

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17260.

Port of Greenock Date of First Survey 10<sup>th</sup> Dec., 1914, Date of Last Survey 8<sup>th</sup> March, 1918, No. of Visits 26  
 No. in Reg. Book on the Iron or Steel L. F. A. "Richard" Port belonging to \_\_\_\_\_  
 Built at Glasgow By whom A. McMillan & Co. When built 1918  
 Owners British Admiralty Owners' Address \_\_\_\_\_  
 Yard No. 490 Electric Light Installation fitted by Claud Hamilton & Co. When fitted 1918

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

High speed engine direct coupled to compound wound ship lighting dynamo.

Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Engine Room Whether single or double wire system is used double  
 Position of Main Switch Board Engine Room having switches to groups 4 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 161 arranged in the following groups:—

A	<u>14</u>	lights each of	<u>20 Watt</u>	candle power requiring a total current of	<u>2.8</u>	Amperes
B	<u>58</u>	lights each of	<u>12-20 Watt</u> <u>16-50 C.P. carbon</u>	candle power requiring a total current of	<u>36</u>	Amperes
C	<u>46</u>	lights each of	<u>20 Watt</u>	candle power requiring a total current of	<u>9.2</u>	Amperes
D	<u>53</u>	lights each of	<u>37-20 Watt</u> <u>16-50 C.P. carbon</u>	candle power requiring a total current of	<u>35</u>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
1		Mast head light with <u>2</u> lamps each of	<u>16</u>	candle power requiring a total current of	<u>2</u>	Amperes
2		Side light with <u>1</u> lamp each of	<u>16</u>	candle power requiring a total current of	<u>4</u>	Amperes
4		Cargo lights of each of <u>8-50</u>		candle power, whether incandescent or arc lights	<u>incandescent</u>	

If arc lights, what protection is provided against fire, sparks, &c. no arc lamp.

Where are the switches controlling the masthead and side lights placed bridge.

**DESCRIPTION OF CABLES.**

Main cable carrying	<u>100</u> Amperes, comprised of	<u>37</u> wires, each	<u>15</u> S.W.G. diameter,	<u>.150</u> square inches total sectional area
Branch cables carrying	<u>36</u> Amperes, comprised of	<u>19</u> wires, each	<u>16</u> S.W.G. diameter,	<u>.06</u> square inches total sectional area
Branch cables carrying	<u>9</u> Amperes, comprised of	<u>19</u> wires, each	<u>17</u> S.W.G. diameter,	<u>.045</u> square inches total sectional area
Leads to lamps carrying	<u>2</u> Amperes, comprised of	<u>1</u> wires, each	<u>14</u> S.W.G. diameter,	<u>.002</u> square inches total sectional area
Cargo light cables carrying	<u>11</u> Amperes, comprised of	<u>19</u> wires, each	<u>22</u> S.W.G. diameter,	<u>.011</u> square inches total sectional area

Cables are all to Admiralty specification and circulate drawings.

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

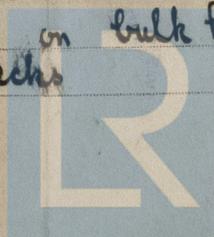
Cables insulated with india rubber vulcanized india rubber braided lead covered

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 — 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 wire run on bulk heads & under decks



**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 cover.

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

What special protection has been provided for the cables near boiler casings Lead cover.

What special protection has been provided for the cables in engine room Lead cover.

How are cables carried through beams Lead bushes through bulkheads, &c. W.I. Glanch.

How are cables carried through decks W.I. 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 no

If so, how are they protected —

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 none

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, fixed ?

**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 yes.

Are any switches, fuses, or joints of cables fitted in the pump room or companion no

How are the lamps specially protected in places liable to the accumulation of vapour or gas Special magazine fittings

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.

For CLAUD HAMILTON, LIMITED Electrical Engineers Date 4th March 1918.  
*MacRae*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 140 feet

Distance between dynamo or electric motors and steering compass 145 -

The nearest cables to the compasses are as follows:—

A cable carrying	<u>10</u>	Amperes	<u>12</u>	feet from standard compass	<u>15</u>	feet from steering compass
A cable carrying	<u>2</u>	Amperes	<u>8</u>	feet from standard compass	<u>12</u>	feet from steering compass
A cable carrying		Amperes		feet from standard compass		feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power (Adjusted by Admiralty Officials)

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.

ARCHD McMILLAN & SON, LTD. Builder's Signature. Date 12th March 1918  
*Garrick* DIRECTOR

**GENERAL REMARKS.**

*The electrical and workmanship are good. Upon completion the installation was tested under full load with satisfactory results. The work has been carried out in accordance with the Admiralty specifications. It is submitted that this vessel is eligible for THE RECORD. Elec. light.*

*JWD* 5/4/18 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute GLASGOW 3 APR 1918  
Elec Light

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



*2/4/18*