

Rpt. 4b

Date of writing report May 1960 Received London Port Marseilles No. I2871
Survey held at Soc. des For. de la Méditerranée No. of visits On vessel First date 17 April 59 Last date 29th April 1960

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 42646 Name "LA ESTANCIA" Gross tons 94.85,62
Owners Buries Marques Ltd Managers Louis DREYFUS & Co. Ltd Port of Registry London
Hull built at La Seyne-sur-Mer By Soc. des For. de la Méditerranée Card No. I340 When 1959-II
Main Engines made at Le Havre By Soc. des For. de la Méditerranée Eng. No. 300 When 1960-3
Donkey boilers made at Edinburgh By A. Stevenson & Co. Ltd Blr. Nos. J.2673 When 1959-IO
Combined Exh. gas boiler at La Seyne By Soc. des For. de la Médit. No. CHX-I2 When 1960-4
Machinery installed at La Seyne By Soc. des For. de la Méditerranée

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 (small, domestic) If so, is it for cargo purposes? No Type of refrigerant Dichlorodifluoromethane

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 2 SA 7 cyl 630x1300m/m (supercharged)

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? 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 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 460 mm ✓ Material forged ingot steel ✓ Minimum approved tensile strength 44/50 kg/mm² ✓
 Shaft separate or integral with crank or wheel shaft? separate ✓ Diameter of intermediate shaft 349 mm ✓ Material forged ingot steel ✓
 Minimum approved tensile strength 44/50 kg/mm² ✓ Diameter of screwshaft cone at large end 402 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 screw/tube shaft liner ---
 bearings 22 mm ✓ Thickness between bearings 17 mm ✓ Material of screwshaft forged ingot steel ✓ Minimum approved tensile strength 44/50 ✓
 Is an approved oil gland fitted? No ✓ If so, state type --- Length of bearing next to and supporting propeller 1640 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? ---

PROPELLER. Diameter of propeller 5 m ✓ Pitch (mean) 3,749m Built up or solid solid ✓ Total developed surface 9,4625 m² ✓
 No. of blades 5 ✓ Blade thickness at top of root fillet 168 mm ✓ Blade material manganese-bronze ✓ Moment of inertia of dry propeller 35707 kgm² ✓
 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 cast - iron ✓ Moment of inertia 45650 kgm² ✓

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) two, 180 m³/h each, electrically driven (s.s.) engine room floor, Southampton No. D. 14313/14 - plus one initial starting hand compressor ✓
 No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) two main, 8m³, (p.s.fwd) upper floor in engine room, Nantes No. 868/one: Aux., 5 cubic feet, (s.s.) lower floor engine room, Leeds No. 8424 ✓
 How are receivers first charged? by hand compressor (see above) ✓ Maximum working pressure of starting air system 25 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 two ✓ No. of main engine lubricating oil coolers two ✓

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure one on (s.s.) first platform aft in engine room for donkey boiler and two daily O.F. tanks incorporated in O.F. settling tank forming part of hull on (p.s.) first platform.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) one fuel pump intended for supply of fuel to main engine unit pumps, from daily tanks.

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	Deep tanks	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling	deep tanks
2-bilge & fire (out & inboard) on lower engine floor (p.s.) fwd capacity 110/70 m ³ /h	X	X				X			X					X			
1-ballast (p.s.) 200 m ³	X	X	X			X			X		X						X
1-S.W. (p.s.) 253 m ³			X			X					X	X					
1-F.W. (p.s.)					X							X					
1-stand-by S.W. & F.W. (p.s.)					X	X					X	X					
2-L.O. (p.s.) fore & aft								X							X	X	
2-O.F. transfer (p.s.) fore & aft				X									X				
2-boiler feed (s.s. aft)							X			X							

All these pumps are electrically driven.

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room two (p.s. & s.s.) in each hold (Nos. 1, 2, 4, 5) Ø 100 mm, one in each deep tank (p.s., axial, s.s.) Ø 150 mm.

No. and size connected to main bilge line in main engine room seven, Ø 100mm; three Ø 50mm (cofferdams), two 80mm in tunnel one 50mm hose flexible.

In aux. engine room --- Size and position of direct bilge suction in machinery spaces Ø 125mm p.s. fwd. / Ø 125mm s.s. fwd. / Ø 125mm middle aft

Size and position of emergency bilge suction in machinery spaces Ø 216mm S.W. main pump.
 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? 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)
No. 1 starboard side iwd. inboard	3 oil engine	Mirrless	Manchester	200 kW D.C. generator each made by Brush Electrical Engineering Coy. Ltd.
No. 2 starboard side fwd. outboard				
No. 3 starboard side aft				
(All on engine room lower floor)	Remark: The three diesel engine have been built under special survey (see Manchester First Entry Report No. 164 dated 18/12/59)			

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 generator
 Is an electric generator driven by Main Engine? No

STEAM INSTALLATION. No. of donkey boilers burning oil fuel one w.p. 6 kg/cm² Type Spanner (see Leith Rpt No. 24686)
 Position first platform aft in engine room on (s.s.)

Is a superheater fitted? --- Are these boilers also heated by exhaust gas? --- No. of donkey boilers heated by exhaust gas only? one w.p. 6 kg/cm²
 Type Götaverken H.S. 100 m² Position E.R. casing at level of bridge deck 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? They deliver direct to the steam range and also operate as economiser in conjunction with donkey boiler.

Leith Report No. 24686 Is steam essential for operation of the ship at sea? No with D.O., yes with O.F. Are any steam pipes over 3 ins. bore? Yes If so, what is their material? Seamless steel For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? Yes No. of oil burning pressure units one No. of steam condensers 1 Aux. No. of Evaporators one.

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) Electric hydraulic driven by 2 elect. motor T.B. Thrige, 20 HP-220 V -76A-No. 3027545-46 / 2 HP 9-J. Hastie & Co. Ltd pumps No. 11737-38

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements Fire piping (2 coupling valves of 2 I/2") smothering: all fuel tanks / Kidde CO2 total flooding system: under floor and above the main engine extinguishers: 2 foam 451 / 7 foam 91 / 1 carbon tetrachloride I, 1351 / 1 sand box : 0,300 m³. 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 trial

Does this machinery installation contain any features of a novel or experimental nature? 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).

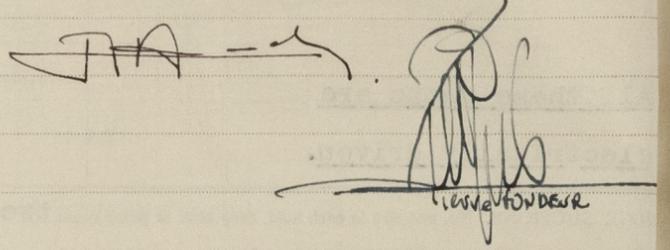
L'Ingénieur Principal
 Chef de la Section "MACHINES"
 Signé: DESAIX



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.

- (1) The main propulsion Diesel engine has been built under survey and to approved plans (see Le Havre Surveyors Report),-
- (2) The donkey boiler has been built under survey and to approved plans,-(see Leith Surveyors Report No.24686),-
- (3) The combined exhaust boiler and steam drum have been built under survey and to approved plans (see Marseilles Surveyors Report No.
- (4) The machinery has been installed under survey in accordance with Rules requirements, approved plans and the Secretary's letters. The materials and workmanship are good. The machinery was examined under working conditions during bassin trials and under full service conditions during trials at sea, with satisfactory results and in our opinion, is eligible for classification with the notation of * L.M.C.


 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 } See Le Havre Surveyors Report

FLYWHEEL SHAFT }

THRUSTSHAFT }

GEARING ---

INTERMEDIATE SHAFTS Lloyd's PAR 631 JB 3/6/59

SCREW AND TUBE SHAFTS Lloyd's PAR 680 ELG 7/7/59

PROPELLERS Lloyd's HAV. I695 31/12/59 LSS

OTHER IMPORTANT ITEMS

Air receivers : No. 1 and 2 Lloyd's Test. 4I kg/cm2 - WP. 25 kg/cm2 - TSL 22/1/60

Steering Gear : Lloyd's Test - Hyd. Cyls. 2080 lbs/sq/inch - HKT 7/8/59

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

Date of approval of plans for crankshaft see Hav.rpt Straight shafting 19/1/1959 Gearing --- Clutch ---

Separate oil fuel tanks 6/5/59 (donkey Bler O.F.) Pumping arrangements 12/2/59 Oil fuel arrangements 17/3/59
(Main eng.daily)

Cargo oil pumping arrangements --- Air receivers See Nantes Report Donkey boilers see Leith report
steam drum 13.8.59
exhaust gas bler. 8.6.59

Dates of examination of principal parts:-

Fitting of stern tube 16.II.59 Fitting of propeller 8.3.60 Completion of sea connections 26.II.59 Alignment of crank shaft in main bearings 29.4.60

Engine chocks & bolts 25.3.60 Alignment of gearing --- Alignment of straight shafting 19.3.60 Testing of pumping arrangements 26.4.60

Oil fuel lines 20/2/60 Donkey boiler supports 24.12.59 Steering machinery 26.4.60 Windlass 26.4.60

Date of Committee FRIDAY - 7 OCT 1960 Special Survey Fee NF 3990

Decision See Rpt. 1.

Expenses NF 320

Date when A/o rendered 10.5.60



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