

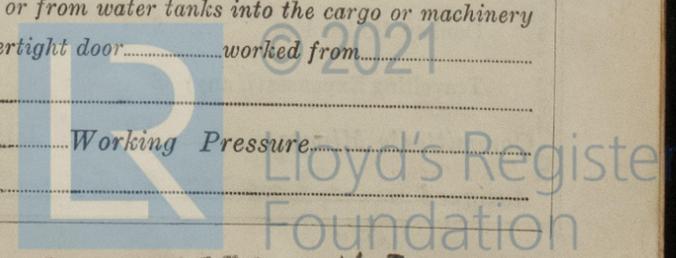
Report on Steam Turbine Machinery. No. 2111

t. 4a.
 Date of writing Report 16 Oct 1952 When handed in at Local Office 19 Port of Yokohama Received at London Office
 No. in Survey held at Tokyo Date, First Survey 3rd March 52 Last Survey 2nd Sept. 1952
 Reg. Book S.S. KIRISHIMA MARU (Number of Visits 36)
 on the S.S. KIRISHIMA MARU Tons (Gross) (Net)
 Built at By whom built Ishikawajima Heavy Industries Co., Ltd. Yard No. 476 When built
 Engines made at Tokyo By whom made Ishikawajima Heavy Industries Co., Ltd. Engine No. 2185 When made 5.2.8 mo.
 Boilers made at By whom made Boiler No. When made
 Shaft Horse Power at Full Power 8,000 SHP Owners Terukuni Kaisha K.K. Port belonging to
 Nom. Horse Power as per Rule 1,600 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines Impulse type with HP & LP turbine
 No. of Turbines 2 Direct coupled, single reduction geared double reduction geared to Main propelling shafts. No. of primary pinions to each set of reduction gearing 2
 Direct coupled to Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at revolutions per minute;
 Factor 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	H. P.	I. P.	L. P.	ASTERN.
LOADING.				
Impulse loading	7 stages 8 rows		6 stages 6 rows	HP 1 stage 2 rows LP 1 stage 2 rows
Reaction loading				
No. of rows				
No. of stages				
No. of rows in each stage				

Shaft Horse Power at each turbine HP 4,000 LP 4,000 Revolutions per minute, at full power, of each Turbine Shaft HP 243.71 LP 334.2 HP 717 LP 69.3
 Motor Shaft diameter at journals HP 170 LP 200 Pitch Circle Diameter 1st pinion LP 314.20 1st reduction wheel LP 1515.80 2nd pinion LP 521.95 main wheel 3177.27 Width of Face 1st reduction wheel LP 270 x 2 main wheel 550 x 2
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 915 820 (HP) 1st reduction wheel HP 900 LP 900 2nd pinion LP 1846.61 1610 (HP) main wheel 1,700
 Flexible Pinion Shafts, diameter at bearings External 1st HP 160 2nd 300 (LP) Internal 1st LP 160 2nd 302 (LP) diameter at bottom of pinion teeth 1st HP 233.0 LP 303.5 2nd HP 494.74 LP 507.96
 Wheel Shafts, diameter at bearings 1st HP 300 LP 300 diameter at wheel shroud, main 465 Generator Shaft, diameter at bearings 1st HP 1500 LP 1440 Propelling Motor Shaft, diameter at bearings main 3050
 Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule 427.77 as fitted 465
 Tube Shaft, diameter as per rule as fitted Screw 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 Thickness between 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 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
 If so, state type Length of Bearing in Stern Bush next to and supporting propeller square feet.
 Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface
 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 How driven
 Pumps connected to the Main Bilge Line No. and size How driven
 Bilge Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size
 Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected both to Main Bilge Pumps and Auxiliary
 Bilge Pumps, No. and size:—In Engine and Boiler Room In Pump Room
 Holds, &c.
 Main 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
 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
 Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks
 Are they 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
 Are they 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
 Working plate 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
 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 Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from
 HEATERS, &c.—(Letter for record) Total Heating Surface of Boilers Working Pressure
 Forced Draft fitted No. and Description of Boilers
 Report on Main Boilers now forwarded?



009570 - 009579 - 0143

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

Is the donkey boiler intended to be used for domestic purposes only?

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.....

Geared turbines situated aft. Have torsional vibration characteristics of system been approved yes Date of approval 6th Oct. 52

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes ✓
 State the principal additional spare gear supplied.....

The foregoing is a correct description.

J. Morimoto

Manufacturer

Dates of Survey while building
 During progress of work in shops - - 1952: - 3. 13. 18. 25 - March 8. 15. 17. 19. 29 - April 6. 9. 13. 16. 20. 22. 30 - May
 During erection on board vessel - - - 3. 6. 20. 24. 27 - June 4. 15. 25. 27. 29 - July 5. 8. 9. 13. 15. 16. 19. 26. 27 - Aug. 2 -

Dates of Examination of principal parts - Casings - HP 9-8-52 HP 20-6-52 HP 13-8-52 1st LP 15-8-52
 LP 27-6-52 Rotors LP 15-7-52 Blading LP 16-8-52 Gearing 2nd LP 15-8-52

Wheel shaft 1st LP 30-5-52 Thrust shaft 5-8-52 Intermediate shafts..... Tube shaft..... Screw shaft.....
 2nd LP 13-5-52

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.....

HP	Ni	Cr	Mo	Si	S	T	R	LP	Forged	Si	B	L	37.5	Identification Mark	Y 2599	Y 261
52.9	48.3	48.3				49.2				51.6						

Flexible Pinion Shaft, Material and tensile strength Ni Cr Mo Si HP B 46.9 LP B 51.8 Identification Mark Y 2621-A Y 262

HP	Ni	Cr	Mo	Si	S	HP	B	46.5	46.5	Identification Mark	1st PINION LP Y 2633-A	HP Y 2633-D
46.6	44.4	45.6				48.4	47.4	48.1				

Pinion shaft, Material and tensile strength Ni Cr Mo Si LP 48.4 47.4 48.1 Ni Cr Mo Si LP 53.0 54.4 Identification Mark 1st PINION LP Y 2633-A HP Y 2633-D

1st HP PINION	0.32	0.24	0.62	0.031	0.030	1.65	0.90	0.39
OTHER PINIONS	0.32	0.27	0.57	0.030	0.018	1.57	0.82	0.34

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 LP FORGED STEEL 31.3 Identification Mark Y 3797 Y 3799

Wheel shaft, Material FORGED STEEL Identification Mark Y 2598 Thrust shaft, Material FORGED STEEL Identification Mark Y 2598

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.....

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 S. NO. 454

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 the approved plans. The quality of workmanship and materials have been found satisfactory.

It is submitted that this machinery is eligible to be classed with this Society with notation of + LMC when satisfactory installed in the vessel. Reference to the Secretary letter dated 22nd March 1951 a recommendation has been made regarding the examination of this gearing after six months in service following in the vessel.

The amount of Entry Fee ... £ 294.336 When applied for.
 Special ... £ : : 19
 Donkey Boiler Fee ... £ : : When received.
 Travelling Expenses (if any) £ : : 19

[Signature]
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 19 JUN 1955
 Assigned Sir F. E. M. ...



Certificate (if required) to be written on or below the space for Committee's Minute.
 10.3.55