

## Report on Steam Turbine Machinery.

No. 3077

23 FEB 1960

Received at London Office  
Date of writing Report 15th Oct. 19 59 When handed in at Local Office 19 Port of YOKOHAMA  
No. in Survey held at Tokyo Date, First Survey 19th Jan. 1959 Last Survey 24th July, 19 59  
eg. Book (Number of Visits 21)  
on the Single Screw Vessel S.S. "ORIENTAL GIANT" Tons (Gross Net)  
Built at Sasebo, Japan By whom built Sasebo Senpaku Kogyo K.K. Yard No. 200 When built  
Engines made at Tokyo, Japan By whom made Ishikawajima Heavy Industries Co., Ltd. Engine No. IT2286 When made 7, 1959  
Boilers made at - do - By whom made - do - Boiler No. IB590 & 591 When made 7, 1959  
Shaft Horse Power Maximum 22,000 Service 20,000 Owners Port belonging to  
I.N. as per Rule 4400 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines. Cross Compound Impulse Turbine  
No. of Turbines Ahead 2 Direct coupled to Main propelling shafts. No. of primary pinions to each set of reduction gearing HP 1 LP 1  
Astern 1 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.

| TURBINE BLADING. |                           | H. P. | I. P. | L. P. | ASTERN. |
|------------------|---------------------------|-------|-------|-------|---------|
| Impulse Blading  | No. of rows               | 10    |       | 7 x 2 | 3       |
| Reaction Blading | No. of stages             |       |       |       |         |
|                  | No. of rows in each stage |       |       |       |         |

Shaft Horse Power at each turbine H.P. 11000 I.P. - LP 11000  
Revolutions per minute, at full power, of each Turbine Shaft H.P. 5907 LP 683  
Rotor Shaft diameter at journals H.P. 119.0mm (50mm Central hole) LP 239.7mm Pitch Circle Diameter 1st pinion HP 292.99mm LP 354.02mm 2nd pinion HP 692.82mm LP 692.82mm  
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion HP 179.7mm LP 219.7mm 2nd pinion HP 459.6mm LP 330mm  
Flexible Pinion (Solid with 1st wheel shaft) 1st HP 197mm LP 298mm Pinion Shafts, diameter at bearings HP 359.6mm LP 359.6mm  
Wheel Shafts, diameter at bearings 1st 710mm (660mm at coupling) 2nd 800mm tapered 788.12mm  
Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule 573 as fitted 659mm (595mm at coupling)

Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted  
Bronze Liners, thickness in way of bushes as per rule as fitted Thickness between bushes as per rule as fitted  
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  
shaft If so, state type Length of Bearing in Stern Bush next to and supporting propeller  
Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface 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. Turbines exhaust direct to the

Condenser No. of Turbines fitted with astern wheels Feed Pumps (No. and size How driven)  
Pumps connected to the Main Bilge Line (No. and size How driven)  
Ballast 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 Branch Bilge Suctions, No. and size:—In Engine and Boiler Rooms In Pump Room  
In Holds, &c.  
Main Water Circulating Pump Direct Bilge Suctions, No. and size Direct Bilge Suctions to the Engine and/or Boiler Room  
Bilges, No. and size 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 line  
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 covering 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  
BOILERS, &c.—Total Heating Surface of Boilers Two Ishikawajima F.W. "D" Type 1298m<sup>2</sup> ( 13972 ft<sup>2</sup>)  
Is Forced Draught fitted Yes No. and Description of Boilers Two Ishikawajima F.W. "D" type Working Pressure 51 kgs/cm<sup>2</sup>  
Is a Report on Main Boilers now forwarded? Yes Steam generator

012154-012164-0141

Is ☒ a Donkey ☐ an Auxiliary Boiler fitted? 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 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 Date of approval

### 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.

*S. Ohyama*

Manufacture

Dates of Survey while building During progress of work in shops - 1959: Jan. 29, 31. Apr. 9, 14, 21, 28. May 7, 28, 30. Jun. 4, 16, 18, 20, 22, 27, 29, 30.  
During erection on board vessel - July 2, 6, 8, 20, 24.  
Total No. of visits 22

Dates of Examination of principal parts Casings HP 21-4-59 LP 28-5-59 Rotors LP 16-6-59 2-7-59 Blading LP 22-6-59 29-6-59 1st LP 8-7-59 6-7-59 Gearing 2nd 30-8-59

Wheel shaft 7-5-59 Thrust shaft 28-4-59 Intermediate shafts Tube shaft Screw shaft

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

Rotor shaft, Material and tensile strength HP Ni, Mo, V. Steel HP 106220, 104980, 108970, 107990 PSI LP 116670, 114020, 111830, 115120 Identification Mark LP 33335 1/1-1

Flexible Pinion Shaft, Material and tensile strength Solid with 1st wheel shaft HP 110070, 112920 PSI LP 111170, 107320 Identification Mark LP 33E 1123 2/2-1

Pinion shaft, Material and tensile strength N. Cr Mo Steel HP 119420, 121070, 117310, 121070 PSI LP 117860, 113370, 119420, 121070 2nd LP 33E 1100 2/2-2 Identification Mark LP 33E 1100 2/2-1

2nd LP 33E 1113 1/2-1 ; Chemical analysis HP C Si Mn P S Ni Cr Mo LP .34 .27 .54 .017 .013 1.80 .80 .34 2nd LP .34 .27 .54 .017 .013 1.80 .80 .34

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment 25-2-59

1st Reduction Wheel Shaft, Material and tensile strength (Solid with quill shaft) HP 110070, 112920 PSI LP 111170, 107320 Identification Mark LP 33E 1123 2/2-1

Wheel shaft, Material Carbon Steel Identification Mark 33429 1/2-1 Thrust shaft, Material Carbon Steel Identification Mark 33421 1/3-1

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

Full description of Fire Extinguishing Apparatus fitted in machinery spaces

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 If so, state name of vessel

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

The materials of these turbines and reduction gearing were made under the survey of American Bureau of Shipping.

These turbines and reduction gearing have been examined in finish machined condition and tested in the shop under no load condition and found satisfactory.

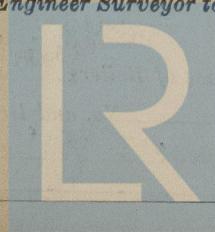
It is submitted that the machinery is eligible for classification with this Society with the notation of LMC with date when satisfactorily installed in the vessel.

The amount of Entry Fee £ 130,000- When applied for DEC 5, 1959  
Special ... £ : :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : : When received

Committee's Minute FRIDAY 25-MAR 1960

Assigned

Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation