

**REPORT ON ELECTRIC LIGHTING INSTALLATION.** No. *7890*

Port of *Belfast* Date of First Survey *Apr 24* Date of Last Survey *Oct 6* No. of Visits *4*  
 No. in on the ~~Iron~~ or Steel *S. S. War Trefoil* Port belonging to *Belfast*  
 Reg. Book Built at *Belfast* By whom *Harland & Wolff Ltd* When built *1914*  
 Owners *For the Shipping Controller* Owners' Address *The Dixon, Belfast.*  
 Yard No. *522* Electric Light Installation fitted by *Harland & Wolff* When fitted *1917.*

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

*One enclosed, forced lubrication Single Cylinder Engine & dynamo with cylinder 5 1/2" x 5" stroke, speed 520 R. P. M.*

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

Where is Dynamo fixed *in Engine Room* Whether single or double wire system is used *Double*

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

Positions of auxiliary switch boards and numbers of switches on each *One in Chart Room containing 7 switches*

If fuses 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 fuses fitted to both flow and return wires of cables of all circuits including lamp circuits *yes*

Are the fuses of non-oxidizable metal *yes* and constructed to fuse at an excess of *100* per cent over the normal current

Are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases *yes*

Total number of lights provided for *151* arranged in the following groups:—

<i>A Aft. Accom.</i>	<i>31</i> lights each of <i>16</i> candle power requiring a total current of <i>15.5</i> Amperes
<i>B Midship</i>	<i>47</i> lights each of <i>32</i> candle power requiring a total current of <i>14.1</i> Amperes
<i>C Navigr.</i>	<i>4</i> lights each of <i>32 C.P. 3 lbs of 8</i> candle power requiring a total current of <i>5.7</i> Amperes
<i>D Cargo etc</i>	<i>32</i> lights each of <i>16 C.P. &amp; 2 lbs of 32</i> candle power requiring a total current of <i>18.4</i> Amperes
<i>E Engines</i>	<i>32</i> lights each of <i>16</i> candle power requiring a total current of <i>16.0</i> Amperes
<i>1 Mast head light with 1 lamp</i>	each of <i>32</i> candle power requiring a total current of <i>1.2</i> Amperes
<i>2 Side light with 1 lamp</i>	each of <i>32</i> candle power requiring a total current of <i>1.2</i> Amperes
<i>5 Cargo lights of</i>	<i>96</i> candle power, whether incandescent or arc lights <i>incandescent.</i>

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

Where are the switches controlling the masthead and side lights placed *In Chart Room.*

**DESCRIPTION OF CABLES.**

Main cable carrying *18.4* Amperes, comprised of *7* wires, each *16* S.W.G. diameter, *.022* square inches total sectional area

Branch cables carrying \_\_\_\_\_ Amperes, comprised of \_\_\_\_\_ wires, each \_\_\_\_\_ S.W.G. diameter, \_\_\_\_\_ square inches total sectional area

Branch cables carrying *4.2* Amperes, comprised of *1* wire, each *14* S.W.G. diameter, *.00503* square inches total sectional area

Leads to lamps carrying *1.8* Amperes, comprised of *1* wire, each *17* S.W.G. diameter, *.00246* square inches total sectional area

Cargo light cables carrying *3* Amperes, comprised of *108* wires, each *38* S.W.G. diameter, *.00503* square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

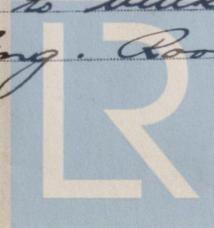
*Cables & branch wiring exposed are 600 megohm, C.M.A. grade vulcanised india Rubber, armoured & white braided also 1/4 A.P. 284 lead covd wire.*

Joints in cables, how made, insulated, and protected *Joints made in W. J. Junction Boxes on deck & porcelain Junction Boxes with iron protecting cover in Engine Room.*

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances *—* 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 *Cables clipped direct to bulkhead & protected by Armouring & braiding in Eng. Room & lead covd in Accomodation.*



**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 in piping

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Armoured & Braided cables

What special protection has been provided for the cables near boiler casings Armoured & braided

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

How are cables carried through beams Beams lashed with lead or fibre through bulkheads, &c. In gland if 1/2" otherwise fibre or lead.

How are cables carried through decks In Iron deck pipes lashed or with glands.

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

If so, how are they protected \_\_\_\_\_

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage No

If so, how are the lamp fittings and cable terminals specially protected \_\_\_\_\_

Where are the main switches and fuses for these lights fitted \_\_\_\_\_

If in the spaces, how are they specially protected \_\_\_\_\_

Are any switches or fuses fitted in bunkers No

Cargo light cables, whether portable or permanently fixed Permanently outside cargo spaces How fixed In S.I. clips outside cargo spaces.

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 none fitted, ship double wired,

Are all the joints with the hull in accessible positions \_\_\_\_\_

Is the installation supplied with a voltmeter yes, and with an amperemeter yes, fixed on Sub in Engine Room

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas \_\_\_\_\_

Are any switches, fuses, 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 copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

Harland & Wolff Electrical Engineers Date 15<sup>th</sup> Oct. 17

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 110' from Dynamo & 2' from Wired Rotary

Distance between dynamo or electric motors and steering compass 102' " " 16' " " "

The nearest cables to the compasses are as follows:—

A cable carrying <u>5.7</u> Amperes	<u>11</u> feet from standard compass	<u>5</u> feet from steering compass
A cable carrying <u>14.1</u> Amperes	<u>16</u> feet from standard compass	<u>10</u> 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 nil degrees on all courses in the case of the standard compass and nil degrees on all courses in the case of the steering compass.

**FOR HARLAND & WOLFF, Ltd.**

Builder's Signature. Date 16/10/17

**GENERAL REMARKS..**

This installation is of good description throughout and has been fitted in accordance with the Rules

It is submitted that this vessel is eligible for THE RECORD. Elec. light.

J.W.D.  
24/10/17

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

Committee's Minute FRI. OCT. 26 1917.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

