

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of Belfast

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No. 4277 \*  
 No. in 59 Name of Ship Magico Built at Belfast When built 1893  
 Reg. Book. 59  
 Electric Light Installation fitted by W. H. Allen & Co. when fitted July 1893.

## DESCRIPTION OF DYNAMO AND ENGINE.—

Two each W. H. Allen's Vertical single cylinder direct-acting engine coupled direct to compound dynamo  
 Capacity of Dynamo each 130 Amperes at 60 Volts, whether continuous or alternating current continuous

Where <sup>are</sup> Dynamos fixed On bottom platform between Foremast Masts.

## LAMPS.—

Vessel wired on single or double wire system single Total number of lights 260 arranged in the following groups:—

Group	Number of lights	Candle power	Current (Amperes)
A	32	16	32
B	29	16	29
C	35	16	35
D	24	16	24
E	20	16	20
1	7	32	2
2	1	32	4
4	64	64	incandescents

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

## SWITCHES AND CUT-OUTS—

Position of Main Switch Board Bottom platform having switches to groups 8 circuits of lights as above

Positions of other switch boards and numbers of switches on each 1 distributing box in engine room, having 6 switches to groups of lights and ascending four.

If cut outs are fitted to main circuit yes and to each auxiliary circuit yes.  
 and at each position where cable is branched or reduced in size yes, where sufficiently reduced to need it.

If vessel is wired on the double wire system are cut outs fitted on each wire yes

Are the cut outs of non-oxidizable metal pure tin and constructed to fuse at an excess of 25 per cent over the normal current

Are all cut outs fitted in easily accessible positions fuses are all placed in boxes in passages

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

How are the lamps specially protected in places liable to the accumulation of vapour or gas

Are all switches and cut-outs constructed of unflammable materials and fitted on unflammable bases particular tests to all fuses and switches

## DESCRIPTION OF CABLES.—

Category	Amperes	Wires	Gauge
Main cable carrying	32	19	18
Branch cables carrying	40	19	18
Branch cables carrying	29	19	18
Branch cables carrying	35	19	18
Leads to lamps	28	19	18
Cargo light cables carrying	6	7	20

The copper used has 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



DESCRIPTION OF INSULATION, PROTECTION, &c.—

Joints in cables, how made, insulated, and protected *All joints dispersed with cables being all connected to terminals in the various distributing brackets, being soldered in from the main taken direct to each lamp*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *Resin is used as a flux*

How are cables led throughout the ship *All cables except those in engine room are run in hard wood casing. Those in engine room being surrounded and clipped to bulkheads.*

What special protection has been provided for the cables in open alleyways *Hard wood casing, cables being run through beams.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Hard wood casing, cables being run through beams.*

What special protection has been provided for the cables near boiler casings *boiler casing being carefully avoided*

What special protection has been provided for the cables in engine room *galvanized iron wire sheathing*

How are cables carried through decks *galvanized iron duct pipes through bulkheads*

Are any cables run through coal bunkers *no* or cargo spaces *yes* If so, how are they protected *being taken along the channel-iron*

Are any lamps fitted in coal bunkers or spaces which may be used for cargo *special cable fittings with cast-iron covers are used for fittings in holds.*

If so, how are they specially protected *iron covers are used for fittings in holds.*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *W. S. Allen cables.*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *coupled to field magnets.*

How are the returns from the lamps connected to the hull *twisted around head of 3/4" brass screw and soldered.*

Are all the joints with the hull in accessible positions *joints are of turns, and are easily accessible*

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of *11* hours' duration

The insulation resistance of the whole installation was not less than \_\_\_\_\_ ohms

The installation is \_\_\_\_\_ supplied with a voltmeter and \_\_\_\_\_ an amperemeter, fixed *on Main Switchboard*

*1 voltmeter to each machine*

General Remarks.—

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. H. Allen* Electrical Engineers

Date *17<sup>th</sup> August 1893.*

COMPASSES.—

Distance between dynamo and standard compass *84 feet*

Distance between dynamo and steering compass *104 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	#	feet from standard compass	feet from steering compass
<i>2</i>			<i>11</i>	
<i>13</i>				

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 \_\_\_\_\_

*A. L. Jones* Surveyor's Signature Date *19<sup>th</sup> August 1893.*

