

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5213

Port of Belfast Date of First Survey 6th Nov Date of Last Survey 11th Dec No. of Visits 9  
 No. in Reg. Book on the Iron Steep S.S. Indian Port belonging to Liverpool  
 Built at Belfast By whom Workman Clark & Co L When built 1900  
 Owners F. Leyland & Co 1900 Ltd Owners' Address Liverpool  
 Yard No. 140 Electric Light Installation fitted by W.A. Allen & Co When fitted 1900

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Bi-polar, under-type dynamo driven coupled in one bedplate to single cylinder high speed vertical, d. acting engine.  
 Capacity of Dynamo 130 Amperes at 62 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed in a room in aft end of main d.e. casing  
 Position of Main Switch Board near 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 —  
 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 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  
 Total number of lights provided for 153 arranged in the following groups:—  
 A 33 lights each of 16 candle power requiring a total current of 33 Amperes  
 B 44 lights each of 16 candle power requiring a total current of 44 Amperes  
 C 45 lights each of 16 candle power requiring a total current of 45 Amperes  
 D 31 lights each of 16 candle power requiring a total current of 31 Amperes  
 E lights each of candle power requiring a total current of Amperes  
 1 Mast head light with 1 lamps each of 32 candle power requiring a total current of 2 Amperes  
 2 Side light with 2 lamps each of 32 candle power requiring a total current of 4 Amperes  
 4 Cargo lights of 96 candle power, whether incandescent or are lights incandescent  
 If are lights, what protection is provided against fire, sparks, &c. ✓

Where are the switches controlling the masthead and side lights placed Wheelhouse (on Bridge)

## DESCRIPTION OF CABLES.

Main cable carrying 130 Amperes, comprised of 37 wires, each 14 L.S.G. diameter, .189 square inches total sectional area  
 Branch cables carrying 45 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .082 square inches total sectional area  
 Branch cables carrying 31 Amperes, comprised of 19 wires, each 18 L.S.G. diameter, .035 square inches total sectional area  
 Leads to lamps carrying 1 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 6 Amperes, comprised of 145 wires, each 38 L.S.G. diameter, .0041 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure rubber, Vulk Rubber & braiding in deck  
protected by a sheathing of lead & galv. zinc wire  
in the engine room  
 Joints in cables, how made, insulated, and protected All joints mended & insulated with pure Para Rubber tape, yellow tape & Oxybenz tape  
& Bth. Sheen Paralink  
 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 Wood casing on deck & clipped with metal clips to bulkhead in Machinery Space.



**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? *None*

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

What special protection has been provided for the cables near boiler casings? *None*

What special protection has been provided for the cables in engine room? *None*

How are cables carried through beams? *Under bunks with fibre through bulkheads, &c.*

How are cables carried through decks? *Under bunks, fibre through deck plates.*

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? *Earth connection bolted to hull of engine room.*

How are the returns from the lamps connected to the hull? *In engine room return space of hull through fitting in deck.*

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 *Main Switch*

The copper used is guaranteed to have a conductivity of *100* per cent. that of pure copper. *Matheson's Standard*

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.

Electrical Engineers Date *14.12.00*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *104 feet.*

Distance between dynamo or electric motors and steering compass *112 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying <i>45</i> Amperes	<i>18</i> feet from standard compass	<i>16</i> feet from steering compass
A cable carrying <i>24</i> Amperes	<i>20</i> feet from standard compass	<i>16</i> feet from steering compass
A cable carrying <input checked="" type="checkbox"/> Amperes	<input checked="" type="checkbox"/> feet from standard compass	<input checked="" type="checkbox"/> 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.

WORKMAN, CLARK & CO., LIMITED.

Builder's Signature. Date *17th Dec 1900*

**GENERAL REMARKS.**

*This installation is of good description throughout and is in accordance with our Rules.*

*R. J. Reynolds*

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

Committee's Minute

*It is submitted that this installation appears to meet the Rule requirements.*



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