

# REPORT ON BOILERS.

14 DEC 1936

Received at London Office

Date of writing Report 19<sup>th</sup> Nov 1936 When handed in at Local Office 19/11/1936 Port of YOKOHAMA

No. in Reg. Book. Survey held at YOKOHAMA Date, First Survey 18 February Last Survey 5<sup>th</sup> November 1936

on the Steel screw motor vessel "HOYO MARU"

(Number of Visits 17) Tons } Gross 8692 Net 6042

Master *[Signature]* Built at Yokohama By whom built *Mitsubishi Jukogyo Kabushiki Kaisha* Yokohama Dock Yard No. 250 When built 1936

Engines made at Yokohama By whom made *Mitsubishi Jukogyo Kabushiki Kaisha* Yokohama Dock Engine No. D.4606 When made 1936

Boilers made at Yokohama By whom made *Mitsubishi J.K.K.* Yokohama Dock Boiler No. 250 When made 1936

Nominal Horse Power ~~1166.8~~ 1163 Owners *Nippon Tanker Kabushiki Kaisha* Port belonging to *Tokio*

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Japan Steel Works, Ltd* 2345# (Letter for Record S. ✓)

Total Heating Surface of Boilers 218 m<sup>2</sup> each boiler Is forced draught fitted *yes* ✓ Coal or Oil fired *Oil* ✓

No. and Description of Boilers 2 cylindrical marine type ✓ Working Pressure 11.5 kg/cm<sup>2</sup> ✓

Tested by hydraulic pressure to 20.75 kg/cm<sup>2</sup> Date of test 12-9-36 No. of Certificate 46 Can each boiler be worked separately *yes* ✓

Area of Firegrate in each Boiler 19.5 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 10.00 as fitted 11.0450* Pressure to which they are adjusted 11.5 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 ✓ Is oil fuel carried in the double bottom under boilers ✓

Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated *yes* ✓

Largest internal dia. of boilers 3800 mm ✓ Length 2550 mm ✓ Shell plates: Material *Steel* ✓ Tensile strength 44-55 ✓

Thickness 25 mm ✓ Are the shell plates welded or flanged ✓ Description of riveting: circ. seams {end *D.R. W.P.* inter. ✓

long. seams *T.R.S.B.S.* ✓ Diameter of rivet holes in {circ. seams 29.5 mm ✓ long. seams 26.5 mm ✓ Pitch of rivets {90 mm ✓ 182 mm ✓

Percentage of strength of circ. end seams {plate 67.2% rivets 45.6% ✓ Percentage of strength of circ. intermediate seam {plate 85.4% rivets 93.3% ✓

Percentage of strength of longitudinal joint {plate 85.4% rivets 93.3% combined ✓ Working pressure of shell by Rules 11.8 kg/cm<sup>2</sup> ✓

Thickness of butt straps {outer 19 mm ✓ inner ✓ No. and Description of Furnaces in each Boiler 2 Deighton type ✓

Material *Steel* ✓ Tensile strength 41-47 ✓ Smallest outside diameter 1178 mm ✓

Length of plain part {top ✓ bottom ✓ Thickness of plates {crown 14 mm ✓ bottom ✓ Description of longitudinal joint *Weld* ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 12.1 kg/cm<sup>2</sup> ✓

End plates in steam space: Material *Steel* ✓ Tensile strength 41/47 ✓ Thickness 30 mm ✓ Pitch of stays 400 mm ✓

How are stays secured *Nuts & washers both sides* ✓ Working pressure by Rules 18.3 kg/cm<sup>2</sup> ✓

Tube plates: Material {front *Steel* ✓ back ✓ Tensile strength {41/47 ✓ Thickness {22 mm ✓

Mean pitch of stay tubes in nests 306 x 330 mm ✓ Pitch across wide water spaces 330 mm ✓ Working pressure {front 12.1 kg/cm<sup>2</sup> back 12.1 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 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 *Steel* ✓ Tensile strength 41/47 ✓

Thickness 22 mm ✓ Lower back plate: Material *Steel* ✓ Tensile strength 41/47 kg/cm<sup>2</sup> ✓ Thickness 22 mm ✓

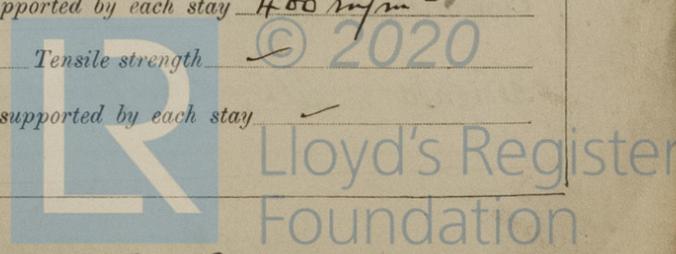
Pitch of stays at wide water space ✓ Are stays fitted with nuts or riveted over ✓

Working Pressure 12.5 kg/cm<sup>2</sup> ✓ Main stays: Material *Steel* ✓ Tensile strength 44/55 ✓

Diameter {At body of stay, 63.5 mm ✓ or Over threads 70 mm ✓ No. of threads per inch 6 ✓ Area supported by each stay 400 mm<sup>2</sup> ✓

Working pressure by Rules 15.5 kg/cm<sup>2</sup> ✓ 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  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 Steel  External diameter <sup>Plain</sup> 3"  Thickness 9 L.S.G.  No. of threads per inch 9

Pitch of tubes 1029 110 mm Working pressure by Rules 13.5 kgs/cm<sup>2</sup> Manhole compensation: Size of opening in shell plate: 305 X 406 mm Section of compensating ring  No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends  Depth of flange if manhole flanged  Steam Dome: Material Steel

Tensile strength H1-H4 Thickness of shell 12 mm  Description of longitudinal joint D.R. Lap.

Diameter of rivet holes 23 mm  Pitch of rivets 60 mm Percentage of strength of joint <sup>Plate</sup> 67.1%   
<sup>Rivets</sup> 74%

Internal diameter 1200 mm Working pressure by Rules 12.6 kgs/cm<sup>2</sup> Thickness of crown 22 mm No. and diameter of stays

How connected to shell D.R.  Inner radius of crown 1200 mm Working pressure by Rules 15.3 kgs/cm<sup>2</sup>

Size of doubling plate under dome 1635 X 25 mm Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 23 mm X 125 mm.

Type of Superheater \_\_\_\_\_ Manufacturers of <sup>Tubes</sup> \_\_\_\_\_  
<sup>Steel castings</sup> \_\_\_\_\_

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 \_\_\_\_\_

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 22 inclusive for boilers been complied with \_\_\_\_\_

The foregoing is a correct description,  
M. Hattery Manufacturer.

Dates of Survey <sup>During progress of work in shops - - -</sup> 18/2/36 - 12/9/36 Are the approved plans of boiler and superheater forwarded herewith Yes 24/4/36  
<sup>while building</sup> <sup>During erection on board vessel - - -</sup> 25/9/36 - 5/11/36 (If not state date of approval.)  
Total No. of visits 17

Is this Boiler a duplicate of a previous case \_\_\_\_\_ If so, state Vessel's name and Report No. \_\_\_\_\_

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey in accordance with the Rules and approved plan. Materials & workmanship good.

These boilers have been securely fitted onboard and have been examined under steam. Safety valves adjusted to 11.5 kgs/cm<sup>2</sup> & accumulation tests carried out with satisfactory results.

These boilers are eligible in my opinion to be classed with the machinery of this vessel and have the record of LMC 11-36

Survey Fee ... .. £ 29 : 5 : 0 When applied for, 18-11-1936

Travelling Expenses (if any) £ all charged on engine report. When received, 19

J. Micholas & M. Hattery  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 29 DEC 1936 TUE 2 FEB 1937

Assigned all J.P. Machy Report

