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# REPORT ON BOILERS.

No. FE-5181

21 JAN 1958

Received at London Office

Date of writing Report JAN 6 1958 When handed in at Local Office JAN 13 1958 Port of KOBE

Survey held at Aioi, Japan Date, First Survey 28th Feb., 1957 Last Survey 10th Oct., 1957

on the Steel Single Screw M.V. "HOEI MARU" (Number of Visits 29)

at Aioi, Japan By whom built Harima S.B. & Eng., Co., Ltd. Yard No. 512 When built 1957-10

Lines made at Aioi, Japan By whom made Harima S.B. & Eng., Co., Ltd. Engine No. 112 When made 1957-10

Boilers made at Aioi, Japan By whom made Harima S.B. & Eng., Co., Ltd. Boiler No. B-1007 When made 1957-10

as per Rule Owners Nitto Shosen K.K. Port belonging to Tokyo

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Plate & Rivet bar: Yawata Iron & Steel Co., Ltd. Tube: Sumitomo Kinzoku K.K.

Total Heating Surface of Boilers 48.7 M<sup>2</sup> Of Superheaters -

Is forced draught fitted No Coal or Oil fired Oil

Description of Boilers 1 - Cylindrical Multitubular dry back Boiler Working Pressure 8.5 kg/cm<sup>2</sup>

Tested by hydraulic pressure to 16.25 kg/cm<sup>2</sup> Date of test 12-8-57 No. of Certificate B-1007 Can each boiler be worked separately -

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler 2 x 80ø bore ordinary type

Area of each set of valves per boiler 15.55 in<sup>2</sup> Pressure to which they are adjusted 8.5 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 450mm Is oil fuel carried in the double bottom under boilers No

Smallest distance between boilers or uptakes and bunkers or woodwork 800mm Is the bottom of the boiler insulated Yes

Smallest internal dia. of boilers 2,300mm Length 2,200mm Shell plates: Material Boiler plate Tensile strength 49.0-49.8 kg/mm<sup>2</sup>

Welding Firm Harima S.B. & Eng., Co., Ltd. Have all the requirements of the Rules for Class I vessels

Complied with Yes Thickness 14mm Are the shell plates welded or flanged Welded Description of riveting: circ. seams

seams Diameter of rivet holes in circ. seams 23mm Pitch of rivets 53.81mm

Percentage of strength of circ. end seams plate 57.3% rivets 43.7% Percentage of strength of circ. intermediate seam

Percentage of strength of longitudinal joint plate rivets combined

Thickness of butt straps outer inner

No. and Description of Furnaces in each Boiler 1. Plain furnace with 2 corrugations

Material Boiler plate Tensile strength 43.3 - 43.8 kg/mm<sup>2</sup> Smallest outside diameter 898 mm

Width of plain part 1650 mm Thickness of plates 12mm Description of longitudinal joint Welding

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

Plates in steam space: Material Boiler plate Tensile strength 42.2-46.7 kg/mm<sup>2</sup> Thickness 22mm Pitch of stays 440mm

Are stays secured Washer and nuts on both sides of end plate

Front plates: Material Boiler plate Tensile strength 42.2 kg/mm<sup>2</sup> Thickness 22mm

Back plates: Material Boiler plate Tensile strength 45.7 kg/mm<sup>2</sup> Thickness 22mm

Pitch of stay tubes in nests 283.5 mm Pitch across wide water spaces 380mm

Stays to combustion chamber tops: Material Tensile strength Depth and thickness of girder

Centre Length as per Rule Distance apart No. and pitch of stays

Combustion chamber plates: Material Thickness: Sides Back Top Bottom

Are stays fitted with nuts or riveted over

Plate at bottom: Material Same as tube plate Tensile strength 42.2 kg/mm<sup>2</sup>

Thickness 24mm Lower back plate: Material Same as tube plate Tensile strength 46.7 kg/mm<sup>2</sup> Thickness 22mm

Are stays fitted with nuts or riveted over

Stays: Material Boiler Steel Bar Tensile strength 48.9 kg/mm<sup>2</sup>

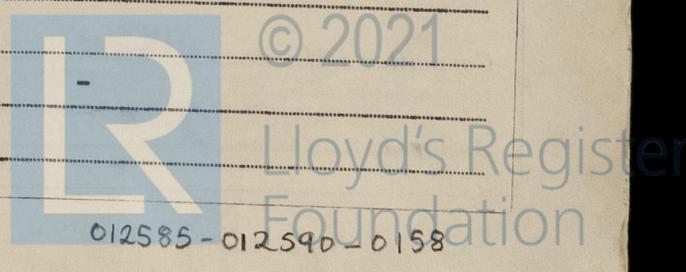
At body of stay 55mm No. of threads per inch 6 T/in

Over threads 55mm

Stays: Material Tensile strength

At turned off part No. of threads per inch

Over threads



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Are the stays drilled at the outer ends.  Margin stays: Diameter  At turned off part.  Over threads.

No. of threads per inch.

Tubes: Material Steel Tube External diameter  70mm  70mm Thickness  4 mm  8 mm No. of threads per inch 7 Th/Boo

Pitch of tubes  95 x 98 mm Manhole compensation: Size of open

shell plate  440 x 540mm Section of compensating ring 9.41 in<sup>2</sup> No. of rivets and diameter of rivet holes.  Welded

Outer row rivet pitch at ends.  Depth of flange if manhole flanged  80mm 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  Rivets

Internal diameter  Thickness of crown  No. and diam

stays  Inner radius of crown

How connected to shell  Size of doubling plate under dome  Diameter of rivet holes an

of rivets in outer row in dome connection to shell

Type of Superheater  Manufacturers of

Number of elements  Material of tubes  Internal diameter and thickness of tubes

Material of headers  Tensile strength  Thickness  Can the superheater be shut

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

tubes  forgings and castings  and after assembly in place  Are drain

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.

THE HARMON SHIPBUILDING & ENGINEERING CO., LTD. Manu

Dates of Survey while building  During progress of work in shops - - 1957: Feb. 28, March 22, April 20, 23, 26, 30, May 2, 7, 10, 14, 17, 21, 24, 31, June, July 5, 16, 19, 23, 24, Aug. 1, 9, 12, 13, Sept. 6 are the approved plans of boiler and superheater forwarded herewith. (If not state date of approval.)

During erection on board vessel - - - 1957: Sept. 20, Oct. 10 Total No. of visits. 28

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 Boiler of this ship has been constructed under Special Survey in accordance with the Rules, Approved Plans and Secretary's letters.

The materials and workmanship are sound and good.

The Donkey Boiler has been examined under steam and the safety valves adjusted to 8.5 and found satisfactory.

An accumulation test was carried out with satisfactory results.

The oil full burning arrangements and the steam fire extinguishing systems have also satisfactorily installed and tested.

Identification of Steel:		Insp. No. or Roll. No.	Charge No.	Maker
Shell Plate	14 x 2,100 x 4,000 = 1	R 2318	S 61202	Yawata Iron & Steel Co.
	14 x 2,100 x 4,000 = 1	R 1592	S 61202	- " -
End Plate	22 x 2,700 x 2,700 = 1	R 9755	D 24727	- " -
End Plate (Back Bottom)	24 x 1,600 x 4,860 = 1	J1526 (Roll No.)	I-5744	Kawasaki Steel Corporation Fukiai Plant
Furnace	13 x 1,400 x 2,900 = 1	R 7110	D 24926	Yawata Iron & Steel Co.
Survey Fee	13 x 1,400 x 2,900 = 1	R 7111	D 24926	- " -
Travelling Expenses (if any) £	13 x 1,200 x 2,900 = 1	R 1615	D 24486	- " -
Survey Fee	: ¥24,000.-	When received	19	
Expenses	: See Rpt. 1			

S. G. Johnson & N. E. ...  
Engineer Surveyors to Lloyd's Register of Shipping

Committee's Minute **TUESDAY 25 MAR 1958**

Assigned See Rpt. 1.



23-1-58  
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