

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6902.

Port of Belfast Date of First Survey Nov. 11<sup>th</sup> 1910 Date of Last Survey Jan. 11<sup>th</sup> 1911 No. of Visits 14  
 No. in Reg. Book on the Iron or Steel T.S.S. "Arankola" Port belonging to Glasgow  
 Built at Belfast By whom Workman Clark & Co. Ltd. When built 1910  
 Owners British India Steam Nav. Co. Ltd. Owners' Address London  
 Yard No. 298 Electric Light Installation fitted by W. C. Martin & Co. When fitted 1910

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

Two compound double acting steam engines, each direct coupled to compound wound multipolar Dynamo with carbon brushes.  
 Capacity of Dynamo 380 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Thrust Recess Whether single or double wire system is used Double  
 Position of Main Switch Board near Dynamos having switches to groups A, B, C, D, E, F of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Shade Deck Port, 2-3 way;  
Shade Deck Starboard, 1-3 way; Upper Deck Forward, 1-3 way;  
Upper Deck Aft, 1-3 way; Engine Room, 1-3 way.  
 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~~ 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-oxidisable 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 467 arranged in the following groups :-  

A	108	lights each of	16	candle power requiring a total current of	59.4	Amperes
B	107	lights each of	16	candle power requiring a total current of	58.85	Amperes
C	69	lights each of	16	candle power requiring a total current of	37.9	Amperes
D	94	lights each of	16	candle power requiring a total current of	51.7	Amperes
E	89	lights each of	16	candle power requiring a total current of	48.9	Amperes
2	Mast head light with	1	lamps each of	32	candle power requiring a total current of	2.2
2	Side lights with	1	lamps each of	32	candle power requiring a total current of	2.2
3	Cargo lights of	8	lamps each of	16	candle power, whether incandescent or arc lights	incandescent

 If arc lights, what protection is provided against fire, sparks, &c. No Arc Lights  
 Where are the switches controlling the masthead and side lights placed In Chartroom

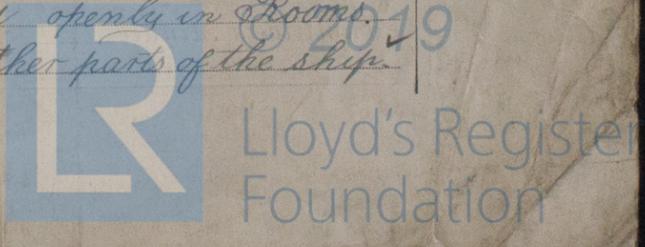
**DESCRIPTION OF CABLES.**

Main cable carrying 380 Amperes, comprised of 61 wires, each 13 L.S.G. diameter, .4 square inches total sectional area  
 Branch cables carrying 60 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .06 square inches total sectional area  
 Branch cables carrying 30 Amperes, comprised of 19 wires, each 18 L.S.G. diameter, .033 square inches total sectional area  
 Leads to lamps carrying 3 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .003 square inches total sectional area  
 Cargo light cables carrying 4.4 Amperes, comprised of 108 wires, each - L.S.G. diameter, .005 square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

L. E. Copper wire, tinned, insulated with pure and vulcanised Rubber and tape, the whole vulcanised together, taped and sheathed with lead or Galvanised Iron  
 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 joints. 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 no joints  
 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 Lead covered cables, clipped openly in Rooms  
Twin Armoured Cables, clipped directly to steelwork in other parts of the ship

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**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible *Yes, except when cargo in holds* ✓  
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Metal Tubes* ✓  
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Steel Armour* ✓  
 What special protection has been provided for the cables near boiler casings *Steel Armour* ✓  
 What special protection has been provided for the cables in engine room *Steel Armour* ✓  
 How are cables carried through beams *Bushed holes* ✓ through bulkheads, &c. *W.T. Glands* ✓  
 How are cables carried through decks *Metal Tubes, fitted watertight to Deck* ✓  
 Are any cables run through coal bunkers *no* or cargo spaces *yes* or spaces which may be used for carrying cargo, stores, or baggage *yes* ✓  
 If so, how are they protected *Steel armoured Cable clipped under deck, protected by beams* ✓  
 Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *yes* ✓  
 If so, how are the lamp fittings and cable terminals specially protected *Strong Iron Shutters* ✓  
 Where are the main switches and cut outs for these lights fitted *Outside - Near Entrances* ✓  
 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 *at present* supplied with *2* voltmeters and *also two* ✓ ~~ampere~~ amperemeters fixed *on 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 *98* ✓ 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.S. Martin & Co* Electrical Engineers

Date *28<sup>th</sup> July 1911*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *156 feet*  
 Distance between dynamo or electric motors and steering compass *160 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>8</i>	Amperes	<i>6</i>	feet from standard compass	<i>12</i>	feet from steering compass
A cable carrying	<i>1</i>	Amperes	<i>6</i>	feet from standard compass	<i>12</i>	feet from steering compass
A cable carrying	<i>25</i>	Amperes	<i>1</i>	feet from standard compass	<i>1</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 *a certain* ✓ course in the case of the standard compass and *nil* ✓ degrees on *the same* ✓ course in the case of the steering compass.

*Fracker*  
 THE NORMAN LARK & CO., LIMITED.  
 SECRETARY

Builder's Signature. Date *31<sup>st</sup> July 1911*

**GENERAL REMARKS.**

*The installation has been well fitted, and was satisfactory under trial*

*It is submitted that this vessel is eligible for THE RECORD, Elec. Light.*

*J.R.L.*  
*3.2.11*  
*J.W.D. 3/3/11*

*A. J. Thomas*

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

Committee's Minute



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