

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3775

Port of MANCHESTER. Date of First Survey 15<sup>th</sup> Sept 1916 Date of Last Survey 30<sup>th</sup> Sept 1916 No. of Visits Three  
 No. in on the ~~Iron~~ Steel S.S. Mercedes de Larrinaga Port belonging to Liverpool  
 Reg. Book 983 Built at St. Glasgow By whom Russell & Co When built 1902  
 Owners Larrinaga & Co Owners' Address 30 James Street, Liverpool  
 Yard No. Electric Light Installation fitted by Campbell & Isherwood Ltd When fitted 29/9/16

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

*Two sets each consisting of an Open, Vertical, Single cylinder engine direct coupled to a protected type compound wound dynamo*

Capacity of Dynamo 75 Amperes at 100 Volts, whether continuous or alternating current continuous ✓

Where is Dynamo fixed Top recess forward of Main Engines Whether single or double wire system is used double ✓

Position of Main Switch Board ditto ditto having switches to groups of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

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-oxidisable metal Yes and constructed to fuse at an excess of \_\_\_\_\_ 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

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 37 arranged in the following groups:—

A	<u>4</u>	lights each of	<u>16 CP</u>	candle power requiring a total current of	Amperes
B	<u>10</u>	lights each of	<u>16 CP</u>	candle power requiring a total current of	Amperes
C	<u>12</u>	lights each of	<u>16 CP</u>	candle power requiring a total current of	Amperes
D	<u>2</u>	lights each of	<u>50 CP</u>	candle power requiring a total current of	Amperes
E		lights each of		candle power requiring a total current of	Amperes
—		Mast head light with	— lamps each of	candle power requiring a total current of	Amperes
		<u>Two</u> Side light with	<u>one</u> lamps each of <u>32 CP</u>	candle power requiring a total current of	<u>1.2</u> Amperes
—		Cargo lights of	—	candle power, whether incandescent or arc lights	

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

Where are the switches controlling the masthead and side lights placed

**DESCRIPTION OF CABLES.**

Main cable carrying	<u>75</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>16</u>	S.W.G. diameter,	<u>.06</u>	square inches total sectional area
2 Branch cables carrying	<u>30</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>18</u>	S.W.G. diameter,	<u>.0125</u>	square inches total sectional area
2 Branch cables carrying	<u>20</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>20</u>	S.W.G. diameter,	<u>.007</u>	square inches total sectional area
Leads to lamps carrying		Amperes, comprised of		wires, each		S.W.G. diameter,		square inches total sectional area
Cargo light cables carrying		Amperes, comprised of		wires, each		S.W.G. diameter,		square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

*Lead covered armoured & braided, except in rooms, which is lead covered & braided only*

Joints in cables, how made, insulated, and protected No joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances None 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

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 & braided

**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 armoured braided

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

What special protection has been provided for the cables near boiler casings No cables on Boiler casings None fitted

What special protection has been provided for the cables in engine room Lead covered armoured braided

How are cables carried through beams Sibre Ferrules through bulkheads, &c.

How are cables carried through decks Deck Pipes

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 braided

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 —

Cargo light cables, whether portable or permanently fixed — How fixed —

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 Main Board

**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.

Campbell & Inghamwood Ltd Electrical Engineers Date 29<sup>th</sup> September 1916

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 80 feet

Distance between dynamo or electric motors and steering compass 80 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>30</u>	<u>10</u>	<u>10</u>	<u>10</u>
<u>20</u>	<u>14</u>	<u>14</u>	<u>14</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Have the compasses been adjusted with and without the electric installation at work at full power No

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.

Builder's Signature. Date

**GENERAL REMARKS.** The above statement include the permanent installation carried out up to the time the vessel left this port and will be completed at Liverpool; as stated by Owners representative, on completion of which the vessel will be eligible to be recorded "Electric Light" in R. Book.

It is mentioned that this vessel is eligible for THE BROOD. Elec. light. JWR 6/10/16 J. L. Rabay Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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