

Rpt. 4b

Date of writing report 20th July, 1958. Received London 23 SEP 1958 Nag. H. Shimoda Port Shimonoseki. No. 895
 Survey held at Nagasaki & Hiroshima No. of visits 80 23 In shops 21-9-57 Last date 16-4-58
 On vessel 27 First date 14-4-58

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name M. V. "OCEANIA MARU" Gross tons 8906.05
 Owners MITSUBISHI KAIUN K.K. Managers Port of Registry Tokyo
 Hull built at Hiroshima, Japan By Mitsubishi SB & Eng. Co., Ltd., Hiroshima S.Y. Yard No. H-137 Year Month 1958-7
 Main Engines made at Nagasaki, Japan By Mitsubishi SB & Eng. Co., Ltd., Nagasaki S.Y. Eng. No. 305 (CD-9613) When 1958-3
 Gearing made at Nagasaki, Japan By Mitsubishi Zosen K.K.
 Donkey boilers made at Osaka, Japan By Hirano Iron Works Co., Ltd. Blr. Nos. H-774 When 1958-1
 Machinery installed at Hiroshima, Japan By When

Particulars of restricted service of ship, if limited for classification
 Particulars of vegetable or similar cargo oil notation, if required
 Is ship to be classed for navigation in ice? No Is ship intended to carry petroleum in bulk? No
 Is refrigerating machinery fitted? Yes If so, is it for cargo purposes? No Type of refrigerant Vertical type freon gas refrigerator
 Is the refrigerating machinery compartment isolated from the propelling machinery space? Yes Is the refrigerated cargo installation intended to be classed?

The following particulars should be given as fully and as clearly as possible. Where the answer is "No" or "None", say so! Ticks and other signs of doubtful meaning are not to be used. Where the wording is not applicable to the installation, a black line may be inserted. If the main engines have been constructed at another port and are covered by a separate report, the particulars given in that report need not be repeated below, but the port and report number should be stated.

No. of main engines 1 No. of propellers 1 Brief description of propulsion system Direct coupled to straight shafting machy.
 MAIN RECIPROCATING ENGINES. Licence Name and Type No. Mitsubishi 6 UEC 75/150 Type (Supercharged)
 No. of cylinders per engine 6 Dia. of cylinders 750 mm. stroke(s) 1500 mm. 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum approved BHP per engine 8,500 at 122 RPM of engine and 122 - RPM of propeller.
 Corresponding MIP 8.76 kgs/cm² (For D.A. engines give MIP top & bottom) Maximum cylinder pressure 58 kgs/cm² Machinery numeral 1,700
 Are the cylinders arranged in Vee or other special formation? No If so, number of crankshafts per engine -

TWO STROKE ENGINES. Is the engine of opposed piston type? No If so, how are upper pistons connected to crankshaft?
 Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? Valves No. and type of mechanically driven scavenge pumps or blowers per engine and how driven None

No. of exhaust gas driven scavenge blowers per engine 2 Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action? Yes
 If a stand-by or emergency pump or blower is fitted, state how driven Electric Motor Driven No. of scavenge air coolers 2 Scavenge air pressure at full power 0.35 kgs/cm² Are scavenge manifold explosion relief valves fitted? Yes

FOUR STROKE ENGINES. Is the engine supercharged? - Are the undersides of the pistons arranged as supercharge pumps? - No. of exhaust gas driven blowers per engine -
 No. of supercharge air coolers per engine - Supercharge air pressure - Can engine operate without supercharger? -
 TWO & FOUR STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel 1 Inlet None Exhaust 3 Starting 1 Safety 1

Material of cylinder covers Cast Iron Material of piston crowns Cr. Mo. S. forging Is the engine equipped to operate on heavy fuel oil? Yes
 Cooling medium for :-Cylinders F.W. Pistons F.W. Fuel valves F.W. Overall diameter of piston rod for double acting engines -
 Is the rod fitted with a sleeve? No Is welded construction employed for: Bedplate? No Frames? No Entablature? No Is the crankcase separated from the underside of pistons? Yes Is the engine of crosshead or trunk piston type? Crosshead Total internal volume of crankcase 85.32M³ No. and total area of explosion relief devices 6-9, 923.4cm² Are flame guards or traps fitted to relief devices? No Is the crankcase readily accessible? Yes If not, must the engine be removed for overhaul of bearings, etc? No Is the engine secured directly to the tank top or to a built-up seating? - How is the engine started? Compressed Air
 Can the engine be directly reversed? Yes If not, how is reversing obtained? -

Has the engine been tested working in the shop? Yes How long at full power? 2 hours at official shop trial

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 9-12-57 399A State barred speed range(s), if imposed for working propeller 35 below For spare propeller - Is a governor fitted? Yes Is a torsional vibration damper or detuner fitted to the shafting? No

Where positioned? - Type - No. of main bearings 8 Are main bearings of ball or roller type? No Distance between inner edges of bearings in way of crank(s) 1,020mm Distance between centre lines of side cranks or eccentrics of opposed piston engines -

Crankshaft type: Built, semi-built, solid. (State which) Semi-built up
 Diameter of journals 560mm. Diameter of crankpins Centre 560mm. Breadth of webs at mid-throw 886 mm. Axial thickness of webs 350 mm.
 If shrunk, radial thickness around eyeholes 242.5 mm. Are dowel pins fitted? No Crankshaft material Journals Steel forging Approved 34 T/□" Webs Tensile strength 2021
 Diameter of flywheel 2,679mm. Weight 8,750 kgs Are balance weights fitted? No Total weight - Radius of gyration 1.081M.
 Diameter of flywheel shaft 560 mm. Material Steel forging Minimum approved tensile strength 28 T/□" Lloyd's Register Foundation
 Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Integral with thrust shaft

14/10/58



013224-013231-0172

MAIN GAS TURBINES. Name and Type No.

No. of sets of turbines - Open or closed cycle - BHP per set - at - RPM of output shaft -
 How is drive transmitted to propeller shaft?
 ARRANGEMENT OF TURBINES. HP drives - at - RPM - HP gas inlet temperature - pressure -
 (A small diagram should be attached showing gas cycle.)
 IP drives - at - RPM - IP gas inlet temperature - pressure -
 LP drives - at - RPM - LP gas inlet temperature - pressure -
 No. of air compressors per set - Centrifugal or axial flow type? - Material of turbine blades -
 compressor blades - No. of air coolers per set - No. of heat exchangers per set - How are turbines started? -
 How is reversing effected? - Are the turbines operated in conjunction with free piston gas generators? -
 Total No. of free piston gas generators - Diameter of working pistons - Diameter of compressor pistons - No. of double strokes per
 minute at full power - Gas delivery pressure - Gas delivery temperature - Have the turbines and attached equipment been tested working
 in the shop? - How long at full power? -

ELECTRIC PROPULSION (Reciprocating engines or gas turbines. Electrical particulars to be reported on Form 4d.)

No. of generators - KW per generator - at - RPM - AC or DC? - Position -
 No. of propulsion motors - SHP per motor - at - RPM - Position -
 How is power obtained for excitation of generators? - Motors? -

REDUCTION GEARING (Reciprocating engines or gas turbines. A small line sketch should be attached showing arrangement of gearing.)

Is gearing of single or double helical type? - If single, position of gear thrust bearing - Is gearing of epicyclic type? -
 PCD of pinions: First reduction - Second reduction - PCD of wheels: First reduction - Main -
 Material of pinions - Tensile strength - Material of wheel rims - Tensile strength -
 Are gear teeth surface hardened? - How are teeth finished? - Diameter of pinion journals - Wheel shaft
 journals - Are the wheels of welded construction? - Is gearcase of welded construction? - Has the wheel/gearcase been heat treated on completion
 of welding? - Where is the propeller thrust bearing located? - Are gear bearings of ball or roller type? -

CLUTCHES, FLEXIBLE COUPLINGS, ETC. If a clutch or other flexible connection is fitted between engine/turbine and gearing or between engine and line shafting give brief description and, for clutches, state how operated.

Can the main engine be used for purposes other than propulsion when declutched? - If so, what? -

STRAIGHT SHAFTING. Diameter of thrustshaft 560 mm. Material Steel Forging Minimum approved tensile strength 28 T/d
 Shaft separate or integral with crank or wheel shaft? integral with wheel shaft Diameter of intermediate shaft 405 mm Material Steel forging
 Minimum approved tensile strength 28 T/d Diameter of screwshaft cone at large end 470 mm Is screwshaft fitted with a continuous liner? Yes
 Diameter of tube shaft. (If these are separate shafts) - Is tube shaft fitted with a continuous liner in way of stern tube - Thickness of screw/tube shaft liner at
 bearings 25 mm Thickness between bearings 24 mm Material of screw/tube shaft Forged Steel Minimum approved tensile strength 28 T/d
 Is an approved oil gland fitted? NO If so, state type - Length of bearing next to and supporting propeller 2000 mm
 Material of bearing Lignumvitae In multiple screw vessels is the liner between stern tube and A bracket continuous? - If not, is the exposed length of shafting between
 liners readily visible in dry dock? -

PROPELLER. Diameter of propeller 5200 mm Pitch 4700 mm Built up or solid Solid Total developed surface 9.7 m²
 No. of blades 4 Blade thickness at top of root fillet 253 mm Blade material Manganese Bronze Moment of inertia of dry propeller 139,491kg-cm²
 If propeller is of special design, state type NO Is propeller of reversible pitch type? NO If so, is it of approved design?
 State method of control - Material of spare propeller Cast Iron Moment of inertia 199,318kg-cm²

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine NONE Can they be declutched? -

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) 1 at 220 m³/hr driven by Pt. Fwd generator engine Yokohama M-4683, at 220 m³/hr driven by Pt. aft generator eng. Yokohama M-4683 /at 4.5 m³/hr Pt. amid of ER KOBE M-4728/
 No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) 2 at 10 M³ on Pt. 2nd deck engine room fore & aft Cert. SMK AR 6058/at 200¹ on Pt. mid eng. room Cert. KOB AR 49316

How are receivers first charged? By small air compressor driven by Kerosen engine. Maximum working pressure of starting air system 30 kg/cm² Are the safety devices in accordance with the Rules? Yes Has the starting of the main engines been tested and found satisfactory? Yes.

COOLERS. No. of main engine fresh water coolers Jacket 1 No. of main engine lubricating oil coolers 1 -

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure /at 3ton A Oil settling Tank/at 3ton A oil service tank on 2nd deck starbd. of ER.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) 1 - High pressure oil fuel pump

Name below essential pumps, state position and how driven. Give capacity of bilge pumps.	Service for which each pump is connected to be marked thus X														
	SUCTION						DELIVERY								
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling
Fc FW Pump (stab. ER) Elec. coupled with JCFW Pump					X										X
Jc FW Pump (starb. ER) Elec. coupled with FCFW Pump					X						X				
Cooling SW Pumps (2) (st. Eng. room) Elec. (360M ² /h. each)			X(2)			X				X					
Main LO Pump (pt. ER)								X						X	
LO Pump for Turbo-charger, (pt. ER)								X						X	
A oil trans. OF Pump (st. ER) (elect.)				X								X			
C oil trans. Pump (st. ER) (elect.)				X								X			
FO Pump (elec.) Purifier (st. ER) (2000 L/H)				X								X			
Boiler water circ. Pump (st. ER) Elect. (10M ³ /H)							X		X						
Sanitary Pump (st. ER) Elect. (10 M ³ /H)							X								
Bilge Pump (st. ER) Elect. (30 M ³ /hr)		X													
Bilge & Ballast Pump (pt. ER) Elect. (100/200 M ³ /hr)	X		X	X										X	
Fire & General Service Pump (pt. ER) Elec. (100/200 M ³ /H)	X	X	X			X								X	
FW Pump (st. ER) Elect. (10 M ³ /H)							X								
Feed water Pump (2nd Dk. ER) Elect. Steam Weirs Type (4M ³ /H)							X			X					

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room
 NO. 1, 2, 3 Holds each Port & Starbd 80mm; No. 4 DT 2 each Pt. & Stab. 130mm; No. 5, 2 each p. & s. /No. 6, 1 each, p. & s.
 No. and size connected to main bilge line in main engine room 4 x 80mm 1 x 50mm 2 - 50 off ft. In tunnel 1 x 50mm 1 x 80mm
 In aux. engine room - Size and position of direct bilge suctions in machinery spaces Ft. aft 1 x 130 mm p. aft
 Stbd. aft 1 x 80 mm Size and position of emergency bilge suctions in machinery spaces 2 x 260 mm Stbd. fwd.
 Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? No Do the piping arrangements comply with the Rules including special requirements for ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (strike out words not applicable.) No

STEAM & OIL ENGINE AUXILIARIES

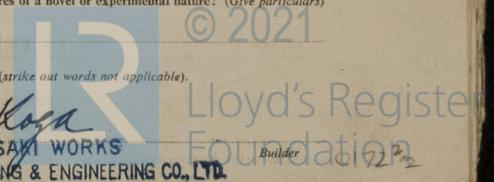
Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
Pt. out-board fwd	4 cycle single Acting	Tokyo Motor Vehicle Wks	Yokohama M-4627	250 KVA electric generator with air compressor
Pt. outboard Aft	Solid injection	Mitsubishi	"	"
Pt. inboard Aft	5 cylinder Diesel Engine	Nippon Heavy Ind. Ltd.	"	250 KVA electric generator only

Is electric current used for essential services at sea? Yes If so, state the minimum No. and capacity of generators required in order that the ship may operate at sea 1 generator 200 KW. Is an electric generator driven by Main Engine? NONE
 STEAM INSTALLATION. No. of donkey boilers burning oil fuel 1 w.p. 7kg/cm² Type Vertical cockran type
 Position On 2nd deck fwd of machinery space.
 Is a superheater fitted? No Are these boilers also heated by exhaust gas? No No. of donkey boilers heated by exhaust gas only? 1 w.p. 7 kg/cm²
 Type Forced circulation header & coil. Position Upper centre of mach space in funnel. Can the exhaust heated boilers deliver steam directly to the steam range or do they operate only as economisers in conjunction with oil fired boilers? As an economizer. Port and No. of report on donkey boilers Kobe 1-47761 Is steam essential for operation of the ship at sea? No Are any steam pipes over 3 ins. bore? Yes If so, what is their material? Steel For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? Yes No. of oil burning pressure units 1 No. of steam condensers 1 No. of Evaporators NONE

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) Electric hydraulic type with 2 rams & 2 motor pumps.

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements Hydrant 4 dia. 70mm with hose reels 4 spray nozzles, Portable fire extinguishers 9 1/2 x 8 (bubble) 65kg x 4 (CL4), Removable type bubble Ext. 45 x 1 Steam smothering pipe beside of boiler & main engine, 30 bubbles of CO₂ Gas kiddy fire extinguish system. Sand boxes & scoops.
 Has the spare gear required by the Rules been supplied? Yes Has all the machinery been tried under full working conditions and found satisfactory? Yes Date and duration of full power sea trials of main engines 10-7-58 4 hours Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) NO

The foregoing description of the main engine and installation is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable).
 T. Kawara HIROSHIMA WORKS MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.
 S. Koga NAGASAKI WORKS MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.



GENERAL REMARKS

State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations for classification, including any special notation to be assigned. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

This engine has been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters. The materials and workmanship are good. The engine was tested under full power working condition in the shop and found satisfactory.

The machinery of this vessel have been installed under Special Survey in accordance with the Rules, approved plans and Secretary's letters and tested under full power working condition during sea trial and found satisfactory.

Torsograph readings taken on trials gave a natural frequency at 30 R.P.M. which is below the normal operating range. At Owners request notice board fitted & tachometer marked; Engine not to run below 35 R.P.M.

An exhaust gas heated economizer has been fitted to the donkey boiler.

It is submitted that the machinery of this ship is eligible to have the class notation of LMC in the Register Book with notation of 1 donkey boiler 102 lbs & exhaust gas economizer 142 lbs and the records of machinery Survey: 128 lbs

Engine N 7/58, DBS 7/58, CL 7/58, Sps 7/58.

G. J. Hervey

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

PARTICULARS OF IDENTIFICATION MARKS (Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

RODS Piston Rods: LLOYD'S NAG NO. MS. 2192A, 2192C, 2192D, 2192F, Y10881B, Y10881A M.O. R 14.1.58
Connecting Rods: LLOYD'S NAG NO. SF. 2507-1, 2, 3, 4, 5, 6 S.M. 20.11.57.

CRANKSHAFT OR ROTOR SHAFT LLOYD'S NAG NO. CK. 2483F & CK. 2483A M.O. R 13.1.58

FLYWHEEL SHAFT) LLOYD'S NAG NO. MS. 2193 M.O. R 13.1.58
THRUST SHAFT)

GEARING 1) LLOYD'S SMK KOB NO. F2930 KO R 12-4-58 4) LLOYD'S SMK KOB NO. F2933 KO R 4-4-58
INTERMEDIATE SHAFTS 2) LLOYD'S SMK KOB NO. F2931 KO R 4-4-58 5) LLOYD'S SMK KOB NO. F2934 KO R 10-4-58
3) LLOYD'S SMK KOB NO. F2932 KO R 4-4-58 6) LLOYD'S SMK NAG NO. 1844 KO LR19-3-57
SCREW AND ~~OTHER~~ SHAFTS 7) LLOYD'S SMK KOB NO. F4928 KO R 10-4-58
PROPELLERS LLOYD'S KOB NO. KF2582 EI R 6-1-58
LLOYD'S SMK NAG NO. MNBC2476 KO R 24-3-58 (Working)
LLOYD'S SMK NO. 6074 KO R 12-7-58 (Spare)

OTHER IMPORTANT ITEMS Spare Piston Crown, LLOYD'S NAG NO. MS. 2006A, Y11077L S.M. 27.12.57
Piston Crowns: LLOYD'S TEST NAG 12 KG NO. Y-11077-A, D, E, G, J, K. M.O. 11.2.58
Crosshead Pins - LLOYD'S NAG NO. MS. 2017B, 2007A, Y10897A, MS. 2007B, 2017H, Y10897C
M.O. R 9.1.58 M.O. R 10.1.58

Is the installation a duplicate of a previous case? No
provisionally thrust shaft
Date of approval of plans for crankshaft 31-1-57 (Kob) 31-1-57 Gearing - Clutch -
Separate oil fuel tanks 11-12-57 Pumping arrangements 11-12-57 Oil fuel arrangements 11-12-57
Cargo oil pumping arrangements - Air receivers 25-11-57 Donkey boilers 22-8-57

Dates of examination of principal parts:-
Fitting of stern tube 9-4-58 Fitting of propeller 14-4-58 Completion of sea connections 18-4-58 Alignment of crankshaft in main bearings 13-6-58
Engine checks & bolts 16-6-58 Alignment of gearing - Alignment of straight shafting 13-6-58 Testing of pumping arrangements 10-7-58
Oil fuel lines 31-5-58 Donkey boiler supports 19-4-58 Steering machinery 10-7-58 Windlass 10-7-58

Date of Committee TUESDAY 21 OCT 1958
Decision See Rpt. 1.

Special Survey Fee £298,000 (29/5/58)
252,000 (15/8/58)
Construction: £550,000 ✓
Installation: £305,000 ✓ (11/9/58)
Expenses (Smk. 87,000 (11/9/58)
Kob. 20,950 (11/9/58)

