

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5498

Port of Belfast Date of First Survey 4 Aug Date of Last Survey 12 Oct No. of Visits 8  
 No. in Reg. Book P.S. Cards Port belonging to London  
 Built at Belfast By whom Harland & Wolff When built 1904  
 Owners Royal Mail Steam Pk. Coy L Owners' Address London  
 Yard No. 363 Electric Light Installation fitted by W. H. Allen Son & Co When fitted 1904

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Engine having cylinder 7" diameter by 6" stroke  
 Dynamo 4 pole, compound wound  
 Capacity of Dynamo 80 Amperes at 110 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed on starting platform, starboard side  
 Position of Main Switch Board on bulkhead of Engine Room connecting switches to groups A + B + C of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each —

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 — 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 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 163 arranged in the following groups:—

Group	Description	Number of Lights	Candle Power	Current (Amperes)
A	lights each of	<u>16</u>	<u>50</u>	<u>50</u>
B	lights each of	<u>16</u>	<u>24</u>	<u>24</u>
C	Cargo as below			
D	lights each of			
E	lights each of			
	<u>2</u> Mast head lights with <u>1</u> lamp each of	<u>32</u>		<u>2.2</u>
	<u>2</u> Side lights with <u>1</u> lamp each of	<u>32</u>		<u>2.2</u>
	<u>2</u> Cargo lights of <u>8 lamps of 16</u> candle power, whether incandescent or arc lights <u>incandescent</u>			

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

Where are the switches controlling the masthead and side lights placed in wheelhouse on upper bridge deck.

## DESCRIPTION OF CABLES.

Description	Amperes	Wires	Diameter (L.S.G.)	Total Sectional Area
Main cable carrying	<u>80</u>	<u>19</u>	<u>.079</u>	<u>square inches</u>
Branch cables carrying	<u>48</u>	<u>19</u>	<u>.0477</u>	<u>square inches</u>
Branch cables carrying	<u>29</u>	<u>7</u>	<u>.0291</u>	<u>square inches</u>
Leads to lamps carrying	<u>4.3</u>	<u>7</u>	<u>.0043</u>	<u>square inches</u>
Cargo light cables carrying	<u>4.3</u>	<u>145</u>	<u>.0042</u>	<u>square inches</u>

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

The conductor is covered with one layer pure Pare rubber, then two layers vulcanizing rubber, the whole vulcanized together & finally taped & braided. Wires in machinery spaces, after vulcanizing, are lead covered, used & spirally armoured with G.I. wires

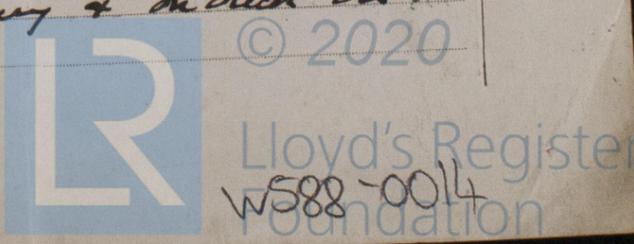
Joints in cables, how made, insulated, and protected

Thoroughly soldered, insulated with two layers pure rubber tape one layer black 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 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 in stray wood casing & a duck in galvanized iron pipes



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 *on the decks they are drawn into galvanized iron pipes*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *none near undue heat*

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

What special protection has been provided for the cables in engine room } *armoured with G. I. wires*

How are cables carried through beams *in fibre funnels*

How are cables carried through decks *in G. I. pipes bushed with fibre* through bulkheads, &c. in fibre funnels through U.S. bulkheads in U.S. stands with brass nuts

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 *in strong wood casing*

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 *—*

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 *screwed to yoke of magnet*

How are the returns from the lamps connected to the hull *soldered to with screws*

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

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 installation is supplied with a voltmeter and *with* an amperemeter, fixed *on main switchboard*

The copper used is guaranteed to have a conductivity of *100* 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.

FOR W. H. ALLEN, SON & CO. LTD

Electrical Engineers

Date *4. 10. 04*

COMPASSES.

*C.P. Hunter*

Distance between dynamo or electric motors and standard compass *96 feet*

Distance between dynamo or electric motors and steering compass *96 feet*

The nearest cables to the compasses are as follows:—

A cable carrying <i>29</i> Amperes <i>18</i> feet from standard compass	<i>17</i> feet from steering compass
A cable carrying <i>The above is double wired</i> feet from standard compass	feet from steering compass
A cable carrying <i>—</i> 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 *every* course in the case of the standard compass and *nil* degrees on *every* course in the case of the steering compass.

*John Hunter*

Builder's Signature.

Date *7<sup>th</sup> Oct 1904*

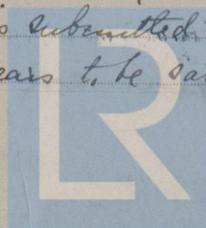
GENERAL REMARKS.

*This installation is of good description throughout, and has been fitted in accordance with the Rules.*

*G. J. Beveridge*  
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

*It is submitted that this installation appears to be satisfactory.*



Lloyd's Register Foundation

*11. 10. 04*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 13.