

## REPORT ON BOILERS.

No. 9952

Received at London Office

-8 MAR '37

Date of writing Report 8-2-1937 When handed in at Local Office 16-2-1937 Port of KOBE

No. in Reg. Book. Survey held at TAMA Date, First Survey 7/10/35 Last Survey 15/1/1937

on the STEEL SINGLE SCREW MOTORSHIP "OMROSAN MARU" (Number of Visits 20) Gross 9205 Tons Net 5288

Master ✓ Built at TAMA By whom built MITSUI BUSSAN KAISHA Yard No. 212 When built 1937

Engines made at TAMA By whom made MITSUI BUSSAN KAISHA Engine No. 96 When made 1937

Boilers made at TAMA By whom made MITSUI BUSSAN KAISHA Boiler No. 134 When made 1937

Nominal Horse Power 1231 Owners MITSUI BUSSAN KAISHA Port belonging to KOBE

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel SHELL PLATES: GUTEHOFFNUNGSHUTTE OBERHAUSEN A.G. DUSSEL DORF CERTIFICATES. OTHER PLATES: NIPPON SEITETSU, YAWATA WORKS. (Letter for Record (S) ✓)

Total Heating Surface of Boilers OIL BURNING: 57.43 M<sup>2</sup> WASTE GAS: 219.45 M<sup>2</sup> Is forced draught fitted YES ✓ Coal or Oil fired OIL & WASTE GAS. ✓

No. and Description of Boilers ONE: WASTE GAS AND OIL FITTED SINGLE ENDED MULTITUBULAR Working Pressure 14.19 kg/cm<sup>2</sup> ✓

Tested by hydraulic pressure to 24.5 kg/cm<sup>2</sup> Date of test 23-10-36 No. of Certificate 5581 Can each boiler be worked separately YES ✓

Area of Firegrate in each Boiler 1.95 M<sup>2</sup> No. and Description of safety valves to each boiler 2 SPRING LOADED ✓

Area of each set of valves per boiler (per Rule 11300 m<sup>2</sup> as fitted 12400 m<sup>2</sup> Pressure to which they are adjusted 14.19 kg/cm<sup>2</sup> Are they fitted with easing 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 ABOUT 6 FT. TO F.O. TANKS Oil fuel carried in the double bottom under boilers ✓

Smallest distance between shell of boiler and tank top plating BOILER FITTED IN MID TWEEN DECK Is the bottom of the boiler insulated YES ✓

Largest internal dia. of boilers 4000 m/m ✓ Length 3500 m/m ✓ Shell plates: Material STEEL ✓ Tensile strength 28-32 T/d ✓

Thickness 32 m/m ✓ Are the shell plates welded or flanged No ✓ Description of riveting: circ. seams end DOUBLE RIVETTED LAP. ✓

long. seams TREBLE RIVETED D.B.S. ✓ Diameter of rivet holes in circ. seams 36.5 m/m ✓ Pitch of rivets 100 m/m ✓

Percentage of strength of circ. end seams plate 63.5 rivets 53.8 Percentage of strength of circ. intermediate seam plate ✓ rivets ✓

Percentage of strength of longitudinal joint plate 85.5 rivets 92.0 combined 89.2 Working pressure of shell by Rules 14.9 kg/cm<sup>2</sup> ✓

Thickness of butt straps outer 25 m/m ✓ inner 28 m/m ✓ No. and Description of Furnaces in each Boiler ONE MORISON TYPE CORRUGATED 30 ✓

Material STEEL ✓ Tensile strength 26-30 T/d ✓ Smallest outside diameter 945 m/m ✓

Length of plain part top 157 m/m bottom 157 m/m Thickness of plates crown 15 m/m ✓ bottom 15 m/m ✓ Description of longitudinal joint WELDED ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 16.25 kg/cm<sup>2</sup> ✓

End plates in steam space: Material STEEL ✓ Tensile strength 26-30 T/d ✓ Thickness 30 m/m ✓ Pitch of stays 400 m/m x 450 m/m ✓

How are stays secured DOUBLE NUTS & WASHER Working pressure by Rules 16.2 kg/cm<sup>2</sup> ✓

Tube plates: Material front STEEL ✓ back STEEL ✓ Tensile strength 26-30 T/d ✓ Thickness 21 m/m ✓

Mean pitch of stay tubes in nests 218 m/m ✓ Pitch across wide water spaces 340 m/m x 108 m/m Working pressure front 16.6 kg/cm<sup>2</sup> ✓ back 23.5 kg/cm<sup>2</sup> ✓

Girders to combustion chamber tops: Material STEEL ✓ Tensile strength 28-32 T/d ✓ Depth and thickness of girder at centre 230 m/m x 2-18 m/m Length as per Rule 741 m/m ✓ Distance apart 200 m/m ✓ No. and pitch of stays in each 2-240 m/m ✓ Working pressure by Rules 20.4 kg/cm<sup>2</sup> ✓

Tensile strength 26-30 T/d ✓ Thickness: Sides 18 m/m ✓ Back 18 m/m ✓ Top 18 m/m ✓ Bottom 21 m/m ✓

Pitch of stays to ditto: Sides 250 m/m x 180 m/m Back 230 m/m x 210 m/m Top 240 m/m x 200 m/m Are stays fitted with nuts or riveted over NUTS ✓

Working pressure by Rules 16.3 kg/cm<sup>2</sup> ✓ Front plate at bottom: Material STEEL ✓ Tensile strength 26-30 T/d ✓

Thickness 21 m/m ✓ Lower back plate: Material STEEL ✓ Tensile strength 26-30 T/d ✓ Thickness 19 m/m ✓

Pitch of stays at wide water space 210 m/m x 340 m/m ✓ Are stays fitted with nuts or riveted over NUTS ✓

Working Pressure 19 kg/cm<sup>2</sup> ✓ Main stays: Material STEEL ✓ Tensile strength 28-32 T/d ✓

Diameter At body of stay, 70 m/m ✓ No. of threads per inch 6 ✓ Area supported by each stay 400 m/m x 450 m/m ✓

Over threads 76 m/m ✓ Working pressure by Rules 16.25 kg/cm<sup>2</sup> ✓ Screw stays: Material STEEL ✓ Tensile strength 26-30 T/d ✓

Diameter At turned off part, - No. of threads per inch 9 ✓ Area supported by each stay 48387 m/m<sup>2</sup> (750") ✓

Over threads 44.5 m/m ✓



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Working pressure by Rules 17.1 Kg/cm<sup>2</sup> Are the stays drilled at the outer ends YES Margin stays: Diameter { At turned off part, or Over threads 50.8 mpm 47.6 mpm

No. of threads per inch 6 Area supported by each stay 57096 m<sup>2</sup> (88.5 sq") Working pressure by Rules 16.8 Kg/cm<sup>2</sup>

Tubes: Material STEEL External diameter { Plain 80 mpm Stay 80 mpm Thickness { 4 mpm 8 mpm + 10 mpm No. of threads per inch 9

Pitch of tubes 110 mpm x 450 mpm Working pressure by Rules 25.9 Kg/cm<sup>2</sup> Manhole compensation: Size of opening, B

shell plate 550 mpm x 450 mpm Section of compensating ring 545 mpm x 32 mpm No. of rivets and diameter of rivet holes 42 36.5 mpm

Outer row rivet pitch at ends 210 mpm Depth of flange if manhole flanged 105 mpm Steam Dome: Material NONE

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 pitch

of rivets in outer row in dome connection to shell

Type of Superheater NONE 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 from the boiler

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 tested

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 22 inclusive for boilers been complied with YES

PER PRO MITSUBISHI KAISHA LTD  
The foregoing is a correct description,  
S. Saito, Manufacturing

Dates of Survey	During progress of work in shops - -	1935. OCT. 7. NOV. 13. 1936. FEB. 18, 21. MAR. 5, 10, 19, 23. APR. 30. MAY. 14, 27. JUN. 4, 7.	Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)	26-3-35
while building	During erection on board vessel - - -	1936 NOV. 13. DEC. 26. 1937 JAN. 7, 15.	Total No. of visits	20

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

This boiler has been constructed under Special Survey in accordance with the Rules and approved plan.

The materials and workmanship are good.

The boiler was tested by hydraulic pressure to 24.5 Kg/cm<sup>2</sup> and found sound and tight, afterwards installed in accordance with the Rules in the vessel, and safety valves adjusted under steam to 14 Kg/cm<sup>2</sup>. (200 Lbs./sq. in.).

The boiler, in our opinion, is eligible to have the record of D.B. 14 Kg. per square cm. (200 Lbs. per square inch.)

See letter regarding slight deformation of one back tube plate.

Survey Fee ... £ 57-10-6 When applied for, Jan. 18th 1937

Travelling Expenses (if any) £ : : : When received, Febr. 15th 1937

c. Macpherson. M. Kamakura.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned See Kob. J.E. 9952

FRI 12 MAR 1937