

Rpt. 4b

4 JAN 1960

Date of writing report 11.12.1959 Received London Port E M D E N No. 292  
Survey held at Papenburg/Emden No. of visits In shops 4 First date 7.8.59 Last date 14.11.59  
On vessel 10

## FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name M.V. "WATAMPONE" Gross tons 2167,94  
Owners Republic of Indonesia Managers -- Port of Registry Djakarta  
Hull built at Papenburg By Jos. L. Meyer, Yard No. 498 Year Month 1959-11  
Main Engines made at Hamburg By Eng. No. 405 348 When 1959-7  
Gearing made at -- By --  
Donkey boilers made at -- By -- Blr. Nos. -- When --  
Machinery installed at Papenburg By Jos. L. Meyer, When 1959-11

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 --  
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 Oil-Engine direct to shaft  
MAIN RECIPROCATING ENGINES. Licence Name and Type No. M.A.N. Type G8 V 40/60 Supercharged

No. of cylinders per engine 8 Dia. of cylinders 400 mm stroke(s) 600 xx 4 stroke cycle Yes Single-acting Yes

Maximum approved BHP per engine 1680 at 275 RPM of engine and 275 RPM of propeller.

Corresponding MIP 10,5 kg/cm<sup>2</sup> (For DA engines give MIP top & bottom) Maximum cylinder pressure 62 kgs/cm<sup>2</sup> Machinery numeral 336

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? 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? Yes Are the undersides of the pistons arranged as supercharge pumps? No No. of exhaust gas driven blowers per engine

1 No. of supercharge air coolers per engine none Supercharge air pressure 0,4 kg/cm<sup>2</sup> Can engine operate without supercharger? Yes

TWO & FOUR STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel 1 Inlet 1 Exhaust 1 Starting 1 Safety 1

Material of cylinder covers cast iron Material of piston crowns Aluminium alloy Is the engine equipped to operate on heavy fuel oil? No

Cooling medium for :-Cylinders freshwater Pistons uncooled Fuel valves fuel Overall diameter of piston rod for double acting engines

Is the rod fitted with a sleeve? -- Is welded construction employed for: Bedplate? No Frames? No Entablature? -- Is the crankcase separated from the

underside of pistons? -- Is the engine of crosshead or trunk piston type? Yes Total internal volume of crankcase 9,6 m<sup>3</sup> No. and total area of explosion relief

devices 8 of 1960 cm<sup>2</sup> Are flame guards or traps fitted to relief devices? traps Is the crankcase readily accessible? Yes If not, must the engine be removed for

overhaul of bearings, etc? no Is the engine secured against the crankcase to a built-up seating? Yes How is the engine started? by 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? 4 hours full load, 1 hour 10% overload

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 5.3.59 State barred speed range(s), if imposed

for working propeller below 85RPM For spare propeller not applies this instant Is a governor fitted? Yes Is a torsional vibration damper or detuner fitted to the shafting? Yes

Where positioned? fwd of crankshaft Type Huelsenfeder No. of main bearings 10 Are main bearings of ball or roller

type? No 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) solid

Diameter of journals Diameter of crankpins Centre Breadth of webs at mid-throw Axial thickness of webs

If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Pins Minimum

Approved Tensile strength

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) integral with crankshaft

015213-015223-0074<sup>1</sup>/<sub>2</sub>



# 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 I .....

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 240 mm ..... Material SMOH steel ..... Minimum approved tensile strength 44 kg/mm<sup>2</sup> .....

Shaft separate from crankshaft? Yes ..... Diameter of intermediate shaft 190/196 mm ..... Material SMOH steel .....

Minimum approved tensile strength 44 kg/mm<sup>2</sup> ..... Diameter of screwshaft cone at large end 220 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 screwshaft liner at bearings 18 mm ..... Thickness between bearings 15 mm ..... Material of screwshaft SMOH steel ..... Minimum approved tensile strength 44 kg/mm<sup>2</sup> .....

Is an approved oil gland fitted? No ..... If so, state type ..... Length of bearing next to and supporting propeller 875 mm .....

Material of bearing lignum vitae wood ..... 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 2600 mm ..... Pitch 1629 mm ..... Total developed surface ..... No. of blades 3 ..... Blade thickness at top of root fillet 110 mm ..... Blade material (G 50 MS 57) ..... Moment of inertia of dry propeller 1850 kgm<sup>2</sup> .....

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 ..... Moment of inertia .....

## 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) 2 in No. 75 m<sup>3</sup>/h, el. driven air compressors, p.s. of E.R., EMD Certs 59/2512-13 .....

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) 3. - Two Main 800 ltrs each, one auxy. 125 ltrs. - all p.s. of E.R. - HAM Cert. No. 59/1946 - Def. Cert 58/13241 .....

How are receivers first charged? air cooled Em.compr. 7m<sup>3</sup>/h capacity is fitted. Maximum working pressure of starting air system 30 kgs/cm<sup>2</sup> ..... 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 2 ..... 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 One daily service tank 6m<sup>3</sup> capacity, s.s. of E.R. to aft. .....

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) Cylinder unit O.F. injection pumps, 2 lub.-oil pumps, one O.F. booster pump. .....

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							DELIVERY						
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	Pos. in E.R.	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main
2 El.dr. sea & fr.-w.-pumpsets					X	X			S.S.		X	X		
1 el.dr. harbour cooling water pump set					X	X			S.S.		X	X		
1 el.dr. bilge pump	X	X	X			X			P.S.				X	
1 el.dr. ballast pump	X		X			X			P.S.				X	
1 el.dr. O.F. transf.pump				X					S.S.					
1 el.dr. spare lubr. oil double pumpset								X	S.S.				X	
1 oil eng. driven emergency fire and bilge pump						X			Maindeck p.s.aft				X	

From one suction 80 mm diam. each placed in No. 1, 2, 3, 4 hold and E.R., all p.s.

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room Hold No. 1, 3x80 mm  $\phi$  - Hold No. 2 4x80 mm  $\phi$  .....

Hold No. 3 4x80 mm  $\phi$  - Hold No. 4 3x80 mm  $\phi$ , Cofferdam 70/71 1x50 mm  $\phi$ , Cofferdam 50/51 1x50 mm  $\phi$  .....

No. and size connected to main bilge line in main engine room 2x80 mm diam p.s., 1 x 80 mm diam. s.s. In tunnel 1x80 mm  $\phi$  p.s. .....

In aux. engine room --- Size and position of direct bilge suction in machinery spaces 1x80 mm  $\phi$  p.s. .....

1 x 80 mm  $\phi$  s.s. Size and position of emergency bilge suction in machinery spaces 1 x 100 mm  $\phi$  ss of E.R. .....

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? Yes ..... 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). Yes .....

## 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 to aft	Oil engine 4 SCOA	M.A.N.		120 kw Generators
E.R. stb. to fwd	dto.	dto.	LLOYD'S AUG 2982/3236	dto.
E.R. stb. to aft	dto.	dto.		dto.
Bridge deck	dto.	dto.	LLOYDS AUG 59/2016	20 kw Emergency generator

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. one .....

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) One, electric driven oil hydraulic (cylinder-plunger) type steering gear (one Motor 5,2 kw) .....

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes ..... Brief description of arrangements CO<sub>2</sub> extinguishing plant for holds and machinery spaces, water fire fighting all deck and machinery spaces, chemical extinguishers in machinery & deck spaces. .....

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 6 hours on 14/11/59 ..... 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).

Lloyd's Register  
Jos. L. Meyer  
Builder  
23/12.59.  
00742<sub>2</sub>



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 Main and auxiliary Engines of this vessel have been constructed under Special Survey (see attached Certificates) they have been installed in accordance with the approved plans and the Secretary's letters and the materials and workmanship are good. The machinery has been examined under working conditions during sea trials and found satisfactory.

The Machinery of this vessel is eligible in my opinion to have record of **\* LMC 11.59**

Tailshaft Continuous liner 11.59. Oil Engine 2 SCSA 400 x 600 mm, machinery numeral 336. Crank case explosion relief devices are fitted to Main and auxiliary engines.

The Main engines are not to be worked continuously below 85 RPM. ✓

Engine 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 LLOYDS DTM HA 35 ✓

GEARING --

INTERMEDIATE SHAFTS LLOYDS HNO 742-744-745- 795-797-798-801.

SCREW AND SHAFTS Working - LLOYDS HNO 747, Spare - 748.

PROPELLERS LLOYDS KLN 338.

OTHER IMPORTANT ITEMS Short intermediate shaft, fly wheel to thrust.

LLOYDS KLN H.B. 88

Is the installation a duplicate of a previous case? No If so, state name of vessel --

Date of approval of plans for crankshaft -- Straight shafting 30.12.58 Gearing -- Clutch --

Separate oil fuel tanks -- Pumping arrangements 8.7.59 Oil fuel arrangements 8.7.59

Cargo oil pumping arrangements -- Air receivers -- Donkey boilers --

Dates of examination of principal parts:--

Fitting of stern tube 4.8.59 Fitting of propeller 6.8.59 Completion of sea connections 10.8.59 Alignment of crankshaft in main bearings --

Engine chocks & bolts 27.10.59 Alignment of gearing -- Alignment of straight shafting 27.10.59 Testing of pumping arrangements 12.11

Oil fuel lines 2.10.59 Donkey boiler supports -- Steering machinery 14.11.59 Windlass 14.11.59

Date of Committee FRIDAY 19 FEB 1960

Decision See Rpt. 1.

Special Survey Fee £ 98. 0.0.

Expenses £ 28. 0.0.