

Rpt. 4b

Date of writing report **14.10.58** Received London **BINO** Port **BILBAO** No. **12426**
Survey held at **Santander** In shops **-** No. of visits **11** First date **-** Last date **21.7.58**
On vessel **11**

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. **66319** Name **Single Screw M/V. "JOSELIN"** Gross tons **992**
Owners **J.M.Pombo Romero-Robledo** Managers **-** Port of Registry **Santander**
Hull built at **Santander** By **Corcho Hijos S.A.** Yard No. **71** Year Month **1958-7**
Main Engines made at **Hazel Grove** By **Mirrlees, Bickerton & Day Ltd.** Eng. No. **51202** When **1957**
~~Machinery made at~~ ~~By~~ ~~When~~
~~Donkey boilers made at~~ ~~By~~ ~~When~~
Machinery installed at **Santander** By **Corcho Hijos S.A.** When **1958**
Particulars of restricted service of ship, if limited for classification **Un-restricted service**
~~Particulars of restricted service of ship, if limited for classification~~ **"PLEASE SEE MANCHESTER MACHINERY RPT. No 18060"**

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. Domestic** Type of refrigerant **Dichlorodifluoromethane**
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 **One** No. of propellers **One** Brief description of propulsion system **Oil Eng. coupled direct to propeller through shafting**

MAIN RECIPROCATING ENGINES. Licence Name and Type No. **One KSSDM8 Heavy Oil,**
No. of cylinders per engine **8** Dia. of cylinders **15"** stroke(s) **18"** 2 or 4 stroke cycle **4** Single or double acting **Single**
Maximum approved BHP per engine **1600** at **350** RPM of engine and **350** RPM of propeller.
Corresponding MIP **172 psi** (For DA engines give MIP top & bottom) Maximum cylinder pressure **1080 psi** Machinery numeral **320**
Are the cylinders arranged in Vee or other special formation? **No. Vertical in line.** If so, number of crankshafts per engine

TWO STROKE ENGINES. Is the engine of opposed piston type? **No.** 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 **1** 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.** 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? **Yes** Are the undersides of the pistons arranged as supercharge pumps? **No** No. of exhaust gas driven blowers per engine **One** No. of supercharge air coolers per engine **One** Supercharge air pressure **29HG** Can engine operate without supercharger? **Yes**

TWO & FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel **1** Inlet **2** Exhaust **2** Starting **1** Safety **1**
Material of cylinder covers **Cast iron** Material of piston crowns **Cast iron.** Is the engine equipped to operate on heavy fuel oil? **No**
Cooling medium for:—Cylinders **F. Water** Pistons **None** Fuel valves **None** Overhaul diameter of piston rod for double-acting engines

Is welded construction employed for: Bedplate? **No** Frames? **No** Entablature? **No** Is the crankcase separated from the underside of pistons? **No** Is the engine of crosshead or trunk piston type? **Trunk** Total internal volume of crankcase **338 cu.ft.** No. and total area of explosion relief devices **8-230sq.inch.** Are flame guards or traps fitted to relief devices? **No** Is the crankcase readily accessible? **Yes** If not, must the engine be removed for overhaul of bearings, etc? **Tank top** How 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? **Yes** How long at full power? **6 hours.**

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system **4.7.57** State barred speed range(s), if imposed **382T.**
Working propeller **No** For spare propeller **No** Is a governor fitted? **Yes** Is a torsional vibration damper or detuner fitted to the shafting? **No**

Are main bearings of ball or roller type? **Plain** No. of main bearings **9** Are main bearings of ball or roller type? **Plain**
Distance between inner edges of bearings in way of crank(s) **17 1/2"** Distance between centre lines of side cranks or eccentrics of opposed piston engines

Crankshaft type: Built, semi-built, solid. (State which) **Solid**
Diameter of journals **11 1/2"** Diameter of crankpins **10 1/2" with 3 5/8" hole** Breadth of webs at mid-throw **8"** Axial thickness of webs **5.7/32"**

Pin **-** Minimum **-** Approved **40tpsi** Tensile strength **-**
Crankshaft material **O.H. Steel** Journals **-** Webs **-** Radius of gyration **-**

Diameter of flywheel **4'6"** Weight **4250 lbs.** Are balance weights fitted? **No** Total weight **-**

Material of flywheel shaft **-** Minimum approved tensile strength **-**

Shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) **Integral with thrustshaft.**

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MAIN GAS TURBINES. Name and Type No.

No. of sets of turbines _____ at _____ RPM of output shaft _____

Open or closed cycle _____ BHP per set _____

How is drive transmitted to propeller shaft? _____ at _____ RPM HP gas inlet temperature _____ pressure _____

ARRANGEMENT OF TURBINES. HP drives _____ at _____ RPM IP gas inlet temperature _____ pressure _____

(A small diagram should be attached showing gas cycle.) LP drives _____ at _____ RPM LP gas inlet temperature _____ pressure _____

No. of air compressors per set _____ Centrifugal or axial flow type? _____ Material of turbine blades _____

No. of air coolers per set _____ No. of heat exchangers per set _____ How are turbines started? _____

Are the turbines operated in conjunction with free piston gas generators? _____

How is reversing effected? _____ Diameter of working pistons _____ Diameter of compressor pistons _____

Total No. of free piston gas generators _____ Gas delivery temperature _____ Have the turbines and attached equipment been tested working _____

minute at full power _____ Gas delivery pressure _____

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 _____

SHP per motor _____ Motors? _____

How is power obtained for excitation of generators? _____

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 _____

PCD of pinions: First reduction _____ Second reduction _____ PCD of wheels: First reduction _____ Tensile strength _____

Material of pinions _____ Tensile strength _____ Material of wheel rims _____ Wheel shaft _____

Are gear teeth surface hardened? _____ How are teeth finished? _____ Diameter of pinion journals _____

Are the wheels of welded construction? _____ Is gearcase of welded construction? _____ Has the wheel/gearcase been heat treated on completion _____

Where is the propeller thrust bearing located? _____ Are gear bearings of ball or roller type? _____

Is gearing of epicyclic 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 _____ 9.1/4" Material _____ O.H. Steel Minimum approved tensile strength _____ 40 tpsi

Shaft separate or integral with crank or wheel shaft? _____ Integral with wheel shaft Diameter of intermediate shaft _____ 11.0 Material _____ O.H. Steel

Minimum approved tensile strength _____ Diameter of screwshaft cone at large end _____ 13.0 Is screwshaft fitted with a continuous liner? _____ No

Thickness of screw/tube shaft liner _____ O.H. Steel Minimum approved tensile strength _____

Material of screw/tube shaft _____ 4.4" Length of bearing next to and supporting propeller _____

Is an approved oil gland fitted? _____ Yes If so, state type _____ NEWARK Gland (Ferguson Patent. No 3 type)

Material of bearing _____ White metal

liners readily visible in dry dock? _____

PROPELLER. Diameter of propeller _____ 2200 mm. Pitch _____ Var. 1302mm. Built up or solid _____ Solid

No. of blades _____ 4 Blade thickness at top of root fillet _____ 98 mm. Blade material _____ Bronze

If propeller is of special design, state type _____ No Is propeller of reversible pitch type? _____ No

Material of spare propeller _____ Cast iron

Are the safety devices of the Rule Requirements for fire extinguishing arrangements been complied with? _____ Yes

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine _____ None

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) _____ 2-44 m3/h. Elec. motor. Eng. forward (p.s.) Barcelona No 145. 16.10.57. 1000 ltr. port side aft as below.

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) _____ 2-23 cu. ft. each. E. room platform SWP. 300 PSI. LLOYD'S TEST TP. 600 PSI. LBS. D. 26.1.57 No 235995 TP. 600 PSI. LBS. 19. inch

(p.s.) Ident. Marks:- No 235703 TP. 600 PSI. LBS. D. 26.1.57 No 235995 TP. 600 PSI. LBS. 19. inch

How are receivers first charged? _____ Air comp. driven by hand started oil eng. Maximum working pressure of starting air system _____ Yes

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 _____ 2 Daily service tanks, eng. room (p.s.) Cap. 1500 ltr. each.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) _____ P.V., S.V. and 2 Lub. Oil pumps.

INDEPENDENT PUMPS 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	Boiler Feed	Salt Water Cooling
Lub. oil pump. E.R. port fwd. Electric motor										
Oil fuel transfer pump. E.R. fwd (s.s.) E. motor										
S.W. cooling pump. E. Room centre (s.s.) Elec. motor										
F.W. cooling pump. E. room centre (s.s.) Elec. motor										
S.&F.W. cooling pump. E.R. centre (s.s.) Elec. motor										
Bilge pump. E.R. (s.s.) Elec. motor. Cap. 50 Tons/h. Gen. service pump. E.R. (s.s.) E. motor. Cap. 25T/h.										

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room. No. 1 hold, 1 of 70 mm. dia. (p.s.), No 2 hold, 1 of 70 mm. dia. (p.s.)

No. and size connected to main bilge line in main engine room 3 of 70 mm. dia. (fwd, centre & aft)

Size and position of direct bilge suction in machinery spaces 1 of 80 mm. engine well after end.

Size and position of emergency bilge suction in machinery spaces 1 of 90 mm. dia. (s.s.)

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, cargo oil or cargo gas? _____ 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)
E.R. Platform (p.s.) MODEL 671 LA 24 GEN. MOTOR Cp.	Bbo. Rpt. No. 12426	75 KW. Generator		
" " (s.s.) " " " " " " " "	No. 12426	75 KW. " "		
" " (p.s.) 4L1	MANCI. S.A.	No. 12426	20 KW. " "	
" " (p.s.) AV'C.	PETTER	Small air compressor		

Electric current used for essential services at sea? _____ Yes

1. Generator of 40 KW. 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? _____ Yes

STEAM INSTALLATION. No. of donkey boilers burning oil fuel _____ W.P. _____ Type _____

superheater fitted? _____ Are these boilers also heated by exhaust gas? _____ No. of donkey boilers heated by exhaust gas only? _____ W.P. _____

Can the exhaust heated boilers deliver steam directly to team range or do they operate only as economisers in conjunction with oil fired boilers? _____

Is steam essential for operation of the ship at sea? _____ Are any steam pipes over 3 ins. bore? _____ If so, what is their No. of oil burning pressure _____

No. of steam condensers _____ No. of Evaporators _____

STEAM GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) _____ One Electric motor

(2 hydrants of 2" dia. with hoses, 2 foam portable extinguishers of 10 ltr. 1 portable extinguisher, CO2 10 ltr. portable foam extinguishers of 10 ltr. at E.R. entrance doors.

Are the safety devices of the Rule Requirements for fire extinguishing arrangements been complied with? _____ Yes

Has all the machinery been tried under full working conditions and found satisfactory? _____ Yes

Date and duration of full trials of main engines _____ 11.7.58, 4 hours - 14.7.58, 3 hours.

Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) _____

CORCHO HIJOS, S. A. FACTORIA DE S. MARTIN

J. Garcia Martinez

Builder

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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.

This main and auxiliary machinery has been constructed and installed aboard the vessel under Special Survey and in accordance with the Rules, approved plans and Secretary's letters, examined under working conditions and found satisfactory. Workmanship and materials are good. In our opinion this vessel is now eligible to be classed + IMC with records of E.S. 7,58 TS(OG) N 6,58, Oil engine, subject to 20 K.W. generator being tested under working conditions with automatic voltage regulator.

PARTICULARS OF IDENTIFICATION MARKS (Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

RODS See Manchester Report No 18060

CRANKSHAFT OR ROTORSHAFT

FLYWHEEL SHAFT

THRUST SHAFT

GEARING

INTERMEDIATE SHAFTS Lloyd's L.R. 1628 Manchester Certificate No C1949

SCREW AND TUBE SHAFTS Lloyd's L.R. 1447

PROPELLERS Lloyd's No 4543 RHS. Cert. No 40375

OTHER IMPORTANT ITEMS Spare tail shaft Lloyd's No L.R. 1448. Manchester Certificate No C1949

Is the installation a duplicate of a previous case? Yes

If so, state name of vessel "MIGUELIN POMBO"

Date of approval of plans for crankshaft 4.7.57 Straight shafting 4.7.57 Gearing 26.6.57

Separate oil fuel tanks 1.4.57 Pumping arrangements 26.6.57 Oil fuel arrangements 26.6.57

Air receivers 23/5703. 23/5995

Dates of examination of principal parts:-

Fitting of stern tube 21.1.58 Fitting of propeller 3.6.58 Completion of sea connections 24.9.57 Alignment of crankshaft in main bearings 5.8.57

Engine checks & bolts 12.3.58 Alignment of gearing 12.3.58 Testing of pumping arrangements 8.7.58

Oil fuel lines 8.7.58 Donkey boiler supports 11.7.57 Steering machinery 11.7.58 Windlass 11.7.58

Date of Committee TUESDAY 11 NOV 1958 During installation Special Survey Fee 14.864 Ptas.

Decision See Rpt. 1

Expenses 2500

Date when A/c rendered 31x58

