

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6052

Port of Bilbao Date of First Survey July 10th Date of Last Survey July 29th No. of Visits 4
 No. in Reg. Book on the ~~Iron or~~ Steel 3/8 Cabo Huertas Port belonging to Sevilla
 Built at Sestao Bilbao By whom La Constructora Naval When built 1922
 Owners Gbarra y Cia Owners' Address Sevilla
 Yard No. 19 Electric Light Installation fitted by Shipbuilders When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 6x8 vertical, single cylinder double acting, open type steam engine direct coupled to one compound wound four pole dynamo.
 Capacity of Dynamo 70 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
 Total number of lights provided for 127 @ 16 cp arranged in the following groups:—

| | | | | | | |
|---|-----------------|----------------------|------------------------|--|---|--------------------|
| A | <u>22</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>10.8</u> | Amperes |
| B | <u>25</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>7.5</u> | Amperes |
| C | <u>31</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>18.6</u> | Amperes |
| D | <u>49</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>27.0</u> | Amperes |
| E | <u>Wireless</u> | lights each of | <u>1/2 KW.</u> | candle power requiring a total current of | <u>10.0</u> | Amperes |
| | <u>2</u> | Mast head light with | <u>1</u> lamps each of | <u>32</u> | candle power requiring a total current of | <u>1.2</u> Amperes |
| | <u>2</u> | Side light with | <u>1</u> lamps each of | <u>32</u> | candle power requiring a total current of | <u>1.2</u> Amperes |
| | <u>Four</u> | Cargo lights of | <u>6 lamps of 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 70 Amperes, comprised of 19 wires, each .064 S.W.G. diameter, .0600 square inches total sectional area
 Branch cables carrying 27 Amperes, comprised of 7 wires, each .052 S.W.G. diameter, .0145 square inches total sectional area
 Branch cables carrying 10 Amperes, comprised of 7 wires, each .036 S.W.G. diameter, .0070 square inches total sectional area
 Leads to lamps carrying 6 Amperes, comprised of 1 wires, each .044 S.W.G. diameter, .0015 square inches total sectional area
 Cargo light cables carrying 3.6 Amperes, comprised of 162 wires, each .0076 S.W.G. diameter, .0070 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, all joints being mechanical

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances mechanical 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 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 and armoured cables securely clipped to the fore & after girders by W.I. clips.

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 and 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 where necessary in W.I. pipes*

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 *to 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.

S. R. Heslop

Electrical Engineers

Date *30 June 1922*

DEPARTAMENTO DE ELECTRICIDAD

COMPASSES.

Distance between dynamo or electric motors and standard compass *21 meters*

Distance between dynamo or electric motors and steering compass *23 meters*

The nearest cables to the compasses are as follows:—

| Cable | Amperes | Feet from standard compass | Feet from steering compass |
|---------------------------|--------------|----------------------------|----------------------------|
| A cable carrying <i>3</i> | <i>1 1/2</i> | <i>6</i> | <i>6</i> |
| A cable carrying <i>6</i> | <i>6</i> | <i>1</i> | <i>1</i> |
| A cable carrying <i>6</i> | <i>9</i> | <i>3</i> | <i>3</i> |

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.

Manuel Bautista
Delegado del Consejo de Admin.

Builder's Signature. Date _____

GENERAL REMARKS.

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

C. H. Foulley

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 1 AUG. 1922



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.