

pt. 4a.

# Report on Steam Turbine Machinery.

No. FE-1053

23 FEB 1960

ate of writing Report 14th Dec., 1959 When handed in at Local Office 19 Port of Nagasaki Received at London Office  
o. in Survey held at Sasebo, Japan Date, First Survey 4th Aug., 1959 Last Survey 8th December, 1959  
eg. Book (Number of Visits 33)  
on the ~~Triple~~ ~~Quadruple~~ Single Screw Vessel S.S. "ORIENTAL GIANT" Tons {Gross 43,422.88  
uilt at Sasebo, Japan By whom built Sasebo Ship Ind.Co., Ltd. Yard No. 200 When built Dec., 1959  
Engines made at Tokyo, Japan By whom made Ishikawajima Heavy Ind.Co. Ltd. Engine No. IT 2286 When made July, 1959  
ilers made at -do- By whom made -do- Boiler No. P.B.1B.591 When made July, 1959  
aft Horse Power {Maximum 22,000 Owners Tanker Service Inc., Liberia Port belonging to Monrovia  
Service 20,000  
N. as per Rule Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
rade for which Vessel is intended Oil Tanker

TEAM TURBINE ENGINES, &c.—Description of Engines Cross Compound Impulse Turbine  
No. of Turbines Ahead 2 Direct coupled } Main propelling shafts. No. of primary pinions to each set of reduction gearing HP 1  
Astern 1 single reduction geared } LP 1  
double reduction geared }  
direct coupled to { Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute;  
for supplying power for driving Propelling Motors, Type Direct Current Generator  
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.
BLADING.				
Impulse Blading { No. of rows				
Reaction Blading { No. of stages				
No. of rows in each stage				

Shaft Horse Power at each turbine { H.P. I.P. L.P. } Revolutions per minute, at full power, of each Turbine Shaft { H.P. I.P. L.P. } 1st reduction wheel main shaft

Rotor Shaft diameter at journals { H.P. I.P. L.P. } Pitch Circle Diameter { 1st pinion 1st reduction wheel 2nd pinion main wheel } Width of Face { 1st reduction wheel main wheel }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 1st reduction wheel 2nd pinion main wheel }

Flexible Pinion Shafts, diameter { 1st 2nd } Pinion Shafts, diameter at bearings External Internal { 1st 2nd } diameter at bottom of pinion teeth { 1st 2nd }

Wheel Shafts, diameter at bearings { 1st main } diameter at wheel shroud, { 1st main } Generator Shaft, diameter at bearings Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule as fitted 592mm. Thrust Shaft, diameter at collars as per rule as fitted

Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted 685mm Is the tube screw shaft fitted with a continuous liner Yes 685mm

Bronze Liners, thickness in way of bushes as per rule as fitted 34mm. Thickness between bushes as per rule as fitted 25mm 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 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 2750mm

Propeller, diameter 7200mm Pitch 5200mm No. of Blades 5 State whether Moveable Solid Total Developed Surface 24.40 square feet

If 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 1 Feed Pumps { No. and size 3x120 M<sup>3</sup>/H x 58 M; 1x3 M<sup>3</sup>/H x 56 M; 2x33 M<sup>3</sup>/H x 42 PSI for LPSG

Pumps connected to the Main Bilge Line { No. and size 1x Bilge pump 15 M<sup>3</sup>/H x 25 M; 1x Fire & Bilge pump 180/100 M<sup>3</sup>/H x 30/85 M; 1x GS pump 150 M<sup>3</sup>/H x 8.5 M

How driven Elect. Motor Elect. Motor Steam Recipro

Ballast Pumps, No. and size 1 x GS pump 150 M<sup>3</sup>/H x 8.5 M Lubricating Oil Pumps, including Spare Pump, No. and size 2x160 M<sup>3</sup>/H x 3.5 kg/cm<sup>2</sup>

Are two independent means arranged for circulating water through the Oil Cooler. Yes Branch Bilge Suctions, No. and size: In Engine

and Boiler Rooms 9 x 130mm Dia; 4 x 50mm. Dia. In Pump Room Main pump room 1x100mm x 2x80mm dia

In Holds, &c. Fwd Cofferdam (P & S) each 100mm. Dia; aft cofferdam (P & S) each 100mm. Dia.

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 x 550 mm. Dia. Direct Bilge Suctions to the Engine and/or Boiler Room

Bilges, No. and size 1x180mm Dia; 1x100mm. Dia. Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes. No

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. Yes

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

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. Below 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. (Fwd Deep Tank) F.P. Tk Extra heavy steel pipe

What pipes pass through the deep tanks (aft F.O. Wing & Settling Tks) Have they been tested as per rule. Yes Without flange connection

Are all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times. Yes

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

paces, or from one compartment to another. Yes Is the Shaft Tunnel watertight. Is it fitted with a watertight door. worked from

BOILERS, &c.—Total Heating Surface of Boilers. 2 Ishikawajima F.W. "D" Type Working Pressure 51 kg/cm<sup>2</sup>

s Forced Draught fitted. Yes No. and Description of Boilers

s a Report on Main Boilers now forwarded? Yes No. FE-1053

012159-012164-0140



Is { a Donkey Boiler fitted? Low pressure steam generator If so, is a report now forwarded? Yes, certificate attached  
an Auxiliary }  
Is the donkey boiler intended to be used for domestic purposes only  
Plans. Are approved plans forwarded herewith for Shafting Yes Main Boilers No L.P. Steam Generator  
(If not, state date of approval) 26.2.59 28.4.59 11.4.59 & 25.5.59  
Superheaters No General Pumping Arrangements Yes Oil Fuel Burning Arrangements Yes  
Geared turbines situated aft. Have torsional vibration characteristics of system been approved Yes Date of approval 27.1.59

### SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes  
State the principal additional spare gear supplied One tail shaft fitted with a continuous liner & 10 coupling bolts and one spare bronze propeller.

The foregoing is a correct description.

General Manager Sasebo Ship Industry Co., Ltd.

Manufacture for

Dates of Survey while building During progress of work in shops - - -  
During erection on board vessel - - -  
Total No. of visits 33  
1959-Aug. 4, 11, 16, 20, 24. Sept. 16, 25, 30. Oct. 2, 6, 7, 12, 14, 17, 21, 24, 26, 28, 31.  
Nov. 5, 7, 12, 13, 16, 17, 18, 20, 24. Dec. 1, 3, 4, 5, 8.

Dates of Examination of principal parts-Casings. Rotors Blading Gearing  
Wheel shaft Thrust shaft Intermediate shafts Tube shaft Screw shaft  
Propeller 20.8.59 Stern tube 16.8.59 Engine and boiler seatings 7.10.59 Engine holding down bolts 7.10.59  
Completion of fitting sea connections 24.8.59 Completion of pumping arrangements 13.11.59 Boilers fixed 30.9.59 Engines tried under steam 20.11.59  
Main boiler safety valves adjusted 12.11.59 Thickness of adjusting washers 1.12.59  
Rotor shaft, Material and tensile strength Identification Mark  
Flexible Pinion Shaft, Material and tensile strength Identification Mark  
Pinion shaft, Material and tensile strength Identification Mark

; 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 Identification Mark

Wheel shaft, Material Identification Mark Nag M-8465 Thrust shaft, Material Identification Mark

Intermediate shafts, Material F.S. Identification Marks Nag M-8466 Tube shaft, Material Identification Marks

Screw shaft, Material F.S. Identification Marks Nag M-8466 Steam Pipes, Material Cr. Mo Steel & Carbon Steel Test pressure Main Steam Aux. Steam

Date of test Oct. 2, 6, 14, 21, 24, 26, 31 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 Yes

Full description of Fire Extinguishing Apparatus fitted in machinery spaces. Hydraulic: 5 x 2 1/2" Dia with 5 sets Cannon hose & 1/2" nozzle. 1 x 33.5" 2 x 10 gal, 16 x 2 gal

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo Oil Tanker 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 ship has been installed

under supervision of the Society's Surveyors in accordance with the Rules, approved plans and Secretary's letters. The machinery has been examined during installation and under full power & overload condition during comprehensive sea trials and torsiograph reading taken and confirmed satisfactory results. Selected machinery components opened out after sea trials, examined and all found in satisfactory condition. A special examination of the gearing was made & contact found very satisfactory. The material of this installation has been under the survey of the American Bureau of Shipping.

The machinery of this ship is eligible in our opinion to have the class notation of LMC in the Register Book and the records of ES 12,59, MBS 12,59 (725 PSI, SPT 625 PSI at 850°F), SDS 12,59, steam generator 142 PSI TS(CL) 12,59, fitted for Oil Fuel 12,59 above 150°F.

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

(The Committee's Minute

FRIDAY 25 MAR 1960

Assigned

See Rpt. 1

Engine Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation