

*Received at London Office*

Date of writing Report 25th Apr 1929 When handed in at Local Office 25th Apr 1929 Port of NAGASAKI.

No. in Survey held at N A G A S A K I. Date, First Survey 7th Feb. 1928 Last Survey 29th March, 1929.  
Reg. Book. (Number of Visits 163)

Reg. Book.		Steel Twin Screw Steamer "U R A L M A R U".		(Number of Visits 169.)	
92456	on the				
Supp.				Tons	Gross 6376.92
Built at	Nagasaki.	By whom built	Mitsubishi Zosen Kaisha.	Yard No.	452.
Engines made at	Nagasaki.	By whom made	Mitsubishi Zosen Kaisha.	Engine No.	452.
Boilers made at	Nagasaki.	By whom made	Mitsubishi Zosen Kaisha.	Boiler No.	452.
Shaft Horse Power at Full Power	6500	Owners	Osaka Shosen Kabushiki Kaisha.	Port belonging to	Osaka.
Nom. Horse Power as per Rule	1158	Is Refrigerating Machinery fitted for cargo purposes	Yes	Is Electric Light fitted	Yes
Trade for which Vessel is intended	Osaka - Dairen.				

STEAM TURBINE ENGINES, &c.—Description of Engines

No. of Turbines Ahead.....4..... Direct coupled,  
Astern.....4..... single reduction geared } to Two propelling shafts. No. of primary pinions to each set of reduction gearing.....Two  
double reduction geared

direct coupled to { Alternating Current Generator / phase / periods per second }  
 { Direct Current Generator } 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.

[illegible]

<b>Shaft Horse Power at each turbine</b>	{	<i>H.P.</i> <b>1511</b> <i>I.P.</i> <b>1</b> <i>L.P.</i> <b>1739</b>	<b>Revolutions per minute, at full power, of each Turbine Shaft</b>	{	<i>H.P.</i> <b>5508</b> <i>I.P.</i> <b>7</b> <i>L.P.</i> <b>3896</b>	<i>1st reduction wheel</i> <b>634</b>  <i>main shaft</i> <b>120</b>
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<b>Rotor Shaft diameter at journals</b>	H.P.	110 m/m	<b>Pitch Circle Diameter</b>	1st pinion	HP 6.225"	1st reduction wheel	54.093"	<b>Width of Face</b>	1st reduction wheel	300 m/m
	I.P.	/		2nd pinion	LP 8.800"	main wheel	89.954"		main wheel	640 m/m
	L.P.	160 m/m								

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings

1st pinion	320 m/m	1st reduction wheel	320 m/m (Ford)
2nd pinion	545 m/m	main wheel	295 m/m (Aft)
			562.5 m/m

**Flexible Pinion Shafts, diameter** { 1st 140 m/m **Pinion Shafts, diameter at bearings** External 1st { 115 2nd { 270 diameter at bottom of pinion teeth { HP 5.6484"  
2nd { 165 LP 8.2243"  
2nd { 16.1056"

Wheel Shafts, diameter at bearings { 1st 270 m/m diameter at wheel shroud, { 1st 1270 m/m Generator Shaft, diameter at bearings      /  
 { main 360 m/m { main 2150 m/m Propelling Motor Shaft, diameter at bearings      /

Intermediate Shafts, diameter as per rule 305 m/m (12.01") Thrust Shaft, diameter at collars as per rule 320.2 m/m Tube Shaft, diameter as per rule 330 m/m

Screw Shaft, diameter as per rule 334 m/m (13.13") Is the yes screw shaft fitted with a continuous liner { Yes } Bronze Liners, thickness in way of bushes as per rule 17.7 m/m  
as fitted 350 m/m as fitted 19 m/m

Thickness between bushes as per rule 13.3 m/m 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 as fitted 15 m/m

made by fusion through the whole thickness of the liner 1 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 1 Is an approved **Oil Gland**

or other appliance fitted at the after end of the shaft. **No** Length of Bearing in **Stern Bush** next to and supporting propeller **1400 m/m**

Propeller, diameter 13'-6" Pitch 1'-9" No. of Blades 4 State whether Moveable Yes Total Developed Surface 84 square feet.

If Single 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

Condenser: / No. of Turbines fitted with astern wheels 4 Feed Pumps { No. and size 3 in No. One 100 tons. 2 @ 50 tons.  
How driven Steam.

Pumps connected to the Main Bilge Line	No. and size	3 - One 200 tons. One 87 tons. One 50 tons.
	How driven	Steam.

How driven \_\_\_\_\_  
 Ballast Pumps, No. and size **One @ 200 tons 1 hour capacity.**  
**One @ 100 " " Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 19600 galls/hr.**

Are two independent means arranged for circulating water through the Oil Cooler **Yes** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room **4 @ 3½" dia. 2 @ 2½". Coff. One @ 2½". Shaft tunnels 2 @ 3". Tunnel we**

In Holds, etc. No.1- 2 @ 3" dia. No.2- 2 @ 3½"dia. No.3- 2 @ 3"dia. No.4- one @ 3"dia. one @ 5"

**Main Water Circulating Pump Direct Bilge Suctions, No. and size** 2- 11"dia. **Independent Power Pump Direct Suctions to the Engine Room**

Bilges, No. and size One @ 5" dia. One @ 4" dia Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes 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 as per approved plan.

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

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 line? **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 covering plate. Yes

What pipes pass through the bunkers Forward hold suction. / How are they protected rubber boots.  
Have they been tested as per rule \_\_\_\_\_ /

What pipes pass through the deep tanks ☐ Have they been tested as per rule ☐

4. All Pipe, Clack, Valve, and Runners in connection with the machinery and all boiler mountings accessible at all times ☒ Yes ☐ No

To 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

Is the Shaft Tunnel watertight Yes, Is it fitted with a watertight door Yes worked from 2nd Dk level.

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BOILERS, &c.—(Letter for record S ) Total Heating Surface of Boilers 12,565 sq.ft.

Is Forced Draft fitted Yes No. and Description of Boilers 5 Single ended Multitubular Working Pressure 225 lbs.

Is a Report on Main Boilers now forwarded? Yes.

Is { a Donkey } Boiler fitted? No.

If so, is a report now forwarded? /

Plans. Are approved plans forwarded herewith for Shafting Yes (If not state date of approval)

Main Boilers

Yes

Auxiliary Boilers

Donkey Boilers

Superheaters

Yes

General Pumping Arrangements

Yes

Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:—

As per the Rules, and in addition. (See separate list).

NAGASAKI WORKS, LTD. KASHA, LTD.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building 1928. Feb. 7. 13. 14. 16. 18. 28. Mar. 5. 9. 12. 16. 20. 22. Apr. 4. 5. 6. 10. 11. 12. 16. 20. 23. 25. May 7. 10. 15. 19. 24. 25. 26. 31. June 1. 7. 9. 13. 15. 18. 22. 27. 29. July 3. 4. 6. 7. 9. 10. 18. 19. 24. 25. 26. 30. 3. Aug. 9. 10. 11. 14. 18. 20. 24. 28. Sep. 3. 4. 7. 8. 11. 12. 13. 14. 15. 18. 19. 20. 22. 26. 27. 28. 29. 30. Dec. 1. 3. 5. 6. 7. 8. 10. 11. 12. 13. 14. 15. 18. 19. 20. 21. 22. 26. 27. 28. 29. 30. Jan. 4. 7. 8. 9. 15. 16. 17. 19. 21. 22. 23. 24. 25. 26. 28. 29. Feb. 1. 4. 7. 9. 14. 16. 18. 19. 20. 22. 25. Mar. 2. 5. 7. 8. 9. 12. 18. 19. 22. 25. 27. 29. Total No. of visits 169.

Dates of Examination of principal parts—Casings 15-5-28 to 14-8-28. Rotors 13-2-28 to 31-5-28. Blading 30-7-28. Gearing 15-5-28 to 21-9-28.

Wheel shaft 13-2-28 to 15-5-28. Thrust shaft 21-9-28. Intermediate shafts 22-6-28 to 20-11-28. Tube shaft / Screw shaft 20-11-28.

Propeller 3-12-28. Stern tube 7 & 19-11-28 Engine and boiler seatings 25-1-29. Engine holding down bolts 4-1-28.

Completion of pumping arrangements 7-3-29. Boilers fixed 25-1-29. Engines tried under steam 2-3-29.

Main boiler safety valves adjusted 22-2-29 Thickness of adjusting washers No. 1- 2"- 11/16". No. 2- 7/8"- 11/16". No. 3- 7/8" 15/16". No. 4- 7/8"- 11/16". No. 5- 27/32"- 15/16".

Rotor shaft, Material and tensile strength Ingot steel, 34 - 38 tons sq.in. Identification Mark Lloyd's No. 9 G.A. 31-5-28.

Flexible Pinion Shaft, Material and tensile strength Nickel steel, 40 tons sq.in. minimum. Identification Mark Lloyd's No. 9 G.A. 18-8-28.

Pinion shaft, Material and tensile strength Nickel steel, 40 tons sq.in. minimum. Identification Mark Lloyd's No. 9 G.A. 18-8-28.

1st Reduction Wheel Shaft, Material and tensile strength Ingot steel, 34 - 38 tons sq.in. Identification Mark Lloyd's No. 9 G.A. 15-5-28.

Wheel shaft, Material Ingot steel Identification Mark G.A. 15-5-28. Thrust shaft, Material Ingot steel Identification Mark Lloyd's No. 9 G.A. 21-9-28.

Intermediate shafts, Material Ingot steel Identification Marks Lloyd's No. 1314-1331-1321- No. 1313-1320. No. 1330-1338. No. 1346. 1322-1337. G.A. 20-11-28. G.A. 1-11-28. G.A. 24-7-28.

Screw shaft, Material Ingot steel Identification Marks Lloyd's No. 13260-1. 13274-(Spare) G.A. 20-11-28. Steam Pipes, Material Solid draw steel Test pressure 48 kg/cm<sup>2</sup>

Date of test 16-1-29 to 21-2-29. Is an installation fitted for burning oil fuel No.

Is the flash point of the oil to be used over 150°F. / Have the requirements of the Rules for carrying and burning oil fuel 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.

The Machinery has been constructed under special survey and installed in the vessel in accordance with the Rules and Approved plans.

The materials and workmanship are good and the machinery has been examined under working conditions and found satisfactory.

The machinery of this vessel is eligible in my opinion to have the record of LMO, 3-'29.

The amount of Entry Fee ... £ 60:00 When applied for, 17. 4. 19 29  
Special ... £ 1934:25  
Donkey Boiler Fee ... £ :  
Travelling Expenses (if any) £ : When received, 16/5/29

George Anderson & K. Kishigami  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 7 JUN 1929

FRI 12 JUL 1929

Assigned

+ LMO 3.29 RD C.

CERTIFICATE WRITTEN

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Foundation