

REPORT ON BOILERS.

No. 663

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Date of writing Report 20th Jan. 1952 When handed in at Local Office 1952 Port of Kobe

No. in Reg. Book 7544 Survey held at Aioi Japan Date, First Survey 17th May 1951 Last Survey 20th December 1951

on the steel single screw M/V "NISSYO-MARU" (Number of Visits 20) Tons Gross 1186.569 Net 893.201

Built at Aioi Japan By whom built Harima Shipbuilding & Engineering Co. Ltd. Yard No. 466 When built Dec. 1951

Engines made at Aioi Japan By whom made Harima Shipbuilding & Engineering Co. Ltd. Engine No. 101 When made Nov. 1950

Boilers made at Aioi Japan By whom made Harima Shipbuilding & Engineering Co. Ltd. Boiler No. B737 When made Sept. 1951

Nominal Horse Power 179.7 Owners Idemitsu Kosen K.K. Port belonging to Tokyo

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Plate: YAWATA, Tube: Fuso, Rivet: YAWATA, Cast Steel: HARIMA (Letter for Record)

Total Heating Surface of Boilers 200.5 M² x 2 Of Superheaters —

Total for Register Book 401 M² (4314.76 sq. ft.) Is forced draught fitted yes Coal or Oil fired Oil fired

No. and Description of Boilers 2 Scotch Boilers (multitubular) Working Pressure 12 kg/cm²

Tested by hydraulic pressure to 21.5 kg/cm² Date of test 4th 8th Sept. 51 No. of Certificate B196 B197 Can each boiler be worked separately yes

Area of Firegrate in each Boiler — No. and Description of safety valves to each boiler 2 (in one chest) Ordinary type (90° x 2)

Area of each set of valves per boiler per Rule 104 cm² as fitted 127.2 cm² Pressure to which they are adjusted 12.3 kg/cm² 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 1700 mm Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 5880 mm Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 4170 mm Length 3350 mm Shell plates: Material O.H. steel Tensile strength 28.9 ~ 29.9 %

If fusion welded, state name of welding Firm — Have all the requirements of the Rules for Class I vessels been complied with — Thickness 30 mm Are the shell plates welded or flanged No Description of riveting: circ. seams end Lap joint Double inter Lap joint triplan

Long. seams Double Butted stepped joint Diameter of rivet holes in circ. seams 33.5 mm long. seams 33.5 mm Pitch of rivets 86.8 mm (Front, later) 85.5 mm (Back) 21.5 mm

Percentage of strength of circ. end seams plate 60.837 rivets 55.562 Percentage of strength of circ. intermediate seam plate 61.433 rivets 83.342

Percentage of strength of longitudinal joint plate 84.468 rivets 105.224 combined 89.881

Thickness of butt straps outer 28 mm inner 28 mm No. and Description of Furnaces in each Boiler 3 Morrison's furnace

Material O.H. steel Tensile strength 28.8 % ~ 30.0 % Smallest outside diameter 728 mm

Length of plain part top bottom Thickness of plates 14 mm Description of longitudinal joint Electric welding

Dimensions of stiffening rings on furnace or c.c. bottom —

End plates in steam space: Material O.H. steel Tensile strength 28.5 ~ 29.9 % Thickness 32 mm Pitch of stays ASD x 430 mm

How are stays secured The stays pass through the plates not exposed to flame & are fitted with nuts inside & outside

Tube plates: Material front O.H. steel back Tensile strength 28.5 ~ 29.9 % Thickness Top 32 mm Bottom 25 mm 22 mm

Mean pitch of stay tubes in nests 234 mm Pitch across wide water spaces 350 x 190 mm

Girders to combustion chamber tops: Material J.H. steel Tensile strength 29.1 ~ 29.9 % Depth and thickness of girder at centre 230 mm 38 mm Length as per Rule 749 mm Distance apart 260 mm No. and pitch of stays in each 2 : 240 mm

Combustion chamber plates: Material O.H. steel Tensile strength 28.6 ~ 30 % Thickness: Sides 19 mm Back 19 mm Top 19 mm Bottom 22 mm

Pitch of stays to ditto: Sides 260 x 220 mm Back 280 x 220 mm Top 240 mm Are stays fitted with nuts or riveted over yes

Front plate at bottom: Material O.H. steel Tensile strength 26.5 ~ 28.5 % Thickness 25 mm Lower back plate: Material O.H. steel Tensile strength 27.2 ~ 29.2 % Thickness 25 mm

Pitch of stays at wide water space 280 x 220 mm Are stays fitted with nuts or riveted over Both

Main stays: Material O.H. steel Tensile strength 31.5 ~ 32.5 %

Diameter At body of stay 7.5 mm 6.5 mm No. of threads per inch 6 TH/N

Over threads 2 3/8" 2 1/2"

Crew stays: Material O.H. steel Tensile strength 26.7 ~ 28.0 %

Diameter At turned off part — No. of threads per inch 9 TH/N

Over threads 2 1/4" 2 3/8" 1 3/8"

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Are the stays drilled at the outer ends... *No* ✓ Margin stays: Diameter { At turned off part...
No. of threads per inch... *Hot drawn seamless steel* External diameter { Plain... *70 mm* Thickness { *4 mm* ✓
Tubes: Material *O.H. steel* Stay... *70 mm* No. of threads per inch... *9 TH*
Pitch of tubes... *105 x 95 mm* Manhole compensation: Size of opening in
shell plate... *560 x 460 mm* ✓ Section of compensating ring *30 (278-335) x 2 mm²* No. of rivets and diameter of rivet holes... *40 ; 33.5 mm*
Outer row rivet pitch at ends... *220 mm* ✓ Depth of flange if manhole flanged... *Top 100 mm Bottom 90 mm* Steam Dome: Material...
Tensile strength... Thickness of shell... Description of longitudinal joint...
Diameter of rivet holes... Pitch of rivets... Percentage of strength of joint { Plate...
Internal diameter... Thickness of crown... Rivets...
stays... Inner radius of crown...
How connected to shell... Size of doubling plate under dome... Diameter of rivet holes and pitch
of rivets in outer row in dome connection to shell...
Type of Superheater... Manufacturers of { Tubes...
Steel forgings...
Steel castings...
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... Is a safety valve fitted to every part of the superheater which can be shut off from the boiler...
Area of each safety valve... Are the safety valves fitted with easing gear...
Pressure to which the safety valves are adjusted... Hydraulic test pressure
tubes... forgings and castings... and after assembly in place... Are drain cocks
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... *yes*

The foregoing is a correct description,
M. Yoshinawa Manufacturer

MAT 17. JUNE 12. JULY 14. 19. 21. 24. 28
Dates of Survey while building { During progress of work in shops - - - 1951 AUG. 2. 4. 7. 11. 23. SEPT 4. 8. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
During erection on board vessel - - - 1951 NOV 27. DEC 8. 11. 14. 19. 20 Total No. of visits... 20

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

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

The Donkey Bailer have been constructed under Special Survey in accordance with the Rules, Approved plans and Secret letters.

The workmanship and materials are sound and good.

The Donkey Bailer have been examined under steam the safety valves adjusted to 12.3 kgs./cm² and found satisfactory.

Survey Fee ... £ (See Rpt 4b) } When applied for...
Travelling Expenses (if any) £ : : } When received... 19...

Shunichi Hoshinawa
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUES. 10 JUN 1952

Assigned *Sir F.E. Moly. rpt*



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