

# Report on Steam Turbine Machinery. No. 1232

Date of writing Report 19... When handed in at Local Office **23 FEB 1953** Port of **Kobe** Received at London Office **4 MAR 1953**  
 No. in Survey held at **Aioi Japan** Date, First Survey **13 - 2 - 52** Last Survey **24 - 10 - 19 52**  
 Reg. Book (Number of Visits **66**)  
 on the **Steel, Single Screw S.S. "KIRISHIMA-MARU"** Tons (Gross **11,979.61** Net **8,726.64**)  
 Built at **Aioi Japan** By whom built **Harima Shipbuilding & Engineering Co., Ltd.** Yard No. **476** When built **Oct. 1952**  
 Engines made at **Tokyo Japan** By whom made **Ishikawajima Heavy Industries Co., Ltd.** Engine No. **IT 2185** When made **Aug. 1952**  
 Boilers made at **Aioi Japan** By whom made **Harima Shipbuilding & Engineering Co., Ltd.** Boiler No. **B750, 751** When made **Aug. 1952**  
 Shaft Horse Power at Full Power **8000 S.H.P.** Owners **TERUKUNI KAIUN K.K.** Port belonging to **Tokyo**  
 Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**  
 Trade for which Vessel is intended **Ocean going**

## STEAM TURBINE ENGINES, &c.—Description of Engines

No. of Turbines **Ahead** Direct coupled, **Astern** single reduction geared } to propelling shafts. No. of primary pinions to each set of reduction gearing.....  
 Direct coupled to { Alternating Current Generator.....phase.....periods per second } rated..... Kilowatts..... Volts at..... revolutions per minute;  
 for supplying power for driving..... Direct Current Generator }  
 Propelling Motors, Type.....  
 rated..... Kilowatts..... Volts at..... revolutions per minute. Direct coupled, single or double reduction geared to..... propelling shafts.

TURBINE LADING.	H. P.	I. P.	L. P.	ASTERN.
No. of rows.....				
No. of stages.....				
No. of rows in each stage.....				

Shaft Horse Power at each turbine { H.P. I.P. L.P. } Revolutions per minute, at full power, of each Turbine Shaft { H.P. I.P. L.P. } 1st reduction wheel..... main shaft.....

Propeller Shaft diameter at journals { H.P. I.P. L.P. } Pitch Circle Diameter { 1st pinion..... 1st reduction wheel..... 2nd pinion..... main wheel..... } Width of Face { 1st reduction wheel..... main wheel..... }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion..... 1st reduction wheel..... 2nd pinion..... main wheel..... }

Pinion Shafts, diameter at bearings { External Internal } 1st { 2nd } diameter at bottom of pinion teeth { 1st 2nd }

Wheel Shafts, diameter at bearings { 1st..... diameter at wheel shroud, } { main..... } Generator Shaft, diameter at bearings..... Propelling Motor Shaft, diameter at bearings.....

Intermediate Shafts, diameter as per rule..... as fitted..... 16.4204" 16.7717" ✓ Screw Shaft, diameter as per rule..... as fitted..... 17.9925" 18.5040" ✓ Is the { tube screw } shaft fitted with a continuous liner { Yes }

Bronze Liners, thickness in way of bushes as per rule..... as fitted..... 0.8513" 0.9447" Thickness between bushes as per rule..... as fitted..... 0.6385" 0.7087" Is the after end of the liner made watertight in the propeller boss..... Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner.....

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive..... If two liners are fitted, is the shaft lapped or protected between the liners..... Is an approved Oil Gland or other appliance fitted at the after end of the tube.....

Propeller, diameter 5750 mm Pitch 4137.5 mm No. of Blades 4 State whether Moveable **Moveable** Total Developed Surface 117.2 square feet. Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine. Yes Can the H.P. or I.P. Turbines exhaust direct to the condenser. Yes

No. of Turbines fitted with astern wheels 2 Feed Pumps { No. and size..... 2 x 45M3/H x 300M 2 x 20 M3/H x 300M How driven..... steam (turbine) Steam (Weirs) }

Pumps connected to the Main Bilge Line { No. and size..... 1x200M3/Hx30M 1x100M3/Hx60M 1x90M3/Hx140M 2-15M3/Hx35 1x15M3/Hx50M How driven..... (Bilge-Ballast P.) (Bilge-Fire P.) (Butterworth P.) (Bilge-Sanitary P.) (Sanitary P.) }

Fast Pumps, No. and size..... 1 x 200M3/H x 30M Lubricating Oil Pumps, including Spare Pump, No. and size..... 2 x 135M3/H x 35M

Are there two independent means arranged for circulating water through the Oil Cooler. Yes Suctions, connected both to Main Bilge Pumps and Auxiliary Pumps, No. and size..... In Engine and Boiler Room. Shaft tunnel 1 x 3" Aft. (P.S.) 2 x 4" For (P.S.) 2 x 3" For (C.) 1 x 2" In Pump Room. Main 2 x 4" (P&S) 1 x 2" (Center)

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes. Yes Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges. Yes

Are all Sea Connections fitted direct on the skin of the ship. Yes Are they fitted with Valves or Cocks. Yes Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates. Yes Are the Overboard Discharges above or below the deep water line. Both Are they each fitted with a Discharge Valve always accessible on the plating of the vessel. Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate. Yes What pipes pass through the bunkers..... How are they protected.....

What pipes pass through the deep tanks..... Have they been tested as per rule..... Are all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times. Yes

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another. Yes Is the Shaft Tunnel watertight. NONE Is it fitted with a watertight door. NONE worked from.....

Total Heating Surface of Boilers 561.724M2 x 3 Forced Draft fitted. Yes No. and Description of Boilers 3.A type Harima 3 drum Working Pressure 22 Kg/cm2 Water Tube Boiler

Is a Report on Main Boilers now forwarded? Yes

Is  a Donkey Boiler fitted?  NONE  If so, is a report now forwarded?   
 an Auxiliary Boiler fitted?  NONE  If so, is a report now forwarded?   
 Is the donkey boiler intended to be used for domestic purposes only?

Plans. Are approved plans forwarded herewith for Shafting 6-10-52 Main Boilers 4-9-52 Auxiliary Boilers - Donkey Boilers -  
 (If not, state date of approval)  
 Superheaters 4-9-52 General Pumping Arrangements 8-10-52 Oil Fuel Burning Arrangements 8-10-52  
 Geared turbines situated aft. Have torsional vibration characteristics of system been approved?  Date of approval 26-9-52

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied?  Yes  No  
 State the principal additional spare gear supplied:  
 1 set of Bearing bushes for each reduction gear & each rotor.  
 2 spare propeller blades

The foregoing is a correct description.  
**THE HARIMA SHIPBUILDING AND ENGINEERING COMPANY, LTD.** *M. Yoshizawa* Manufacturer

Dates of Survey while building	During progress of work in shops - -	1952, Feb. 13, March 4, 10, 18, April 1, 4, 5, 7, 9, 18, 21, 23 May 6, 8, 16, 17, 20, 22, 24, 27, 29 June 5, 7, 10, 14, 18, 20, 23, 25, 27, 30 July 2, 4, 7, 11, 16, 18, 25, 28 Aug. 1, 6, 8, 9, 11, 13, 14, 18, 22
	During erection on board vessel - -	Aug. 25 Sept. 1, 8, 10, 13, 15, 19, 22, 24, 27, 30 Oct. 3, 4, 7, 10, 18, 21, 24.
	Total No. of visits	66

Dates of Examination of principal parts—Casings..... Rotors..... Blading..... Gearing.....  
 Wheel shaft..... Thrust shaft..... Intermediate shafts 13-8-52..... Tube shaft..... Screw shaft 24-5-52  
 Propeller 6-8-52..... Stern tube 9-4-52..... Engine and boiler seatings 8-9-52..... Engine holding down bolts 15-9-52  
 Completion of fitting sea connections 20-8-52..... Completion of pumping arrangements 18-10-52 Boilers fixed 25-8-52 Engines tried under steam 18.21-1  
 Main boiler safety valves adjusted 7-10-52..... Thickness of adjusting washers..... Drum (L) 48(R) 44..... D(L) 49(R) 42..... D(L) 47(R) 48  
 Rotor shaft, Material and tensile strength..... Identification Mark.....  
 Flexible Pinion Shaft, Material and tensile strength..... Identification Mark.....  
 Pinion shaft, Material and tensile strength..... Identification Mark.....  
 ; Chemical analysis.....

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment.....  
 1st Reduction Wheel Shaft, Material and tensile strength..... Identification Mark.....  
 Wheel shaft, Material..... Identification Mark..... Thrust shaft, Material..... Identification Mark.....  
 Intermediate shafts, Material O.H. Steel Identification Marks K-F 1056 K-F 1142..... Tube shaft, Material..... Identification Marks.....  
 Screw shaft, Material O.H. Steel Identification Marks K-F 1085..... Steam Pipes, Material Seamless O.H. steel Test pressure 44 Kg/cm<sup>2</sup>  
 Date of test 1952, Sept. 1, 13, 19, 22, 30..... Is an installation fitted for burning oil fuel..... Yes   
 Is the flash point of the oil to be used over 150°F..... Yes  Have the requirements of the Rules for the use of oil as fuel been complied with..... Yes   
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo..... - If so, have the requirements of the Rules been complied with..... -  
 If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with..... -  
 Is this machinery a duplicate of a previous case..... Yes  If so, state name of vessel S.S. "TERUKUNI - MARU"

General Remarks. (State quality of workmanship, opinions as to class, &c.) *The Machinery has now been satisfactory installed on board and tested under full power.*  
*In our opinions the machinery of this vessel is worthy of a record of + LMC 10, 52 BS. 10, 52 W.P. 22 kg/cm<sup>2</sup> and TS (C.L.) 10, 52. Subject to the reduction gears of the main turbines being specially examined at the end of six months time (i.e. end of March, 1953)*

Certificate (if required) to be sent to  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee	£ 300.000	When applied for	23. FEB. 1953
Special	£ :	When received	19
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		19

Committee's Minute..... **FRI. 19 JUN 1953**  
 Assigned..... **+ LMC 10, 52. Subject**  
**MITTED FOR OIL FUEL 1052 FLASH POINT ABOVE 150°F. FD CL 3 WTB 313/6 Spt.**

*E. Tabuchi for R. Currie & self*  
 Engineer/Surveyor to Lloyd's Register of Shipping.

