

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 33026

Port of *Glasgow* Date of First Survey *2.7.13* Date of Last Survey *16.8.13* No. of Visits *11*.  
 No. in on the Iron or Steel *J. J. Cuylen* Port belonging to *Rotterdam*  
 Reg. Book *13 Sup.* Built at *Dumbarton* By whom *A. G. Millan & Son Ltd* When built *1913*  
 Owners *Rotterdamische Lloyd* Owners' Address  
 Yard No. Electric Light Installation fitted by *Haddow & Co* When fitted *1913*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*One Compound Wound Dynamo coupled direct on same bed -  
 shaft to one double acting, open fronted Steam Engine*  
 Capacity of Dynamo *150* Amperes at *65* 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 *Alongside Dynamo* having switches to groups *A.B.C.D.E.F.G.H.* of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each *Forecastle - 4 circuits, Pantry - 8 circuits  
 Chart Room - 8 circuits, Aft - 4 circuits, Steering Engine Space -  
 4 circuits, Pantry - 4 circuits, Engine Room - 8 circuits Mast Km - 6 circuits*  
 If cut outs 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 cessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits *Yes*  
 Are the cut outs of non-oxidizable metal *Yes* and constructed to fuse at an excess of *25* per cent over the normal current  
 Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes*  
 Total number of lights provided for *192* arranged in the following groups:—  

A	<i>14</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>13</i>	Amperes
B	<i>26</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>24</i>	Amperes
C	<i>10</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>10</i>	Amperes
D	<i>28</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>26</i>	Amperes
E, F, G, H.	<i>110</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>107</i>	Amperes
<i>2</i>	Mast head light with	<i>1</i>	lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>
<i>2</i>	Side light with	<i>1</i>	lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>
<i>10</i>	Cargo lights of	<i>7</i>	Lamps of	<i>16</i>	candle power, whether incandescent or arc lights	<i>Included in above</i>

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

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

## DESCRIPTION OF CABLES.

Main cable carrying *150* Amperes, comprised of *37* wires, each *15* L.S.G. diameter, *15000* square inches total sectional area  
 Branch cables carrying *24* Amperes, comprised of *7* wires, each *15* L.S.G. diameter, *02803* square inches total sectional area  
 Branch cables carrying *26* Amperes, comprised of *7* wires, each *15* L.S.G. diameter, *02803* square inches total sectional area  
 Leads to lamps carrying *1* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *001810* square inches total sectional area  
 Cargo light cables carrying *6.3* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *01246* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Pure Rubber, Vulcanized Rubber,  
 tape, braided & compounded overall*

Joints in cables, how made, insulated, and protected *Soldered & insulated with Pure Para Rubber  
 vulcanized tape & rubber solution*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *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 *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, armoured*



**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 *In iron tubes*

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

*Answered*

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

*Do*

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

*Do.*

How are cables carried through beams *Vulcanized fibre* through bulkheads, &c. *Stuffing Glands*

How are cables carried through decks *Iron tubes flanged to deck*

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

*Answered*

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 cut outs for these lights fitted

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers

*No*

Cargo light cables, whether portable or permanently fixed

*Portable*

How fixed *Connections in cast-iron 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

The installation is supplied with a voltmeter and

an amperemeter, fixed *on Main Switchbd.*

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, cut outs, 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 *100* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile after 24 hours' immersion in seawater.

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.

*Haddon & Co., Glasgow*

Electrical Engineers

Date *Aug. 25<sup>th</sup> 1913.*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass

*100 feet*

Distance between dynamo or electric motors and steering compass

*105 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>17</i>	<i>12</i>	<i>12</i>	<i>12</i>
<i>24</i>	<i>25</i>	<i>25</i>	<i>25</i>
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

The maximum deviation due to electric currents, etc., was found to be *Nil* degrees on course in the case of the

standard compass and *Nil* degrees on course in the case of the steering compass.

*ARCHD. McMILLAN & SON, LTD.*

*W. Wm. Millan*  
DIRECTOR

Builder's Signature.

Date *27<sup>th</sup> Aug 1913.*

**GENERAL REMARKS.**

*The Electric Lighting of this vessel has been satisfactorily carried out.*

*It is submitted that this vessel is eligible for*

**THE RECORD. Elec. light.**

*J.W.D.*  
*4/9/13.*

*H. Bannister-Smith.*

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

*GLASGOW*

*2-SEP-1913*

*Elec. Light.*



Lloyd's Register  
Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.