

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 38837

Port of Glasgow Date of First Survey 19/5/19 Date of Last Survey 9th June 1919 No. of Visits 11  
 No. in Reg. Book 1328 on the Iron or Steel T.S.S. "Masula" Port belonging to Glasgow  
 Built at Whiteinch By whom Barclay, Curle & Coy. When built 1919  
 Owners British India Steam Navigation Coy. Ltd Owners' Address London.  
 Yard No. 516 Electric Light Installation fitted by Siemens Bros. Dynamo Works, Ltd When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Siemens multipolar compound wound dynamos direct coupled to  
shanks open type vertical engines, cylinders 5 & 8" X 6"

*The existing dynamos paralleled 10-11  
 + an additional 26 k.w. set  
 fitted. See Rept 102058*

Capacity of Dynamo each 90 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed In main engine room Whether single or double wire system is used Double  
 Position of Main Switch Board In main engine room having switches to groups A - E of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each None

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 100 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 250 arranged in the following groups:—

A	<u>28</u> lights each of <u>32</u>	candle power requiring a total current of <u>9.6</u> Amperes
B	<u>95</u> lights each of <u>25</u>	candle power requiring a total current of <u>28</u> Amperes
C	<u>42</u> lights each of <u>25</u>	candle power requiring a total current of <u>12.6</u> Amperes
D	<u>81</u> lights each of <u>25</u>	candle power requiring a total current of <u>24.3</u> Amperes
E	<u>Wireless</u> lights each of	candle power requiring a total current of <u>30</u> Amperes
<u>2</u>	<u>Mast head light with 1 lamp each of carbon 32</u>	candle power requiring a total current of <u>2.4</u> Amperes
<u>2</u>	<u>Side light with 1 lamp each of carbon 32</u>	candle power requiring a total current of <u>2.4</u> Amperes
<u>4</u>	<u>Cargo lights of 8 lamps each 25</u>	candle power, whether incandescent or arc lights <u>Incandescent</u>

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

Where are the switches controlling the masthead and side lights placed In Nav. Lts. Indicator in Chart Room.

## DESCRIPTION OF CABLES.

Main cable carrying <u>90</u> Amperes, comprised of <u>19</u> wires, each <u>14</u> S.W.G. diameter, <u>.094</u> square inches total sectional area
Branch cables carrying <u>8 - 30</u> Amperes, comprised of <u>7</u> wires, each <u>16</u> S.W.G. diameter, <u>.022</u> square inches total sectional area
Branch cables carrying <u>Amperes</u> , comprised of <u>wires</u> , each <u>S.W.G. diameter</u> , <u>square inches total sectional area</u>
Leads to lamps carrying <u>.3</u> Amperes, comprised of <u>7</u> wires, each <u>25</u> S.W.G. diameter, <u>.0022</u> square inches total sectional area
Cargo light cables carrying <u>2.4</u> Amperes, comprised of <u>7</u> wires, each <u>25</u> S.W.G. diameter, <u>.0022</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

conductors of high conductivity tinned copper wire insulated with pure and vulcanised india rubber, taped and lead covered Also the foregoing but taped and lead covered and armoured with galvanised steel wires and braided overall.

Joints in cables, how made, insulated, and protected No joints, porcelain extension boxes used

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

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 wood bulkheads or direct to ships iron with brass or galvanised clips and screws.



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 and braided

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

What special protection has been provided for the cables near boiler casings Lead covered and armoured and braided

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

How are cables carried through beams In fibre bushes through bulkheads, &c. In special W.T. brass glands

How are cables carried through decks In special W.T. deck tubes

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

If so, how are they protected lead covered armoured and 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 No

Cargo light cables, whether portable or permanently fixed Portable 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 with 2, 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.

COMPASSES.

Distance between dynamo or electric motors and standard compass \_\_\_\_\_

Distance between dynamo or electric motors and steering compass \_\_\_\_\_

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>12</u>		<u>20</u>	
<u>30</u>	<u>30</u>	<u>40</u>	
<u>3</u>	<u>1n</u>	<u>1n</u>	<u>XXXXX</u>

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 Nil degrees on any course in the case of the standard compass and FOR BARRY, COATES & CO. LTD. any degrees on any course in the case of the steering compass.

GENERAL REMARKS.

*This installation has been fitted on board under special survey. Tested under full working conditions & found satisfactory.*

*It is submitted that this vessel is eligible for THE RECORD. Elec. light.*

*J. Stanley Ransin*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW

1 - JUL 1919

*Elec. Light*



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

*HC 28.6.19*

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