

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4554

Port of Belfast Date of First Survey 18th Oct. Date of Last Survey 28th Oct. 95 No. of Visits 5
 No. in Reg. Book 14 Sup on the ~~Iron or~~ Steel Sc. S. "Mourne" Port belonging to Belfast
 Built at Belfast By whom Workman, Clark & Co. Ltd. When built 1895-10m.
 Owners J. Dixon & Sons Owners Address 113 Corporation St. Belfast.
 Yard No. 114 Electric Light Installation fitted by The Faraday Electrical Engineering Co. Ltd. When fitted 1895-10m.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Vertical Engine by Robey $4\frac{1}{2} \times 6$ ", 350 revs per minute mounted on bedplate and coupled direct to "Faraday" dynamo, compound wound.
 Capacity of Dynamo Forty Amperes at Eighty Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed forward end of engineroom starboard side
 Position of Main Switch Board on casing above dynamo having switches to groups Four groups 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 boards to the cables of auxiliary circuits and at each position where a cable is branched or reduced in size and to each lamp circuit

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

Yes 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

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

A <u>Between decks forward.</u>	<u>10</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>7</u>	Amperes
B <u>Main holds forward.</u>	<u>10</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>7</u>	Amperes
C <u>Between decks aft.</u>	<u>10</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>7</u>	Amperes
D <u>Main holds aft.</u>	<u>10</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>7</u>	Amperes
E	lights each of		candle power requiring a total current of		Amperes
	Mast head light with	lamps each of	candle power requiring a total current of		Amperes
	Side light with	lamps each of	candle power requiring a total current of		Amperes
	Cargo lights of		candle power, whether incandescent or arc lights.		

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

Where are the switches controlling the masthead and side lights placed

DESCRIPTION OF CABLES.

Main cable carrying 28 Amperes, comprised of 19 wires, each No. 18 L.S.G. diameter, .035" square inches total sectional area
 Branch cables carrying 7 Amperes, comprised of 7 wires, each No. 20 L.S.G. diameter, .0073" square inches total sectional area
 Branch cables carrying Amperes, comprised of wires, each L.S.G. diameter, square inches total sectional area
 Leads to lamps carrying 0.7 Amperes, comprised of 7 wires, each No. 20 L.S.G. diameter, .0073" square inches total sectional area
 Cargo light cables carrying Amperes, comprised of wires, each L.S.G. diameter, square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All cables insulated with pure and vulcanising rubber, then taped and vulcanised together, then covered with warps and strong braiding served with preservative compound. The cables throughout ship are carried in wood casing protected with heavy wood covers

Joints in cables, how made, insulated, and protected The insulation is carefully removed from both conductors for a length of 8" the cable forming the branch to lamp (which is the same dimension as the group cable) is then jointed to the other conductor afterwards soldered at the extreme ends, then carefully insulated with pure rubber, and rubber proof tape.

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 Joints are made connecting cables to lamps in holds, the cables to lamps are the same size as group cables. No conductor smaller than No. 20 used
 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 see above



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Not accessible in holds when full of cargo.*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *No cables exposed in such a manner*
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *No such exposure*
 What special protection has been provided for the cables near boiler casings *No*
 What special protection has been provided for the cables in engine room *heavy wood casing*
 How are cables carried through beams *through hardwood ferrules* through bulkheads, &c. *in tubes with watertight glands*
 How are cables carried through decks *in tubes with watertight glands*
 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 *by heavy wood casing and battens on front of same*
 Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *Yes in holds*
 If so, how are the lamp fittings and cable terminals specially protected *by heavy cast iron covers*
 Where are the main switches and cut outs for these lights fitted *on main switchboard*
 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 _____ 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 _____

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* *but not* an amperemeter, fixed *on 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 *Six Hundred* 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.

THE FARADAY ELECTRICAL ENGINEERING CO., LTD.

W. J. White

MANAGING DIRECTOR.

Electrical Engineers

Date *29th October 1895*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 65 feet*
 Distance between dynamo or electric motors and steering compass *65*
 The nearest cables to the compasses are as follows:—

A cable carrying <i>10</i> Amperes <i>30</i>	feet from standard compass	feet from steering compass
<i>Double wiring throughout.</i>		
A cable carrying _____ Amperes _____	feet from standard compass	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 _____ degrees on _____ course in the case of the standard compass and _____ degrees on _____ course in the case of the steering compass.

Builder's Signature _____ Date _____

GENERAL REMARKS.

Electric lamps are fitted only in the holds, to be used when working cargo.

A. L. Jones 1/11/90
 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute _____

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.