

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5924

Port of Belfast Date of First Survey April 28th Date of Last Survey June 12th No. of Visits 8  
 No. in Reg. Book on the Iron or Steel S.S. Zent Port belonging to Belfast  
 Built at Belfast By whom Workman Clark & Co Ltd When built 1905  
 Owners Elstern & Fyffes (Shipping) Ltd Owners' Address W.D. Allen & Co Ltd When fitted 1905  
 Yard No. 222 Electric Light Installation fitted by W.D. Allen & Co Ltd

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Engine having cylinders 7" dia<sup>r</sup> & 6" stroke dynamo 4 pole compound wound

Capacity of Dynamo 150 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed On Starting Platform Starboard side

Position of Main Switch Board on bulkhead above dynamo 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 —

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 — 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 260 arranged in the following groups:—

A	<u>Holds say 91</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>54</u>	Amperes
B	<u>Crew say 23</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>14</u>	Amperes
C	<u>Account say 33</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>20</u>	Amperes
D	<u>Engineers say 43</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>26</u>	Amperes
E	<u>Mach<sup>ns</sup> spaces say 40</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>24</u>	Amperes
1	Mast head light with 1 lamp each of	<u>32</u>	candle power requiring a total current of	<u>1.2</u>	Amperes
2	Side lights with 1 lamp each of	<u>32</u>	candle power requiring a total current of	<u>1.2</u>	Amperes
4	Cargo lights & each of 6	<u>16</u>	candle power, whether incandescent or are lights	<u>incandescent</u>	

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

Where are the switches controlling the masthead and side lights placed in Wheelhouse on Bridge

## DESCRIPTION OF CABLES.

Main cable carrying	<u>150</u> Amperes, comprised of	<u>37</u> wires, each	<u>15</u> L.S.G. diameter,	<u>.1534</u> square inches total sectional area
Branch cables carrying	<u>23</u> Amperes, comprised of	<u>7</u> wires, each	<u>16</u> L.S.G. diameter,	<u>.0229</u> square inches total sectional area
Branch cables carrying	<u>13</u> Amperes, comprised of	<u>7</u> wires, each	<u>18</u> L.S.G. diameter,	<u>.0129</u> square inches total sectional area
Leads to lamps carrying	<u>7</u> Amperes, comprised of	<u>7</u> wires, each	<u>20</u> L.S.G. diameter,	<u>.0073</u> square inches total sectional area
	<u>4</u> Amperes, comprised of	<u>1</u> wires, each	<u>22</u> L.S.G. diameter,	<u>.0043</u> square inches total sectional area
Cargo light cables carrying	<u>3.6</u> Amperes, comprised of	<u>145</u> wires, each	<u>38</u> L.S.G. diameter,	<u>.0043</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

The conductor is insulated with one layer pure Para rubber, then two layers of vulcanizing rubber, the whole vulcanized together & finally taped & braided  
 Wires in machinery spaces, after vulcanizing, are lead covered served & spirally  
 Joints in cables, how made, insulated, and protected armoured with 9.7. wires

Thoroughly soldered, insulated with two layers pure rubber, two layers of prepared 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 strong wood casing



© 2021

Lloyd's Register Foundation

W724 - 0042



**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 *on masts they are in G. I. pipe*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *none near undue heat*

What special protection has been provided for the cables near boiler casings *lead covered, sewed & armoured with G. I. wire*

What special protection has been provided for the cables in engine room *in fibre ferrules* through bulkheads, &c. *in fibre ferrules*

How are cables carried through beams *in G. I. pipes lashed with fibre*

How are cables carried through decks *in G. I. pipes lashed with fibre*

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 *strong wood casing*

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 fittings*

Where are the main switches and cut outs for these lights fitted *master controlling switches in Engineers entrance*

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 *—*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Double wired*

How are the returns from the lamps connected to the hull *Double wired*

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 *with* an amperemeter, fixed *on main 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 *600* 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. H. ALLEN, SON & CO. LTD.

*C. Hunter*

Electrical Engineers

Date

*24-VI-05*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *100'*

Distance between dynamo or electric motors and steering compass *96'*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>23</i>	<i>22</i>	<i>16</i>	
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 *nil* degrees on *every* course in the case of the standard compass and *nil* degrees on *every* course in the case of the steering compass.

THE WORKMAN, CLARK & CO., LIMITED,

*P. Hinchad*

Builder's Signature.

Date

*29<sup>th</sup> June 1905.*

**GENERAL REMARKS.**

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

*P. F. Brumfield*

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

*3.7.05*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.