

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 903.

Port of Cadix Date of First Survey 30-5-21 Date of Last Survey 31-7-21 No. of Visits SEVEN
 No. in Reg. Book 79244 on the Steel S.S. "GASTELU" Port belonging to San Sebastian.
 Built at Cadix By whom Echevarrieta y Larrinaga When built 1921.
 Owners Compania Naviera "BERMEO" Owners' Address Bilbao.
 Yard No. 11. Electric Light Installation fitted by Sunderland Forge & Eng. Co. Ltd. When fitted 1921.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound, continuous current, driven direct by one high speed vertical steam engine.

Capacity of Dynamo 80 Amperes at 100 Volts, whether continuous or alternating current continuous.

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

Position of Main Switch Board Engine room platform having switches to groups E.R. FORD. MID. NAV. MAR. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each E.R. 7 way switch board & dist. box.

Fore-castle: 4 way dist. box, switches in rooms. Mid-ships: 6 way dist. box, switches in rooms.

Navigation: 5 way dist. box, & 5 switches all in Chart Room. Mar. 2 way dist. switch board in Chart Room.

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 75% 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 115. arranged in the following groups :-

A Engine Room	24 lights each of	16	candle power requiring a total current of	12	Amperes
B Fore-Castle	13 lights each of	16	candle power requiring a total current of	6	Amperes
C Mid-Ships	32 lights each of	16	candle power requiring a total current of	16	Amperes
D Navigation	5 lights each of	8	candle power requiring a total current of	4	Amperes
E Marconi	lights each of		candle power requiring a total current of		Amperes
2 Mast head light with	7 lamps each of	32	candle power requiring a total current of	4	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	1	Amperes
30 Cargo lights of		16	candle power, whether incandescent or are lights	Incandescent.	

If arc lights, what protection is provided against fire, sparks, &c. Yes

Where are the switches controlling the masthead and side lights placed Chart Room.

DESCRIPTION OF CABLES.

Main cable carrying	80 Amperes, comprised of	19 wires, each	16 S.W.G. diameter, .060	square inches total sectional area
Branch cables carrying	12 Amperes, comprised of	7 wires, each	20 S.W.G. diameter, .0075	square inches total sectional area
Branch cables carrying	25 Amperes, comprised of	7 wires, each	18 S.W.G. diameter, .0125	square inches total sectional area
Leads to lamps carrying	1 Amperes, comprised of	1 wires, each	17 S.W.G. diameter, .0025	square inches total sectional area
Cargo light cables carrying	3 Amperes, comprised of	1 wires, each	17 S.W.G. diameter, .0025	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main Cable: Twine armoured braided. Branch Cable: T.A.B. and lead covered.
 Leads to lamps: Lead covered. Cargo lights: T.A.B.

Joints in cables, how made, insulated, and protected Marconi. one joint. Soldered insulated with tape & rubber & protected with box.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances Yes 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

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 Clipped to iron work by screwed clips.
Through iron work: lead or brass bushes or flanges. Through decks: tubing.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes*

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

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Armoured cable.*

What special protection has been provided for the cables near boiler casings *Armoured cable.*

What special protection has been provided for the cables in engine room *Armoured cable.*

How are cables carried through beams *Sheet lead or brass glands* through bulkheads, &c. *Sheet lead or brass glands*

How are cables carried through decks *Metal 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 *Armoured cable*

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 from box.* How fixed *Plugs in watertight metal boxes.*

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

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 *Engine Room.*

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.

ECHEVARRIETA Y LAZAR
ASTILLEROS DE CADIZ

J.W. Turpie
DIRECTOR

Electrical Engineers

Date *Aug 6th 1921*

COMPASSES.

Distance between dynamo or electric motors and standard compass *86 feet.*

Distance between dynamo or electric motors and steering compass *84 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>4</i>	Amperes	<i>10</i>	feet from standard compass	<i>8</i>	feet from steering compass
A cable carrying	<i>1/2</i>	Amperes	<i>10</i>	feet from standard compass	<i>8</i>	feet from steering compass
A cable carrying	<i>1/4</i>	Amperes	<i>inside</i>	feet from standard compass	<i>inside</i>	feet from steering compass

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

The maximum deviation due to electric currents, etc., was found to be *1/2* degrees on *steering* course in the case of the standard compass and *1/2* degrees on *steering* course in the case of the steering compass.

ECHEVARRIETA Y LAZAR
ASTILLEROS DE CADIZ

J.W. Turpie
DIRECTOR

Builder's Signature.

Date *Aug 6th 1921*

GENERAL REMARKS.

The dynamo, engine and installation has been fitted according to the Rules, the material and workmanship satisfactory and a full power trial of six hours duration has been run with satisfactory results.

H. J. Bell

Surveyor to Lloyd's Register of Shipping.

It is submitted that this vessel is eligible for THE RECORD & see Light Bell 19/8/21

Committee's Minute

W
2m. 11. 10. — Transfer.