

REPORT ON STEAM TURBINE MACHINERY. No. 247

Received at London Office..... 2 AUG 1950

Rating Report.		28/7/1950	When handed in at Local Office.		28/7/1950	Port of		Yokohama	
Survey held at		Yokohama		Date, First Survey		14th April		Last Survey 12th May 1950	
Book supplement on the		S.S. Fuji Maru.		(Number of Visits)					
		Nippon Steel Tube Co.						Tons { Gross 3629 Net 1995	
Yokohama		By whom built		Tsurumi Shipyard		Yard No.		When built 1949 7	
Hitachi City,		By whom made		Hitachi Works, Hitachi		Engine No. M-112		When made 21-4-1949	
Ibaraki Prefecture,		By whom made		Hitachi Works		Boiler No.		When made 3-1949	
Japan.		Horse Power at Full Power		2,400		Owners		Nippon Yusosen K.K.	
made at Hitachi, Japan.		Horse Power as per Rule		568		Is Refrigerating Machinery fitted for cargo purposes		No	
		Port belonging to		Tokyo		Electric Light fitted		Yes	
for which Vessel is intended		MN 602							

4M TURBINE ENGINES, &c.—Description of Engines Impulse type with double reduction gear

Ahead 1xHP 1xLP ~~Direct coupled~~ } to Single propelling shafts. No. of primary pinions to each set of reduction gearing 2xHP 2xLP
 Turbines Astern 1xHP 1xLP ~~single reduction geared~~ }
 coupled to { Alternating Current Generator..... phase..... periods per second } rated..... Kilowatts..... Volts at..... revolutions per minute;
 Direct Current Generator }
 driving power for driving..... Propelling Motors, Type.....
 Kilowatts..... Volts at..... revolutions per minute. Direct coupled, single or double reduction geared to..... propelling shafts.

[illegible]

Horse Power at each turbine <table border="0"> <tr> <td>H.P.</td> <td>1200</td> </tr> <tr> <td>I.P.</td> <td></td> </tr> <tr> <td>L.P.</td> <td>1200</td> </tr> </table>		H.P.	1200	I.P.		L.P.	1200	Revolutions per minute, at full power, of each Turbine Shaft <table border="0"> <tr> <td>H.P.</td> <td>5744</td> </tr> <tr> <td>I.P.</td> <td></td> </tr> <tr> <td>L.P.</td> <td>3864</td> </tr> </table>		H.P.	5744	I.P.		L.P.	3864	1st reduction wheel <table border="0"> <tr> <td>HP</td> <td>764</td> </tr> <tr> <td>LP</td> <td>583</td> </tr> </table>		HP	764	LP	583
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Shaft diameter at journals <table border="0"> <tr> <td>H.P.</td> <td>120^{mm}</td> </tr> <tr> <td>I.P.</td> <td></td> </tr> <tr> <td>L.P.</td> <td>120^{mm}</td> </tr> </table>		H.P.	120 ^{mm}	I.P.		L.P.	120 ^{mm}	Pitch Circle Diameter <table border="0"> <tr> <td>HP</td> <td>135</td> </tr> <tr> <td>LP</td> <td>175</td> </tr> </table>		HP	135	LP	175	1st reduction wheel <table border="0"> <tr> <td>HP</td> <td>1015</td> </tr> <tr> <td>LP</td> <td>160</td> </tr> </table>		HP	1015	LP	160		
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Distance between centres of pinion and wheel faces and the centre of the adjacent bearings

Pinion Shafts, diameter at bearings

1st. -

2nd. 110 ✓

1st pinion HP 275 LP 325

2nd pinion HP 555 LP 555

HP 120 ✓ LP 140 ✓

HP 240 ✓ LP 240

HP 150 LP 150

HP 126.2 LP 166.2

HP 289.4 LP 284.4

1st reduction wheel LP 325

main wheel 645

diameter at bottom of pinion teeth

Shafts, diameter at bearings	$\left\{ \begin{array}{l} 1^{st} \text{ LP } 130 \checkmark \\ \text{main } 360 \checkmark \end{array} \right.$	diameter at wheel shroud,	$\left\{ \begin{array}{l} 1^{st} \text{ LP } 1066 \\ \text{main } 1892 \end{array} \right.$	Generator Shaft, diameter at bearings..... - Propelling Motor Shaft, diameter at bearings..... -
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Intermediate Shafts, diameter as per rule $\frac{277}{16}$ Thrust Shaft, diameter at collars as per rule $\frac{291}{16}$ Tube Shaft, diameter as per rule -
 as fitted $\frac{285}{16}$ as fitted $\frac{315}{16}$ as fitted -

Shaft, diameter as per rule 309
 as fitted 314 If the { tube { screw { shaft fitted with a continuous liner { Yes ✓ Bronze Liners, thickness in way of bushes as per rule 16.97
 as fitted 18

ess between bushes as per rule 12.73 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

ry 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

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
appliance fitted at the after end of the tube shaft.....**No**..... Length of Bearing in **Stern Bush** next to and supporting propeller.....**640**.....

ller, diameter 4500 Pitch 3450 No. of Blades 4 State whether Moveable Yes Total Developed Surface 68.4 square feet

Can the H.P. or I.P. Turbine exhaust direct to the
Direct to condenser through (No. and size 2 sets 20m³/h 250m head

Feed Pumps (How driven) Steam weir type

(X) 1 15 T/h 1 60 T/h 1 180 T/h

is connected to the Main Bilge Line { No. and size 1-15 1/4", 1-50 1/4", 1-120 1/4"
How driven Main engine contained and or steam driven. ✓

Oil Pumps, No. and size 1 set 180m³/h 20m head Lubricating Oil Pumps, including Spare Pump, No. and size 2 sets 45m³/h 25m head

No. and size:—In Engine and Boiler Room. 3, 180 M³/H 20^M head, 60 M³/H 20^M head, 15 M³/H 30^M head

Water Circulating Pump Direct Bilge Suctions No. and size 1. 300mm ✓ Independent Power Pump Direct Suctions to the Engine Room

No. and size 1-80mm 2-130mm Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes ✓

1 Sea Connections fitted direct on the skin of the ship. Yes ✓ Are they fitted with Valves or Cocks. Yes ✓

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. above

each fitted with a Discharge Valve always accessible on the plating of the vessel. 165. Are the Blow Off Cocks fitted with a spigot and brass covering plate. 165
pipes pass through the bunker. Filling Air, Sounding, Ballast, Bilge. How are they protected by steel plate cover. ✓

Scupper, Echo sound water pipe. Have they been tested as per rule Yes ☒

1 Pipes, Cocks, Valves, and Bungs in connection with the machinery and all boiler mountings accessible at all times Yes ☒

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

ment to another. Yes ✓ Is the Shaft Tunnel watertight. Yes Is it fitted with a watertight door. Yes ✓ worked from upper level

010037-010048-0172

BOILERS, &c.— (Letter for record.....) Total Heating Surface of Boilers 2x320m²
Is Forced Draft fitted..... Yes..... No. and Description of Boilers 2x3 drums water tube boiler..... Working Pressure 20kg
Is a Report on Main Boilers now forwarded? Yes
Is { a Donkey } Boiler fitted? No..... If so, is a report now forwarded?
{ an Auxiliary }
Plans. Are approved plans forwarded herewith for Shafting Yes Main Boilers Yes Auxiliary Boilers Donkey Boilers
(If not state date of approval)
Superheaters Yes General Pumping Arrangements Yes Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:—
Screw propeller 2 coupling bolt.
Turbine 1 set of springs for relief valve, 5 per cent of bolts and nuts of each size of turbine gear, 1 set of thrust pads and liners for turbine and main thrust bearings. 1 set of bolts and nuts for turbine and gear bearings, 1 set of each size of bearing brasses for turbine and gear. 1 set of coupling bolts. 1 set of labyrinth gland packings for turbine. 1 set of bolts and nuts for turbine and gear bearings.
Boiler Feed check valve-2, Tube stopper-16, Fire bar-138, bolt/nut and stud-1 set, plate and 1 set, 1 set of valves, piston and plunger rings of each kind of pumps.

The foregoing is a correct description,

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 15-4-50 Rotors 15-4-50 Blading 15-4-50 Gearing 15-4-50
Wheel shaft 15-4-50 Thrust shaft 15-4-50 Intermediate shafts 29-4-50 Tube shaft 29-4-50 Screw shaft 29-4-50
Propeller 29-4-50 Stern tube 29-4-50 Engine and boiler seatings 2-5-50 Engine holding down bolts 2-5-50
Completion of pumping arrangements 11-5-50 Boilers forced 15-4-50 Engines tried under steam 11-5-50
Main boiler safety valves adjusted 11-5-50 Thickness of adjusting washers 65mm
Rotor shaft, Material and tensile strength Forged Ni-Cr Steel min. 70kg/mm² Identification Mark
Flexible Pinion Shaft, Material and tensile strength Forged Cr-Mo Steel min. 70kg/mm² (99500lbs/sq in) Identification Mark
Pinion shaft, Material and tensile strength HP&LP 1st Pinion Forged Ni-Cr Steel min 70kg/cm² (99500lbs/sq in) Identification Mark
(HP&LP 2nd Pinion Forged Steel min 60kg/mm² (85700 lbs/sq in) Identification Mark
1st Reduction Wheel Shaft, Material and tensile strength Forged steel min. 49 kg/mm² (69700 lbs/sq in) Identification Mark
Wheel shaft, Material Forged steel Identification Mark Thrust shaft, Material Forged steel Identification Mark
Intermediate shafts, Material Forged steel Identification Marks NR 16 3337, 3338, 3346 Tube shaft, Material Identification Marks
Screw shaft, Material Forged steel Identification Marks NR 16 3347 Steam Pipes, Material Steel Test pressure 850 lbs/sq in
Date of test 5-31-49 Is an installation fitted for burning oil fuel No
Is the flash point of the oil to be used over 150°F. over Have the requirements of the Rules for the use of oil as fuel been complied with No
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
Is this machinery a duplicate of a previous case If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. This vessel was built in 1949 and is now submitted for classification with this Society in accordance with the Rules for vessels not built under survey, the machinery has been opened up and examined in entirety, scantlings checked and found to be in accordance with approved plans and the Rules, the workmanship and materials found satisfactory.

It is submitted that the machinery of this vessel be recommended for the record of LMC 5.50 and notation TSCL 4,50.

The amount of Entry Fee ... /Y 160,640 : When applied for,
Special £ : : 19
Donkey Boiler Fee £ : : When received,
Travelling Expenses (if any) /Y 5,000 : 19

Committee's Minute FRI. 10 NOV 1950

Assigned LMC 5.50 Subject
S(CL) 7.50
F.D. 2 WTB 28416. Spt-

Engine Surveyor to Lloyd's Register of Shipping.



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