

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5545

Port of *Belfast* Date of First Survey *20th Nov 1902* Date of Last Survey *20th Nov 1902* No. of Visits *8*
 No. in Reg. Book *135* on the *Trade* *Marine* Port belonging to *London*
 Built at *Belfast* By whom *Worham & Co. Belfast* Year built *1902*
 Owners *Green Line* Owners' Address *London*
 Yard No. *1194* Electric Light Installation fitted by *R. Nelson & Co. Belfast* When fitted *1902*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Single Cylinder Engine, 310 Rev. Coupled to two pole dynamo

Capacity of Dynamo *95* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Middle Platform*

Position of Main Switch Board *E. Room Bulkhead* Having switches to groups *A, B, C, D* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *distribution*
Stehold door. 1-5 way at tunnel recess. 1-8 way Saloon pantry. 1-4 way at E. Room door 1-4 way at Fore.

If cut outs are fitted on main switch board to the cables of main circuit *Yes* and on each auxiliary switch board to the cables of auxiliary circuits *Yes* and at each position where a cable is branched or reduced in size *Yes* and to each lamp circuit *Yes*

If vessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits *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* Are the fuses of standard dimensions *Yes* If wire fuses are used are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit *Yes*

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes*

Total number of lights provided for *162* arranged in the following groups:—

| | | | |
|---|------------------------------------------------------|-------------------------------------------------------------|-------------------------------|
| A | <i>49</i> lights each of | <i>16</i> candle power requiring a total current of | <i>27</i> Amperes |
| B | <i>51</i> lights each of | <i>16</i> candle power requiring a total current of | <i>29</i> Amperes |
| C | <i>12</i> lights each of | <i>16</i> candle power requiring a total current of | <i>7</i> Amperes |
| D | <i>(5 at 10) 50</i> lights each of | <i>16</i> candle power requiring a total current of | <i>29</i> Amperes |
| E | lights each of | candle power requiring a total current of | Amperes |
| | <i>1</i> Mast head light with <i>1</i> lamps each of | <i>32</i> candle power requiring a total current of | <i>Included 1 1/2</i> Amperes |
| | <i>2</i> Side light with <i>1</i> lamps each of | <i>32</i> candle power requiring a total current of | <i>in above 3</i> Amperes |
| | <i>5</i> Cargo lights of <i>(10 each)</i> | <i>16</i> candle power, whether incandescent or arc lights. | <i>(29</i> |

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

Where are the switches controlling the masthead and side lights placed *Wheelhouse*

DESCRIPTION OF CABLES.

Main cable carrying *89* Amperes, comprised of *37* wires, each *16* L.S.G. diameter, *.119* square inches total sectional area
 Branch cables carrying *29* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.035* square inches total sectional area
 Branch cables carrying *27* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.035* square inches total sectional area
 Leads to lamps carrying *7* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.012* square inches total sectional area
 Cargo light cables carrying *29* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.035* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure rubber, vulcanized rubber, taped and vulcanized together & braided.

Joints in cables, how made, insulated, and protected *Joints in extension boxes. A few soldered insulated & taped*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *Yes* Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage *Yes*

Are there any joints in or branches from the cable leading from dynamo to main switch board *No*

How are the cables led through the ship, and how protected *Armoured & Wood Cases where not armoured*



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes - Except Tween Deck cables, when cargo is in*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Remained*
 What special protection has been provided for the cables near galley, or oil lamps or other sources of heat *Wood Case & Armoured*
 What special protection has been provided for the cables near boiler casings *Remained*
 What special protection has been provided for the cables in engine room *✓*
 How are cables carried through beams *Remained* through bulkheads, &c. *W.T. Planks*
 How are cables carried through decks *W.S. tubes*
 Are any cables run through coal bunkers *No* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes*
 If so, how are they protected *Remained Wood Case*
 Are any lamps fitted in ~~coal bunkers~~ or spaces which may at times be used for cargo, coals, or baggage *Yes*
 If so, how are the lamp fittings and cable terminals specially protected *Cast iron covers*
 Where are the main switches and cut outs for these lights fitted *In Engine Room*
 If in the spaces, how are they specially-protected *✓*
 Are any switches or cut outs fitted in bunkers *No*
 Cargo light cables, whether portable or permanently fixed *Portable* How fixed *Cast iron boxes*
 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 *✓*

VESSELS BUILT FOR CARRYING PETROLEUM.

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 *✓*
 Are any switches, cut outs, or joints of cables fitted in the pump room or companion *✓*
 How are the lamps specially protected in places liable to the accumulation of vapour or gas *✓*
 The installation is ~~supplied with a voltmeter~~ supplied with a voltmeter ~~an amperemeter, fixed~~ *Main Sea Keel Board*

The copper used is guaranteed to have a conductivity of *100* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *2500* megohms per statute mile after 24 hours' immersion in seawater.

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.

Robert Wilson Electrical Engineers

Date *Jan 22nd 1903*

COMPASSES.

Distance between dynamo or electric motors and standard compass *About 180 ft.*

Distance between dynamo or electric motors and steering compass *145*

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 | <i>2</i> Amperes | <i>7</i> feet from standard compass | <i>5</i> 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 *Nil* degrees on *✓* course in the case of the standard compass and *✓ Nil* degrees on *✓* course in the case of the steering compass.

PRO WORKMAN, CLARK & CO., LIMITED

M. Buchanan

Builder's Signature. Date *24th January 1903*

GENERAL REMARKS:

This installation appears to be of good description, and has been fitted in accordance with the Rules.

R. J. Reynolds
 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

It is submitted that this installation appears to meet the Rule requirements
 Lloyd's Register Foundation
 27.1.03

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 11.