

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No.

Port of Belfast Date of First Survey Nov 10<sup>th</sup> 1897 Date of Last Survey 1<sup>st</sup> May 1898 No. of Visits 5  
 No. in Reg. Book on the Iron or Steel J. S. S. "Monmouth" Port belonging to  
 Built at Belfast By whom Harland & Wolff Ltd When built 1898  
 Owners Elder Dempster & Co Ltd Owners' Address  
 Yard No. B Electric Light Installation fitted by W. H. Allen, Son & Co When fitted 1898

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

W. H. Allen, Son & Co's Patent Compound dynamo coupled direct to single cylinder vertical type engine.  
 Capacity of Dynamo 177 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed On lower platform of engine room between main engine & furnaces  
 Position of Main Switch Board on bulkhead at tunnel entrance 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 One switch board containing 11 switches controlling lights on cattle deck placed in passage at entrance to engine room  
 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 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 single wire system  
 Are the cut outs of non-oxidizable metal pure tin and constructed to fuse at an excess of 50 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. porcelain and slate.

Total number of lights provided for 190. arranged in the following groups:—

Group	Number of lights	Light type	Candle power	Current (Amperes)
A	45	lights each of 42 of 16.	28.8	Amperes
B	48	lights each of 16	28.8	Amperes
C	42	lights each of 16	25.2	Amperes
D	29	lights each of 16	17.4	Amperes
E	26	lights each of 16	15.6	Amperes
1	Mast head light with 1 lamps	each of 32	1.2	Amperes
2	Side light with 1 lamps	each of 32	2.4	Amperes
6	Cargo lights of 128			incandescent

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

Where are the switches controlling the masthead and side lights placed in Chart House on Bridge

## DESCRIPTION OF CABLES.

Main cable carrying 37 wires, each 16 L.S.G. diameter, .1219 square inches total sectional area  
 Branch cables carrying 28.8 Amperes, comprised of 19 wires, each 18 L.S.G. diameter, .0349 square inches total sectional area  
 Branch cables carrying 5 Amperes, comprised of 7 wires, each 20 L.S.G. diameter, .007 square inches total sectional area  
 Leads to lamps carrying .6 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .0032 square inches total sectional area  
 Cargo light cables carrying 4.8 Amperes, comprised of 145 wires, each 38 L.S.G. diameter, .0072 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables insulated with pure rubber. Vulcanizing rubber to required thickness. india rubber proof tape the whole being vulcanized together. finally braided and compounded.  
 Joints in cables, how made, insulated, and protected joints are all soldered and reinsulated with pure rubber tape. felt and opokrite tapes finally coated with insulating varnish.  
 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 they are all accessible  
 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 Cables in machinery spaces are armoured and sheathed clipped to bulkheads on deck are run in strong wood casing



**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 *strong wood casing*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *"*

What special protection has been provided for the cables near boiler casings *Lead sheathed & armoured cables*

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

How are cables carried through beams *holes in beams bushed with fibre ferrules* through bulkheads, &c. *bulkhead glands with fibre*

How are cables carried through decks *galvanized iron duct pipes made watertight*

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 *the cable duct may be used for cargo at any time wood casing scrubbed close up to duct protected by the cross*

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 *Cast iron fittings with strong covers in cable space*

Are any switches or cut outs fitted in bunkers *no*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *to main winding* *W. H. Allen Son & Co*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *main winding bolted to field magnet through holding down bolts*

How are the returns from the lamps connected to the hull *soldered to 3/8" brass screws tapped into the beams*

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 *Combed Volt* applied with a voltmeter and *—* an amperemeter, fixed *Main Switch*

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 *2000* megohms 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 & Compy**

*J. W. Kempster*

Electrical Engineers

Date *May 20<sup>th</sup> 1898*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *112 feet*

Distance between dynamo or electric motors and steering compass *106 "*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>1.2</i>	Amperes	<i>7</i>	feet from standard compass	<i>3</i>	feet from steering compass
A cable carrying	<i>6.6</i>	Amperes	<i>8</i>	feet from standard compass	<i>10</i>	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 *all* course in the case of the standard compass and *nil* degrees on *all* course in the case of the steering compass.

*Harland & Wolff* Builder's Signature. Date *17 May 1898*

**GENERAL REMARKS.**

Committee's Minute

*A. L. Jones*

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

*This installation appears to be fitted in accordance with the Rules*



REPORT FORM No. 11.

*507*

*27/5/98*