

REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 15-5-1961. When handed in at Local Office 22-5-1961. Port of BUENOS AIRES.

No. in Survey held at BUENOS AIRES. Date, First Survey 2-7-59 Last Survey 28-4-1961.
Reg. Book (No. of Visits 25)

11315 on the M.V. "HERNANDARIA S". Tons { Gross 1752
Net 1600.

Built at SAN FERNANDO (ARGENTINE) By whom built ASTARSA Astilleros Arg. Rio/ Yard No. 106. When built 1961.
De la Plata S.A.

Owners YACIMIENTOS PETROLIFEROS FISCALES. Port belonging to BUENOS AIRES.

Installation fitted by CADEMAR. When fitted 1961.

Is vessel equipped for carrying Petroleum in bulk YES. Is vessel equipped with D.F. No. E.S.D. No. Gy.C. No. Sub. Sig. No. Radar No.

Plans, have they been submitted and approved YES. System of Distribution Three phase three wire. Voltage of Lighting 110

Heating 220 Power 380 D.C. or A.C. Lighting A.C. Power A.C. If A.C. state frequency 50

Prime Movers, has the governing been found as per Rule when full load is thrown on and off YES. Are turbine emergency governors fitted with a trip switch --- Generators, are they compound wound ---, and level compounded under working conditions ---

Are the generators arranged to run in parallel YES. Is the compound winding connected to the negative or positive pole ---

Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing YES. Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule YES. Position of Generators 3 at Port Side and 1 at

Starboard. Engine Room. (See Machinery sketch previously forwarded "GOYA"- Yard No. 105).

is the ventilation in way of generators satisfactory Yes. are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil Yes. Switchboards, where are main switchboards placed Engine room at port side.

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil Yes. what insulation is used for the panels Metal-enclosed switchboard panel. if of synthetic insulating

material is it an Approved Type ---, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule --- Is the construction as per Rule, including locking of screws and nuts Yes. Description of Main Switchgear

for each generator and arrangement of equaliser switches For 175 KVA A.E.G. Mod. M 401 400A and for 45 KVA A.E.G. Mod. M 401 200A.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit For transformers; circuit breakers mod. HAMAC and for other circuits; switch and fuses from 250A to 6 Amp.

Are compartments containing switchboards composed of fire-resisting material lined as per Rule Yes. Instruments on main switchboard 6. ammeters 6 voltmeters 1 synchronising devices. For compound machines in parallel are the ammeters and reverse current

protection devices connected on the pole opposite to the equaliser connection --- Earth Testing, state means provided Two lamps. Preference Tripping, state if provided ---, and tested --- (Similat "GOYA"

Switches, Circuit Breakers and Fuses, are they as per Rule Yes. are the fuses an Approved Type Yes. Yard 105). make of fuses "PAMI" Cartridge Type. are all fuses labelled Yes. If circuit breakers are provided for the generators, at what

overload do they operate 280 A with regulation. and at what current do the reverse current protective devices operate 250 A. Cables, are they insulated and protected as per Rule Yes.

if otherwise than as per Rule are they of an Approved Type Yes. state maximum fall of pressure between bus bars and any point under maximum load for 380.10 volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends ---

Are all the cable runs in accessible positions not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Yes. are any cables laid under machines or floorplates No. if so, are they adequately protected --- State

type of cables (if in conduit this should also be stated) in machinery spaces ---, galleys --- and laundries --- State how the cables are supported or protected Fitted on cable tray alongside,

bulkheads and in pipes on deck.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes. where unarmoured cables pass through beams, etc., are the holes

effectively bushed Yes. Refrigerated chambers, are the cables and fittings as per Rule Yes.

Have refrigeration fan motors been constructed under survey --- and test certificates supplied ---

Are the motors accessible for maintenance at all times Yes.

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule... **Yes**... Emergency Supply, state position

Only on Engine Room.

Navigation Lamps, are they separately wired... **Yes**... controlled by separate double pole switches and fuses... **Yes**... Are the switches and fuses in a position accessible only to the officers on watch... **Yes**... is an automatic indicator fitted... **Yes**... Is an alternative supply provided... **Yes**...

Secondary Batteries, are they constructed, fitted and adequately ventilated as per Rule... **Yes**... state battery capacity in ampere hours... (24 V/100 h) - 24 V/180 h... Where required to do so does it comply with 1948 International Convention...

Lighting, is fluorescent lighting fitted... **No**... If so, state nominal lamp voltage... and compartments where lamps are fitted... **--**

Fittings, are all fittings on weather decks, in engine rooms and wherever exposed to drip or condensed moisture, weatherproof... **Yes**

Searchlights, No. of... **3**... whether fixed or portable... **fixed**... are they of the carbon arc or of the filament type... **filament**

Heating and Cooking, is the general construction as per Rule... **Yes**... are the frames effectually earthed... **Yes**... are heaters in the accommodation of the convection type... **Yes**... Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil... **Yes**

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment... **Yes**... Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing... **Yes**

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule... **Yes**

Lightning Conductors, where required are they fitted as per Rule...

Ships carrying Oil having a Flash Point of less than 150° F. Have all the special requirements of the Rules for such ships been complied with... **Yes**... are all fuses of an Approved Cartridge Type... **Yes**... make of fuse... **"B.M.I." Trade name**... Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships... **Yes**... Are all cables lead covered as per Rule... **Yes**

E.S.D., if fitted state maker... location of transmitter and receiver... **--**

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations... **--**

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory... **Yes**

PARTICULARS OF GENERATING PLANT

DESCRIPTION OF GENERATOR	No. of	MAKER	RATED AT				PRIME MOVER	
			Kw. per Generator	Volts	Ampères	Revs. per Min.	TYPE	MAKER
MAIN ...	3	Self regulating Generator "Piller"	175	400	253	600	Diesel	Otto Deutz.
EMERGENCY ROTARY TRANSFORMER	1	Self regulating Generator "Piller"	45	400	65	1000	Diesel	Otto Deutz.

GENERATOR CABLES

DESCRIPTION	No. of	Kw.	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return feet)	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands Sq. ins. or sq. mm.	In the Circuit	Rule			
MAIN GENERATOR ...	3	140	4	3 X 50	250	276	44	Vulcanised Rubber.	Lead-covered and armoured, steel wire.
" " EQUALISER ...									
EMERGENCY GENERATOR ...	1	36	--	3 X 50	65	✓ 69	45	ditto.	ditto.
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR ...									

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.)

DESCRIPTION	No. in Parallel	Sectional area sq. mm.	Maximum Current in Amperes		Length metre.	Cables Type.
			Circuit.	Rule.		
Transformer 70 KVA 380-110 (primary).	2	3 X 50	110	✓ 118	8	Vulcanised rubber
Transformer 70 KVA 380-110 (Secondary)	5	3 X 50	340	✓ 345	8	Lead covered and armoured, steel wire.
Transformer 60 KVA 380-220 (primary).	2	3 X 50	95	✓ 138	11	ditto.
Transformer 60 KVA 380-220 (secondary).	3	3 X 50	150	✓ 200	11	ditto.

DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.)

DESCRIPTION	No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return feet)	INSULATION	PROTECTIVE COVERING
			In the Circuit	Rule			
Lighting switchboard 110 V. L 1.	--	2 X 10	25	✓ 38	50		
" " 110 V. L 2	--	3 X 10	25	✓ 27	25		
" " 110 V. L 3	--	2 X 10	25	✓ 38	40		
" " 110 V. L 4	--	2 X 25	50	✓ 60	30		
" " 110 V. L 5.	--	2 X 25	50	✓ 60	30		
" " 110 V. L 6.	--	2 X 16	25	✓ 49	30		
" " 110 V. L 7.	--	3 X 10	20	✓ 27	25		
Heating Switchboard 220 V. C 1.	--	2 X 10	35	✓ 38	36		
" " 220 V. C 2.	--	2 X 25	50	✓ 60	30		
" " 220 V. C 3	--	2 X 25	50	✓ 60	30		
" " 220 V. C 4	--	3 X 10	25	✓ 27	18		

MOTOR CABLES

ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	B.H.P.	No. in Parallel	Sectional area sq. mm.	Max. current in amperes.		Approx. length mts.	Cables Type.
					In the Circuit	Rule.		
Waterous Pump.	4	100	2	3 X 50	135	✓ 138	20	Vulcanised rubber. Lead covered and armoured steel wire.
Fire pump.	1	20	--	3 X 16	30	✓ 33	20	ditto.
Capstan.	1	37	--	3 X 25	37	✓ 44	86	ditto.
Winch Centre Deck.	1	12	--	3 X 25	18	✓ 44	60	ditto.
Winch Stern deck.	1	12	--	3 X 10	18	✓ 27	20	ditto.
Winch Stern.	2	10	--	3 X 10	17	✓ 27	20	ditto.
Purifier. (Electric heater).	1	24 Kw.	--	3 X 25	36.5	✓ 44	15	ditto.
Rudder.	2	5	--	3 X 10	9.3	✓ 27	15 (2 circuit)	ditto.
General Service pump.	1	15	--	3 X 10	22.5	✓ 27	20	Polyvinylchloride.
Refrigerant.	2	5	--	3 X 6	7.5	✓ 21	18	ditto.
Air compressor.	2	5	--	3 X 10	23	✓ 27	14	ditto.

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.
All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.
The foregoing is a correct description.

CADEMAR (Sub Contractors).

Electrical Contractors. Date 28-4-61.

COMPASSES

Have the compasses been adjusted under working conditions. YES.

Builder's Signature. Date 28-4-61.

ASTILLEROS ARGENTINOS RIO DE LA PLATA S.A.
HANS F. OFFERMANN

Have the foregoing descriptions and schedules been verified and found correct. YES.

Is this installation a duplicate of a previous case. YES. If so, state name of vessel. "GOYA" Yard 105.

Plans. Are approved plans forwarded herewith. YES. If not, state date of approval. 6-4-60-6-10-59.

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith. YES.

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.)

Electrical equipment has been efficiently installed under Society's Surveyors Supervision, is of approved material with Workmanship Good.

This installation is recommended for inclusion in now submitted machinery record of "L.M.C. 4-61."

Paris Cert. 1545 Par. (Relevant this construction previously forwarded "GOYA" Yard No. 105).

Cert. Nos. attached: Hannover No. Hno- C- 60/327-328-329.

Local Manufacture Type test Cert. 5 off Yard Nos. 105/106 previously forwarded "GOYA".

Total Capacity of Generators. 456 Kilowatts.

The amount of Fee ... \$ 44,625.00 When applied for, 28-4-19 61.

Travelling Expenses (if any) £ --- : When received, 19

A. F. Sinclair.
Surveyor to Lloyd's Register of Shipping

Committee's Minute. FRIDAY 22 DEC 1961

Assigned. See Rpt 1.