

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7961

Port of BELFAST Date of First Survey Aug 2 - 1917 Date of Last Survey Dec 14th - 17 No. of Visits 11  
 No. in Reg. Book on the Iron or Steel T.S.S. PORT DARWIN Port belonging to \_\_\_\_\_  
 Built at BELFAST By whom WORKMAN CLARK & CO. LTD. When built 1917  
 Owners THE COMMONWEALTH & DOMINION LINE LTD Owners' Address LONDON  
 Yard No. 351 Electric Light Installation fitted by THE SUNDERLAND FORGE & ENGINEERING CO. When fitted 1917.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 - Compound wound multipolar dynamos each coupled to vertical open type single cylinder steam engine, on combination bedplate, speed 275 rpm.  
 Capacity of Dynamos each 165 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 10 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each 1 in wheelhouse - 8 switches for navigating lights. 1 in Engine room - 10 Switches. 1 in " " - 8 " "  
 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 668 arranged in the following groups :-

<u>A</u>	<u>117</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>23.4</u>	Amperes
<u>B</u>	<u>Wireless Installation</u>			"	<u>30.0</u>	"
<u>C</u>	<u>96</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>19.2</u>	Amperes
<u>D</u>	<u>86</u>	"	<u>16</u>	"	<u>17.2</u>	"
<u>E</u>	<u>50</u>	lights each of	<u>16 op &amp; 1 HCP lamp</u>	candle power requiring a total current of	<u>20.0</u>	Amperes
<u>F</u>	<u>35</u>	"	<u>16 op &amp; 1 HCP lamp</u>	"	<u>17.0</u>	"
<u>G</u>	<u>122</u>	lights each of	<u>16 op</u>	candle power requiring a total current of	<u>24.4</u>	Amperes
<u>H</u>	<u>69</u>	"	<u>16</u>	"	<u>13.8</u>	"
<u>I</u>	<u>90</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>18.0</u>	Amperes
<u>J</u>	<u>90</u>	"	<u>16</u>	"	<u>25.0</u>	"
<u>K</u>	<u>2</u>	Mast head light with	<u>1</u> lamps each of	<u>16</u>	candle power requiring a total current of	<u>1.2</u>
	<u>2</u>	Side light with	<u>1</u> lamps each of	<u>16</u>	candle power requiring a total current of	<u>1.2</u>
	<u>70</u>	Cargo lights of	<u>16 c/p &amp; 2 HCP lamps</u>	candle power, whether incandescent or are lights	<u>Incandescent</u>	

If are lights, what protection is provided against fire, sparks, &c. none fitted.

Where are the switches controlling the masthead and side lights placed In wheelhouse on bridge (main mast light controlled from poop)

## DESCRIPTION OF CABLES.

Main cable carrying	<u>165</u>	Amperes, comprised of	<u>37</u>	wires, each	<u>14</u>	L.S.G. diameter, <u>.1824</u>	square inches total sectional area
Branch cables carrying	<u>30</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>16</u>	L.S.G. diameter, <u>.060</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>.0221</u>	square inches total sectional area
Leads to lamps carrying	<u>1.8</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>25</u>	L.S.G. diameter, <u>.0021</u>	square inches total sectional area
Cargo light cables carrying	<u>10</u>	Amperes, comprised of	<u>114</u>	wires, each	<u>38</u>	L.S.G. diameter, <u>.00319</u>	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper conductors, insulated with pure and vulcanising indiarubber, taped and the whole vulcanised together and finished as follows:- In accommodation - lead-covered & braided overall. In machinery & cargo spaces - lead covered armoured and braided.

Joints in cables, how made, insulated, and protected No joints.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux \_\_\_\_\_ 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 \_\_\_\_\_

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 lead-covered, armoured and braided cables secured to beams by galvanised iron saddles and brass screws.

**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 lead-covered armoured and braided.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead covered arm<sup>d</sup> & braided.

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 holes bushed with fibre through bulkheads, &c. through Brass w.t.glands.

How are cables carried through decks through deck tubes, 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 armoured and braided.

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 Glass well jar and strong brass guard.

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 To heavy brass terminals fitted in cast iron boxes on deck.

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 ---

The installation is Yes supplied with 2 voltmeters and with 2 amperemeters fixed in engine room.

**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 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.

**P. PRO THE SUNDERLAND FORGE & ENGINEERING CO. LTD.**

H. Wright DIRECTOR. Electrical Engineers Date May 9th. 1918.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 124 feet

Distance between dynamo or electric motors and steering compass 116 "

The nearest cables to the compasses are as follows:—

A cable carrying <u>6.4</u> Amperes	<u>7</u> feet from standard compass	<u>7</u> feet from steering compass
A cable carrying <u>0.2</u> Amperes	<u>3</u> feet from standard compass	<u>3</u> feet from steering compass
A cable carrying <u>-</u> Amperes	<u>-</u> feet from standard compass	<u>-</u> 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 course in the case of the standard compass and Nil degrees on all course in the case of the steering compass.

H. Wright Builder's Signature. Date -----

**GENERAL REMARKS.**

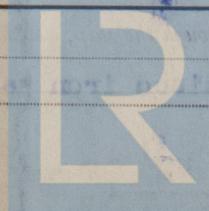
This installation is of good description, and has been fitted in accordance with the Rules

It is submitted that this vessel is eligible for THE RECORD. Elec. light. H.W.D. 21/5/18 R. J. Beauville Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute -----

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 12.—5m.34.



© 2020 Lloyd's Register Foundation