

# REPORT ON ELECTRIC FITTINGS

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

19 JUN 1934

Date of writing Report 2<sup>nd</sup> June 1934 When handed in at Local Office 6<sup>th</sup> June 1934 Port of Bilbao

No. in Survey held at Santander Date, First Survey 8<sup>th</sup> Feb Last Survey 29<sup>th</sup> May 1934  
Reg. Book. (Number of Visits 8)

22915 on the steel Gun Sec. "CAMPROON"

Tons { Gross  
Net

Built at Santander By whom built Cercho Hijos S.A. Yard No. 34 When built 1934

Owners Soc. Anonima de Montajes de Petroleros S.A. Port belonging to Barcelona

Electric Light Installation fitted by Cercho Hijos S.A. Contract No. When fitted 1934

Is the Vessel fitted for carrying Petroleum in bulk Yes (F.P. above 150°F)

System of Distribution Parallel, constant pressure, two wire 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 Yes

Generators, do they comply with the requirements regarding rating Yes, are they compound wound Yes

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

Where more than one generator is fitted are they arranged to run in parallel, is an adjustable regulating resistance fitted in series with each shunt field

Are all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes, Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators After end of engine room

is the ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yes

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 Yes

are their axes of rotation fore and aft Yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes, are the prime movers and their respective generators in metallic contact Yes

Main Switch Boards, where placed on bulkhead at aft 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

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes

are they protected from mechanical injury and damage from water, steam or oil Yes, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards

are they constructed wholly of durable, non-ignitable non-absorbent materials Yes, is all insulation of high dielectric strength and of permanently high insulation resistance

Slate panel, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework

and is the frame effectively earthed Yes, Are the fittings as per Rule regarding: - spacing or shielding of live parts

Yes, accessibility of all parts Yes, absence of fuses on back of board Yes, proportion of omnibus bars

Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches Yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

Generator and each outgoing circuit fitted with double pole quick break switch and fuse on each pole

Instruments on main switchboard 1 ammeters 1 voltmeters synchronising device for paralleling purposes.

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

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes



**Cables:** Single, twin, concentric, or multicore Single are the cables insulated and protected as per Tables IV or V of the Rules Yes  
*(Swim in fused circuits)*

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load 5 volts

**Cable Sockets and other connections,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes

**Paper Insulated Cables,** If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound Yes

**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 Yes

**Support and Protection of Cables,** state how the cables are supported and protected In conduit along deck, clipped to vessel in remainder of circuit

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

**Refrigerated Chambers,** if lights are fitted, are the cables and fittings in accordance with the special requirements Yes

**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 Yes

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

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

are their connections made as per Rule Yes

**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule Yes

**Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven Yes

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

has each navigation lamp an automatic indicator as per Rule Yes

**Secondary Batteries,** are they constructed and fitted as per Rule Yes

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

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected Steel anti-gas glass bowls + metal bars in fresh room, how are the cables led outside pump room

where are the controlling switches situated Main switch board

**Searchlight Lamps,** No. of 1, whether fixed or portable Yes, are their fittings as per Rule Yes

**Arc Lamps,** other than searchlight lamps, No. of 1, are their live parts insulated from the frame or case Yes, are their fittings as per Rule Yes

**Motors,** are their working parts readily accessible Yes, are the coils self-contained and readily removable for replacement Yes, are the brushes, brush holders, terminals and lubricating arrangements as per Rule Yes, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material Yes

are they protected from mechanical injury and damage from water, steam or oil Yes, are their axes of rotation fore and aft Yes, 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 Yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors Steel mast and Yes

**Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule Yes

**Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule Steel mast

**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 Yes

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office Yes

**PARTICULARS OF GENERATING PLANT.**

| DESCRIPTION OF GENERATOR. | No. of | RATED AT   |        |       |                | DRIVEN BY       | WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. |                      |
|---------------------------|--------|------------|--------|-------|----------------|-----------------|--|----------------------|
|                           |        | Kilowatts. | Volts. | Amps. | Revs. per Min. |                 | Fuel Used.                                     | Flash Point of Fuel. |
| MAIN                      | 1      | 10         | 110    | 91    | 720            | Steam engine    | Fitted   | 9.5                  |
| AUXILIARY                 | 1      | 4.4        | 110    | 40    | 1000           | Internal engine |  |                      |
| EMERGENCY                 |        |            |        |       |                |                 |  |                      |
| ROTARY TRANSFORMER        |        |            |        |       |                |                 |  |                      |

**GENERATOR, LIGHTING AND HEATING CONDUCTORS.**

| DESCRIPTION.                       | CONDUCTORS.   |  | COMPOSITION OF STRAND. |           | TOTAL MAXIMUM CURRENT AMPERES. |       | Approximate Length (Lead and Return) Feet. | Insulated with | HOW PROTECTED.                 |
|------------------------------------|---------------|--|------------------------|-----------|--------------------------------|-------|--|----------------|--------------------------------|
|                                    | No. per Pole. | Total Effective Area per Pole Sq. Ins. | No.                    | Diameter. | In Circuit.                    | Rule. |  |                |                                |
| MAIN GENERATOR                     | 1             | 18.5                                   | 19                     | 1.8       | 91                             | 97    | 8  | Rubber         | Lead sheathing + wire braiding |
| EQUALISER CONNECTIONS              |               |  |                        |           |                                |       |  |                |                                |
| AUXILIARY GENERATOR                |               |  |                        |           |                                |       |  |                |                                |
| EMERGENCY GENERATOR                |               |  |                        |           |                                |       |  |                |                                |
| ROTARY TRANSFORMER MOTOR GENERATOR |               |  |                        |           |                                |       | 7 circuits                                 |                |                                |
| ENGINE ROOM                        | 1             | 1.5                                    | 1                      | 1.4       | 3.6                            | 9     | 16-35 min                                  | do             | do                             |
| BOILER ROOM                        |               |  |                        |           |                                |       |  |                |                                |
| AUXILIARY SWITCHBOARDS             |               |  |                        |           |                                |       |  |                |                                |
| N1, after accommodation            | 1             | 3                                      | 7                      | 0.75      | 10.5                           | 17.5  | 15   | do             | do                             |
| N2 Centre                          | 1             | 14.5                                   | 7                      | 1.6       | 24                             | 46    | 84   | do             | do                             |
| N3 Fore                            | 1             | 3                                      | 7                      | 0.75      | 9.8                            | 17.5  | 104  | do             | do                             |
| N4 Main light                      | 1             | 1.1                                    | 1                      | 0.75      | 2.0                            | 7.0   | 84   | do             | do                             |
| ACCOMMODATION                      | 1             | 1.5                                    | 1                      | 1.4       | 1.2                            | 9     | various                                    | do             | do                             |
| WIRELESS                           |               |  |                        |           |                                |       |  |                |                                |
| SEARCHLIGHT                        |               |  |                        |           |                                |       |  |                |                                |
| MASTHEAD LIGHT                     | 1             | 1.3                                    | 3                      | 0.75      | 0.6                            | 7.8   | 80   | do             | do                             |
| SIDE LIGHTS                        | 1             | "                                      | "                      | "         | "                              | "     | 15   | do             | do                             |
| COMPASS LIGHTS                     | 1             | "                                      | "                      | "         | 0.3                            | "     | 6  | do             | do                             |
| POOP LIGHTS                        | 1             | "                                      | "                      | "         | 0.6                            | "     | 80   | do             | do                             |
| CARGO LIGHTS                       |               |  |                        |           |                                |       |  |                |                                |
| ARC LAMPS                          |               |  |                        |           |                                |       |  |                |                                |
| HEATERS                            |               |  |                        |           |                                |       |  |                |                                |

**MOTOR CONDUCTORS.**

| DESCRIPTION.            | No. of Motor. | CONDUCTORS.   |  | COMPOSITION OF STRAND. |           | TOTAL MAXIMUM CURRENT AMPERES. |       | Approximate Length (Lead and Return) Feet. | Insulated with | HOW PROTECTED. |
|-------------------------|---------------|---------------|--|------------------------|-----------|--------------------------------|-------|--|----------------|----------------|
|                         |               | No. Per Pole. | Total Effective 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                |               |               |  |                        |           |                                |       | 01   |                |                |
| 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.  
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.  
 The foregoing is a correct description.

*Handwritten signature*  
 Electrical Engineers.

Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass 30 min

The nearest cables to the compasses are as follows:—

A cable carrying 1.2 Ampères feet from standard compass 6 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 Yes

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

The maximum deviation due to electric currents was found to be 1/2 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 No If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)  
 The electric lighting installation and tested has been fitted on board this vessel in accordance with the Rules & Regulations and as per approved plans and found satisfactory. The material and workmanship is good and the installation is eligible in my opinion to be classed with the notation "Elec. Light"

Wtd  
 24  
 20/6/34

Total Capacity of Generators 1044 Kilowatts.

|                                |   |   |                   |
|--------------------------------|---|---|-------------------|
| The amount of Fee ... .. £     | : | : | When applied for, |
|                                |   |   | .....19.....      |
| Travelling Expenses (if any) £ | : | : | When received,    |
|                                |   |   | .....19.....      |

*Handwritten signature*  
 Surveyor to Lloyd's Register of Shipping.

FRI. 17 AUG 1934

Committee's Minute FRI. 6 JUL 1934

Assigned

*Handwritten signature*

Im. 0.00.—Transfer.  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)