

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6682.

Port of Belfast Date of First Survey Aug 24 Date of Last Survey Oct 5 No. of Visits 13  
 No. in Reg. Book on the Iron or Steel 13. 210 of Canada Port belonging to Belfast  
 Built at Belfast By whom Workman Clark & Coy L When built 1909  
 Owners L. & L. Ltd Owners' Address Lanark, Glasgow  
 Yard No. 283 Electric Light Installation fitted by M<sup>rs</sup> Maxwell & Co L<sup>td</sup> When fitted 1909

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Engine of the single cylinder vertical open type, with crankshaft throttle governor; direct coupled to compound wound multipolar dynamo.

Capacity of Dynamo 165 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In Thrust Recess, Engine Room.

Position of Main Switch Board Near Dynamo having switches to groups Four in number of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each (1) Saloon Passage 6 way, (2) Saloon Pantry 9 way, (3) Steering Engine Platform 9 way, (4) (4A) Engine Room, Sub-Dist. Boards:— (5) Forecastle 6 way, (6) Wheel House 9 way, (7) Aft Deck House 6 way, (8) Refrig. Engine Rm. 6 way.

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, fine tin and constructed to fuse at an excess of 50 to 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, all bases of porcelain.

Total number of lights provided for 223 - 16 c.p. arranged in the following groups:—

|   |           |                       |               |  |           |   |            |         |
|---|-----------|-----------------------|---------------|--|-----------|---|------------|---------|
| A | <u>47</u> | lights each of        | <u>16</u>     | candle power requiring a total current of        | <u>26</u> | Amperes                                   |            |         |
| B | <u>50</u> | lights each of        | <u>16</u>     | candle power requiring a total current of        | <u>28</u> | Amperes                                   |            |         |
| C | <u>55</u> | lights each of        | <u>16</u>     | candle power requiring a total current of        | <u>31</u> | Amperes                                   |            |         |
| D | <u>40</u> | lights each of        | <u>16</u>     | candle power requiring a total current of        | <u>39</u> | Amperes                                   |            |         |
| E |           | lights each of        |               | candle power requiring a total current of        |           | Amperes                                   |            |         |
|   | <u>2</u>  | Mast head lights with | <u>2</u>      | lamps each of                                    | <u>32</u> | candle power requiring a total current of | <u>1.1</u> | Amperes |
|   | <u>2</u>  | Side lights with      | <u>2</u>      | lamps each of                                    | <u>32</u> | candle power requiring a total current of | <u>1.1</u> | Amperes |
|   | <u>10</u> | Cargo lights of       | <u>5 - 16</u> | candle power, whether incandescent or arc lights |           | <u>incandescent.</u>                      |            |         |

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

Where are the switches controlling the masthead and side lights placed Fore Mast & Sidelights, in Wheel House on Bridge; Main Mast, in Wheel House aft.

## DESCRIPTION OF CABLES.

|                             |            |                       |            |             |           |                  |             |                                    |
|-----------------------------|------------|-----------------------|------------|-------------|-----------|------------------|-------------|------------------------------------|
| Main cable carrying         | <u>127</u> | Amperes, comprised of | <u>37</u>  | wires, each | <u>14</u> | L.S.G. diameter, | <u>.182</u> | square inches total sectional area |
| Branch cables carrying      | <u>32</u>  | Amperes, comprised of | <u>7</u>   | wires, each | <u>14</u> | L.S.G. diameter, | <u>.034</u> | square inches total sectional area |
| Branch cables carrying      | <u>26</u>  | Amperes, comprised of | <u>7</u>   | wires, each | <u>15</u> | L.S.G. diameter, | <u>.028</u> | square inches total sectional area |
| Leads to lamps carrying     | <u>3</u>   | Amperes, comprised of | <u>1</u>   | wires, each | <u>16</u> | L.S.G. diameter, | <u>.003</u> | square inches total sectional area |
| Cargo light cables carrying | <u>3</u>   | Amperes, comprised of | <u>145</u> | wires, each | <u>38</u> | L.S.G. diameter, | <u>.004</u> | square inches total sectional area |

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of high conductivity tinned copper, insulated with pure and vulcanised rubber and taped. In Accomodation, braided & compounded overall; in Tween Decks & Eng. Rms., lead covered, jute padded, armoured with gal. iron wires.

Joints in cables, how made, insulated, and protected Braided, and compounded overall.

Joints in wires & cables entirely dispensed with, metal junction boxes with porcelain interiors being used throughout.

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 None.

Are there any joints in or branches from the cable leading from dynamo to main switch board None.

How are the cables led through the ship, and how protected Cables led through beams and clipped to decks and bulkheads in Tween decks and engine rooms; protected by lead covering armouring with gal. iron wire, and braided & compounded overall. All wiring in accomodation v. i. r. run in wood casing.

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible All cables and wood casings exposed & accessible.
What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture cables lead covered, padded, armoured and braided & compounded.
What special protection has been provided for the cables near galleys or oil lamps or other sources of heat L.C. Arm. & Braided.
What special protection has been provided for the cables near boiler casings Lead Covered Armoured & Braided
What special protection has been provided for the cables in engine room " " " " " "
How are cables carried through beams through teak bushes through bulkheads, &c. screwed watertight gland
How are cables carried through decks gal. iron deck tubes flanged to deck & made watertight.
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 Lead covered padded, armoured, braided and compounded.
Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage None.
If so, how are the lamp fittings and cable terminals specially protected
Where are the main switches and cut outs for these lights fitted
If in the spaces, how are they specially protected
Are any switches or cut outs fitted in bunkers None.
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

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 an amperemeter, fixed on Main Switchboard
The copper used is guaranteed to have a conductivity of 98 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.

WILLIAM HARRIE & Co. LIMITED.
R. F. Peiman
SECRETARY.

Electrical Engineers Date 11th Oct. 1909.

COMPASSES.

Distance between dynamo or electric motors and standard compass
Distance between dynamo or electric motors and steering compass
The nearest cables to the compasses are as follows:—
A cable carrying .3 Amperes led into base of 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 Yes
The maximum deviation due to electric currents, etc., was found to be 1/2 degrees on all course in the case of the standard compass and degrees on course in the case of the steering compass.

R. Peiman
SECRETARY.

Builder's Signature. Date 17th Dec. 1909

GENERAL REMARKS.

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

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

Committee's Minute

REPORT FORM No. 13.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

