

## REPORT ON BOILERS.

No. 2262

Received at London Office AUG 13 1937

Date of writing Report 13th July 1937 When handed in at Local Office 13th July 1937 Port of NAGASAKI.

No. in Reg. Book Survey held at NAGASAKI. Date, First Survey 9th Feb. 1937 Last Survey 30th June 1937  
 on the Single Screw Motor Vessel "KOZUI MARU" (Number of Visits) See Machy. rpt. Gross 7072 Tons Net 5219

Built at Nagasaki By whom built Mitsubishi Jukogyo K.K. Yard No. 672 When built 1937  
 Engines made at Nagasaki By whom made Mitsubishi Jukogyo K.K. Engine No. 672 When made 1937  
 Boilers made at Nagasaki By whom made Mitsubishi Jukogyo K.K. Boiler No. 672 When made 1937  
 Owners Takachiho Shosen Kabushiki Kaisha. Port belonging to Kobe

## VERTICAL DONKEY BOILER.

Made at Nagasaki By whom made Mitsubishi J.K.K. Boiler No. 672 When made 1937 Where fixed E.R. Upper.

Manufacturers of Steel Nippon Seitetsu K.K. Yawata.

Total Heating Surface of Boiler 31.614 sq.M. Is forced draught fitted Yes Coal or Oil fired Exhaust gas or oil.

No. and Description of Boilers One, Vertical waste heat boiler. (Clarkson Type). Working pressure 8.5 Kg/cm<sup>2</sup>Tested by hydraulic pressure to 16.25 Kg/cm<sup>2</sup> Date of test 16-3-1937 No. of Certificate 1672

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler Twin spring loaded

Area of each set of valves per boiler per rule 2268 sq. m/m as fitted 2771 Pressure to which they are adjusted 8.6 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

or woodwork Is oil fuel carried in the double bottom under boiler Smallest distance between base of boiler and tank top plating

Boiler flat near Is the base of the boiler insulated Yes Largest internal dia. of boiler 2000 m/m Height 4.950 m/m

Shell plates: Material Steel Tensile strength 44-55 Kg/cm<sup>2</sup> Thickness 13 m/m

Are the shell plates welded or flanged No Description of riveting: circ. seams S.R.L. long. seams D.R.D.B.S.

Dia. of rivet holes in circ. seams 20 m/m Pitch of rivets 45.5 m/m Percentage of strength of circ. seams plate 56% rivets 43.5% of Longitudinal joint plate 75% rivets 90% combined

Working pressure of shell by rules 9.86 Kg/cm<sup>2</sup> Thickness of butt straps outer 8.5 m/m inner 11.5 m/m

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Dished Material Steel

Tensile strength 41-48 Kg/cm<sup>2</sup> Thickness 22 m/m Radius 1800 m/m Working pressure by rules 8.87 Kg/cm<sup>2</sup>

Description of Furnace: Plain, spherical, or dished crown See Ogee Ring. Material Tensile strength

Thickness External diameter top 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

Thickness of Ogee Ring Diameter as per rule Working pressure by rule

Ogee Ring:- Material Steel Tensile strength 41-48 Kg/cm<sup>2</sup> Thickness of top plate 20 m/m Bot. plate 21 m/m

Radius if dished Bottom 1500 m/m Working pressure by rule Approved London 8.7 Kg 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 Steel Tensile strength 41-48 Kgs Thickness 28 m/m Mean pitch of tubes in nests 206.3x177.9 m/m

If comprising shell, Dia. as per rule front back Pitch in outer vertical rows Dia. of tube holes 83 m/m BACK

Is each alternate tube in outer vertical rows a stay tube Working pressure by rules 10.5 Kg/m

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



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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 /

Water circulating tube:- M.S.  
Tubes: Material Thimble tube:- M.S. External diameter { plain Circ. Tube: 75 m/m Thickness 4.5 m/m  
stay Thimble 83 m/m 5 m/m

No. of threads per inch / Pitch of tubes / Working pressure by rules Circ. tube: 14 Kg/cm<sup>2</sup>  
Thimble 15

Manhole Compensation: Size of opening in shell plate 280 x 380 m/m Section of compensating ring Flanged 16 m/m thick No. of rivets and diameter

of rivet holes 40 x 19 m/m Outer row rivet pitch at ends 90 m/m Depth of flange if manhole flanged 70 m/m

Uptake: External diameter 1210 x 772 m/m Thickness of uptake plate 28 m/m. 16 m/m.

Cross Tubes: No. / External diameters / Thickness of plates /

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

The foregoing is a correct description.

YOKOSAKI WORKS, MITSUBISHI JUKOGYO KABUSHIKI KAISHA.

K. Shimidzu  
for GENERAL MANAGER.

Manufacture:

Dates of Survey { During progress of work in shops - -  
while building { During erection on board vessel - -

See Machinery Report.

Is the approved plan of boiler forwarded herewith 27-8-1936  
(If not state date of approval.)

Total No. of visits /

Is this Boiler a duplicate of a previous case. Yes If so, state Vessel's name and Report No. "KOTOKU MARU" Nag. Rpt No. 2251

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

This boiler has been constructed under Special Survey in accordance with the Rules & Approved Plan.

The materials have been tested found efficient and the workmanship throughout is good.

A water test of 16.25 Kg/cm<sup>2</sup> applied to boiler and found sound and tight.

This boiler has now been installed on board, and the safety valves adjusted under steam to 8.6 Kg/cm<sup>2</sup> on the 2nd June 1937, afterwards an accumulation test carried out and all found satisfactory.

Eligible in our opinion to have the record of DBS. 6-37 in the Register Book.

Fitted for oil fuel F.P. above 150° F.

The oil burning arrangement for Donkey boiler was made by Mitsubishi's Yokohama Dock, and consists of a fan and small electric heater for starting up and 1 small steam heater. (Heater, Enclosed type).

The oil is fed by gravity from an oil fuel tank to the burner where it is forced by steam through the nozzle and the whole carried up through the boiler c.c. by air from fan.

All requirement of the Rules for oil fuel have been complied with as far as they apply.

Survey Fee ... £ 5-5-0

When applied for, 8. 7. 1937

Travelling Expenses (if any) £ :

When received, 13-10-1937

Committee's Minute

TUE. 24 AUG 1937

Assigned

See Nag. J.E. 2262

Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register  
Foundation