

REPORT ON BOILERS.

No. 9508.

Received at London Office

5 JUN 1936

Date of writing Report 9-4-1936 When handed in at Local Office 23-4-1936 Port of KOBE

No. in Survey held at TAMA Date, First Survey 14-8-1935 Last Survey 4-4-1936

Reg. Book. on the STEEL SINGLE SCREW MOTORSHIP "OTOWASAN MARU" (Number of Visits 13) Gross 9234 Tons Net 5338

Master ✓ Built at TAMA By whom built MITSUI BUSSAN KAISHA Yard No. 211 When built 1936.

Engines made at TAMA By whom made MITSUI BUSSAN KAISHA Engine No. 95 When made 1936

Boilers made at TAMA By whom made MITSUI BUSSAN KAISHA Boiler No. 131 When made 1936

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 M² WASTE GAS: 219.45 M² 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 Kg/cm² ✓

Tested by hydraulic pressure to 24.5 Kg/cm² Date of test 6-2-36 No. of Certificate 4908 Can each boiler be worked separately YES

Area of Firegrate in each Boiler 1.95 M² No. and Description of safety valves to each boiler 2 SPRING LOADED ✓

Area of each set of valves per boiler {per Rule 11300 MM² as fitted 12400 MM² Pressure to which they are adjusted 14 Kg/cm² 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 FEET TO F.O. TANK. Is 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 MM. ✓ Length 3500 MM ✓ Shell plates: Material STEEL ✓ Tensile strength 28-32 T/a" ✓

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

long. seams TRIPLE RIVETED DOUBLE BUTT STRAP Diameter of rivet holes in {circ. seams 36.5 MM ✓ Pitch of rivets {100 MM ✓ 230 MM ✓

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/cm²

Thickness of butt straps {outer 25 MM inner 28 MM ✓ No. and Description of Furnaces in each Boiler ONE - MORISON TYPE CORRUGATED ✓

Material STEEL Tensile strength 26-30 T/a" ✓ Smallest outside diameter 945 MM ✓

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

Dimensions of stiffening rings on furnace or c.e. bottom ✓ Working pressure of furnace by Rules 16.25 Kg/cm²

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

How are stays secured DOUBLE NUTS AND WASHER Working pressure by Rules 16.2 Kg/cm²

Tube plates: Material {front STEEL back STEEL Tensile strength {26-30 T/a" ✓ Thickness {21 MM ✓ 21 MM ✓

Mean pitch of stay tubes in nests 218 MM Pitch across wide water spaces 340 MM x 108 MM. Working pressure {front 16.6 Kg/cm² back 23.5 Kg/cm²

Girders to combustion chamber tops: Material STEEL Tensile strength 28-32 T/a" ✓ Depth and thickness of girder at centre 230 MM x 2-18 MM Length as per Rule 741 MM ✓ Distance apart 200 MM ✓ No. and pitch of stays in each 2.- 240 MM ✓ Working pressure by Rules 20.4 Kg/cm² Combustion chamber plates: Material STEEL.

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

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

Working pressure by Rules 16.3 Kg/cm² Front plate at bottom: Material STEEL Tensile strength 26-30 T/a" ✓

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

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

Working Pressure 19 Kg/cm² Main stays: Material STEEL Tensile strength 28-32 T/a" ✓

Diameter {At body of stay, 70 MM ✓ or 76 MM No. of threads per inch 6 ✓ Area supported by each stay 400 MM x 450 MM

Working pressure by Rules 16.25 Kg/cm² Screw stays: Material STEEL Tensile strength 26-30 T/a" ✓

Diameter {At turned off part, — or 44.5 MM. ✓ No. of threads per inch 9 ✓ Area supported by each stay 483.87 MM² (750")

Working pressure by Rules 17.1 Kg/cm² Are the stays drilled at the outer ends YES Margin stays: Diameter { At turned off part, 50.8 mm, 47.6 mm, Over threads 16.8 Kg/cm² No. of threads per inch 6 Area supported by each stay 57096 mm² (88.5 sq in) Working pressure by Rules 16.8 Kg/cm² Tubes: Material STEEL External diameter { Plain 80 mm Thickness 4 mm No. of threads per inch 9 Stay 80 mm 8 mm, 10 mm Pitch of tubes 110 mm x 108 mm Working pressure by Rules 25.9 Kg/cm² Manhole compensation: Size of opening in shell plate 550 mm x 450 mm Section of compensating ring 545 mm x 32 mm No. of rivets and diameter of rivet holes 42: 36.5 mm Outer row rivet pitch at ends 210 mm Depth of flange if manhole flanged 105 mm 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 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 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

The foregoing is a correct description
PER P&S MITSUBISHI BOSSAN KAISHA, LTD.
Saito Manufacturer.

Dates of Survey { During progress of work in shops - 1935: AUG. 14, SEPT. 10, OCT. 14, NOV. 22, 25, 27, DEC. 11, 27. 1936: FEB. 6. Are the approved plans of boiler and superheater forwarded herewith 26-3-35. (If not state date of approval.) During erection on board vessel - 1936: FEB. 12, MAR. 23, 28, APR. 4 Total No. of visits 13.

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. per sq. cm and found sound and tight, afterwards installed in accordance with the Rules in the vessel, and safety valves adjusted under steam to 14 Kg. per sq. cm. (200 lbs/sq in).
The boiler, in my opinion, is eligible to have the record of D.B. 14 Kg. per sq. cm. (200 lbs/sq in).

Survey Fee	...	£	:	:	When applied for,	192
Travelling Expenses (if any)	£	:	:	:	When received,	192

M. Kanakura.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 12 JUN 1936
Assigned See minute on F.E. Rpt.