

Rpt. 4b

Date of writing report 20-8-63 Received London Port YOKOHAMA No. 4841
Survey held at Yokosuka, Japan No. of visits In shops 38 On vessel 7 First date 19-9-62 Last date 9-7-63
6-5-63 24-7-63

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name M.S. "POLISI 511" Gross tons 310.27
Owners The Reparation Mission of The Government of the Republic of Indonesia. Port of Registry DJAKARTA
Hull built at Yokosuka, Japan By Uruga Shipbuilding Yard Yard No. 832 When 1963 - 7
Main Engines made at Akashi, Japan By Kawasaki Dockyard. Eng. No. 6198 & 6199 When 1963 - 3

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 Dichlorodifluoromethane
Is the refrigerating machinery compartment isolated from the propelling machinery space? No Is the refrigerated cargo installation intended to be classed? No

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 TWO No. of propellers TWO Brief description of propulsion system Two oil engines directly coupled to screw shafts.

MAIN RECIPROCATING ENGINES. Licence Name and Type No.
No. of cylinders per engine Dia. of cylinders stroke(s) 2 or 4 stroke cycle Single or double acting
Maximum approved BHP per engine at RPM of engine and RPM of propeller.
Corresponding MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral
Are the cylinders arranged in Vee or other special formation? If so, number of crankshafts per engine

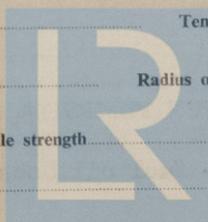
TWO STROKE ENGINES. Is the engine of opposed piston type? If so, how are upper pistons connected to crankshaft?
Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? No. and type of mechanically driven scavenge pumps or blowers per engine and how driven
No. of exhaust gas driven scavenge blowers per engine Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action?
If a stand-by or emergency pump or blower is fitted, state how driven No. of scavenge air coolers Scavenge air pressure at full power
Are scavenge manifold explosion relief valves fitted?

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 Inlet Exhaust Starting Safety
Material of cylinder covers Material of piston crowns Is the engine equipped to operate on heavy fuel oil?
Cooling medium for :--Cylinders Pistons Fuel valves Overall diameter of piston rod for double acting engines
Is the rod fitted with a sleeve? Is welded construction employed for: Bedplate? Frames? Entablature? Is the crankcase separated from the underside of pistons?
Is the engine of crosshead or trunk piston type? Total internal volume of crankcase No. and total area of explosion relief devices
Are flame guards or traps fitted to relief devices? Is the crankcase readily accessible? If not, must the engine be removed for overhaul of bearings, etc?
Is the engine secured directly to the tank top or to a built-up seating? Built-up seating How is the engine started?
Can the engine be directly reversed? If not, how is reversing obtained?
Has the engine been tested working in the shop? How long at full power?

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system State barred speed range(s), if imposed for working propeller For spare propeller Is a governor fitted? Is a torsional vibration damper or detuner fitted to the shafting?
Where positioned? Type No. of main bearings Are main bearings of ball or roller type? Distance between inner edges of bearings in way of crank(s) Distance between centre lines of side cranks or eccentrics of opposed piston engines
Crankshaft type: Built, semi-built, solid. (State which)
Diameter of journals Diameter of crankpins Breadth of webs at mid-throw Axial thickness of webs
Pins Minimum
If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Approved Tensile strength
Webs
Diameter of flywheel Weight Are balance weights fitted? Total weight Radius of gyration
Diameter of flywheel shaft Material Minimum approved tensile strength
Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which)

Please refer Kobe Rpt. No. FE-11602



21520-21510-105910

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 Material of 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 150 mm Material Forged carbon steel Minimum approved tensile strength 50 kg/mm²

Shaft separate or integral with crank or wheel shaft? Integral with wheel shaft Diameter of intermediate shaft 110 mm Material Forged carbon steel

Minimum approved tensile strength 44 kg/mm² Diameter of screwshaft cone at large end 130 mm Is screwshaft fitted with a continuous liner? No

Diameter of tube shaft. (If these are separate shafts) 126 mm Is tube shaft fitted with a continuous liner in way of stern tube Thickness of screw/tube shaft liner at bearings

Material of screw/tube shaft High tension brass Minimum approved tensile strength 50 kg/mm²

How is the after end of the liner made watertight in the propeller boss?

Is an approved oil gland fitted? No If so, state type Length of bearing next to and supporting propeller 535 mm

Material of bearing Lignum Vitae 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? Yes

PROPELLER. Diameter of propeller 1,300 mm Pitch 858 mm Built up or solid Solid Total developed surface 0.778 sq.m

No. of blades 3 Blade thickness at top of root fillet 55 Blade material Bronze Design Manganese Moment of inertia of dry propeller 243.1 kg.cm.Sec²

Tensile strength 47.9 kg/mm² If propeller is of special design, state type Is propeller of reversible pitch type? No If so, is it of approved design?

State method of control Material of spare propeller Moment of inertia

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine No Can they be declutched?

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) Two - 20 m³/h x 30 kg/cm², 5.5 KW Motor, P. & S.(Fwd.) Kobe No. M-87672, One - 45 m³/h x 30 kg/cm² oil eng. driven stb'd.(Fwd.) Kobe No. M-87662

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) Two - Main 400 l P. & S.(Fwd.)

Kobe No. AR-87746, One - Aux. 150 l, Port(Fwd.) Kobe No. AR-84327

How are receivers first charged? Hand Starting Diesel Eng. 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 1 No. of main engine lubricating oil coolers 2

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure None

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) Each engine : 1 - cooling sea water, 1 - cooling fresh water,

1 - lub. oil, 1 - fuel oil booster, 8 - fuel oil injection

INDEPENDENT PUMPS 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							(Main Eng.) 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
Bilge & Fire															
E/R.Stb'd.Aft.E.Motor, ^{m³/h} 60/30	X	X	X			X				X	X		X		
General Service															
E/R.Stb'd.Aft.E.Motor, ^{m³/h} 20m ³ /h	X		X			X				X	X		X		
Cooling S.W. for Generator Eng.						X				X					
E/R.Fwd. E.Motor															
Reserve Lub. oil								X							X
E/R. Centre E.Motor															
Fuel oil transfer				X								X			
E/R. Centre E.Motor															
Lub.oil Priming for Main Eng.								X							X
E/R. P.&S. Fwd. E.Motor															

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room Bosun's store, 1-50mm; Void space(f), 1-50mm; Chain locker, 1-50mm;

Hydro. Pump room, 2-50mm; Fwd. Mail or Ammunition room, 2-50mm; Cargo hold, 2-70mm; Aft. Mail or Ammunition room, 1-50mm; Steering room, 1-50mm

No. and size connected to main bilge line in main engine room 2-50mm In tunnel 2-50mm

In aux. engine room Size and position of direct bilge suction in machinery spaces 1-65mm, Aft.

Size and position of emergency bilge suction in machinery spaces 1-125mm, 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).

STEAM & OIL ENGINE AUXILIARIES

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
E/R. Port & Stb'd. Fwd	4.S.C.S.A.	Yamner Diesel Engine Co.,Ltd.	Kobe 0-88225 ^{3 cyl} X	70 KVA, A.C. Generator
E/R. Fwd.	4.S.C.S.A.	Yamner Diesel Engine Co.,Ltd.	Kobe M-84022 ^{1 cyl} X	Aux. Air compressor, 2.5PS 4.5m ³ /h x 30kg/cm ² .

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, 45 KW

Is an electric generator driven by Main Engine? No

STEAM INSTALLATION. No. of donkey boilers burning oil fuel W.P. Type

Position

Is a superheater fitted? Are these boilers also heated by exhaust gas? No. of donkey boilers heated by exhaust gas only? W.P.

Type Position 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?

Port and No. of report on donkey boilers

Is steam essential for operation of the ship at sea? Are any steam pipes over 3 ins. bore? If so, what is their material?

For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? No. of oil burning pressure units No. of steam condensers No. of Evaporators

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars)

1 - Elec. motor driven (1.5KW) Hele-Shaw type pump 2 rams, 2 cylinders; 1 - Hand pump for emergency use.

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements Extinguisher, 3 x 9 L, 2 x 45 L. foam and 1 x 5 lbs. CO₂; Hydrant 2 x 40 mm; Sand box 2.

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 23-7-63, 2.5 hours Does this machinery installation contain any features of a novel or experimental nature? (Give particulars)

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).

URAGA SHIPBUILDING YARD, URAGA HEAVY INDUSTRIES, LTD.



0215 1/4

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.

The machinery has been satisfactorily installed in the vessel and tested under working condition.
 It is submitted that machinery of this vessel is eligible to be classed with this society with the notation of **+ LMC** with record of ES 7/63, and TS (b) (p. & s.) 7/63.

Note : - Borred speed range - Main engine not to be run continuously below 190 R.P.M.

Notice boards were fitted at the control station stating that the engine should not be operated continuously below 190 R.P.M. and the tachometers were marked accordingly.

[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

CRANKSHAFT OR ROTORSHAFT

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS (Working)

OTHER IMPORTANT ITEMS

Please refer Kobe Rpt. No. FE-11602 ✓

Port : - Lloyd's Yka. No. Y-20090-A2 & No. Y-20090-B2
 Stbd.: - Lloyd's Yka. No. Y-20090-A1 & No. Y-20090-B1
 Port : - Lloyd's Yka. No. Y-18497-B & No. Y-18498-B ✓
 Stbd.: - Lloyd's Yka. No. Y-18497-A & No. Y-18498-A ✓

Port :- Lloyd's Test Kob. FI 11-12-62, MH LR C. No. 37683 ✓
 Stbd.: - Lloyd's Test Kob. FI 11-12-62, MH LR C. No. 37681 ✓

Is the installation a duplicate of a previous case? **Yes** If so, state name of vessel **M.S. "POLISI 509" & POLISI 510"**
 Date of approval of plans for crankshaft **29-8-62** Straight shafting **8-10-62** Gearing **-** Clutch **-**
 Separate oil fuel tanks **-** Pumping arrangements **27-8-62, 8-11-62** Oil fuel arrangements **27-8-62**
 Cargo oil pumping arrangements **-** Air receivers **6-12-62** Donkey boilers **-**
 Dates of examination of principal parts:-
 Fitting of stern ^{bushes} tube **4-5-63** Fitting of propeller **6-5-63** Completion of sea connections **6-5-63** Alignment of crankshaft in main bearings **27-6-63**
 Engine chocks & bolts **27-6-63** Alignment of gearing **-** Alignment of straight shafting **27-6-63** Testing of pumping arrangements **23-7-63**
 Oil fuel lines **20-7-63** Donkey boiler supports **-** Steering machinery **23-7-63** Windlass **23-7-63**
 Date of Committee **FRIDAY - 4 OCT 1963**

Decision **+LMCES }
 TS(b) } 7-63**

Special Survey Fee

Expenses

Date when Alc rendered



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