

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 Gdańsk

No.

Survey held at Gdynia

In shops  
No. of visits  
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 &amp; 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 &amp; 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?

Has the engine been tested working in the shop? How long at full power?

CRANK &amp; 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 MinimumIf 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)

012686-012693-0060 1/2



# 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/mm<sup>2</sup>..... 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 54.0 Kg/mm<sup>2</sup>.....

Is an approved oil gland fitted? yes..... If so, state type of shaft line arrangmt..... 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 2165 mm..... Pitch 1414 mm..... Built up or solid solid..... Total developed surface 1.8 m<sup>2</sup>.....

No. of blades 4..... Blade thickness at top of root fillet 78 mm..... Blade material Bronze..... Moment of inertia of dry propeller 680 Kg/cm<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 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.....

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) Main Aft 1000L Cap. KAT 402.....

AUX Port Ford 60L HNO C 59/593.....

AUX Stbd Ford 60L HNO C 60/216..... Aux Port Aft 60L Düsseldorf 7276.....

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

| INDEPENDENT PUMPS<br>Name below essential pumps, state position and<br>how driven. Give capacity of bilge pumps. | Service for which each pump is connected to be marked thus X |                 |                 |             |                                |     |               |             |                    |                |                               |                                |                      |              |             |                        |           |
|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------|-----------------|-------------|--------------------------------|-----|---------------|-------------|--------------------|----------------|-------------------------------|--------------------------------|----------------------|--------------|-------------|------------------------|-----------|
|                                                                                                                  | SUCTION                                                      |                 |                 |             |                                |     |               |             | DELIVERY           |                |                               |                                |                      |              |             |                        |           |
|                                                                                                                  | Bilge<br>Main                                                | Bilge<br>Direct | Ballast<br>Main | Oil<br>Fuel | Fresh<br>Water<br>Cool-<br>ing | Sea | Feed<br>Tanks | Lub.<br>Oil | Emergency<br>Bilge | Boiler<br>Feed | Salt<br>Water<br>Cool-<br>ing | Fresh<br>Water<br>Cool-<br>ing | Oil<br>Fuel<br>Tanks | Fire<br>Main | Lub.<br>Oil | Piston<br>Cool-<br>ing | Overboard |
| Main Engine F.W.Circ.(PS)                                                                                        |                                                              |                 |                 |             | X                              | X   |               |             |                    |                |                               | X                              |                      | X            |             |                        |           |
| Main Engine L.O.Circ(SS)                                                                                         |                                                              |                 |                 |             |                                |     |               | X           |                    |                |                               |                                |                      |              | X           | X                      |           |
| Fire Pump (PS)                                                                                                   |                                                              |                 | X               |             |                                | X   |               |             |                    |                | X                             |                                |                      | X            |             |                        |           |
| Bilge Pump (SSFord)                                                                                              | X                                                            | X               | X               | X           |                                | X   |               |             | X                  |                |                               |                                | X                    |              |             |                        | X         |
| 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                    |              |             |                        |           |
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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 Ford.....

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 3600 requirements 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 <u>X</u>         | " " " "                                                  |

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 CO<sub>2</sub> 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. 2012686-012613-00602/2

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).

1062NIA im. KOMUNY PARTSKIEJ  
Gdynia, ul. Cieszkowska 3

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Lloyds Register  
Foundation



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", "LENGKIENG", "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- & z/ 4,200.-

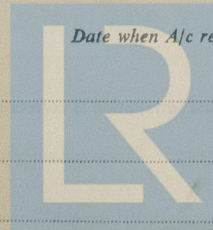
Decision

+ Lmc ES 1.61  
OG

Expenses

z/ 550.-

Date when A/c rendered 31st January, 1961



Lloyd's Register Foundation