 Built at Nagasaki By whom built Nagasaki Zosen Sho, Mitsubishi Zosen K.K. Yard No. 1437 When built 1953.11 mo.
 Engines made at Nagasaki By whom made Nagasaki Zosen Sho, Mitsubishi Zosen K.K. Engine No. 25/260 When made 1953.8 mo.
 Boilers made at Nagasaki By whom made Nagasaki Zosen Sho, Mitsubishi Zosen K.K. Boiler No. 1383 When made 1953.11 mo.
 Nominal Horse Power Owners Mitsubishi Kaian K.K. Port belonging to Tokyo

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Yawata Iron and Steel Works (Letter for Record)
 Total Heating Surface of Boilers 268.5 sq meter. Is forced draught fitted Yes Coal or Oil fired Oil fired
 No. and Description of Boilers One Multitubular cylindrical dry combustion Working Pressure 7 Kgs/cm²
 Tested by hydraulic pressure to 14 Kgs/cm² Date of test 12 Aug 1953 No. of Certificate No. 10545 Can each boiler be worked separately.
 Area of Firegrate in each Boiler No. and Description of safety valves to each boiler one set—2 valves full lift type
 Area of each set of valves per boiler { per Rule 51.2 cm² Pressure to which they are adjusted 7 Kgs/cm² Are they fitted with easing gear Yes
 as fitted 56.5 cm²
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler.
 Smallest distance between boilers or uptakes and bunkers or woodwork 6000 mm Is oil fuel carried in the double bottom under boilers No
 Smallest distance between shell of boiler and tank top plating 6000 mm Is the bottom of the boiler insulated Yes
 Largest internal dia. of boilers 3800 mm Length 2650 mm Shell plates: Material Boiler quality steel Tensile strength 28-32 %
 Thickness 19 mm Are the shell plates welded or flanged No Description of riveting: circ. seams end Double Riveted Lap Joint
 inter. 88 mm
 Long. seams Double Riveted Double Butt Strap Diameter of rivet holes in { circ. seams 26.5 mm Pitch of rivets { 102 mm
 long. seams 26.5 mm
 Percentage of strength of circ. end seams { plate 69.9 Percentage of strength of circ. intermediate seam { plate
 rivets 53.8 rivets
 Percentage of strength of longitudinal joint { plate 74 Working pressure of shell by Rules 7.77 Kgs/cm²
 rivets 87.7 combined
 Thickness of butt straps { outer 13 mm
 inner 16 mm No. and Description of Furnaces in each Boiler One—Morrison Corrugated
 Material Boiler quality steel Tensile strength 26-30 % Smallest outside diameter 1028 mm
 Length of plain part { top Thickness of plates { crown 14 mm Description of longitudinal joint Fusion weld from both sides
 bottom 14 mm
 Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 13.8 Kgs/cm²
 End plates in steam space: Material Boiler quality steel Tensile strength 26-30 % Thickness 22 mm Pitch of stays 400 mm
 How are stays secured with nuts inside and outside of end plates Working pressure by Rules 8.1 Kgs/cm²
 Tube plates: Material { front Boiler quality steel Tensile strength { 26-30 % Thickness { 22 mm
 back DO DO
 Mean pitch of stay tubes in nests 318 mm Pitch across wide water spaces 340 mm Working pressure { front 7.86 Kgs/cm²
 back 7.86 Kgs/cm²
 Girders to combustion chamber tops: Material Tensile strength Depth and thickness of girder
 at centre Length as per Rule Distance apart No. and pitch of stays
 in each Working pressure by Rules Combustion chamber plates: Material
 Tensile strength Thickness: Sides Back Top Bottom
 Pitch of stays to ditto: Sides Back Top Are stays fitted with nuts or riveted over.
 Working pressure by Rules Front plate at bottom: Material Boiler quality steel Tensile strength 26-30 %
 Thickness 22 mm Lower back plate: Material Boiler quality steel Tensile strength 26-30 % Thickness 22 mm
 Pitch of stays at wide water space Are stays fitted with nuts or riveted over.
 Working pressure Main stays: Material Longitudinal stay Tensile strength 28-32 %
 Diameter { At body of stay 6.5 mm No. of threads per inch 6 Area supported by each stay 1.907 sq. cm
 Over threads
 Working pressure by Rules 13.4 Kgs/cm² Screw stays: Material Tensile strength
 Diameter { At turned off part No. of threads per inch Area supported by each stay
 Over threads

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Working pressure by Rules. Are the stays drilled at the outer ends. Margin stays: Diameter (At turned off part, or Over threads. No. of threads per inch. Area supported by each stay. Working pressure by Rules. Tubes: Material. Boiler tube. External diameter (Plain. 76.2 mm. Stay. 76.2 mm. Thickness. 4 mm. 8 mm. No. of threads per inch. 9. Pitch of tubes. Vertical. 105 mm. Horizontal. 107 mm. Working pressure by Rules. 9.92 Kgs/cm². Manhole compensation: Size of opening. shell plate. 405 mm x 305 mm. Section of compensating ring. 19 x 160 x 160 mm. No. of rivets and diameter of rivet holes. 36 x 26. Outer row rivet pitch at ends. 122.7 mm. Depth of flange if manhole flanged. 85 mm. 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 stays. Inner radius of crown. Working pressure by Rules. How connected to shell. Size of doubling plate under dome. Diameter of rivet holes and of rivets in outer row in dome connection to shell.

Type of Superheater. None. Manufacturers of (Tubes. Steel forgings. 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 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 Rules. Pressure to which the safety valves are adjusted. Hydraulic test pressure tubes. forgings and castings. and after assembly in place. Are drain cock valves fitted to free the superheater from water where necessary. Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with.

The foregoing is a correct description,

Dates of Survey while building. During progress of work in shops. 1953. May 2, 12, June 13, 16, 17, 18, 22, 29, 30, July 1, 4, 15, 17, 18, 20, 22, 25, 28, 30. Are the approved plans of boiler and superheater forwarded herewith. 15 July 1953. (If not state date of approval.) During erection on board vessel. 1953. Aug 5, 12, 18, 21, 26, Sep 10, 22, Oct 12, 15, 29, Nov 4, 7, 9, 14. Total No. of visits. 34. MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD. NAGASAKI WORKS

Is this Boiler a duplicate of a previous case. Yes. If so, state Vessel's name and Report No. ASOMARU, ARIMAMARU, TOMISHIMAMARU, AWATAMARU, ARITAMARU

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

The Donkey Boiler of this vessel has been constructed under Special Survey in accordance with the Rules, Approved plans and Secretary's letter. The material and workmanship are good. The Donkey Boiler has been examined under steam, the Safety valves were adjusted to 7 Kgs per sq. cm. and found satisfactory.

Survey Fee ... £ 75,000 When applied for APR - 7 1954 Travelling Expenses (if any) See Rpt. 1. When received ... 19. LOCALLY

Shunichi Peter Manson Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIDAY 21 MAY 1954

Assigned See Rpt. 4 b.