

Rpt. 4b

Date of writing report 15-5-61. Received London Port BUENOS AIRES. No. 32674.
 Survey held at BUENOS AIRES. No. of visits In shops 6 First date 19-8-60 Last date 28-4-61.
 On vessel 30

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 14315 Name M.V. "HERNANDARIAS". Gross tons 1752
 Owners YACIMIENTOS PETROLEROS FISCALES Managers DE LA PLATA S.A. Port of Registry BUENOS AIRES.
 Hull built at SAN FERNANDO. (Prov: Bs. As.) By ASTARSA ASTILLEROS ARGENTINOS RIO/ Yard No. 106 When 61-4 mo.
 Main Engines made at WINTER THUR. By SULZER BROS. LTD Eng. No. 49901 When 1959/60.
 Gearing made at By
 Donkey boilers made at By Blr. Nos. When
 Machinery installed at SAN FERNANDO. (Argentina) By ASTARSA ASTILLEROS ARGENTINOS RIO DE LA PLATA S.A. When 1961.
 Particulars of restricted service of ship, if limited for classification FOR SERVICE RIVER PARANA AND URUGUAY LIMITING PORTS LA PLATA AND BUENOS AIRES.

Is ship to be classed for navigation in ice? NO Is ship intended to carry petroleum in bulk? YES.
 Is refrigerating machinery fitted? YES If so, is it for cargo purposes? NO. Type of refrigerant FREON.
 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. No. of propellers. Brief description of propulsion system.

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 pressure Can engine operate without supercharger?

TWO & FOUR STROKE ENGINES-GENERAL. No. of valves 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: Bed plate? 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)

AS PER WINTERTHUR REPORT NO. 515 ATTACHED.

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?.....

(x) See Winterthur Report. STRAIGHT SHAFTING. Diameter of thrustshaft..... (x)..... Material..... (x)..... Minimum approved tensile strength..... (x).....

Shaft separate or integral with crank or wheel shaft?..... (x)..... Diameter of intermediate shaft..... 185 mm..... Material..... Steel.....

Minimum approved tensile strength..... 28/32 tons..... Diameter of screwshaft cone at large end..... 210 mm..... 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 screw/tube shaft liner at bearings..... 14 mm..... Thickness between bearings..... Material of screwshaft..... Steel..... Minimum approved tensile strength..... 28/32 tons.....

Is an approved oil gland fitted?..... No..... If so, state type..... Length of bearing next to and supporting propeller..... 800 mm.....

Material of bearing..... Rubber..... In multiple screw vessels is the liner between stern tube and A bracket continuous?..... No..... If not, is the exposed length of shafting between liners readily visible in dry dock?..... Yes.....

See Marking Form attached. PROPELLER. Diameter of propeller..... 1800 mm..... Pitch..... 1120..... Built up or solid..... Solid..... Total developed surface..... 437 kgm².....

No. of blades..... 4..... Blade thickness at top of root fillet..... Blade material..... BRONZE..... Moment of inertia of dry propeller..... (x).....

(x) Refer to Hand. 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..... Bronze..... Moment of inertia..... (x).....

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

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate).....

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate).....

How are receivers first charged?..... Has the starting air system been tested and found satisfactory?..... Are the safety devices in accordance with the Rules?.....

COOLERS. No. of main engine fresh water coolers..... No. of main engine lubricating oil coolers.....

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).....

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										DELIVERY				Piston Cooling
	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	
G/S Combined.															0/B.
Bilge Pump (45/50 metres ³) at 15/10 metres head.	X	X	X			X				X			X		X
Fire Pump.						X				X			X		X
Fuel Transfer Pump.				X								X			X
Sanitary Pump.						X							X		X
Pump Room Bilge.	X	X													X
Hold Bilge Pump. (5 metres ³ /hours).	X	X													X
Positioned as per General arrangements Plan No. PP-18 D.															
All being electrically driven.															

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room. Dry Hold Ford. - 2 at 2" dia. Pump Room Fwd. 1 at 2" dia.

Main Pump Room 1 at 3" dia.

No. and size connected to main bilge line in main engine room. 3 at 65 mm (1 C/L aft. 1 (PS) Fwd. 1 (SS) Fwd. In tunnel. -

In aux. engine room Pump Room 1 at 3" dia. direct C/L. Size and position of direct bilge suction in machinery spaces C/L aft 1 at 4".

Size and position of emergency bilge suction in machinery spaces 1 at 152 mm C/L mid-length.

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? No. Do the piping arrangements comply with the Rules including special requirements for ships carrying petroleum in bulk, 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)
ENGINE ROOM.				
Port Side Forward.	A.G.M. 428	Klockner	Eng.No. 2599148-153	175 Kw. 4c Kcl 547 ✓
Port Side Aft.	A.G.M. 428	Humboldt	Eng.No. 2599154-159	175 Kw. 4c Kcl 548 ✓
Port side Fwd. Inboard.	A.G.M. 517	Deutz A.G.	Eng.No. 2608628/31 Köln Cert. No. 60/577.	45 Kw.
Starboard Side.	A.G.M. 428		Eng.No. 2599142-147	175 Kw. 4c Kcl 546 ✓

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 at 175 Kw.

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. of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars).....

HASTIES ELECTRIC/HYDRAULIC GEAR NO. H.G. 7852/3. (Greenock Cert. C 7491).

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes. Brief description of arrangements. C 0² Bottles.

Please refer your letter Eng. 10/8/59 and earlier correspondence. (Milan Cert. No. M. 1539 attached, inclusive of GYA (105).

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. 8 hours 23/3/61.

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).

HANS F. OFFERMANN

Lloyd's Register
ASTILLEROS ARGENTINOS RIO DE LA PLATA S.A.
HANS F. OFFERMANN

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 Machinery of this vessel has been constructed and installed under the Supervision of Surveyors to this Society in accordance with the Rules and Regulations and Secretary's letters (Ref. Winterthur Report attached). Installation at Port of Buenos Aires efficient.

Sea trials attended and satisfactory.

The torsional vibrations characteristics and the shafting installation of the Main Machinery has been approved for a service speed of 360 RPM and a notice board has been fitted indicating that Engines are not to be operated continuously between 158 RPM and 178 RPM. Tachometer marked in red accordingly.

Machinery installation recommended for Classing in the Society's Register Books

+ LMC 4.61 and T.S. 4.61 "Engines not to be run continuously between 158 to 178 RPM".

C. Y. Sinclair

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 See Winterthur Report attached.

CRANKSHAFT OR ROTORSHAFT ditto.

FLYWHEEL SHAFT

THRUSTSHAFT ditto.

GEARING

INTERMEDIATE SHAFTS Markings verified against Hamburg Cert. possession Builders.

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? Yes.

8-1-60

If so, state name of vessel

"GOYA"

(Yard No.105).

Date of approval of plans for crankshaft

17-11-59

Straight shafting

17-11-59

Gearing

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Clutch

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Separate oil fuel tanks

2-7-59

Pumping arrangements

25/9/59

Oil fuel arrangements

25-9-59

Cargo oil pumping arrangements

3-9-59 & 25/9/59.

Air receivers. Verified accordance Cert. possession Builders. (Ref. DALMINE dated 23-3-1956).

Donkey boilers

Dates of examination of principal parts:—

Fitting of stern tube

5-8-60

Fitting of propeller

19-8-60

Completion of sea connections

19-8-60

Alignment of crankshaft in main bearings

Engine checks & bolts

20-1-61.

Alignment of gearing

Alignment of straight shafting

24-2-61.

Testing of pumping arrangements

9-3-61.

Oil fuel lines

16-2-61.

Donkey boiler supports

Steering machinery

9-3-61.

Windlass

9-3-61.

Date of Committee

FRIDAY 22 DEC 1961

Decision

+ LMC ES }
TS } 4.61

Special Survey Fee

\$ 28,140.00

S.A.F.

\$ 850.00

Expenses

\$ 1,500.00

Date when A/c rendered

28th April 1961.

