

REPORT ON STEAM TURBINE MACHINERY. No. 322

TURBO GENERATOR

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Report made on 11/1/1950 When handed in at Local Office 11/1/1950 Port of Yokohama KODE
 Survey held at Tokvo Aioi Japan Date, First Survey 22-5-50 Last Survey 23-12-1950 (KODE) 19-10-1950
 Book on the S/v "Nichiei Maru"
 Tons { Gross 11806.07 T Net 8550.57 T
 Aioi, Japan By whom built Harima Shipbuilding Wks Yard No. 453 When built Dec. '50.
 made at Tokyo, Japan By whom made Ishikawajima H. Industries Engine No. IA1088 When made 19-10-50
 made at Aioi Japan By whom made Harima Shipbuilding Co Ld Boiler No. 8722 8724 When made Dec. '50.
 Horse Power at Full Power 270 x 2 Owners Nitto Shosen Co., Ltd. Port belonging to Tokyo
 Horse Power as per Rule 45 x 2 = 90 Is Refrigerating Machinery fitted for cargo purposes ----- Is Electric Light fitted Yes
 for which Vessel is intended Ocean going

STEAM TURBINE ENGINES, &c.—Description of Engines: Impulse type 5 stages

Ahead Direct coupled, single reduction geared } to propelling shafts. No. of primary pinions to each set of reduction gearing
 Astern double 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.

EXPANSION	H.P.			I. P.			L. P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
12	20	392	400	2								
"	12	474	1									
"	18	446	1									
"	15	440	1									
"	28	464	1									

Horse Power at each turbine { H.P. 268 I.P. 10038 L.P. 1800 }
 Shaft diameter at journals { H.P. 70 I.P. 115.56 L.P. 644.44 }
 Pitch Circle Diameter { 1st pinion 115.56 2nd pinion main wheel }
 Width of Face { 1st reduction wheel 100 main wheel }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 380, 210 2nd pinion main wheel }
 Pinion diameter { 1st 60 2nd } diameter at bottom of pinion teeth { 1st 107.59 2nd }
 Shafts, diameter at bearings { main 100 } Generator Shaft, diameter at bearings 80 mm 90 mm (ENGINE SIDE)
 Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule as fitted Tube Shaft, diameter as per rule as fitted
 Shaft, diameter as per rule as fitted Is the tube screw } shaft fitted with a continuous liner }
 Bronze Liners, thickness in way of bushes as per rule as fitted
 Is the after end of the liner made watertight in the propeller boss If the liner is in more than one length are the junctions

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. 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. Length of Bearing in Stern Bush next to and supporting propeller.
 Pitch No. of Blades State whether Moveable Total Developed Surface square feet.
 Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or I.P. Turbine exhaust direct to the

No. of Turbines fitted with astern wheels Feed Pumps { No. and size How driven }
 connected to the Main Bilge Line { No. and size How driven }
 Lubricating Oil Pumps, including Spare Pump, No. and size
 independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes.
 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.
 Connections fitted direct on the skin of the ship. Are they fitted with Valves or Cocks.
 fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates. Are the Overboard Discharges above or below the deep water line.
 each fitted with a Discharge Valve always accessible on the plating of the vessel. Are the Blow Off Cocks fitted with a spigot and brass covering plate.
 How are they protected.
 Have they been tested as per rule.
 Bes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times.
 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
 to another. Is the Shaft Tunnel watertight. Is it fitted with a watertight door. worked from

BOILERS, &c.— (Letter for record.....) Total Heating Surface of Boilers.....

Is Forced Draft fitted..... No. and Description of Boilers..... Working Pressure.....

Is a Report on Main Boilers now forwarded?.....

Is { a Donkey } Boiler fitted?..... If so, is a report now forwarded?.....
 { an Auxiliary }

Plans. Are approved plans forwarded herewith for Shafting..... Main Boilers..... Auxiliary Boilers..... Donkey Boilers.....
 (If not state date of approval)

Superheaters..... General Pumping Arrangements..... Oil Fuel Burning Arrangements.....

Spare Gear. State the articles supplied:—

- Bearing bushes for each reduction gear and each rotor.
- Bolts, reamer bolts, studs and nuts for joint of turbine casings.

The foregoing is a correct description,

H. Sakabe T. Shigetomi

Dates of Survey { During progress of work in shops - - } 12 VISITS (Tokyo)
 { During erection on board vessel - - } 1950-Nov. 10, Dec. 6, 12, 14, 23 (HARIMA)
 while building { Total No. of visits } 17

Dates of Examination of principal parts—Casings 15 & 19-9-50 Rotors 22-9-50) 02 pcs Blading 3-10-50 Gearing ?

Wheel shaft 22-9-50 Thrust shaft - Intermediate shafts - Tube shaft - Screw shaft -

Propeller - Stern tube - Engine and boiler seatings 10-11-50 Engine holding down bolts 10-11-50

Completion of pumping arrangements - Boilers fixed - Engines tried under steam { 19-10-50
6-12-50
23-12-50 }

Main boiler safety valves adjusted - Thickness of adjusting washers -

Rotor shaft, Material and tensile strength 44.6 43.5 44.1 ton/ " Ni Cr Steel Identification Mark Y 935
 43.2 44.1 44.1

Flexible Pinion Shaft, Material and tensile strength - Identification Mark Y 953

Pinion shaft, Material and tensile strength 5312-1 (41.7) Ni Steel Identification Mark Y 954
 5312-2 41.7

Reduction Wheel Shaft, Material and tensile strength 33.4 Forging steel 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. - 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. - If so, have the requirements of the Rules 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. This Turbine has been constructed under the

supervision of the Society's Surveyors in accordance with approved plans and the Rules, the

workmanship and materials have been ~~been~~ found satisfactory. The turbine was examined during

after shop trials, and found in good order. The turbine is intended for installation in Ship

being constructed at the Harima Shipbuilding Works Ltd., Japan.

It is submitted that this engine is eligible for classification with this Society with the

notation of LMC when satisfactorily installed in the vessel. The turbo generators have now

satisfactorily installed on board and tested under full load and overload conditions as required

by the Rules.

The amount of Entry Fee £ : : When applied for,

Special £ : : 19

Donkey Boiler Fee £ : : When received,

Travelling Expenses (if any) £ : : 19

T. Shigetomi
 Engineer Surveyor to Lloyd's Register of Shipping.

FRI 24 AUG 1951

Committee's Minute

Assigned *See F.E. Moly. rpt.*



Certificate (if required) to be sent to Committee's Minute.