

# REPORT ON BOILERS.

No. 1750

17 NOV 1930

Received at London Office

Date of writing Report 16th Oct 1930 When handed in at Local Office 16th Oct 1930 Port of NAGASAKI.

No. in Reg. Book Survey held at NAGASAKI. Date, First Survey 29th Nov. 1929 Last Survey 14th October 1930.

92429 on the Steel Twin Screw Motor Ship "SANYO MARU". in Sup. (Number of Visits) See Machy.rpt. Tons { Gross 8,365.28 Net 5,046.44

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 473. When built 1930

Engines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Engine No. 473. When made 1930

Boilers made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd., Boiler No. 473. When made 1930

Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.

## VERTICAL DONKEY BOILER.

Made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Boiler No. 473. When made 1930 Where fixed In Engine Room.

Manufacturers of Steel Gutehoffnungshutte A.G. Oberhausen. The Steel Co of Scotland, Ltd., Scottish Iron and Steel Co. The Rivet, Bolt and Nut Co, Ltd.,

Total Heating Surface of Boiler 199.1 sq.ft. Is forced draught fitted No Coal or Oil fired Oil

No. and Description of Boilers One Vertical. Working pressure 100 lbs.

Tested by hydraulic pressure to 200 lbs. sq.in. Date of test 13th June 1930. No. of Certificate 140.

Area of Firegrate in each Boiler / No. and Description of safety valves to each boiler Two- 1 1/2" Direct spring loaded.

Area of each set of valves per boiler { per rule 2.6 sq.in. as fitted 3.53 " Pressure to which they are adjusted 103 lbs. 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 Yes Smallest distance between base of boiler and tank top plating 4'- 3"

Is the base of the boiler insulated Yes Largest internal dia. of boiler 1400 m/m Height 3500 m/m

Shell plates: Material Steel. Tensile strength 28-35 tons sq.in. Thickness 10 m/m

Are the shell plates welded or flanged No Description of riveting: circ. seams { end S.R.L. inter. " long. seams D.R.Lap.

Dia. of rivet holes in { circ. seams 20 m/m long. seams " Pitch of rivets { 52.1 m/m 65.8 " Percentage of strength of circ. seams { plate 61.61 % rivets 49.5 % of Longitudinal joint { plate 70.3 % rivets 76.3 % combined

Working pressure of shell by rules 130.6 lbs sq.in. Thickness of butt straps { outer / inner /

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

Tensile strength 28-35 tons sq.in Thickness 13 m/m Radius 819 m/m Working pressure by rules 186 lbs sq.in.

Description of Furnace: Plain, spherical, or dished crown Hemispherical Material Steel Tensile strength 26-30 tons sq.in.

Thickness 13 m/m External diameter { top 1200 m/m bottom / Length as per rule / Working pressure by rules 179.1 lbs sq.in.

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 600 m/m(ext) Working pressure by rule /

Thickness of Ogee Ring 16 m/m Diameter as per rule { D 1400 m/m d 1200 " Working pressure by rule 118.2 lbs sq.in.

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 tons sq.in. Thickness { 17 m/m Mean pitch of stay tubes in nests 118.5 m/m

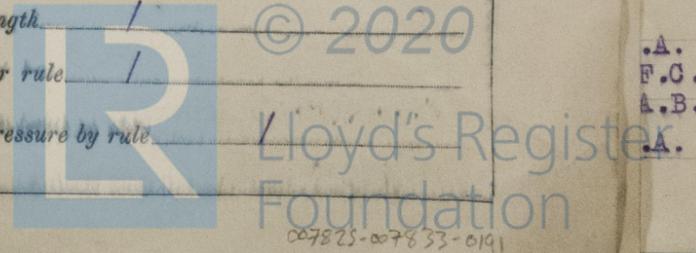
If comprising shell, Dia. as per rule { front 1074 m/m back 1280 " Pitch in outer vertical rows { 160 m/m Dia. of tube holes FRONT { stay 30.8 m/m plain " BACK { stay 56 m/m plain " Working pressure by rules { front 150.2 lbs sq.in. back 126 "

Is each alternate tube in outer vertical rows a stay tube Yes Working pressure by rules { front 150.2 lbs sq.in. back 126 "

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 Mild steel / External diameter { plain 50.8 m/m / stay / Thickness { 10 L.S.G. / 8 m/m /  
 No. of threads per inch 9 / Pitch of tubes 78 x 80 m/m / Working pressure by rules (Plain) 215 lbs sq.in.

**Manhole Compensation:** Size of opening in shell plate 300 x 400 m/m / Section of compensating ring / No. of rivets and diameter /  
 of rivet holes / Outer row rivet pitch at ends / Depth of flange if manhole flanged 90 m/m

**Uptake:** External diameter 286 m/m / Thickness of uptake plate 13 m/m

**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,  
 NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.  
S. Kawanishi Manufacturer.  
 GENERAL MANAGER.

Dates of Survey { During progress of work in shops - - / See Machinery Report. / Is the approved plan of boiler forwarded herewith Yes (If not state date of approval.)  
 while building { During erection on board vessel - - / Total No. of visits /

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)  
The materials and workmanship are good.  
The boiler has been constructed under special survey in accordance with the Rules and Approved plan, satisfactorily fitted in the vessel and safety valves adjusted under steam as above.

Survey Fee ... .. £ : : } When applied for, ..... 10  
 Travelling Expenses (if any) £ : : } When received, ..... 10  
See Machy Rpt.

George Anderson & K. Kidigama  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 25 NOV 1930  
 Assigned See other Ref. J.E. Rpt

