

# REPORT ON BOILERS.

No. 9745

Received at London Office

30 OCT 1936

Date of writing Report 12-9-1936 When handed in at Local Office 17-9-1936 Port of KOBE

No. in Survey held at TAMA Date, First Survey 13-11-35 Last Survey 31-8-1936  
Reg. Book.

on the STEEL SINGLE SCREW MOTORSHIP "TOKYO MARU" (Number of Visits 15) Gross 6486.01 Tons Net 3863.68

Built at TAMA By whom built MITSUI BUSSAN KAISHA Yard No. 217 When built 1936

Engines made at TAMA By whom made MITSUI BUSSAN KAISHA Engine No. 108 When made 1936

Boilers made at TAMA By whom made MITSUI BUSSAN KAISHA Boiler No. 130 When made 1936

Owners SETTSU SHOSEN KABUSHIKI KAISHA Port belonging to OSAKA

## VERTICAL DONKEY BOILER.

Made at TAMA By whom made MITSUI BUSSAN KAISHA Boiler No. 130 When made 1936 Where fixed 1936

Manufacturers of Steel KAWASAKI DOCKYARD, FUKIAI WORKS, KOBE.

Total Heating Surface of Boiler 59.7 SQUARE METER (642.6 SQUARE FT.) Is forced draught fitted NO. Coal or Oil fired OIL+WASTE GAS.

No. and Description of Boilers ONE, COCHRAN'S TYPE Working pressure 7 Kg/cm<sup>2</sup> (100 LBS/IN<sup>2</sup>)

Tested by hydraulic pressure to 14 Kg/cm<sup>2</sup> Date of test 18-5-36 No. of Certificate No. 5220.

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

Area of each set of valves per boiler per rule 45 cm<sup>2</sup> as fitted 63 cm<sup>2</sup> Pressure to which they are adjusted 7 Kg/cm<sup>2</sup> Are they fitted with easing gear YES

State whether steam from main boilers can enter the donkey boiler Smallest distance between boiler or uptake and ~~bunkers~~ FUEL OIL

TANK FOR D.B. ABOUT 2 FT. Is oil fuel carried in the double bottom under boiler Smallest distance between base of boiler and tank top plating

Is the base of the boiler insulated Largest internal dia. of boiler 2,100 mm Height 5,750 mm

Shell plates: Material STEEL Tensile strength 28-32 + 26-30 T/IN Thickness 14 mm

Are the shell plates welded or flanged NO. Description of riveting: circ. seams end D.R. LAP inter. D.R. LAP long. seams TREBLE RIVETED LAP

Dia. of rivet holes in circ. seams 23.5 mm long. seams 23.5 mm Pitch of rivets 72.5 mm 85 mm Percentage of strength of circ. seams plate 67.5 rivets 70.0 of Longitudinal joint plate 72.5 rivets 89.5 combined

Working pressure of shell by rules 9.5 Kg/cm<sup>2</sup> Thickness of butt straps outer inner

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat DISHED PARTIAL SPHERICAL Material STEEL

Tensile strength 26-30 T/IN Thickness 16 mm Radius 3,600 mm Working pressure by rules 7.4 Kg/cm<sup>2</sup>

Description of Furnace: Plain, spherical, or dished crown SPHERICAL Material STEEL Tensile strength 26-30 T/IN

Thickness CROWN - 16 mm BOTTOM - 24 mm External diameter top 1,800 mm bottom Length as per rule Working pressure by rules

Pitch of support stays circumferentially and vertically Are stays fitted with nuts or riveted over

Diameter of stays over thread Radius of spherical or dished furnace crown Working pressure by rule 10.6 Kg/cm<sup>2</sup>

Thickness of Ogee Ring 24 mm Diameter as per rule D 2,100 mm d 1,800 mm Working pressure by rule 8.65 Kg/cm<sup>2</sup>

Combustion Chamber: Material Tensile strength Thickness of top plate

Radius if dished Working pressure by rule Thickness of back plate Diameter if circular

Length as per rule Pitch of stays Are stays fitted with nuts or riveted over

Diameter of stays over thread Working pressure of back plate by rules

Tube Plates: Material front STEEL back STEEL Tensile strength 26-30 T/IN Thickness 20 mm 25 mm Mean pitch of stay tubes in nests 277.5 mm

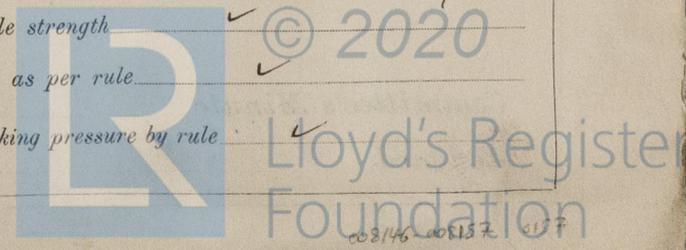
If comprising shell, Dia. as per rule front 1,647 mm back 1,912 mm Pitch in outer vertical rows 95 mm Dia. of tube holes FRONT stay 63.5 mm plain 63.5 mm BACK stay 48 mm plain 46.7 mm

Is each alternate tube in outer vertical rows a stay tube YES Working pressure by rules front 7.5 Kg/cm<sup>2</sup> back 7.17 Kg/cm<sup>2</sup>

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 rule



**Crown stays:** Material  Tensile strength  Diameter { at body of stay,  or over threads,

No. of threads per inch  Area supported by each stay  Working pressure by rules

**Screw stays:** Material  Tensile strength  Diameter { at turned off part,  or over threads,  No. of threads per inch

Area supported by each stay  Working pressure by rules  Are the stays drilled at the outer ends

**Tubes:** Material STEEL External diameter { plain 63.5 mm stay 63.5 mm Thickness { 1/16" 1/4"

No. of threads per inch 9 Pitch of tubes 90 mm x 95 mm Working pressure by rules 8.6 Kg/cm<sup>2</sup>

**Manhole Compensation:** Size of opening in shell plate 380 mm x 480 mm Section of compensating ring 380 mm x 16 mm No. of rivets and diameter of rivet holes 48, 23.5 mm Outer row rivet pitch at ends 180 mm Depth of flange if manhole flanged 90 mm

**Uptake:** External diameter 772 mm Thickness of uptake plate 6 mm

**Cross Tubes:** No.  External diameters {  Thickness of plates

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with YES.

The foregoing is a correct description,  
**PER PRO MITSUI BUSSAN KAISHA, LTD.,**  
*V. Vaita* Manufacturer.  
 SUB-MANAGER SHIPBUILDING DEPT.

Dates of Survey while building { During progress of work in shops - { 1935 NOV. 13, DEC. 11. { FEB. 8, MAR. 7, 25, APR. 28, MAY 12, 18, 29, JUN 17, AUG. 2. Is the approved plan of boiler forwarded herewith 15-8-35. (If not state date of approval.)

{ During erection on board vessel - { 1936 AUG 2, 20, 27, 31. Total No. of visits 15

**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 14 Kg/cm<sup>2</sup> and found sound & tight, afterwards installed in accordance with the Rules in the vessel, and safety valves adjusted under steam to 7 Kg/cm<sup>2</sup>. (100 lbs/□")*

*The boiler, in our opinion, is eligible to have the record of D.B. 100 lbs per square inch (7 Kg/cm<sup>2</sup>).*

Survey Fee ... £ : : } When applied for, ..... 19 .....

Travelling Expenses (if any) £ : : } When received, ..... 19 .....

*C. Macpherson & M. Kamakura,*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 8 NOV 1936  
 Assigned See Kob. J.G. 9745

