

REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of Belfast

Received at London Office WED. 3 DEC 1893

No. 4316 *

No. in Reg. Book. No. 13 Sup. Name of Ship Ormiston

Built at Belfast

When built 1893-11 m.

Electric Light Installation fitted by W. C. Martin & Co when fitted 1893-11 m.

DESCRIPTION OF DYNAMO AND ENGINE.—

Clydesdale Dynamo by W. C. Martin & Co
Open type engine Link belt drive.

Capacity of Dynamo 100 Amperes at 65 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In special platform in Engine Room.

LAMPS.—

Is vessel wired on single or double wire system Double Total number of lights 81 ~~77~~ ^{1 search lt + 1 arc-lamp.} arranged in the following groups:—

Group	Number of lights	Each of	Candle power	Requiring a total current of	Amperes
A	<u>39</u>	lights each of <u>sixteen</u>		<u>39</u>	Amperes
B	<u>19</u>	lights each of <u>sixteen</u>		<u>19</u>	Amperes
C	<u>23</u>	lights each of <u>sixteen</u>		<u>23</u>	Amperes
D	<u>1 search light</u>	lights each of <u>all 6000</u>		<u>50</u>	Amperes
E	<u>1 arc</u>	lights each of <u>1200</u>		<u>15</u>	Amperes
Included in above	<u>1</u>	Must head light with <u>2</u> lamps each of <u>sixteen</u>		<u>2</u>	Amperes
	<u>2</u>	Side light with <u>2</u> lamps each of <u>sixteen</u>		<u>4</u>	Amperes
	<u>16</u>	Cargo lights of			candle power, whether incandescent or arc lights

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

Fun at bottom of globe of arc-lamp to catch any pieces of heated carbon falling

SWITCHES AND CUT-OUTS—

Position of Main Switch Board Over dynamo in Engine Room having switches to groups the above 81 lamps of lights as above

Positions of other switch boards and numbers of switches on each

One switch 1 fuse board under fore-castle head for search light.

If ^{fun} 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

If vessel is wired on the double wire system are ^{fun} cut-outs fitted on each wire Yes

Are the ^{fun} cut-outs of non-oxidizable metal yes and constructed to fuse at an excess of 50 per cent over the normal current

Are all ^{fun} cut-outs fitted in easily accessible positions Yes

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 Yes

How are the lamps specially protected in places liable to the accumulation of vapour or gas heavily insulated wires on Galvanized iron pipes

Are all switches and ^{fun} cut-outs constructed of unflammable materials and fitted on unflammable bases Yes

DESCRIPTION OF CABLES.—

Main cable carrying	<u>39</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>16</u>	legal standard wire gauge diameter
Branch cables carrying	<u>19</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>18</u>	legal standard wire gauge diameter
Branch cables carrying	<u>23</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>18</u>	legal standard wire gauge diameter
Leads to lamps	<u>2-3</u>	Amperes, comprised of	<u>1</u>	wire, each	<u>18</u>	legal standard wire gauge diameter
Cargo light cables carrying	<u>4</u>	Amperes, comprised of	<u>225</u>	wires, each	<u>40</u>	legal standard wire gauge diameter

The copper used has a conductivity of 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 750 megohms per statute mile after 24 hours' immersion in seawater

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DESCRIPTION OF INSULATION, PROTECTION, &c.—

Wires insulated with pure rubber, vulcanized taped & lapped.

Joints in cables, how made, insulated, and protected

Soldered using resin as flux.

Insulated with 2 layers pure rubber strip, rubber solution 2 layers prepared preservative tape & the whole coated with pure rubber solution.

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

Yes.

How are cables led throughout the ship

In wood-casing & cover or in Galvanized iron pipes —

What special protection has been provided for the cables in open alleyways

Run in heavy wood casings

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat

protected in special heavy wood casings

What special protection has been provided for the cables near boiler casings

none near

What special protection has been provided for the cables in engine room

run in Galvanized iron pipes heavy wood casings

How are cables carried through decks

in Galvanized iron deck tubes and through bulkheads through hard-wood plug bulk

Are any cables run through coal bunkers

no

or cargo spaces

no

If so, how are they protected

Are any lamps fitted in coal bunkers or spaces which may be used for cargo

no but flexibles used for them

If so, how are they specially protected

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

none

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of 30 hours' duration

The insulation resistance of the whole installation was not less than 0.123 meg ohms

The installation is ~~not~~ supplied with a voltmeter and ~~not~~ marine type amperemeter, fixed on switchboard.

General Remarks.—

All work carried out in accordance with Phoenix Fire Office Rules for 1893.

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. B. Martin & Co. Electrical Engineers

Date 2nd Dec 1893.

COMPASSES.—

Distance between dynamo and standard compass

about 95 feet.

Distance between dynamo and steering compass

ditto

The nearest cables to the compasses are as follows:—

A cable carrying	10	Amperes	at 10	feet from standard compass	6 or 8	feet from steering compass
A cable carrying	2	Amperes	at 15	feet from standard compass	12 or 13	feet from steering compass
A cable carrying	1	Amperes	at 8	feet from standard compass	3	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 not appreciable degrees on either course in the case of the standard compass

and not appreciable on either course in the case of the steering compass.

W. B. Martin

Builder's Signature

Date 4th December 1893

M. Jones

Surveyor's Signature

Date 5 December 1893



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