

REPORT ON BOILERS.

LONDON

No. 205

Received at London Office 25 AUG 1953

Date of writing Report 19..... When handed in at Local Office..... 19..... Port of Shimonoseki

No. in Reg. Book. Survey held at Nagasaki Date, First Survey 29th July 1952 Last Survey 27th February 1953

on the Twin Screw Motor Vessel "ARITA MARU" (Number of Visits 25) Tons } Gross 7655.50
 Net 4287.40

Master..... Built at Nagasaki By whom built Mitsubishi Shipbuilding & Engineering Co. Ltd. Yard No. 1430 When built 1953.2 mo.

Engines made at Nagasaki By whom made Mitsubishi Shipbuilding & Engineering Co. Ltd. Engine No. 248, 249 When made 1952.11 mo.

Boilers made at Nagasaki By whom made Mitsubishi Shipbuilding & Engineering Co. Ltd. Boiler No. 1376 When made 1952.12 mo.

Nominal Horse Power..... Owners Nippon Yusen Kaisha Port belonging to Tokyo

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Yamata Iron & Steel Works (Letter for Record.....)

Total Heating Surface of Boilers 268.5 sq. meter Is forced draught fitted yes Coal or Oil fired Oil and Exh. gas

No. and Description of Boilers one - Multitubular cylindrical dry combustion Working Pressure 7 kg/cm²

Tested by hydraulic pressure to 14 kg/cm² Date of test 1 Dec. 1952 No. of Certificate 10.173 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 as fitted 56.5 cm² Pressure to which they are adjusted 7 kg/cm Are they fitted with casing gear yes

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 6 meters Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 6 meters 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 28-35 T/P

Thickness 19 mm Are the shell plates welded or flanged no Description of riveting: circ. seams { end Double riveted lap joint inter..... }
 long. seams Double riveted double butt strap Diameter of rivet holes in { circ. seams 26.5 mm long. seams 26.5 mm } Pitch of rivets { 83 mm }
 Percentage of strength of circ. end seams { plate 69.9 rivets 53.8 } Percentage of strength of circ. intermediate seam { plate..... rivets..... }
 Percentage of strength of longitudinal joint { plate 74 rivets 87.7 combined..... } Working pressure of shell by Rules 7.77 kg/cm²

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 T/P Smallest outside diameter 1028 mm

Length of plain part { top..... bottom..... } Thickness of plates { crown 14 mm bottom 14 mm } Description of longitudinal joint Butt fusion weld from both sides

Dimensions of stiffening rings on furnace or c.c. bottom..... Working pressure of furnace by Rules 13.8 kg/cm²

End plates in steam space: Material Boiler quality steel Tensile strength 26-30 T/P 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 kg/cm²

Tube plates: Material { front Boiler quality steel back do } Tensile strength { 26-30 T/P } Thickness { 22 mm }
 Lean pitch of stay tubes in nests 31.8 mm Pitch across wide water spaces 340 mm Working pressure { front 7.86 kg/cm² back 7.86 kg/cm² }

Girders to combustion chamber tops: Material..... Tensile strength..... Depth and thickness of girder centre..... Length as per Rule..... Distance apart..... No. and pitch of stays 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 T/P Thickness 22 mm

Lower back plate: Material Boiler quality steel Tensile strength 26-30 T/P Thickness 22 mm

Working pressure..... Are stays fitted with nuts or riveted over.....

Main stays: Material Longitudinal stay Tensile strength 28-35 T/P Diameter { At body of stay 65 mm Over threads..... } No. of threads per inch 6 Area supported by each stay 1.907 sq. cm

Working pressure by Rules 13.4 kg/cm² Screw stays: Material..... Tensile strength..... Diameter { At turned off part..... Over threads..... } No. of threads per inch..... Area supported by each stay.....

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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 *Baker tube* External diameter ^{Plain} *76.2 mm* Thickness *4 mm* No. of threads per inch *9*

Pitch of tubes *Vertical 105 mm* *107 mm* Working pressure by Rules *9.92 kg/cm²* Manhole compensation: Size of opening in shell plate *405 mm x 305 mm* Section of compensating ring *19 mm x 160 mm* No. of rivets and diameter of rivet holes *36 x 26.5 mm*

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 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 *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 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 casing gear..... Working pressure as per Rules..... Pressure to which the safety valves are adjusted..... Hydraulic test pressure: tubes..... forgings and 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 22 inclusive for boilers been complied with.....

The foregoing is a correct description,
L. Matsushita Manufacturer.
NAGASAKI WORKS

MITSUBISHI SHIPBUILDING & ENGINEERING CO. LTD.
 Are the approved plans of boiler and superheater forwarded herewith *Yes* ^{28/11/1952}
 (If not state date of approval.)

Dates of Survey while building ¹⁹⁵² During progress of work in shops - - *Aug. 10, 17, 18, 24, 30, Sep. 1, 10, 14, 20, 23, Oct. 4, 6, 12, 15, 17, 19, 20*
¹⁹⁵² ¹⁹⁵³ During erection on board vessel - - *Dec. 5, 4, Jan. 12, 30, Feb. 9, 16, 24, 27*

Total No. of visits..... *25*

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

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, *JUL. 3.1. 1953*.....
 Travelling Expenses (if any) £ : : } **LOCALLY**.....
 When received.....*19*.....

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

Committee's Minute..... **FRIDAY 18 SEP 1953**.....

Assigned..... *See Rpt. 4b.*.....



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