

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No.

Port of Belfast Date of First Survey 26<sup>th</sup> Aug Date of Last Survey 8<sup>th</sup> October No. of Visits 8  
 No. in Reg. Book on the Iron or Steel J. S. S. "Destyherie" Port belonging to Liverpool  
 Built at Belfast By whom Harland & Wolff Ltd When built 1894  
 Owners McBibby Steam Ship Co Ltd. Owners' Address  
 Yard No. 314 Electric Light Installation fitted by W. A. Allen, Son & Co Ltd When fitted 1894

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Combined sets of W. A. Allen, Son & Co 6° compound engines & dynamos  
 Capacity of Dynamo 200 Amperes at 62 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Bottom platform of engine room between main engine thrust blocks.  
 Position of Main Switch Board Forward bulkhead having switches to groups A to H 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 yes and at each position where a cable is branched or reduced in size yes and to each lamp circuit yes  
 If lights wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits  
 Cut-outs of non-oxidizable metal Copper on main board and constructed to fuse at an excess of 50 per cent over the normal current  
 Cut-outs fitted in easily accessible positions yes Are the fuses of standard dimensions yes If wire fuses are used  
 Permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit yes  
 Cables and cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 298 arranged in the following groups:—

<u>59</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>59</u>	Amperes
<u>60</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>60</u>	Amperes
<u>35</u>	lights each of	<u>32 &amp; 32 &amp; 4</u>	candle power requiring a total current of	<u>38</u>	Amperes
<u>30</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>30</u>	Amperes
<u>34</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>34</u>	Amperes
<u>1</u>	Mast head light with	<u>1</u> lamps each of <u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
<u>2</u>	Side light with	<u>2</u> lamps each of <u>32</u>	candle power requiring a total current of	<u>4</u>	Amperes
<u>6</u>	Cargo lights of	<u>64</u>	candle power, <sup>each</sup> whether incandescent or arc lights <u>incandescent</u>		

For all lights, what protection is provided against fire, sparks, &c. The arc is protected with clear glass globe carried in a strong brass carrier securely attached to body of lamp.  
 Where are the switches controlling the masthead and side lights placed. In Chart house of Bridge amidships

### DESCRIPTION OF CABLES.

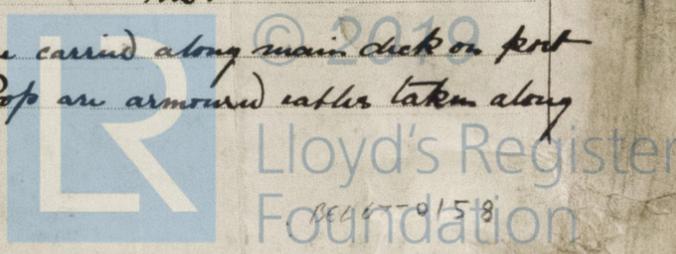
from dynamos to switchboard only.

in cable carrying	<u>200</u> Amperes, comprised of	<u>37</u> wires, each	<u>14</u> L.S.G. diameter,	<u>.186</u> square inches total sectional area
inch cables carrying	<u>60</u> Amperes, comprised of	<u>19</u> wires, each	<u>16</u> L.S.G. diameter,	<u>.0612</u> square inches total sectional area
inch cables carrying	<u>35</u> Amperes, comprised of	<u>19</u> wires, each	<u>18</u> L.S.G. diameter,	<u>.0344</u> square inches total sectional area
lights to lamps carrying	<u>1</u> Amperes, comprised of	<u>1</u> wires, each	<u>16</u> L.S.G. diameter,	<u>.00322</u> square inches total sectional area
cargo light cables carrying	<u>4</u> Amperes, comprised of	<u>145</u> wires, each	<u>38</u> L.S.G. diameter,	<u>.0041</u> square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulation of all cables is of 2000 mugs and these are carried in wood casing throughout the ship being specially protected in leak wood casing in damp places. The casing of cables consists of pure Para rubber, 2 coats vulcanizing rubber, 1 P.R. proofed tape. The whole vulcanized compounded & braided.  
 Wires in cables; how made, insulated, and protected Wires are stranded together and soldered. They are then recovered with felt tape pure rubber tape oysterite tape and finally painted 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 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 From to midship house are carried along main deck on port side in wood casing and along lower deck to forecath. From to poop are armoured cables taken along main deck and up through piping to aft deck house and poop.



**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 *strong wood casing.*

What special protection has been provided for the cables near boiler casings *armoured & lead sheathed cables run in g.i. pipes*

What special protection has been provided for the cables in engine room *armoured & lead sheathed cables clipped to bulkheads*

How are cables carried through beams *holes bushed with 1/2" fibre fasteners* through bulkheads, &c. glands bushed with fibre

How are cables carried through decks *g.i. deck pipes made watertight*

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

If so, how are they protected *in wood casing carried in channel iron*

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 *Concentric metal couple*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Main winding bolted to fund magnets*

How are the returns from the lamps connected to the hull *3/8" brass wire secured to the iron of ship*

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 \_\_\_\_\_ 2 \_\_\_\_\_ amperemeters fixed on main board

*of Corsham's type*

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 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.

*W. Allen & Co* Electrical Engineers Date *October 18/97*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *110 ft.*

Distance between dynamo or electric motors and steering compass *120 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>1</i>	Amperes	<i>1</i>	feet from standard compass	<i>1</i>	feet from steering compass
A cable carrying	<i>12</i>	Amperes	<i>10</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying	<i>6</i>	Amperes	<i>4</i>	feet from standard compass	<i>6</i>	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* courses in the case of the standard compass and *nil* degrees on *all* courses in the case of the steering compass.

*Harland & Wolff Ltd* Builder's Signature. Date *21 Oct '97*

**GENERAL REMARKS.**

*This ship is fitted with a complete Suez Canal plant consisting of 2 Arc lanterns & 1 Projector. The arc lamps may be attached to either the Poop, Forecastle or Midship Bridge*

*A. L. Jones*

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

Committee's Minute *This installation appears to be fitted in accordance with the Rules*

*so also said*

*25/10/97*

Lloyd's Register Foundation

REPORT FORM No. 17

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