

REPORT ON BOILERS.

No. 1514

Received at London Office

22 FEB 1926

Date of writing Report 18th Jan. 1926 When handed in at Local Office 18th Jan. 1926 Port of NAGASAKI.

No. in Reg. Book. Survey held at NAGASAKI. Date, First Survey 7th April 1925 Last Survey 22nd October 1925 (Number of Visits 14.) Gross 7267

on the Steel Twin Screw Motor Vessel "SANTOS MARU". Tons Net 4387

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 410. When built 1925.

Engines made at Winterthur, Switzerland. By whom made Sulzer Brothers. Engine No. 5465 & 5471. When made 1925.

Boilers made at / By whom made / Boiler No. / When made /

Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.

VERTICAL DONKEY BOILER.

Made at Nagasaki. By whom made Mitsubishi Zosen Kaisha. Boiler No. 410. When made 1925. Where fixed Ford. End of Engine Casing Uppermost Dk.

Manufacturers of Steel Imperial Steel Works. Yawata. Japan.

Total Heating Surface of Boiler 300.3 sq. feet. Is forced draught fitted No. Coal or Oil fired Oil

No. and Description of Boilers One, Vertical Type Multitubular Boiler. Working pressure 100 lbs.

Tested by hydraulic pressure to 200 lbs per sq.in. Date of test 11th September, 1925. No. of Certificate 119.

Area of Firegrate in each Boiler Oil fired No. and Description of safety valves to each boiler 2 Spring loaded.

 Area of each set of valves per boiler { per rule 3.5344 sq.ins. Pressure to which they are adjusted 100 lbs Are they fitted with easing gear Yes
as fitted 6.2832 sq.ins.

State whether steam from main boilers can enter the donkey boiler No. Smallest distance between boiler or uptake and bunkers

Woodwork 6'-0" Is oil fuel carried in the double bottom under boiler No Smallest distance between base of boiler and tank top plating

Boiler fitted at Uppermost deck. Is the base of the boiler insulated Yes Largest internal dia. of boiler 5'-6" Height 13'-6"

Shell plates: Material Mild Steel Tensile strength 28.6 Thickness 1/2".

 Are the shell plates welded or flanged Furnace bottom plate, furnace Description of riveting: circ. seams { end Sing. riv. long. seams Doub. riveted
mouth & smoke flue tube (Flanged & Welded) { inter Sing. riv.

 Dia. of rivet holes in { circ. seams 15/16 Pitch of rivets { 2 1/4" Percentage of strength of circ. seams { plate 58.4% of Longitudinal joint { plate 67.5%
long. seams 15/16 { 2 7/8" { rivets 50.5% { rivets 78.7%
combined

Working pressure of shell by rules 138 per sq.in. Thickness of butt straps { outer / inner /

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

Tensile strength 28.8 Thickness 5/8" Radius 4'-9" Working pressure by rules 102.5 lbs sq.in.

Description of Furnace: Plain, spherical, or dished crown Spherical. Material Mild Steel Tensile strength 26.1

Thickness 9/16" External diameter { top / bottom / Length as per rule / Working pressure by rules 167 lbs

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 2'-3 1/2" Working pressure by rule

 Thickness of Ogee Ring 9/16" Diameter as per rule { D 66" Working pressure by rule 150 lbs
a 62"

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 M.S. Tensile strength { 26.3 Thickness { 13/16 Mean pitch of stay tubes in nests 9.4875"
back M.S. { 26.3 { 13/16

 of comprising shell, Dia. as per rule { front 100.3 lbs Pitch in outer vertical rows { 3 5/8" Dia. of tube holes FRONT { stay 2 11/16 BACK { stay 2 17/32
back 124 lbs { 3 5/8" { plain 2 5/8 BACK { plain 2 1/2

Is each alternate tube in outer vertical rows a stay tube Yes Working pressure by rules { front 224 lbs sq.in. back 224 lbs sq.in.

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

Tubes: Material Steel External diameter { plain 2 1/2" stay 2 1/8" Thickness { No. 11 LSG. 5/16 No. of threads per inch 10 Pitch of tubes Working pressure by rules 248 lbs

Manhole Compensation: Size of opening in shell plate 16"x 12" Manhole 8"x 6" Mudhole Section of compensating ring 4 11/16"x 1/2" No. of rivets and diameter of rivet holes 20 - 15/16" Outer row rivet pitch at ends 4 1/4" Depth of flange if manhole flanged 2 3/4" - 2 1/2"

Uptake: External diameter / Thickness of uptake plate /

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 ZOSSEN KAISHA, LTD.
M. Crawford
GENERAL MANAGER. Manufacturer.

1925.
Dates of Survey { During progress of work in shops - Apr. 7, 16, 22, 25, May 6, June 1. Is the approved plan of boiler forwarded herewith Yes.
while building { During erection on board vessel - July 1, Aug. 12, 13, 15, 19, Sep. 11, 29. (If not state date of approval.)
Oct. 22. Total No. of visits 14.

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 of good material and workmanship, it has been securely fitted on board and has been satisfactorily tried under steam.

Survey Fee ... £ 71:30 : When applied for, 10. 12. 19 25
Travelling Expenses (if any) £ : : When received, 17. 12. 19 25

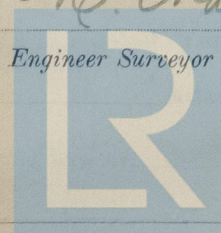
Committee's Minute

Assigned

FRI. 26 FEB 1926

See H.E. rpt attached

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



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