

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17541.

Port of Greenock Date of First Survey 1<sup>st</sup> July 1919 Date of Last Survey 6<sup>th</sup> October 1919 No. of Visits 15  
 Built on the Iron or Steel Series Port belonging to London  
 Built at Greenock By whom Harland & Wolff When built 1919  
 Owners Royal Mail S.P.C. Owners' Address London  
 No. 578 Electric Light Installation fitted by Harland & Wolff When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

combined direct coupled steam generating sets. Engines single cylinder 5'3" x 5" stroke  
16 B.H.P. 520 R.P.M. by Messrs. Harland & Wolff. Dynamoes Multipoles, level compound, by Messrs. Holmes &

Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Engine Room Starboard Side Whether single or double wire system is used Single, but double forward of boiler room

Position of Main Switch Board on Engine Room Bulkhead having switches to groups seven of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each No auxiliary switch boards Distribution boxes  
located: 1 in fore-castle. 1 in wheel house. 2 in Officers' accom. (1 for lights & 1 for food cargo)  
in Engineers' Accom. 1 in Engine casing for Aft, Cargo. 1 in Engine Room. 7 Dis. boxes in all

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

Where 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 100 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 236 arranged in the following groups:—

<u>3</u>	lights each of	<u>32</u>	candle power requiring a total current of	<u>3.3</u>	Amperes
<u>153</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>91.8</u>	Amperes
<u>5</u>	lights each of	<u>8</u>	candle power requiring a total current of	<u>1.5</u>	Amperes
<u>58</u>	lights each of	<u>40 watt</u>	candle power requiring a total current of	<u>23.2</u>	Amperes
<u>5</u>	lights each of	<u>1000 cp. 1/2 watt</u>	candle power requiring a total current of	<u>25</u>	Amperes
<u>2</u>	Mast head lights with	<u>1 lamp each of 32</u>	candle power requiring a total current of	<u>2.2</u>	Amperes
<u>2</u>	Side lights with	<u>1 lamp each of 32</u>	candle power requiring a total current of	<u>2.2</u>	Amperes
<u>10</u>	Cargo lights of	<u>8-16 cp lamps each</u>	candle power, whether incandescent or arc lights	<u>Incandescent</u>	
<u>5</u>	Cargo lights of	<u>1-1200 "</u>	"		

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

Where are the switches controlling the masthead and side lights placed In wheel house

## DESCRIPTION OF CABLES.

in cable carrying	<u>100</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>14</u>	S.W.G. diameter,	<u>.094</u>	square inches total sectional area
inch cables carrying	<u>40</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>16</u>	S.W.G. diameter,	<u>.072</u>	square inches total sectional area
inch cables carrying	<u>15</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>18</u>	S.W.G. diameter,	<u>.0125</u>	square inches total sectional area
leads to lamps carrying	<u>5</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>17</u>	S.W.G. diameter,	<u>.0025</u>	square inches total sectional area
go light cables carrying	<u>6</u>	Amperes, comprised of	<u>103</u>	wires, each	<u>38</u>	S.W.G. diameter,		square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main & Sub main cables V.I.R. Taped & braided  
 Sub-wiring in accommodation V.I.R. Taped & braided  
 " " Engine Room & Crew Space V.I.R. lead covered, armoured & braided  
 Joints in cables, how made, insulated, and protected Standard joints for sub-wiring. No joints in main cables

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances Clamp using screws 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

Where are the cables led through the ship, and how protected through holds the cable is carried in steel conduit  
through Accommodation in wood casing & in Engine & Boiler Rooms, under 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 Steel conduit or lead

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

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

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

How are cables carried through beams through red fibre bushes through bulkheads, &c. three W. P. Bulkhead Glands

How are cables carried through decks through deck tubes 18" long & made water-tight

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 in steel conduit through holds

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 through brass earth lug to engine casing

How are the returns from the lamps connected to the hull through fitting direct to steel deck

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 2,500 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.

Messrs Harland & Wolff Limited Electrical Engineers Date 20<sup>th</sup> Sep 1919

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 100 feet

Distance between dynamo or electric motors and steering compass 92 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	Position	feet from standard compass	feet from steering compass
<u>.3</u>	<u>Fitted in</u>	<u>6 feet</u>	<u>6 feet</u>	<u>6 feet</u>
<u>.3</u>	<u>Amperes</u>	<u>6 feet</u>	<u>2 feet</u>	<u>2 feet</u>
<u>.</u>	<u>Amperes</u>	<u>.</u>	<u>.</u>	<u>.</u>

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

FOR HARLAND & WOLFF LIMITED. Builder's Signature. Date 1<sup>st</sup> October 1919

**GENERAL REMARKS.**

The wiring of the vessel in this vessel is as stated in this Report and appears to be in accordance with the Committee's requirements;

**It is submitted that this vessel is eligible for THE RECORD.**

Elec Light  
Roll 14/10/19

James Jones  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute. **GLASGOW 14 OCT 1919**

Elec. Light.



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