

Rpt. 4b

See also Aalborg F.E. Report 4b No. 18403 attached

F.E.M. 042

Date of writing report 14-2-61 Received London Port Gdansk
 Survey held at Gdynia No. of visits In shops On vessel 20 First date 10-10-60 Last date 28-1-1961

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name "NANAS" Gross tons 677
 Owners Indonesian Government Managers Stocznia im. Komuny Paryskiej Port of Registry Djakarta
 Hull built at Gdynia By w Gdyni Yard No. B471/9 Year Month When 1961-1
 Main Engines made at Friedrikshavn By Alpha Diesel A/S Eng. No. 8742 When 1960-6
 Gearing made at - By -
 Donkey boilers made at - By - Blr. Nos. - When -
 Machinery installed at Gdynia By Stocznia im. Komuny Paryskiej w Gdyni When 1961-1
 Particulars of restricted service of ship, if limited for classification No restriction.
 Particulars of vegetable or similar cargo oil notation, if required None 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 Dichlor-difluoro-methane
 Is the refrigerating machinery compartment isolated from the propelling machinery space? yes 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 1 No. of propellers 1 Brief description of propulsion system 2 SA 8 Cyl 290x 490mm oil engine direct coupled to propeller.

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Alpha Diesel A/S type 498 R.
 No. of cylinders per engine 8 Dia. of cylinders 290 stroke(s) 490 2 or 4 stroke cycle 2 Single or double acting single
 Maximum approved BHP per engine 960 at 310 RPM of engine and 310 RPM of propeller.
 Corresponding MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral 192.
 Are the cylinders arranged in Vee or other special formation? If so, number of crankshafts per engine

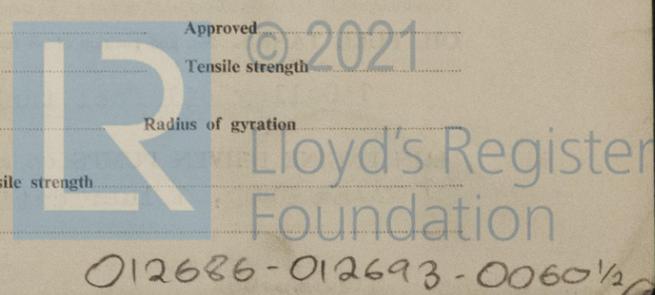
TWO STROKE ENGINES. Is the engine of opposed piston type? If so, how are upper pistons connected to crankshaft?
 Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? No. and type of mechanically driven scavenge pumps or blowers per engine and how driven
 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 Fresh water Pistons Lubricating oil Fuel valves Fuel oil 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 Is the engine started? Compressed air
 Can the engine be directly reversed? yes If not, how is reversing obtained?

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 23-7-59 State barred speed range(s), if imposed
 for working propeller none For spare propeller none Is a governor fitted? yes Is a torsional vibration damper or detuner fitted to the shafting? no
 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 Centre Breadth of webs at mid-throw Axial thickness of webs
 Side Pins Minimum
 If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Approved
 Webs 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)



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 _____ Material _____ Minimum approved tensile strength _____

Shaft separate or integral with crank or wheel shaft? Separate Diameter of intermediate shaft 155 Material Steel

Minimum actual tensile strength 55.5 Kg/mm² Diameter of screwshaft cone at large end 192 mm Is screwshaft fitted with a continuous liner? no

Diameter of tube shaft. (If these are separate shafts) none Is tube shaft fitted with a continuous liner in way of stern tube none Thickness of screwshaft liner at bearings none Thickness between bearings _____ Material of screwshaft steel Minimum actual tensile strength 54.0Kg/mm²

Is an approved oil gland fitted? yes If so, state type of shaft line arrangement _____ Length of bearing next to and supporting propeller 810 mm

Material of bearing white metal 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 2165mm Pitch 1414mm Built up or solid solid Total developed surface 1.8m²

No. of blades 4 Blade thickness at top of root fillet 78 mm Blade material Bronze Moment of inertia of dry propeller 680Kg/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 none Moment of inertia _____

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine 1 Can they be declutched? no

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) 1 55 cubic meter/Hr. Port Aft side.

HAM 60/1869 Main Ford 1000L Cap. KAT 327
 Main Aft 1000L Cap. KAT 402

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate)
AUX Port Ford 60L HNO C 59/593
AUX Stbd Ford 60L HNO C 60/216 Aux. Port Aft 60L Dusseldorf 7276

How are receivers first charged? Manual air compressor Maximum working pressure of starting air system 30Kg/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 1

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure 1 Port Aft side engine room top.
1 Galley oil fuel tank on bridge deck.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) 1 Main engine F.W. circulating, 1 salt water circulating
1 bilge pump, 1 lubricating oil pump

20. FEB. 1951

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	Emergency Bilge	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling	Overboard
31 Main Engine F.W.Circ.(PS)					X	X					X		X			
31 Main Engine L.O.Circ(SS)								X						X	X	
31 Fire Pump (PS)			X			X				X			X			
40 Bilge Pump (SSFord)	X	X	X	X		X			X			X				X
50 Ballast Pump (S.S. Aft)	X	X	X	X		X			X			X				X
O.F.Trans pump (SS)				X								X				
O.F.Service pump PS				X								X				
All pumps electric																

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room No.1 Hold 2 at 65mm (P&S); No.2 Hold 2 at 65mm P.&S.

No. and size connected to main bilge line in main engine room 1 at 80mm In tunnel _____

In aux. engine room _____ Size and position of direct bilge suction in machinery spaces 1 at 80mm
Stbd Aft. Size and position of emergency bilge suction in machinery spaces 1 at 100 mm Stbd For'd

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 yes

Are the arrangements for ships carrying petroleum in bulk cargo oil or closed 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)
Port	A 4M 517	Deutz	KIN C 60/383 <u>4 eye</u>	42 K.W. Electric Generator
Centre	A 4M 517	Deutz	KIN C 60/382	" " " "
Starboard	A 4M 517	Deutz	KIN C 60/384	" " " "

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- 42 KW Generator 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 _____

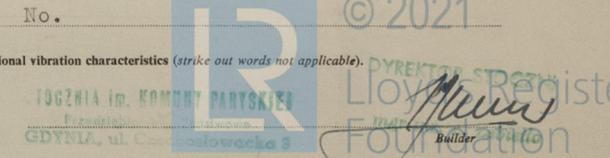
Is steam essential for operation of the ship at sea? _____ Are any steam pipes over 3 ins. bore? _____ If so, what is their material? _____ For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? _____ No. of oil burning pressure units _____ No. of steam condensers _____ No. of Evaporators _____

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) 2 ram hydraulic operated by one Hele Shaw pump driven by electric motor, controlled by Telemotor. Alternative control from Poop. Hand pumps in bridge and steering flat.

Have the Rule Requirements for fire extinguishing arrangements been complied with? yes Brief description of arrangements 3 Hoses with 3 jets and 3 spray nozzles, 2, 10L portable foam & 3; 6 Kgs portable CO₂ extinguishers.

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 18-1-61 6 Hrs. 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).



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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 machinery has been installed under Special Survey in accordance with the Rules, approved plans, and Secretary's letters. The material and workmanship are good. The machinery installation has been tested under working conditions and found satisfactory. The installation is eligible in my opinion to be classed with the Society with records

+ L M C 1-61

TS OG 1-61 and notation 2 SA.

N. Dienes

Engine Surveyor to Lloyd's Register of Shipping.

N. Dienes

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 Lloyds K 1441 VSP 25-5-60 FIN M/C GDY 6-10-60 ND

SCREW AND TUBE SHAFTS Lloyds K 1400 26-4-60 FIN M/C GDY 6-10-60 ND

PROPELLERS LLOYDS GDANSK CTG 480

OTHER IMPORTANT ITEMS Steering machinery, Bilge pump, ballast pump, Fuel pump, oil fuel transfer pump, Windlass, air receivers.

Copies of certificates enclosed.

Is the installation a duplicate of a previous case? yes If so, state name of vessel "RAMBUTAN", "DUKUH", "DUREN", "DUWET", "DJERUK", "LANGSAT", "LENGKENG", "MANGGA"

Date of approval of plans for crankshaft - Straight shafting 17-2-59 Gearing - Clutch -

Separate oil fuel tanks 29-1-60 Pumping arrangements 1-3-60 & 18-5-60 Oil fuel arrangements 1-3-60

Cargo oil pumping arrangements - Air receivers - Donkey boilers -

Dates of examination of principal parts:-

Fitting of stern tube 13-10-60 Fitting of propeller 15-10-60 Completion of sea connections 19-10-60 Alignment of crankshaft in main bearings -

Engine checks & bolts 30-11-60 Alignment of gearing - Alignment of straight shafting 30-11-60 Testing of pumping arrangements 16-12-60

Oil fuel lines 9-1-61 Donkey boiler supports - Steering machinery 18-1-61 Windlass 18-1-61

Date of Committee FRIDAY 12 MAY 1961 Special Survey Fee £ 80-0-0- & zX 4,200.-

Decision + Lmc ES } 1.61 OG 24.2

Expenses zX 550.-

Date when A/c rendered 31st January, 1961



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