

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of SUNDERLAND

SAT. 12 JAN 1895

No. 14625 \*

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No. in Reg. Book. \_\_\_\_\_ Name of Ship Merionethshire Built at SUNDERLAND When built 1894

Electric Light Installation fitted by Blanke Chapman & Sims when fitted 1894

**DESCRIPTION OF DYNAMO AND ENGINE.—**

*One vertical double-acting engine dia. of cyl. 6 1/2" stroke 6" working at a pressure of 80 lbs. sq. in. + coupled direct to a compound-wound drum armature dynamo turning at 340 Revs. per minute.*

Capacity of Dynamo 75 Amperes at 65 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed on port side of steering engine

**LAMPS.—**

Is vessel wired on single or double wire system double Total number of lights 4 Cargo shades + one projector arranged in the following groups:—

A	4 Cargo	lights each of	<u>500</u>	candle power requiring a total current of	<u>70</u>	Amperes
B	1 projector	lights each of		candle power requiring a total current of	<u>60</u>	Amperes
C		lights each of		candle power requiring a total current of		Amperes
D		lights each of		candle power requiring a total current of		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
	<u>1 arc lamp</u>	<del>Cargo</del> lights of	<u>3000</u>	candle power, whether incandescent or arc lights		

If arc lights, what protection is provided against fire, sparks, &c. Arc lamp. mains are fitted with switches cut-outs + the lamp is enclosed in glass lantern.

**SWITCHES AND CUT-OUTS—**

Position of Main Switch Board near to dynamo having switches to groups A + B of lights as above

Positions of other switch boards and numbers of switches on each 4 Cast iron boxes fitted with switch & connection for Cargo lamp

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 Cables not branched.

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 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 close to switches

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 Yes

**DESCRIPTION OF CABLES.—**

	Main cable carrying	<u>60</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>16</u>	legal standard wire gauge diameter
3	Branch cables carrying	<u>18</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>16</u>	legal standard wire gauge diameter
	Branch cables carrying		Amperes, comprised of		wires, each		legal standard wire gauge diameter
	<u>Cargo</u> Leads to lamps	<u>18</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>16</u>	legal standard wire gauge diameter
	Cargo light cables carrying		Amperes, comprised of		wires, each		legal standard wire gauge diameter

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 600 megohms per statute mile after 24 hours' immersion in seawater



DESCRIPTION OF INSULATION, PROTECTION, &c.—

Insulated pure india rubber, then vulcanizing india rubber, india rubber coated laps & the whole vulcanized together

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

How are cables led throughout the ship *in wood iron galvanized piping.*

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

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

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

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

How are cables carried through decks *in wood iron galvanized piping* and through bulkheads *ditto.*

Are any cables run through coal bunkers *yes* or cargo spaces *yes* If so, how are they protected *in W.I. galvanized piping*

Are any lamps fitted in coal bunkers or spaces which may be used for cargo *no.*

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

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of *3* hours' duration *yes*

The insulation resistance of the whole installation was not less than *1,000,000* ohms

The installation is *— — — —* supplied with a voltmeter and *an amperemeter, fixed in series with the*

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 and safe working condition.

FOR CLARKE, CHAPMAN & CO. LTD.

*John B. ...*

Electrical Engineers

Date *14<sup>th</sup> Jan'y*

MANAGING DIRECTOR

COMPASSES.—

Distance between dynamo and standard compass

Distance between dynamo and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
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

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.

FOR THE SUNDERLAND SHIPBUILDING CO. LD.

*James R. ...*

SECRETARY

*John Salmon*

Builder's Signature

Date *Jan 9<sup>th</sup> 1890*

Surveyor's Signature

Date *10<sup>th</sup> Jan'y 1890*



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