

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 33658

Port of Glasgow Date of First Survey 26-1-14 Date of Last Survey 19-2-14 No. of Visits 7  
 No. in 5 on the Iron or Steel S.S. "Carnarvon" Port belonging to Belfast  
 Reg. Book Bowling Built at By whom Scott & Sons When built 1914  
 Owners Arthur Guinness & Co Ltd Owners' Address Claud Hamilton Ltd  
 Yard No. 249 Electric Light Installation fitted by Claud Hamilton Ltd When fitted 1914

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

High speed enclosed steam engine direct coupled to ship lighting dynamo.

Capacity of Dynamo 24 Amperes at 50 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 3 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 50 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 61 arranged in the following groups:—

A	<u>14</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>6.5</u>	Amperes
B	<u>14</u>	lights each of	<u>"</u>	candle power requiring a total current of	<u>5.6</u>	Amperes
C		lights each of		candle power requiring a total current of		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>2</u>	Mast head light with <u>1</u>	lamps each of	<u>30</u>	candle power requiring a total current of	<u>1.2</u>	Amperes
<u>2</u>	Side light with <u>1</u>	lamps each of	<u>30</u>	candle power requiring a total current of	<u>1.2</u>	Amperes
<u>4</u>	Cargo lights of <u>each</u>		<u>120</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>	

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

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

## DESCRIPTION OF CABLES.

Main cable carrying	<u>24</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>18</u>	S.W.G. diameter,	<u>.0125</u>	square inches total sectional area
Branch cables carrying	<u>6.5</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>22</u>	S.W.G. diameter,	<u>.0042</u>	square inches total sectional area
Branch cables carrying	<u>5.6</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>22</u>	S.W.G. diameter,	<u>.0042</u>	square inches total sectional area
Leads to lamps carrying	<u>4</u>	Amperes, comprised of	<u>3</u>	wires, each	<u>20</u>	S.W.G. diameter,	<u>.0030</u>	square inches total sectional area
Cargo light cables carrying	<u>9</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>22</u>	S.W.G. diameter,	<u>.0042</u>	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

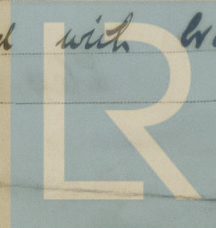
Conductor of high conductivity lined and soft copper wires insulated with fine & vulcanized india rubber, taped braided and lead covered

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 fixed with brass clips



**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 or armoured

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 Armoured

How are cables carried through beams Lead bushes through bulkheads, &c. H.T. Glands

How are cables carried through decks H.T. Deck tubes

Are any cables run through coal bunkers - or cargo spaces yes or spaces which may be used for carrying cargo, stores, or baggage

If so, how are they protected Armoured

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 double wire

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 engine room

**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 lining from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 2500 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 **CLAUDE HAMILTON, LIMITED,**

H. Lawrence

Electrical Engineers

Date 26<sup>th</sup> Feb. 14

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 42 feet

Distance between dynamo or electric motors and steering compass 42 feet

The nearest cables to the compasses are as follows:—

A cable carrying 6.5 Amperes 10 feet from standard compass 10 feet from steering compass

A cable carrying 5.6 Amperes 10 feet from standard compass 10 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 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 nil degrees on any course in the case of the steering compass.

Scott & Sons

Builder's Signature.

Date 2<sup>nd</sup> Mar. 1914

**GENERAL REMARKS.**

This installation has been fitted in accordance with the rules and has been working satisfactorily.

It is submitted that this vessel is eligible for

**THE RECORD.** Elec. light.

JWR 4/3/14

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

Committee's Minute

**GLASGOW**

**3 MAR 1914**

Elec. light



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