

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No.

Port of Bilbao Date of First Survey \_\_\_\_\_ Date of Last Survey \_\_\_\_\_ No. of Visits \_\_\_\_\_  
 No. in on the ~~Steel~~ Steel 1/2 "ALDECOA" Port belonging to Bilbao  
 Reg. Book \_\_\_\_\_ Built at Oleatao, Bilbao By whom La Constructora Naval When built 1922  
 Owners St. D. Francisco Aldecoa Owners' Address Bilbao  
 Yard No. 17 Electric Light Installation fitted by Shipbuilders When fitted 1922

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 6 1/2 x 6 vertical, totally enclosed, single cylinder, double acting steam engine direct coupled to a four pole compound wound dynamo.

Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed in Engine room Whether single or double wire system is used double wire

Position of Main Switch Board near dynamo having switches to groups A.B.C.D.E. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Each circuit is provided with distribution boxes in convenient positions and a switch is provided for each light or group of lights.

If fuses are fitted on main switch board to the cables of main circuit yes and on each auxiliary switch board to the cables of auxiliary circuits yes and at each position where a cable is branched or reduced in size yes and to each lamp circuit yes

If vessel is wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits yes

Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 50 per cent over the normal current

Are all fuses fitted in easily accessible positions yes Are the fuses of standard dimensions yes If wire fuses are used are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit yes

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes, porcelain.

Total number of lights provided for 157 @ 16 cp. arranged in the following groups:—

A	<u>97</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>13.3</u>	Amperes
B	<u>38</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>16.4</u>	Amperes
C	<u>38</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>21.3</u>	Amperes
D	<u>44</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>24.6</u>	Amperes
E	<u>Wireless</u>	lights each of	—	candle power requiring a total current of	<u>10.0</u>	Amperes
<u>2</u>	<u>Mast head light with</u>	<u>1</u>	<u>lamps each of</u>	<u>32</u>	candle power requiring a total current of	<u>1.2</u>
<u>2</u>	<u>Side light with</u>	<u>1</u>	<u>lamps each of</u>	<u>32</u>	candle power requiring a total current of	<u>1.2</u>
<u>5</u>	<u>Cargo lights of</u>	<u>six lamps of</u>	<u>16</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>	

If arc lights, what protection is provided against fire, sparks, &c. none fitted

Where are the switches controlling the masthead and side lights placed in Wheelhouse.

## DESCRIPTION OF CABLES.

Main cable carrying	<u>100</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>0.83</u>	S.W.G. diameter,	<u>100</u>	square inches total sectional area
Branch cables carrying	<u>24</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>0.36</u>	S.W.G. diameter,	<u>0.07</u>	square inches total sectional area
Branch cables carrying	<u>14</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>0.44</u>	S.W.G. diameter,	<u>0.10</u>	square inches total sectional area
Leads to lamps carrying	<u>6</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>0.44</u>	S.W.G. diameter,	<u>0.015</u>	square inches total sectional area
Cargo light cables carrying	<u>3.6</u>	Amperes, comprised of	<u>162</u>	wires,	<u>0.0076</u>	S.W.G. diameter,	<u>0.07</u>	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized india rubber taped and lead covered and where exposed steel armouring over the lead covering

Joints in cables, how made, insulated, and protected in cast iron joint boxes filled with compound, no soldered joints.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances — Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage yes & no

Are there any joints in or branches from the cable leading from dynamo to main switch board No

How are the cables led through the ship, and how protected Lead covered & armoured, secured by means of galvanized iron clips. Where necessary run in pipes or covered with wood



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *No*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead covered & armoured*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead & armoured*

What special protection has been provided for the cables near boiler casings *Lead & armoured*

What special protection has been provided for the cables in engine room *Lead & armoured*

How are cables carried through beams *in lead bushes* through bulkheads, &c. *in W.T. glands*

How are cables carried through decks *in W.I. deck tubes*

Are any cables run through coal bunkers *No* or cargo spaces *yes* or spaces which may be used for carrying cargo, stores, or baggage *yes*

If so, how are they protected *Lead covered & armoured in pipes or with stout wood covering*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *No*

If so, how are the lamp fittings and cable terminals specially protected \_\_\_\_\_

Where are the main switches and fuses for these lights fitted \_\_\_\_\_

If in the spaces, how are they specially protected \_\_\_\_\_

Are any switches or fuses fitted in bunkers *No*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *D.C.I. connection boxes*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *double wire system*

How are the returns from the lamps connected to the hull \_\_\_\_\_

Are all the joints with the hull in accessible positions \_\_\_\_\_

Is the installation supplied with a voltmeter *yes*, and with an amperemeter *yes*, fixed *on switchboard*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas \_\_\_\_\_

Are any switches, fuses, or joints of cables fitted in the pump room or companion \_\_\_\_\_

How are the lamps specially protected in places liable to the accumulation of vapour or gas \_\_\_\_\_

The copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

The foregoing statements are a correct description of the Electric Light installation fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

*H. C. Deshpande* AMIEE.

Electrical Engineer

Date *24. 2. 22.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *35 metres*

Distance between dynamo or electric motors and steering compass *33 metres*

The nearest cables to the compasses are as follows:—

A cable carrying	Ampères	feet from standard compass	feet from steering compass
<i>-6</i>	<i>1</i>	<i>4</i>	
<i>-6</i>	<i>8</i>	<i>1/2</i>	
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

The maximum deviation due to electric currents, etc., 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.

*SOCIEDAD ESPAÑOLA DE CONSTRUCCIÓN NAVAL*

*Ch. Defonso*

Builder's Signature.

Date *24. 2. 22.*

GENERAL REMARKS.

This electric lighting installation has been examined whilst being fitted on board & afterwards tried under working conditions & found satisfactory & in accordance with the Rules. This vessel is therefore eligible in my opinion to have notation of Electric lighting noted in the Register Book.

It is submitted that

this vessel is eligible for

*250pts. paid 10/4/22* THE RECORD Elec. Light: *1/19/22* Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 23 JAN. 1923 TUE. APR. 24 1923