

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of Belfast

11 DEC 84

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No. 4446 \*

No. in Reg. Book. Name of Ship "Ulstermore" Built at Belfast When built 1894-12m.

Electric Light Installation fitted by W. H. Allen & Sons, Bedford when fitted December 1894.

## DESCRIPTION OF DYNAMO AND ENGINE.

2 double acting simple vertical engines coupled direct to compound wound dynamo, running at 250 revs. per min, both of Allens patent.

Capacity of Dynamo 100 Amperes at 62 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed In recess on middle platform facing engine

## LAMPS.—

Is vessel wired on single or double wire system single Total number of lights 164 arranged in the following groups:—

A	<u>33</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>33</u>	Amperes
B	<u>54</u>	lights each of	<u>3 of 16</u>	candle power requiring a total current of	<u>34</u>	Amperes
C	<u>28</u>	lights each of	<u>2 of 32</u>	candle power requiring a total current of	<u>28</u>	Amperes
D	<u>56</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>56</u>	Amperes
E	<u>-</u>	lights each of	<u>-</u>	candle power requiring a total current of	<u>-</u>	Amperes
	<u>1</u>	including Mast head light with lamps each of	<u>30</u>	candle power requiring a total current of	<u>2</u>	Amperes
	<u>2</u>	Side light with lamps each of	<u>32</u>	candle power requiring a total current of	<u>4</u>	Amperes
	<u>4</u>	Cargo lights of	<u>128</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>	

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

## SWITCHES AND CUT-OUTS—

Position of Main Switch Board on middle platform having switches to groups A B C D of lights as above

Positions of other switch boards and numbers of switches on each -

If cut outs are fitted to main circuit ye and to each auxiliary circuit ye where required and at each position where cable is branched or reduced in size ye where required

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

Are the cut outs of non-oxidizable metal tin + lined and constructed to fuse at an excess of 30 per cent. over the normal current

Are all cut outs fitted in easily accessible positions ye

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 ye

## DESCRIPTION OF CABLES.—

Main cable carrying	<u>100</u>	Amperes, comprised of	<u>34</u>	wires, each	<u>16</u>	legal standard wire gauge diameter
Branch cables carrying	<u>33 + 28</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>18</u>	legal standard wire gauge diameter
Branch cables carrying	<u>54 + 56</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>16</u>	legal standard wire gauge diameter
Leads to lamps	<u>1</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>20/18</u>	legal standard wire gauge diameter
Cargo light cables carrying	<u>8</u>	Amperes, comprised of	<u>140</u>	wires, each	<u>38</u>	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 2000 megohms per statute mile after 24 hours' immersion in seawater



DESCRIPTION OF INSULATION, PROTECTION &c.—

Vulcanised rubber of best quality

Joints in cables, how made, insulated, and protected soldered re-insulated with pure rubber & asphaltic tape

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

How are cables led throughout the ship in strong casing

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

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 armoured lead sheath

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

How are cables carried through decks deck tubes and through bulkheads fibre bushes

Are any cables run through coal bunkers or cargo spaces If so, how are they protected along channel iron

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

If so, how are they specially protected

Cargo light cables, whether portable or permanently fixed portable How fixed complex

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel earth run to main

How are the returns from the lamps connected to the hull earth runs of main

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 6 hours' duration

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

The installation is supplied with a voltmeter and an ammeter, fixed

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.

John W. Allen for the Electric Engineers

Electrical Engineers

Date Dec 6th 94.

COMPASSES.—

Distance between dynamo and standard compass about 100 feet

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
-	-	-	-
-	-	-	-
-	-	-	-

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 0 degrees on 0 course in the case of the standard compass and 0 degrees on 0 course in the case of the steering compass.

Builder's Signature Date

A. L. Jones

Surveyor's Signature Date

10th Dec 1894

