

4b

writing report 2-4-1959 Received London Port of Amsterdam No. 22748  
held at Haarlem In shops No. of visits On vessel 28 First date 22-12-1956 Last date 7-3-1959

# FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

R.B. Name m.s. "PILOTO PARDO" Gross tons 1882,41  
de la Armada  
Direction General de los Servicios Managers Port of Registry Valparaiso  
Built at Haarlem By Haarlemsche Scheepsbouw Mij Yard No. 552 Year Month 1959 3  
Engines made at Kiel By M.A.K.Maschinenbau A.G. Eng. Nos. 13330 13331 13332  
Propulsion system made at Slikkerveer By N.V.Electrotechnische Industrie  
Propulsion electromotor made at Slikkerveer by N.V.Electrotechnische Industrie  
Boilers made at London By Spanner Boiler Ltd. Blr. Nos. When  
1st Gas-boiler made at London by Spanner Boiler Ltd.  
Boiler installed at Haarlem By Haarlemsche Scheepsbouw Mij When

Kind of restricted service of ship, if limited for classification ocean going  
Kind of vegetable or similar cargo oil notation, if required no  
Class "1A"  
To be classed for navigation in ice? yes finnish Ia Is ship intended to carry petroleum in bulk? no  
Generating machinery fitted? yes If so, is it for cargo purposes? no Type of refrigerant freon  
Refrigerating machinery compartment isolated from the propelling machinery space? yes Is the refrigerated cargo installation intended to be classed? -

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 answer 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.  
3 MAK Dieselgenerating engines  
one electric propulsion motor.

Main engines 3 No. of propellers 1 Brief description of propulsion system  
NON RECIPROCATING ENGINES. Licence Name and Type No. MAK type MA301C  
Cylinders per engine 8 Dia. of cylinders 230 mm stroke(s) 300 mm 2 or 4 stroke cycle 4 Single or double acting single  
Maximum approved BHP per engine 770, SHP = 1900 at 750 RPM of engine and 180 RPM of propeller.  
Working MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral 154 x 3 / 380  
Cylinders arranged in Vee or other special formation? no If so, number of crankshafts per engine

STROKE ENGINES. Is the engine of opposed piston type? If so, how are upper pistons connected to crankshaft?  
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  
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?  
Stand-by or emergency pump or blower is fitted, state how driven No. of scavenge air coolers Scavenge air pressure at full load  
Are scavenge manifold explosion relief valves fitted?

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?

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? NO  
Lubricating medium for: Cylinders fresh water Pistons Fuel valves Overall diameter of piston rod for double acting engines  
Piston rod fitted with a sleeve? Is welded construction employed for: Bedplate? Frames? Entablature? Is the crankcase separated from the cylinder covers?  
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 access?  
How is the engine started? By air  
Is the engine secured directly to the tank top or to a built-up seating? built up seatings  
Can the engine be directly reversed? no If not, how is reversing obtained? By main electro propulsion motor  
Has the engine been tested working in the shop? How long at full power? generator engines see Sec. 400C letter dd 1-1-58 to Kiel Surveyors

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery  
Is a governor fitted? Is a torsional vibration damper or detuner fitted to the shafting?  
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  
Crank, 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  
Wheel 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 \_\_\_\_\_  
 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 stroke \_\_\_\_\_  
 minute at full power \_\_\_\_\_ Gas delivery pressure \_\_\_\_\_ Gas delivery temperature \_\_\_\_\_ Have the turbines and attached equipment been tested \_\_\_\_\_  
 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 3 KW per generator 540 at 750 RPM AC or DC? AC Position one ss one ps centre eng.  
 No. of propulsion motors one SHP per motor 2000 at 180 RPM Position centre engine room after  
 How is power obtained for excitation of generators? one working + one spare convertor Motors? one working + one spare convertor

REDUCTION GEARING (Reciprocating engines or gas turbines. A small line sketch should be attached showing arrangement of gearing.) no 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 \_\_\_\_\_  
 journals \_\_\_\_\_ Are the wheels of welded construction? \_\_\_\_\_ Is gearcase of welded construction? \_\_\_\_\_ Has the wheel/gearcase been heat treated on contact \_\_\_\_\_  
 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

description and, for clutches, state how operated. Flexible couplings between Main Dieselgenerators and generators type Periflex

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

STRAIGHT SHAFTING. Diameter of thrustshaft 250 mm Material SM steel Minimum approved tensile strength 45,5 kg/mm<sup>2</sup>

Shaft separate or integral with crank or wheel shaft? separate from main Diameter of intermediate shafts 235 mm Material SM steel

Minimum approved tensile strength 48,7 kg/mm<sup>2</sup> Diameter of screwshaft cone at large end 295 mm body Is screwshaft fitted with a continuous liner? no

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 \_\_\_\_\_

bearings 17 mm Thickness between bearings no liner Material of screwshaft SM steel Minimum approved tensile strength 48,7 kg/mm<sup>2</sup>

Is an approved oil gland fitted? no If so, state type \_\_\_\_\_ Length of bearing next to and supporting propeller 1160 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 \_\_\_\_\_

liners readily visible in dry dock? no Exposed length of screw shaft is painted with 3 layers of solution paint.

PROPELLER. Diameter of propeller 3120 mm Pitch 2820 mm Built up or solid solid Total developed surface 4,14 m<sup>2</sup>

No. of blades 4 Blade thickness at top of root fillet 0.2R=29,4 mm Blade material cast steel Moment of inertia of dry propeller 3275 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 iron Moment of inertia 3275 kgm<sup>2</sup>

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) 2 Hatlapa compressors type LHD25, cap

1000 m<sup>3</sup>/min each driven by one electromotor, ss fore in eng. room (cert. Hamburg No. 57/3100 A+B added); 1 Hatlapa

air cooled compressor type LHD10 driven by emergency Diesele engine, ss after on maindeck (cert. Hamburg 58/15

cap. 6 m<sup>3</sup>/h. No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) 1 cap. 500 ltrs; 1 cap. 100 ltrs, ss fore

room (cert. Köln KLN.C 57/1406 and cert. Köln KLN C/1407 added) started by hand

How are receivers first charged? Emergency set with compressor can be Maximum working pressure of starting air system 30 kg/cm<sup>2</sup> Are the safety devices \_\_\_\_\_

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 3

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure \_\_\_\_\_

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) 1 working fresh water cooling pump, 1 working salt water cooling pump

1 lub. oil pump.

Service for which each pump is connected to be marked thus X

INDEPENDENT PUMPS below essential pumps, state position and driven. Give capacity of bilge pumps.	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
bilge/ballast/aux. SW cooling pump; ss fore in eng. room; electr. driven; cap. 72 m <sup>3</sup> /h	X	X	X			X				X			X		
bilge/ballast/aux. SW cooling fire ext. pump; ss fore in eng. room; electr. driven; cap. 60 m <sup>3</sup> /h	X	X	X			X				X			X		
bilge/fire ext. pump; ss fore in eng. room; electr. driven; cap. 60 m <sup>3</sup> /h		X	X			X				X			X		
aux. freshwater cooling pump/shower ballast pump; ss fore in eng. room; electr. driven; cap. 50 m <sup>3</sup> /h					X		X				X				
aux. lub. oil pump; electr. driven; ss in eng. room								X						X	
fuel oil trim pump; electr. driven; ss in eng. room				X								X			
electr. driven SW cooling pumps for aux. Diesele engines and air cooler of electr. in propulsion motor; centre after engine room.							X								

COFFERDAMS. No. and size in each hold. cofferdam 100/101 one of 70 mm; hold 1-2 of 70 mm; hold 2-4 of 70 mm;

cofferdam 58/59 - 1 of 70 mm; hold 3 - 2 of 70 mm.

Size and position of direct bilge suction in machinery spaces 4 of 70 mm In tunnel 2 of 70 mm

Size and position of emergency bilge suction in machinery spaces one of 101 mm mid after eng. room + 2 - 6 inch

ejectors from 2 independent power pumps each of 800 gallons/min on maindeck.

Do the piping arrangements comply with the Rules including requirements for ships classified 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)
after in eng. room	Davey-Paxman type 6YHXZ	Davey-Paxman Colchester	Ipswich Rpt 4c No. 137352	one electric generator AC 298 KVA - 440 V.
after in eng. room	same	same	as above	same
after on maindeck	Austro air cooled Diesel engine type U2L	Motorenfabrik J. Warchalowski Vienna	Vienna cert. 00581 dd 14th July 1958 (added)	one electr. generator A.C. 30 KVA, 440 V + one air cooled Hatlapa compressor.

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 \_\_\_\_\_

Is an electric generator driven by Main Engine? no

one aux. Diesele engine

STEAM INSTALLATION. No. of donkey boilers burning oil fuel one w.p. 7 kg/cm<sup>2</sup> Type Spanner Boiler Ltd.

Position p.s. in eng. room

superheater fitted? no Are these boilers also heated by exhaust gas? no No. of donkey boilers heated by exhaust gas only? one w.p. 7 kg/cm<sup>2</sup>

Spanner Boiler Ltd. Position Engine room casing centre aft Can the exhaust heated boilers deliver steam directly to \_\_\_\_\_

Port and No. of report on donkey \_\_\_\_\_

steam range or do they operate only as economisers in conjunction with oil fired boilers? both

Is steam essential for operation of the ship at sea? no Are any steam pipes over 3 ins. bore? no If so, what is their \_\_\_\_\_

burner

For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? yes No. of oil burning pressure \_\_\_\_\_

one for drinking water, make Nirex - Copenhagen-Denmark (see cert. Copenhagen dd 28th May 1958 (added)).

Electr. hydraulic and hand hydraulic steering

gear No. HG 7025, make John Hastie Co. Ltd (cert. Greenock C 6470 added).

6 fire extinguishing valves of 2 1/2 inch with

ses of 15 metres length on tweendeck; 6 fire extinguishing valves of 2 1/2 inch each with 2 hoses of 15 metres length above

2 portable fire ext. pumps cap each 135 ton/h with each 2 hoses of 2 1/2 inch. CD2 fire ext. installation of 15 bottles each

kg CO2 on boatdeck with smokedetector in wheelhouse for.

as 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 \_\_\_\_\_

over sea trials of main engines 17 till 19 Dec. '58 duration 55 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).

engine room and store under forecastle; steam ext. pipe below donkey

ray serpentine pipe in ammunition hold; 10 CO2 fire extinguishing



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 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 of this vessel is fitted under Special Survey in accordance with approved plans, Secretaries' letters and Lloyd's Rules. Materials tested as required and workmanship found good.

The safety valves of the donkey boiler and exhaust gas boiler are set under steam to a pressure of 7 kg/cm<sup>2</sup>. An accumulation test of the oil fired donkey boiler is held with satisfactory results.

The machinery is tried out on a sea trial trip and the measured mile of New Biggin from 17th till 19th December 1958 with satisfactory results.

In my opinion the machinery of this vessel is eligible to be classed \* LMC 3-59 with notation suitable for navigation in ice and 2 DB 3-59.

*C. van der Linden*

C. van der Linden.  
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 ROTOR SHAFT

FLYWHEEL SHAFT

THRUST SHAFT Lloyds KLN 1359  
H.D. 5-11-57 cert. Hamburg 57/5452 and cert. KLN F No. 57/1650 added.  
Ham 4-12-57

GEARING Lloyds DSF 1 and 2

INTERMEDIATE SHAFTS J.L. 28-10-57 cert. Amsterdam No. 58/1886 added  
CL 12-7-58

SCREW ~~AND~~ SHAFTS Lloyds DSF 7  
JL 31-10-57 cert. Amsterdam 58/210 added  
CL 13-1-58

PROPELLERS Lloyds KLN 17685 cap. Lloyds KLN 371 - 17686  
A.S. 25-2-58 AS 1-3-58 certs Köln C58/307 and KLN F58 No. 387 added.

OTHER IMPORTANT ITEMS  
*Span Propeller C.D. Rot. 21/1/58 No 58/0497  
Stamped G.B. 8/1/58*

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 10-9-57 Gearing \_\_\_\_\_ Clutch \_\_\_\_\_

Separate oil fuel tanks \_\_\_\_\_ Pumping arrangements 22-1-58 Oil fuel arrangements 22-1-58

Cargo oil pumping arrangements \_\_\_\_\_ Air receivers \_\_\_\_\_ Donkey boilers \_\_\_\_\_

Dates of examination of principal parts:—

Fitting of stern tube 27-5-58 Fitting of propeller 3-6-58 Completion of sea connections 6-6-58 Alignment of crankshaft in main bearings \_\_\_\_\_

Engine chocks & bolts 12-7-58 Alignment of gearing \_\_\_\_\_ Alignment of straight shafting 5-7-58 + 12-7-58 Testing of pumping arrangements \_\_\_\_\_

Oil fuel lines 22-10-58 Donkey boiler supports 12-7-58 Steering machinery 23-7-58 Windlass 23-7-58

Date of Committee \_\_\_\_\_ **FRIDAY 19 JUN 1959**

Decision \_\_\_\_\_ *See Rpt. 1.*

Special Survey Fee f. 990,--  
*AR + (500 comp with services) 25-2-59*

Expenses " 272,50

Date when A/c rendered *15/5/59*

