

Report on Steam Turbine Machinery. No. 139

Writing Report 3-5-1950 When handed in at Local Office 19 Port of **Kobe** Received at London Office 12 JUL 1950
 Survey held at **MAIZURU, JAPAN** Date, First Survey 7-4-50 Last Survey 13-5-1950
 (Number of Visits 10)
 on the **STEEL SINGLE SCREW STEAMER "NICHINAN MARU"** Tons Gross 5296.28 Net 2884.54
 YOKOHAMA By whom built **EAST JAPAN HEAVY IND. LD.** YOKOHAMA SHIP YARD Yard No. S 405 When built 30-9-1942
 made at **TOKYO** By whom made **ISHIKAWAJIMA HEAVY IND. LD.** Engine No. IT 2136 When made 30-9-1942
 made at **YOKOHAMA** By whom made **EAST JAPAN HEAVY IND. LD.** YOKOHAMA SHIP YARD Boiler No. When made 30-9-1942
 Horse Power at Full Power 3500 Owners **IINO KAIUN K.K.** Port belonging to **TOKYO**
 Horse Power as per Rule 652 769 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES
 for which Vessel is intended **OCEAN GOING**

TURBINE ENGINES, &c.—Description of Engines CROSS COMPOUND IMPULSE TURBINE

Ahead 2 Direct coupled, single reduction geared to ONE propelling shaft. No. of primary pinions to each set of reduction gearing 2
 Astern 2 double reduction geared
 Applied 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.

NE NG.	H. P.	I. P.	L. P.	ASTERN.
	6		5	HP 2 LP 2
No. of rows				
No. of stages				
No. of rows in each stage				

Horse Power at each turbine H.P. 1750 I.P. 1750 L.P. 1750
 Revolutions per minute, at full power, of each Turbine Shaft H.P. 5202 I.P. 5202 L.P. 5202

Shaft diameter at journals H.P. 120 I.P. 120 L.P. 120
 Pitch Circle Diameter 1st pinion HP 190.95 LP 237.63 1st reduction wheel LP 1086.31 main wheel HP 332.14 LP 351.68
 Width of Face 1st reduction wheel 310 main wheel 760

between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 555 2nd pinion 1060 main wheel 1150

Pinion diameter 1st 110 2nd 110
 Pinion Shafts, diameter at bearings External 1st 240 2nd 140 Internal 1st 240 2nd 140
 diameter at wheel shroud, main 355

Shafts, diameter at bearings 1st 240 2nd 140
 as per rule 316.3 as fitted 317
 Propelling Motor Shaft, diameter at bearings 2200

Thrust Shaft, diameter at collars as per rule 332 as fitted 355
 Is the tube screw shaft fitted with a continuous liner Yes

Liners, thickness in way of bushes as per rule 18.2 as fitted 20
 Thickness between bushes as per rule 18.2 as fitted 20
 Is the after end of the liner made watertight in the 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
 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 460

Are the bearings fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube No
 If so, state type Length of Bearing in Stern Bush next to and supporting propeller 1500

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 sea Yes
 No. of Turbines fitted with astern wheels 2 Feed Pumps No. and size 2-25 M³/hr 320 x 250 x 600 How driven Steam

connected to the Main Bilge Line (No. and size 1 General Service, 1 Ballast + 1 Bilge pump 1-250 x 180 x 250 How driven Steam 1-230 x 300 x 250 1-125 x 125 x 150 Duplex pumps

Pumps, No. and size 1-160 M³/hr 230 x 300 x 250 Lubricating Oil Pumps, including Spare Pump, No. and size 2-60 M³/hr 200 x 250 x 480 Simplex pumps

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 1 x 50 3 x 70 1 x 90 In Pump Rooms 1 x 70 each

after Circulating Pump Direct Bilge Suctions, No. and size 1 x 300 (1750 M³/hr) Independent Power Pump Direct Suctions to the Engine Room No. and size 1 x 180 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes

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

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 Yes 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 plate Yes What pipes pass through the bunkers Cofferdam bilge pipe How are they protected Tested

pipes pass through the deep tanks Cofferdam bilge pipe Have they been tested as per rule Yes
 Pipes, Cocks, Valves and Pumps 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 from one compartment to another Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Yes

&c.—(Letter for record) Total Heating Surface of Boilers 875.4 M² Is 17.7 = 867.7
 Draft fitted Yes No. and Description of Boilers 3 cylindrical dry combustion Boilers Working Pressure 17.5 Kg/cm²
 on Main Boilers now forwarded? Yes

Is ☒ a Donkey ☐ an Auxiliary Boiler fitted? *No* 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 *18-5-50* Main Boilers *18-5-50* Auxiliary Boilers ☒ Donkey Boilers ☒
(If not, state date of approval)
Superheaters *18-5-50* General Pumping Arrangements *18-5-50* Oil Fuel Burning Arrangements *18-5-50*
Geared turbines situated aft. Have torsional vibration characteristics of system been approved? *No* Date of approval ☒

SPARE GEAR.

Has the spare gear required by the Rules been supplied? *YES*
State the principal additional spare gear supplied *one set of bearing bolts & nuts each for rotor shafts.*
one set of bearing bolts & nuts each for reduction gear shafts 64 condenser tubes
one air pump rod & 3 safety valve springs of boiler.

The foregoing is a correct description,

Dates of Survey while building
During progress of work in shops - ☒
During erection on board vessel - *1950 April 7, 10, 11, 14, 15, 24, 25, 30 May 8, 13*
Total No. of visits *10*

Dates of Examination of principal parts—Casings *14-4-50* Rotors *14-4-50* Blading *14-4-50* Gearing *11-4-50*
Wheel shaft *11-4-50* Thrust shaft *14-4-50* Intermediate shafts *14-4-50* Tube shaft ☒ Screw shaft *15-4-50*
Propeller *15-4-50* Stern tube *15-4-50* Engine and boiler seatings *14-4-50* Engine holding down bolts *14-4-50*
Completion of fitting sea connections ☒ Completion of pumping arrangements ☒ Boilers fixed ☒ Engines tried under steam ☒
Main boiler safety valves adjusted *13-5-50* Thickness of adjusting washers ☒
Rotor shaft, Material and tensile strength *Forged steel 44~50 Kgs/mm²* Identification Mark ☒
Flexible Pinion Shaft, Material and tensile strength *Forged steel 44~50 Kgs/mm²* Identification Mark ☒
Pinion shaft, Material and tensile strength *Ni. Cr steel 50~75 Kgs/mm²* Identification Mark ☒
; Chemical analysis ☒

If Pinion ~~Shaft~~ are made of special steel state date of approval of chemical analysis, physical properties and heat treatment *APPROVED ISHIKAWAJIMA SPECIFICATION S*
MECHANICAL PROPERTIES OF MATERIAL OF GEARING QUILL SHAFTS *F.S. 44~50 Kgs/mm²*
1st Reduction Wheel Shaft, Material and tensile strength *Forged steel 44~50 Kgs/mm²* Identification Mark ☒
Wheel shaft, Material *F.S.* Identification Mark ☒ Thrust shaft, Material *F.S.* Identification Mark ☒
Intermediate shafts, Material *F.S.* Identification Marks ☒ Tube shaft, Material ☒ Identification Marks ☒
Screw shaft, Material *F.S.* Identification Marks ☒ Steam Pipes, Material *hild steel* Test pressure *15 lbs*
Date of test ☒ 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? ☒
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo? *oil tankers* 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 ☒

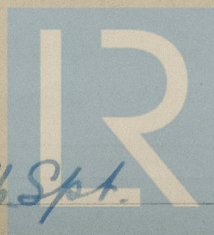
General Remarks, (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been examined in accordance with the approved plans and Secretary's letters for classification.
The workmanship and material are sound and good.
The machinery was examined under working condition during comp sea trial & found satisfactory.
In my opinion, the machinery of this vessel is eligible to be cl with record of LMC 5.50. Screw shaft (C.L.) seen 4.50 Boiler, w 17.5 Kgs/cm².

The amount of Entry Fee ... £ 160-0-0; When applied for.
Tail shaft ... £ 10-0-0
Special ... £ — : 19
Donkey Boiler Fee ... £ — : When received.
Travelling Expenses (if any) £ 17-0-0
Sunday att. fee £ 10-0-0 19
(Committee's Minute) *FRI. 25 AUG 1950*

Assigned *LMC 5.50 Subject*
S 4.50 F.D. C.L. 3 SB 249/6 Spt.

Engineer Surveyor to Lloyd's Register of Shipping



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