

Report on Steam Turbine Machinery. No.

Date of writing Report 5th July 1951 When handed in at Local Office 19 Port of Kobe Received at London Office 30 AUG 1951

No. in Survey held at Hiroshima Date, First Survey 12-6-51 Last Survey 3rd July, 1951

Reg. Book Steel Single Screw Steam Ship "IKUSHTMA MARU" (Number of Visits 4) Tons (Gross 2244.85 Net 1224.17)

Built at Hagasaki By whom built Nagasaki Shipyard & Engine Works Yard No. 1408 When built 1949-1

Engines made at " By whom made " Engine No. 564 When made 10-28, 48

Boilers made at " By whom made " Boiler No. 1334 When made 11-20, 48

Shaft Horse Power at Full Power 1700 Owners Hamane kisen Kaisha Port belonging to Kobe

Nom. Horse Power as per Rule 463 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which Vessel is intended "

STEAM TURBINE ENGINES, &c.—Description of Engines Double reduction geared all impulse steam turbine

No. of Turbines 1-HP, & 1-LP Direct coupled, one propelling shafts. No. of primary pinions to each set of reduction gearing 1-HP 1-LP

direct coupled to Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute

for supplying power for driving Propelling Motors, Type rated Kilowatts Volts at revolutions per minute Direct coupled, single or double reduction geared to propelling shafts

TURBINE BLADING.	H. P.	I. P.	L. P.	ASTERN.
Impulse Blading	No. of rows <u>8</u>		<u>4</u>	<u>2</u>
Reaction Blading	No. of stages			
	No. of rows in each stage			

Shaft Horse Power at each turbine H.P. 855 (860) I.P. 126.84 mm L.P. 845 (840) HP 175.94 mm LP 1031.07 mm 7,300 (7301) 897 112

Rotor Shaft diameter at journals H. 180 mm I.P. 110 mm Pitch Circle Diameter 1st pinion 274.98 mm 2nd pinion 2205.05 mm 1st reduction wheel 220 mm main wheel 520 mm

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 185.0 mm 2nd pinion 445.0 mm 1st reduction wheel 305.0 mm main wheel 480.0 mm

Flexible Pinion Shafts, diameter at bearings 1st 220 mm 2nd 280 mm External 100 mm Internal 0 mm 1st 220 mm 2nd 0 mm diameter at bottom of pinion teeth 1st 1170.4 mm 2nd 166.14 mm 2nd 260.98 mm

Wheel Shafts, diameter at bearings 1st 220 mm main 280 mm diameter at wheel shroud 1st 1031.07 mm main 2205.05 mm Generator Shaft, diameter at bearings Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule 251.55 mm as fitted 255 mm Thrust Shaft, diameter at collars as per rule 264.12 mm as fitted 280 mm

Tube Shaft, diameter as per rule 277.87 mm as fitted 280 mm Screw Shaft, diameter as per rule 16.02 mm as fitted 19 mm Thickens between bushes as per rule 12.01 mm as fitted 15 mm

Bronze Liners, thickness in way of bushes as per rule 16.02 mm as fitted 19 mm Thickens between bushes as per rule 12.01 mm as fitted 15 mm 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 Yes

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 Yes

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 shaft If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter 3800 mm Pitch 4020 mm No. of Blades 4 State whether Moveable Solid Total Developed Surface 5M² square feet

If 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 1 Feed Pumps No. and size 2 x 220 x 160 mm How driven Steam 450

Pumps connected to the Main Bilge Line No. and size 1 x 125 mm 1 x 180 x 215 mm 1 x 240 x 200 mm How driven Line Shaft 460 120 M³/H 1 x 260 mm 100 M³/H

Ballast Pumps, No. and size 1 x 180 x 215 mm 460 Lubricating Oil Pumps, including Spare Pump, No. and size 1 x Gear Pump, 1 x 180 x 215 mm 460

Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected both to Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size In Engine and Boiler Room Engine room 2x70 mm Boiler room 4x70 mm Shaft tunnel 1x70 mm

In Holds, &c. 4 x 80 mm 6 x 70 mm 1 x 50 mm No. 1 Hold 2x70 mm No. 2 Hold 4x70 mm No. 3 Hold 2x80 mm No. 4 Hold 2x80 mm ECHO Sounding Room 1x50 mm

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 x 200 mm Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 x 70 mm

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 No Are they fitted with Valves or Cocks Valves

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 Below

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 Bilge Suction, Ballast Filling & Suction How are they protected Steel Plate

What pipes pass through the deep tanks No Deep Tank Have they been tested as per rule Yes

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 Yes Is it fitted with a watertight door Yes

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers 2 x 230 M² Superheater 55 M² Boiler 230 M² 2x3 Drum Water Tube Boiler Working Pressure 20 kg/cm²

Is Forced Draft fitted Yes No. and Description of Boilers 2x3 Drum Water Tube Boiler

Is a Report on Main Boilers now forwarded? Yes

Is { a Donkey } Boiler fitted? No ✓ If so, is a report now forwarded? No
Is the donkey boiler intended to be used for domestic purposes only? No
Plans. Are approved plans forwarded herewith for Shafting 25-7-50 Main Boilers 25-7-50 Auxiliary Boilers - Donkey Boilers -
(If not, state date of approval)
Superheaters 25-7-50 General Pumping Arrangements 25-7-50 Oil Fuel Burning Arrangements -
Geared turbines } Have torsional vibration characteristics of system been approved. Date of approval -
situated aft. }

SPARE GEAR.

Has the spare gear required by the Rules been supplied? Yes except propeller blades.
State the principal additional spare gear supplied

The foregoing is a correct description,

Manufacturers adjust

Dates of Survey while building
During progress of work in shops - -
During erection on board vessel - -
Total No. of visits

Dates of Examination of principal parts—Casings Rotors Blading Gearing
Wheel shaft Thrust shaft Intermediate shafts Tube shaft Screw shaft
Propeller Stern tube Engine and boiler seatings Engine holding down bolts
Completion of fitting sea connections Completion of pumping arrangements Boilers fixed Engines tried under steam
Main boiler safety valves adjusted Thickness of adjusting washers
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

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 Identification Marks Tube shaft, Material Identification Marks
Screw shaft, Material Identification Marks Steam Pipes, Material Test pressure

Date of test Is an installation fitted for burning oil fuel
Is the flash point of the oil to be used over 150°F No Have the requirements of the Rules for the use of oil as fuel been complied with
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No 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 No If so, state name of vessel

General Remarks. (State quality of workmanship, opinions as to class, &c.)

See Rpt No. 382. (Rpt. 9) attached

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 ... £	When applied for
Special ... £	19
Donkey Boiler Fee ... £	When received
Travelling Expenses (if any) ... £	19

FRI 19 OCT 1951

Assigned LMC 7.51 (with endorsement)
S(C.L.) 6.51 F.D. 2 WTB 2851/5 Spl.



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