

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 36849

Port of Glasgow Date of First Survey 19.1.14 Date of Last Survey 21.5.14 No. of Visits 15  
 No. in on the Iron or Steel of Glennevis Port belonging to Glasgow  
 Reg. Book Built at Irvine By whom Mr. Mackie Thomson When built 1914  
 Owners Mr. James Gardiner & Co Owners' Address St Vincent Place Glasgow  
 Yard No. 445 Electric Light Installation fitted by H. J. Robertson & Co When fitted 1914

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Dynamo Compound wound of multiplex 4 pole type coupled direct to a vertical engine having cylinders  $6\frac{1}{2}$ " dia x 6" stroke @ 300 r.p.m.  
 Capacity of Dynamo 100 Amperes at 100 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 system  
 Position of Main Switch Board near 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 no auxiliary switchboards

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  
 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 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 fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 98 more arranged in the following groups:—

A Wireless	lights each of	$1\frac{1}{2}$ Kils	candle power requiring a total current of	15	Amperes
B Saloon	26 lights each of	16	candle power requiring a total current of	20.4	Amperes
C Mess	4 lights each of	32			
C Engine room	28 lights each of	16	candle power requiring a total current of	16.8	Amperes
D Cargo	20 lights each of	32	candle power requiring a total current of	24	Amperes
E Engine room	20 lights each of	16	candle power requiring a total current of	12	Amperes
2 Mast head lights	with 1 lamp each of	32	candle power requiring a total current of	included in B	Amperes
2 Side lights	with 1 lamp each of	"	candle power requiring a total current of	"	Amperes
4 Cargo lights	of	160	candle power, whether incandescent or arc lights	incandescent	

If arc 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	100 Amperes, comprised of	19 wires, each	14 S.W.G. diameter,	.0956 square inches total sectional area
Branch cables carrying	20.4 Amperes, comprised of	7 wires, each	16 S.W.G. diameter,	.0225 square inches total sectional area
Branch cables carrying	16.8 Amperes, comprised of	7 wires, each	16 S.W.G. diameter,	.0225 square inches total sectional area
Leads to lamps carrying	.6 Amperes, comprised of	1 wires, each	18 S.W.G. diameter,	.00181 square inches total sectional area
Cargo light cables carrying	6 Amperes, comprised of	119 wires, each	38 S.W.G. diameter,	.00404 square inches total sectional area

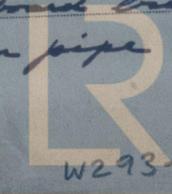
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure india rubber then vulcanising indiarubber, ribbon coated tape, the whole vulcanised together & lead covered in accordance with lead covering, served & armoured as usual  
 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 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 yes

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 girder beam under bridge deck then forward & aft in galv iron pipe along starboard bulwark. Lead covering served & armoured in galv iron pipe



**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 & Armoured cables in galvanneal iron pipes

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

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

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

How are cables carried through beams in lead bushes through-bulkheads, &c. W. I. glands ✓

How are cables carried through decks in galvanneal 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, covered & 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 none in the spaces

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 By large brass stud on dynamo pole ✓

How are the returns from the lamps connected to the hull By 3/8" brass screw & washer ✓

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

Is the installation supplied with a voltmeter yes ✓, and with an amperemeter yes ✓, fixed on Switchboard

**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 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.

H. J. Robertson & Co.

Electrical Engineers

Date 16<sup>th</sup> June 1917

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 114 Feet

Distance between dynamo or electric motors and steering compass 100 Feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>20.4</u>	Amperes	<u>30</u>	feet from standard compass	<u>20</u>	feet from steering compass
A cable carrying	<u>15</u>	Amperes	<u>12</u>	feet from standard compass	<u>4</u>	feet from steering compass
A cable carrying	<u>.3</u>	Amperes	<u>5</u>	feet from standard compass	<u>into</u>	<u>feet from</u> 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.

AYRSHIRE DOCKYARD CO., LTD.

W. Gordon-Mitchell

Builder's Signature.

Date 22-6-17

**GENERAL REMARKS.**

**GENERAL MANAGER.**

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

It is submitted that this vessel is eligible for

THE RECORD. Elec. light. J.W.D.  
28/6/17

W. Gordon-Mitchell

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

Committee's Minute GLASGOW, 26 JUN. 1917  
Elec. Light



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Imp. M. Transfer.

L.M. 23/6/17