

# REPORT ON BOILERS.

No. 9952

Received at London Office - 8 MAR 1937

47.6 mfm  
cm<sup>2</sup>  
9  
5 mfm

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

No. in Survey held at TAMA Date, First Survey 7/10/35 Last Survey 15/2/1937

of opening Book.

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 Nos. 135-136 When made 1937

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

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

shut off manufacturers of Steel SHELL PLATES: GUTEHOFFNUNGSHUTTE OBERHAUSEN A.G. DUSSEL DORF CERTIFICATES. OTHER PLATES: NIPPON SEITETSU, YAWATA WORKS, (Letter for Record (5) ✓)

Total Heating Surface of Boilers 221.73 M<sup>2</sup> EACH Is forced draught fitted YES Coal or Oil fired OIL ✓

sure as No. and Description of Boilers 2. SINGLE ENDED MULTITUBULAR Working Pressure 14 Kg/cm<sup>2</sup> ✓

t pressurized by hydraulic pressure to 24.5 Kg/cm<sup>2</sup> Date of test 23-10-36 Nos. of Certificate 5582 & 5583 ✓ Can each boiler be worked separately YES ✓

Area of Firegrate in each Boiler 5.85 M<sup>2</sup> EACH No. and Description of safety valves to each boiler 2 SPRING LOADED ✓

Area of each set of valves per boiler (per Rule 9000 mfm<sup>2</sup> as fitted 12400 mfm<sup>2</sup> Pressure to which they are adjusted 14 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 in VICINITY OF BOILERS. Is oil fuel carried in the double bottom under boilers ✓

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

-3-35 Largest internal dia. of boilers 4100 mfm Length 3500 mfm Shell plates: Material STEEL Tensile strength 28-32 T/□" ✓

Thickness 32 mfm Are the shell plates welded or flanged NO Description of riveting: circ. seams end DOUBLE RIVETED LAP ✓

ong. seams TREBLE RIVETED D.B.S. Diameter of rivet holes in circ. seams 36.5 mfm Pitch of rivets 100 mfm ✓

Percentage of strength of circ. end seams plate 63.5 rivets 53.7 Percentage of strength of circ. intermediate seam plate rivets ✓

Percentage of strength of longitudinal joint plate 85.4 rivets 92.2 combined 89.2 Working pressure of shell by Rules 14.53 Kg/cm<sup>2</sup> ✓

Thickness of butt straps outer 25 mfm inner 28 mfm No. and Description of Furnaces in each Boiler 3 MORISON TYPE CORRUGATED EACH

Material STEEL Tensile strength 26-30 T/□" Smallest outside diameter 945 mfm

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

Dimensions of stiffening rings on furnace or c.e. bottom ✓ Working pressure of furnace by Rules 16.2 Kg/cm<sup>2</sup> ✓

End plates in steam space: Material STEEL Tensile strength 26-30 T/□" Thickness 30 mfm Pitch of stays 410 mfm x 450 mfm

How are stays secured DOUBLE NUTS + WASHERS. Working pressure by Rules 15.9 Kg/cm<sup>2</sup> ✓

Tube plates: Material front STEEL back STEEL Tensile strength 26-30 T/□" ✓ Thickness 21 mfm

Mean pitch of stay tubes in nests 218 mfm Pitch across wide water spaces 340 mfm x 110 mfm Working pressure front 16.6 Kg/cm<sup>2</sup> back 23.4 Kg/cm<sup>2</sup> ✓

Girders to combustion chamber tops: Material STEEL Tensile strength 28-32 T/□" Depth and thickness of girder

at centre 230 mfm 2-18 mfm Length as per Rule 741 mfm Distance apart 200 mfm No. and pitch of stays

in each 2-240 mfm Working pressure by Rules 21.4 Kg/cm<sup>2</sup> Combustion chamber plates: Material STEEL

Tensile strength 26-30 T/□" Thickness: Sides 18 mfm Back 18 mfm Top 18 mfm Bottom 21 mfm ✓

Pitch of stays to ditto: Sides 250 mfm x 190 mfm Back 230 mfm x 200 mfm Top 240 mfm x 200 mfm Are stays fitted with nuts or riveted over NUTS

Working pressure by Rules 16.1 Kg/cm<sup>2</sup> Front plate at bottom: Material STEEL Tensile strength 26-30 T/□" ✓

Thickness 21 mfm Lower back plate: Material STEEL Tensile strength 26-30 T/□" Thickness 19 mfm ✓

Pitch of stays at wide water space 200 mfm x 340 mfm Are stays fitted with nuts or riveted over NUTS

Working Pressure 19.3 Kg/cm<sup>2</sup> Main stays: Material STEEL Tensile strength 28-32 T/□" ✓

Diameter At body of stay, or Over threads 75 mfm No. of threads per inch 6 Area supported by each stay 410 mfm x 450 mfm ✓

Working pressure by Rules 18.3 Kg/cm<sup>2</sup> Screw stays: Material STEEL Tensile strength 26-30 T/□" ✓

Diameter At turned off part, or Over threads 44.5 mfm No. of threads per inch 9 Area supported by each stay 48387 mfm<sup>2</sup> (750") ✓



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Working pressure by Rules  $17.1 \text{ kg/cm}^2$  Are the stays drilled at the outer ends **YES** Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part, } \checkmark \\ \text{Over threads } 50.8 \text{ mm} + 47.6 \text{ mm} \end{array} \right.$

No. of threads per inch **6** Area supported by each stay  $57096 \text{ mm}^2 (88.5 \text{ in}^2)$  Working pressure by Rules  $16.8 \text{ kg/cm}^2$

Tubes: Material **STEEL** External diameter  $\left\{ \begin{array}{l} \text{Plain } 80 \text{ mm} \\ \text{Stay } 80 \text{ mm} \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 4 \text{ mm} \\ 8 \text{ mm} + 10 \text{ mm} \end{array} \right.$  No. of threads per inch **9**

Pitch of tubes  $108 \text{ mm} \times 110 \text{ mm}$  Working pressure by Rules  $25.9 \text{ mm}$  Manhole compensation: Size of opening

shell plate  $550 \text{ mm} \times 450 \text{ mm}$  Section of compensating ring  $545 \text{ mm} \times 32 \text{ mm}$  No. of rivets and diameter of rivet holes **42**  $36.5 \text{ mm}$

Outer row rivet pitch at ends  $210 \text{ mm}$  Depth of flange if manhole flanged  $105 \text{ mm}$  Steam Dome: Material **NONE**

Tensile strength  $\checkmark$  Thickness of shell  $\checkmark$  Description of longitudinal joint  $\checkmark$

Diameter of rivet holes  $\checkmark$  Pitch of rivets  $\checkmark$  Percentage of strength of joint  $\left\{ \begin{array}{l} \text{Plate } \checkmark \\ \text{Rivets } \checkmark \end{array} \right.$

Internal diameter  $\checkmark$  Working pressure by Rules  $\checkmark$  Thickness of crown  $\checkmark$  No. and diameter

stays  $\checkmark$  Inner radius of crown  $\checkmark$  Working pressure by Rules  $\checkmark$

How connected to shell  $\checkmark$  Size of doubling plate under dome  $\checkmark$  Diameter of rivet holes and pitch

of rivets in outer row in dome connection to shell  $\checkmark$

Type of Superheater **NONE** Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes } \checkmark \\ \text{Steel castings } \checkmark \end{array} \right.$

Number of elements  $\checkmark$  Material of tubes  $\checkmark$  Internal diameter and thickness of tubes  $\checkmark$

Material of headers  $\checkmark$  Tensile strength  $\checkmark$  Thickness  $\checkmark$  Can the superheater be shut off  $\checkmark$

the boiler be worked separately  $\checkmark$  Is a safety valve fitted to every part of the superheater which can be shut off from the boiler  $\checkmark$

Area of each safety valve  $\checkmark$  Are the safety valves fitted with easing gear  $\checkmark$  Working pressure as per

Rules  $\checkmark$  Pressure to which the safety valves are adjusted  $\checkmark$  Hydraulic test pressure

tubes  $\checkmark$  castings  $\checkmark$  and after assembly in place  $\checkmark$  Are drain cocks or valves fitted

to free the superheater from water where necessary  $\checkmark$

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **YES.**

The foregoing is a correct description,  
PER PRO MITSUBI BUSSAN KAISHA, LTD.,

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops} \dots \dots \dots 1935 \text{ OCT. 7. NOV. 13. } 1936 \text{ FEB. 18. 21. 25. MAR. 5. 19. 23. APR. 30. MAY 24. 27. JUN. 10. 17. 24. 31. JUL. 8. 15. 22. 29. AUG. 5. 12. 19. 26. SEP. 2. 9. 16. 23. 30. OCT. 6. 13. 20. 27. NOV. 3. 10. 17. 24. 31. DEC. 7. 14. 21. 28. 1936 SEP. 15. OCT. 22. 23. } \end{array} \right.$  Are the approved plans of boiler and superheater forwarded herewith **28-3-35**  
(If not state date of approval.)

while building  $\left\{ \begin{array}{l} \text{During erection on board vessel} \dots \dots \dots 1936 \text{ NOV. 13. DEC. 26. } 1937 \text{ JAN. 7. 15. } \end{array} \right.$  Total No. of visits **20**

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

These boilers have been constructed under Special Survey in accordance with the Rules and approved plan.

The materials and workmanship are good.

The boilers were tested by hydraulic pressures to  $24.5 \text{ kg/cm}^2$  and found sound and tight, afterwards installed in accordance with the Rules in the vessel, and the safety valves adjusted under steam to  $14 \text{ kg/cm}^2$  (200 lbs./sq. in.)

These boilers, in our opinion, are eligible to have the record of D.B.  $14 \text{ kg. per square cm. (200 lbs per square inch.)}$

Survey Fee ... .. £ : : When applied for, 192

Travelling Expenses (if any) £ : : When received, 192

C. Macpherson

M. Kamakura

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 12 MAR 1937

Assigned

See Kob. J.E. 9952



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