

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of Belfast

22 MAR 92

No. 4055 \*

Received at London Office

No. in

Name of Ship S.S. Massachusetts

Built at

Belfast

When built

Feb 92

Reg. Book. 360

Electric Light Installation fitted by

J.H. Holmes & Co

when fitted

Feb 92

## DESCRIPTION OF DYNAMO AND ENGINE.—

2 Chandler's single acting coupled direct to 2 No 13 Castles  
dynamo — 325 revs.

Capacity of Dynamo

135

Amperes at

60

Volts, whether continuous or alternating current

Continuous

Where is Dynamo fixed

Lower platform in Engine room

## LAMPS.—

Is vessel wired on single or double wire system

Single

Total number of lights

about 280

arranged in the following groups:—

A	<u>Poof.</u>	<u>35</u>	lights each of		candle power requiring a total current of	<u>35</u>	Amperes
B	<u>To side</u>	<u>40</u>	lights each of		candle power requiring a total current of	<u>40</u>	Amperes
C	<u>Engine room</u>	<u>49</u>	lights each of		candle power requiring a total current of	<u>49</u>	Amperes
D	<u>Carp</u>	<u>32</u>	lights each of		candle power requiring a total current of	<u>32</u>	Amperes
E	<u>Port Cabins</u>	<u>38</u>	lights each of		candle power requiring a total current of	<u>38</u>	Amperes
F	<u>Starboard</u>	<u>35</u>	lights each of		candle power requiring a total current of	<u>35</u>	Amperes
G	<u>Cable deck</u>	<u>25</u>	lights each of		candle power requiring a total current of	<u>25</u>	Amperes
	<u>H. Hold tables</u>	<u>26</u>	lights each of		candle power requiring a total current of	<u>26</u>	Amperes
	<u>1 Mast head light with</u>	<u>1</u>	lamps each of	<u>32</u>	candle power requiring a total current of	<u>32</u>	Amperes
	<u>2 Side lights with</u>	<u>1</u>	lamps each of	<u>32</u>	candle power requiring a total current of	<u>32</u>	Amperes
	<u>6 Cargo lights of</u>	<u>8 x 16</u>	candle power, whether incandescent or arc lights			<u>4</u>	Amperes

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

## SWITCHES AND CUT-OUTS.—

Position of Main Switch Board

near dynamo

having switches to groups

A.B.C.D.E.F.G.H

of lights as above

Positions of other switch boards and numbers of switches on each

2 subsidiary switchboard in Engine room with  
4 switches each for Engine room lights — fixed on starting platform.

If cut outs are fitted to main circuit

There is no main circuit

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 cut outs fitted on each wire

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.

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

porcelain

## DESCRIPTION OF CABLES.—

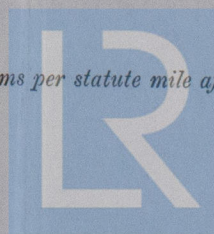
Main cable carrying	<u>135</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>12</u>	legal standard wire gauge diameter
Branch cables carrying	<u>49</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>17</u>	legal standard wire gauge diameter
Branch cables carrying	<u>35</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>14</u>	legal standard wire gauge diameter
Leads to lamps	<u>1</u>	Amperes, comprised of	<u>3</u>	wires, each	<u>22</u>	legal standard wire gauge diameter
Cargo light cables carrying	<u>8</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>22</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



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BEL60-0010



DESCRIPTION OF INSULATION, PROTECTION, &c.—

Covering of pure india rubber, Covering of our Special Separator, Covering of specially hard pressed India rubber, taping of mastic tape, the whole vulcanised together, Braided with Cotton & finished with special Compound.

Joints in cables, how made, insulated, and protected *Spliced & soldered. Covered with 2 or 3 layers of pure india rubber wound spirally in opposite directions - 2 or 3 layers of mastic tape. Each layer painted with india rubber varnish - varnished overall*

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 - In tween decks casing is run in channel iron. ~~after~~*

What special protection has been provided for the cables in open alleyways *None run in open alleyways.*

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

What special protection has been provided for the cables near boiler casings *iron sheathed cables.*

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

How are cables carried through decks *through iron tubes* and through bulkheads *brass glands.*

Are any cables run through coal bunkers *none* or cargo spaces *yes* If so, how are they protected *strong casings*

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

If so, how are they specially protected *all lead covered in wood casings*

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 *Brass shoe fixed to beam by 1/2" brass*

How are the returns from the lamps connected to the hull *3/8" brass bolt & 2 washers - wire placed between washers*

Are all the joints with the hull in accessible positions *Yes*

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of *over 12* hours' duration

The insulation resistance of the whole installation was not less than *50,000* ohms

The installation is *not* supplied with a voltmeter and *not* an amperemeter, fixed *on switchboard*

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.

*J. H. Holmes*

Electrical Engineers

Date *March 14. 92.*

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.

*Harland & Wolff* Builder's Signature

Date *17 March 1892*

*A. L. Jones* Surveyor's Signature

Date *21 Mar 20 1892*



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