

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 16364

Port of Glasgow Date of First Survey 18 February Date of Last Survey 15 August 1898 No. of Visits 24
 No. in Reg. Book on the Iron or Steel S. S. "ACHROITE" Port belonging to Glasgow
 Built at Kilmarnock Glasgow By whom John Thomas & Son When built 1898
 Owners Wm Robertson Esq. Owners' Address 15 Gordon Street Glasgow
 Yard No. 24 Electric Light Installation fitted by James Escrie Glasgow When fitted 1898

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 5½ x 5 Vertical Engine Coupled direct on Combined C.P. beltplate to Compound wound Dynamo

Capacity of Dynamo 70 Amperes at 80 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Engine Room

Position of Main Switch Board At Dynamo having switches to groups 3 circuits of lights, &c., as below

Positions of auxiliary D.P. fuse boards and numbers of switches on each Forecastle, Chart Room, Cabin, Engineers Berth.
with D.P. fuses for each lamp. Separate switches for each lamp, placed in convenient positions.

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 vessel 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 100 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 79 arranged in the following groups:—

A <u>Forward</u>	<u>7</u> lights each of	<u>16</u> candle power requiring a total current of	<u>5.6</u> Amperes
B <u>Midship</u>	<u>24</u> lights each of	<u>16</u> candle power requiring a total current of	<u>16.8</u> Amperes
C <u>Engine Room</u>	<u>15</u> lights each of	<u>16</u> candle power requiring a total current of	<u>12.1</u> Amperes
D	lights each of	candle power requiring a total current of	Amperes
E	lights each of	candle power requiring a total current of	Amperes
<u>One</u> Mast head light with <u>one</u> lamps each of	<u>32</u> candle power requiring a total current of	<u>1.6</u> Amperes	
<u>Two</u> Side light with <u>one</u> lamps each of	<u>32</u> candle power requiring a total current of	<u>3.2</u> Amperes	
<u>Four</u> Cargo lights of <u>3 lamps in each cluster</u>	<u>= 128</u> candle power; whether incandescent or arc lights <u>incandescent</u>		

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

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

DESCRIPTION OF CABLES.

Main cable carrying	<u>66</u> Amperes, comprised of	<u>19</u> wires, each	<u>16</u> L.S.G. diameter,	<u>.0612</u> square inches total sectional area
Branch cables carrying	<u>48</u> Amperes, comprised of	<u>19</u> wires, each	<u>16</u> L.S.G. diameter,	<u>.0612</u> square inches total sectional area
Branch cables carrying	<u>5.6</u> Amperes, comprised of	<u>7</u> wires, each	<u>18</u> L.S.G. diameter,	<u>.0127</u> square inches total sectional area
Leads to lamps carrying	<u>.8</u> Amperes, comprised of	<u>1</u> wires, each	<u>18</u> L.S.G. diameter,	<u>.00181</u> square inches total sectional area
Cargo light cables carrying	<u>4.8</u> Amperes, comprised of	<u>14</u> wires, each	<u>22</u> L.S.G. diameter,	<u>.008612</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure vulcanized rubber, tapes, braided insulating compound.
Minimum insulation 600 megohms per mile

Joints in cables, how made, insulated, and protected none, All wires led to fuse boxes

Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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 none

How are the cables led through the ship, and how protected Hole, Cable Railing space in Gal. iron pipe in Cabin & Forecastle, etc. in wood casing.



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes. except in Hold.*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *None such*
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Iron pipes, or wire laid outside such spaces*
 What special protection has been provided for the cables near boiler casings
 What special protection has been provided for the cables in engine room *Wood casing*
 How are cables carried through beams *Teak wood plugs* through bulkheads, &c. *iron pipes, jaw nut on each side*
 How are cables carried through decks *iron pipes, standing at least 24" high*
 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 *Gal. iron pipes*
 Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *4 lamps in Hold*
 If so, how are the lamp fittings and cable terminals specially protected *Strong iron shutters*
 Where are the main switches and cut outs for these lights fitted *Cabin and Engineer's Berth*
 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 *to plugs in Chart Room*
 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

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 installation is *also* supplied with a voltmeter and *an ammeter, fixed Main Switch Board*
 The copper used is guaranteed to have a conductivity of *98%* 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.

James Epie 173rd St Vincent Street Glasgow Electrical Engineers

Date *26th Aug. 1898*

COMPASSES.

Distance between dynamo or electric motors and standard compass *100 feet*
 Distance between dynamo or electric motors and steering compass *80 feet*
 The nearest cables to the compasses are as follows:—
 A cable carrying *1-6* Amperes *8* feet from standard compass *6* feet from steering compass
 A cable carrying *5-6* Amperes *100* feet from standard compass *20* feet from steering compass
 A cable carrying *11000* Amperes *21* feet from standard compass *2* 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 *0* degrees on *0* course in the case of the standard compass and *0* degrees on *0* course in the case of the steering compass.

John Thomson Builder's Signature.

Date *29 August 1898*

GENERAL REMARKS.

The electric light installation of the above vessel has been fitted in accordance with the requirements of this Society & all the lights are good.
J.W. Dinmoo R.

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

Committee's Minute

It is submitted that this installation appears to be satisfactory



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.