

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 30th Sept. 1935 When handed in at Local Office 30th Sept. 1935 Port of Barcelona Received at London Office 27 OCT 1935

No. in Survey held at Barcelona Date, First Survey 3rd May Last Survey 26th Sept 1935  
 (Number of Visits 4)

Reg. Book. 22175 on the TWIN S. "CAMPRODON" Tons {Gross 1060  
 Net 498

Built at Santander By whom built Borcho Hijos S.A. Yard No. \_\_\_\_\_ When built 1934. 5.

Owners Com. Anonimada del Monopolio de Petroleos S.A. Port belonging to Barcelona

Electric Light Installation fitted by Talleres Nuevo Vulcan Contract No. \_\_\_\_\_ When fitted 1935

Is the Vessel fitted for carrying Petroleum in bulk Carrying oil in bulk FP above 150°F.

System of Distribution Parallel constant pressure two zone insulated.

Pressure of supply for Lighting 110 volts, Heating \_\_\_\_\_ volts, Power \_\_\_\_\_ volts.

Direct or Alternating Current, Lighting Direct Power ✓

If alternating current system, state frequency of periods per second ✓

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off None, efficient flywheel.

Aux. Generators, do they comply with the requirements regarding temperature rise \_\_\_\_\_, are they compound wound no shunt.

are they over compounded 5 per cent. ✓, if not compound wound state distance between each generator 2 metres

Where more than one generator is fitted are they arranged to run in parallel no, is an adjustable regulating resistance fitted in series with each shunt field 1/2

approved no Have certificates of test results for machines under 100 kw. been submitted and \_\_\_\_\_

Are all terminals accessible, clearly marked, and furnished with sockets 1/2, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched 1/2

Are the lubricating arrangements of the generators as per Rule 1/2

Position of Generators After end of engine room., is the ventilation \_\_\_\_\_

in way of the generators satisfactory 1/2 are they clear of all inflammable material 1/2 if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the generators \_\_\_\_\_ and \_\_\_\_\_

are the generators protected from mechanical injury and damage from water, steam or oil 1/2, are their axes of rotation fore and aft 1/2

Earthing, are the bedplates and frames of the generating plant efficiently earthed 1/2 are the prime movers and their respective generators

in metallic contact 1/2 Main Switch Board, where placed on bulkhead at after end of engine room.

If the generators and main switchboard are not placed in the same compartment, is each generator provided with

a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard ✓

Aux. Switchboard, are they placed in accessible positions, free from inflammable gases and acid fumes 1/2, are they protected from mechanical

injury and damage from water, steam or oil 1/2, if situated near unprotected woodwork or other combustible material, state distance of same

horizontally from or vertically above the switchboards \_\_\_\_\_ and \_\_\_\_\_, are they constructed wholly of durable, non-ignitable non-absorbent

materials 1/2, is all insulation of high dielectric strength and of permanently high insulation resistance Slate panel

is it of an approved type \_\_\_\_\_, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micamite or other

non-hygroscopic insulating material, and the slab similarly insulated from its framework 1/2, is the non-hygroscopic insulating material of an approved

type mica, and is the frame effectively earthed 1/2 Are the fittings as per Rule regarding:— spacing or shielding of live parts

1/2, accessibility of all parts 1/2, absence of fuses on back of board 1/2, temperature rise of

omnibus bars \_\_\_\_\_, individual fuses to voltmeter, pilot or earth lamp 1/2, are moving parts of switches alive in the

"off" position no are all screws and nuts securing connections effectively locked no are any fuses fitted on the live side of

switches no Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

Aux. generator circuit fitted with double pole switch and fuse on each pole. Main generator switch on main switchboard replaced by change over switch to avoid paralleling of generators.

Are turbine driven generators fitted with emergency trip switch as per rule \_\_\_\_\_ Are cupboards or compartments containing switchboards composed of

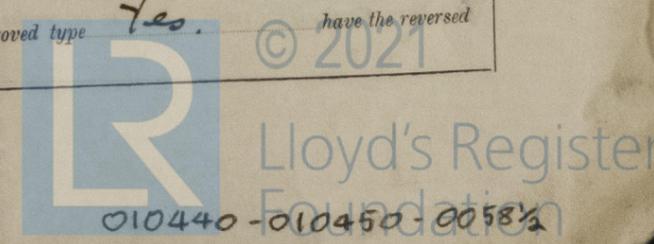
fire-resisting material or lined with approved material \_\_\_\_\_ Instruments on Aux switchboard \_\_\_\_\_ ammeters \_\_\_\_\_

voltmeters \_\_\_\_\_ synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

\_\_\_\_\_ Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

\_\_\_\_\_ Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the Rules 1/2 are the fusible cutouts of an approved type 1/2 have the reversed



current protection devices been tested under working conditions  **Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per Rule** Single insulated per Tables IV, X or XI of the Rules Y/S.

If the cables are insulated otherwise than as per Rule, are they of an approved type  **Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load**

area of 0.04 square inch and above provided with soldering sockets 7/5 **Paper Insulated and Varnished Cambric Insulated Cables.**

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound  or waterproofing tape  **Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage.** Are cables in machinery spaces, galleys, lavatories, bathrooms and the like, secured or in conduit. Steel Conduit clipped to vessel.

**Support and Protection of Cables, state how the cables are supported and protected** Steel Conduit clipped to vessel.

If cables are run in wood casings, are the casings and caps secured by screws  are the cap screws of brass  are the cables run in separate grooves . If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII

**Refrigerated Chambers, are the cables and fittings in accordance with the special requirements**

**Joints in Cables, state if any, and how made, insulated, and protected** None.

**Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands**

**Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed**  state the material of which the bushes are made

**Earthing Connections, state what earthing connections are fitted and their respective sectional areas**

are their connections made as per Rule

**Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule** **Emergency Supply, state position and method of control of the emergency supply and how the generator is driven**

**Navigation Lamps, are these separately wired**  controlled by separate switch and separate fuses  are the fuses double pole  are the switches and fuses grouped in a position accessible only to the officers on watch

has each navigation lamp an automatic indicator as per Rule **Secondary Batteries, are they constructed and fitted as per Rule**

**Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight** are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected

how are the cables led

where are the controlling switches situated

are all fittings suitably ventilated  are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials

**Heating and Cooking Appliances, are they constructed and fitted as per Rule** are air heaters constructed and fitted as per Rule

**Searchlight Lamps, No. of**  whether fixed or portable  are their fittings as per Rule

**Arc Lamps, other than searchlight lamps, No. of**  are their live parts insulated from the frame or case  are their fittings as per Rule

**Motors, are their working parts readily accessible**  are the coils self-contained and readily removable for replacement  are the brushes, brush holders, terminals and lubricating arrangements as per Rule  are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material  are they protected from mechanical injury and damage from water, steam or oil  are their axes of rotation fore and aft  if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type  if not of this type, state distance of the combustible material horizontally or vertically above the motors  and

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing  **Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule** **Lightning Conductors, where lightning conductors are required, are these fitted as per Rule** **Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings** are all fuses of the filled cartridge type  are they of an approved type

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office

**Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule**

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	4.6	110	40	1000	Bolton beam oil eng.	Fuel oil	above 150°F
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR									
EQUALISE CONNECTIONS	1	25	1x2.5+6x2.1		40	63	2 1/2	Rubber	Steel conduit
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM									
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION									
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT									
SIDE LIGHTS									
COMPASS LIGHTS									
POOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

TALLERES NUEVO VULCANO

*James*  
Ingeniero-Director

Electrical Engineers.

Date 30/9/35

COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying ..... Ampères ..... feet from standard compass ..... feet from steering compass.

A cable carrying ..... Ampères ..... feet from standard compass ..... feet from steering compass.

A cable carrying ..... Ampères ..... feet from standard compass ..... feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

The maximum deviation due to electric currents was found to be ..... degrees on ..... course in the case of the standard compass, and ..... degrees on ..... course in the case of the steering compass.

Builder's Signature.

Date

Is this installation a duplicate of a previous case Yes If so, state name of vessel CAMPALANS Bel Rpt 64253

General Remarks (State quality of workmanship, opinions as to class, &c.)

The particulars noted in this report refer to the fitting of an auxiliary generator for standby use in port only. The installation has been fitted in accordance with the Rules and the approved plan (Secretary's letter E 25/4/35) excepting for the recommendations below which still require to be carried out. The materials and workmanship are efficient and in my opinion the vessel is eligible to remain as classed without fresh record of Survey.

Recommendations outstanding to complete the installation:— cables behind auxiliary switchboard to be adequately supported and lock nuts to be fitted to screws supporting fittings. Guard rail to fit around generator engine flywheel. It was stated that these recommendations will be dealt with when the vessel is drydocked for overhaul towards the end of next month.

Total Capacity of Generator And 4.6 Kilowatts.

The amount of Fee ... Rs 250- : When applied for, 30.9 19 35  
Travelling Expenses (if any) Rs 8- : When received, 19

*Robert Jones*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 17 DEC 1935

Assigned See Bel. Rpt 4292

The Surveyors are requested not to write on or below the space for Committee's Minute

2m, 534. - Transfer.

To avoid completion of the report



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