

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 31195

Port of Glasgow Date of First Survey 9.2.12 Date of Last Survey 6.3.12 No. of Visits 5  
 No. in Reg. Book on the Iron or Steel S. S. Risaldar Port belonging to Liverpool  
 Built at Glasgow By whom Miss Charles Connell & Co. When built 1912  
 Owners Turner, C. & L. Owners' Address Liverpool  
 Yard No. 343 Electric Light Installation fitted by H. J. Robertson & Co. When fitted 1912

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound multipolar (4 pole) type coupled direct to a vertical engine having cylinder 4" dia by 6" stroke at 250 rev  
 Capacity of Dynamo 130 Amperes at 62 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Engine room starting platform Whether single or double wire system is used Single wire  
 Position of Main Switch Board Engine room n° dynamo having switches to groups A.B.C.D.E of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each None

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 90 per cent over the normal current  
 Are all cut outs fitted in easily accessible positions yes Are the fuses of standard dimensions wire 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 122 arranged in the following groups:—  
 A Saloon 24 lights each of 16 candle power requiring a total current of 32 Amperes  
 B Engine room 26 lights each of 16 candle power requiring a total current of 26 Amperes  
 C Deck 11 lights each of 16 candle power requiring a total current of 11 Amperes  
 D Cargo 25 lights each of " candle power requiring a total current of 25 Amperes  
 E Engine room 29 lights each of " candle power requiring a total current of 29 Amperes  
 One Mast head light with 1 lamp each of 32 candle power requiring a total current of included in A Amperes  
 Two Side lights with 1 lamp each of " candle power requiring a total current of " Amperes  
 Five Cargo lights of 80 candle power, whether incandescent or arc lights Incandescent

If are lights, what protection is provided against fire, sparks, &c. No arc

Where are the switches controlling the masthead and side lights placed In chart room

## DESCRIPTION OF CABLES.

Main cable carrying 122 Amperes, comprised of 19 wires, each 13 L.S.G. diameter, .126 square inches total sectional area  
 Branch cables carrying 26 Amperes, comprised of 7 wires, each 15 L.S.G. diameter, .0285 square inches total sectional area  
 Branch cables carrying 11 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .0127 square inches total sectional area  
 Leads to lamps carrying 1 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .00181 square inches total sectional area  
 Cargo light cables carrying 5 Amperes, comprised of 119 wires, each 38 L.S.G. diameter, .00407 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

All main cables vulcanized india rubber, lead covered, covered & armoured; with vulcanized taped & braided branch wiring from distributing boxes throughout accommodation, in strong wood casing.  
 Joints in cables, how made, insulated, and protected Spliced joints, soldered & re-insulated with a layer of felt tape, built up with several layers of pure india rubber & adhesive proof tape & varnished.  
 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 none in Bunkers or spaces.  
 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 Along starboard side thro' beams under the bridge deck, forward to fore-castle, aft to Poop along the starboard bulwark; Lead covered, covered & armoured cables in Galv iron pipes

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**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, served & armoured in galv iron pipes.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead covered, served & armoured*

What special protection has been provided for the cables near boiler casings *Lead covered, served & armoured*

What special protection has been provided for the cables in engine room *Lead covered, served & armoured*

How are cables carried through beams *in fibre or lead tubes through bulkheads, &c. in watertight glands*

How are cables carried through decks *in galv iron pipes bushed with fibre*

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, served & armoured under bridge deck*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *Under bridge deck only.*

If so, how are the lamp fittings and cable terminals specially protected *Strong cast iron shutters*

Where are the main switches and cut outs for these lights fitted *In Dining engine room, Engine room.*

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 *—*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *By brass stud on Dynamo pole piece*

How are the returns from the lamps connected to the hull *By 3/8" (Turner) brass screw*

Are all the joints with the hull in accessible positions *yes*

The installation is *also* supplied with a voltmeter and *with* an amperemeter, fixed *on Switch board*

**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 *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *2500* 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.

*A. J. Robertson & Co.*

Electrical Engineers

Date *4<sup>th</sup> April 1912*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *112 Feet*

Distance between dynamo or electric motors and steering compass *118 Feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>32</i>	Amperes	<i>16</i>	feet from standard compass	<i>19</i>	feet from steering compass
A cable carrying	<i>2</i>	Amperes	<i>8</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying	<i>16</i>	Amperes	<i>into</i>	feet from standard compass	<i>7 into</i>	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 *1/2* degrees on *every* course in the case of the standard compass and *1/2* degrees on *every* course in the case of the steering compass.

For **CHARLES CONNELL & CO., Limited.**

*William M. Connell* Director

Builder's Signature.

Date *24 April 1912*

**GENERAL REMARKS.**

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

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

*W. Gordon Murchie*

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

Committee's Minute

*GLASGOW 14 MAY 1912*  
*Elec. Light*



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