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# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 69484

Port of LIVERPOOL Date of First Survey 19 Mch Date of Last Survey 16 Apr 13 No. of Visits 3  
 No. in Reg. Book on the Iron or Steel S S Doon Port belonging to Buenos Aires  
 Built at Birkenhead By whom Cammell Laird & Co Ltd. When built 1913  
 Owners The Royal Mail Steam Packet Co. Owners' Address 18, Moorgate Street London. E.C.  
 Yard No. 790 Electric Light Installation fitted by Cammell Laird & Co Ltd. When fitted 1913

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

W. H. Allen's direct coupled Engine & Dynamo, Engine Open Type, Single Cylinder, Dynamo, Multipolar, Compound Wound  
 Capacity of Dynamo 64 Amperes at 110 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Engine casing, Port side Whether single or double wire system is used double  
 Position of Main Switch Board beside Dynamo having switches to groups A, B, C, & D of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each none fitted  
Five Distribution Boards fitted.

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 cessel 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 about 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 92 arranged in the following groups:—  

A Accommodation	{ 4 lights each of — 8	} candle power requiring a total current of	<u>17</u>	Amperes
	{ 31 lights each of — 16			
B Machinery	{ 1 " " " — 32	} candle power requiring a total current of	<u>11.5</u>	Amperes
	{ 20 lights each of — 16			
C Cluster	<u>32</u> lights each of <u>16</u>	candle power requiring a total current of	<u>16.5</u>	Amperes
D Mast	<u>1</u> lights each of <u>about 1/4 H.P.</u>	candle power requiring a total current of	<u>9</u>	Amperes
E	lights each of	candle power requiring a total current of		Amperes
<u>2</u>	Mast head lights with <u>2</u> lamps, each of <u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
<u>2</u>	Side lights with <u>2</u> lamps each of <u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
<u>8</u>	Cargo lights of <u>4</u> lamps, each <u>16</u>	candle power, whether incandescent or arc lights	<u>Incandescent.</u>	

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

Where are the switches controlling the masthead and side lights placed under Forward Bridge.

## DESCRIPTION OF CABLES.

Main cable carrying 58.7 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .06 square inches total sectional area  
 Branch cables carrying 24 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .022 square inches total sectional area  
 Branch cables carrying 9 Amperes, comprised of 7 wires, each 20 L.S.G. diameter, .007 square inches total sectional area  
 Leads to lamps carrying 2.5 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 2 Amperes, comprised of 108 wires, each 38 L.S.G. diameter, .003 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

600 Megohm grade, C.M.A. V.I.R. Cable. Lead covered & Armoured pattern used in Engine & Boiler Room, Taped & Braided pattern run in Teak casing in Accommodation, Open Deck run in Galvanized Tubing

Joints in cables, how made, insulated, and protected No joints

Are all the joints of cables thoroughly soldered, resin only having been used as a flux no 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 by Deck Pipes, Galvanized Steel Tubing & Wood Casing.



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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 by Galvanized steel tubing

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat no cables in hot situations

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 Bushed holes through bulkheads, &c. Packed Glands

How are cables carried through decks Deck Pipes, insulated with Fibre Tubes

Are any cables run through coal bunkers no or cargo spaces no or spaces which may be used for carrying cargo, stores, or baggage no

If so, how are they protected \_\_\_\_\_

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 cut outs for these lights fitted \_\_\_\_\_

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 \_\_\_\_\_

How are the returns from the lamps connected to the hull \_\_\_\_\_

Are all the joints with the hull in accessible positions \_\_\_\_\_

The installation is \_\_\_\_\_ supplied with a voltmeter and \_\_\_\_\_ an amperemeter, fixed on Main Switchboard

**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 99 7/10 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.

J. J. Wavish MANAGER

Electrical Engineers

Date \_\_\_\_\_

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 58 feet

Distance between dynamo or electric motors and steering compass 175 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>24</u>	Amperes	<u>6</u>	feet from standard compass	<u>120</u>	feet from steering compass
A cable carrying	<u>2</u>	Amperes	<u>6</u>	feet from standard compass	<u>6</u>	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 3° degrees on NW by W. course in the case of the standard compass and 1° degrees on W.N.W. course in the case of the steering compass.

J. J. Wavish MANAGER

Builder's Signature.

Date \_\_\_\_\_

**GENERAL REMARKS.**

The electric installation has now been fitted in accordance with the rules, and when tried under full working conditions was found satisfactory, and is now in my opinion eligible for the award of Electric Light.

It is submitted that this vessel is eligible for the award of Electric Light.

J. J. Wavish 19/5/13  
Surveyor to Lloyd's Register of British and Foreign Shipping.

THE RECORD.

Committee's Minute

LIVERPOOL

16 MAY 1913

Electric Light.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.