

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5532

Port of *Belfast* Date of First Survey *Nov 19th* Date of Last Survey *Dec 10th* No. of Visits *7*
 No. in Reg. Book *193* on the *Trak* Port belonging to *Liverpool*
 Built at *Belfast* By whom *Workman & Carter* When built *1902*
 Owners *Wm. H. Allen & Co. Ltd.* Owners' Address *Liverpool*
 Yard No. *193* Electric Light Installation fitted by *W. H. Allen & Co. Ltd.* When fitted *1902*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two bipolar dynamo coupled direct to two vertical six cylinder engines
 Capacity of Dynamos *150* Amperes at *60* Volts, whether continuous or alternating current *Continuous*
 Where *at* Dynamo fixed *in thrust recess*
 Position of Main Switch Board *in thrust recess* having switches to groups *APSE* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *one at each deck entrance*
main room having 9 switches

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 *100* 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 *201* arranged in the following groups:—

A <i>Salon & Staterooms</i>	<i>38</i> lights each of <i>16</i>	candle power requiring a total current of <i>38</i>	Amperes
B <i>Galley & Deck</i>	<i>34</i> lights each of <i>16</i>	candle power requiring a total current of <i>34</i>	Amperes
C <i>Cargo</i>	<i>45</i> lights each of <i>16</i>	candle power requiring a total current of <i>45</i>	Amperes
D <i>Machinery & Engine</i>	<i>66</i> lights each of <i>16</i>	candle power requiring a total current of <i>66</i>	Amperes
E <i>Port & Main Cabin</i>	<i>18</i> lights each of <i>16</i>	candle power requiring a total current of <i>18</i>	Amperes
1	Mast head light with <i>1</i> lamps each of <i>32</i>	candle power requiring a total current of <i>2</i>	Amperes
2	Side light with <i>1</i> lamps each of <i>32</i>	candle power requiring a total current of <i>4</i>	Amperes
9	Cargo lights of <i>5x16=80</i>	candle power, whether incandescent or are lights <i>incandescent</i>	

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

No arcs.

Where are the switches controlling the masthead and side lights placed *in wheelhouse on bridge.*

DESCRIPTION OF CABLES.

Main cable carrying <i>150</i> Amperes, comprised of <i>37</i> wires, each <i>14</i> L.S.G. diameter, <i>.090</i> square inches total sectional area
Branch cables carrying <i>38</i> Amperes, comprised of <i>19</i> wires, each <i>17</i> L.S.G. diameter, <i>.047</i> square inches total sectional area
Branch cables carrying <i>34</i> Amperes, comprised of <i>19</i> wires, each <i>17</i> L.S.G. diameter, <i>.047</i> square inches total sectional area
Leads to lamps carrying <i>4</i> Amperes, comprised of <i>7</i> wires, each <i>22</i> L.S.G. diameter, <i>.0043</i> square inches total sectional area
Cargo light cables carrying <i>5</i> Amperes, comprised of <i>145</i> wires, each <i>38</i> L.S.G. diameter, <i>.0024</i> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables covered with layers of pure + vulcanizing india rubber, india rubber coated tape & strands soaked in preserving compound. dead sheathes hand in Calladuk
 Joints in cables, how made, insulated, and protected *Splendid joints soldered. Then covered with layers of pure rubber strap, felt tape & black tape. varnished.*

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 *in wood casing along T&B*
run on starboard side of cathead deck.

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *under heat*

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

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 beams *through the trunks* through bulkheads, &c. *through the trunks*

How are cables carried through decks *through galvanised iron deck pipes*

Are any cables run through coal bunkers *no* or cargo spaces *yes* spaces which may be used for carrying cargo, stores, or baggage *yes*

If so, how are they protected *shiny wood casing*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *new trunks*

If so, how are the lamp fittings and cable terminals specially protected *cast iron fittings with heavy cast covers*

Where are the main switches and cut outs for these lights fitted *in special bracket separate from the main*

If in the spaces, how are they specially protected *no*

Are any switches or cut outs fitted in bunkers *no*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *no*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *has terminal in main compartment*

How are the returns from the lamps connected to the hull *soldered to 3/8 brass earth screw*

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

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 and *two* amperemeters *fixed in switchboard*

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.

For W. Halliday & Co. Ltd.
C. J. Hunter

Electrical Engineers

Date *17.12.02*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 130 feet*

Distance between dynamo or electric motors and steering compass *4 4 4*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>38</i>	<i>26</i>	<i>24</i>	<i>24</i>
<i>7</i>	<i>26</i>	<i>24</i>	<i>24</i>

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 *any* course in the case of the standard compass and *nil* degrees on *any* course in the case of the steering compass.

PRO WORKMAN, CLARK & CO., LIMITED

Builder's Signature

Date *22 December 1902*

GENERAL REMARKS.

This installation is of the best description and has been fitted in accordance with the Rules.

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

Committee's Minute

It is submitted that this installation appears to be satisfactory.

Lloyd's Register
Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.