

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 701.

t of *Vancouver B.C.* Date of First Survey *Dec 25<sup>th</sup> 1918* Date of Last Survey *Jan 22<sup>nd</sup> 1919* No. of Visits *5*  
 in *Wood* on the *Iron or Steel* *Sun Sea Aux Sch. Cap Horn* Port belonging to *Vancouver, B.C.*  
 Book Built at *Vancouver B.C.* By whom *Wm Lyall, Shipbuilding Co* When built *1918*  
 rs *Societe D. Armeement, Van Hemelryck* Owners' Address *31 Broadway New York*  
 No. *9* Electric Light Installation fitted by *Muddy Rowland & Co* Where fitted *1918*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Direct connected compound wound generator*  
*manufactured by Meyers & Robbins, Springfield, Ohio.*  
 Capacity of Dynamo *65.2* Amperes at *115* Volts, whether continuous or alternating current *D.C.*  
 Where is Dynamo fixed *Port Side Engine Room* Whether single or double wire system is used *Double wire*  
 Location of Main Switch Board *Beside Generator* having switches to groups *Six* of lights, &c., as below  
 Locations of auxiliary switch boards and numbers of switches on each *Distributing Panel, Forehold with two branch*  
*switch Dis: Panel in passage of Officers Quarters with four branch circuits*  
*1 Dis: Panel in Engine Room with three branch circuits*  
 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*  
 Cables are wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits *Yes*  
 Are the fuses of non-oxidizable metal *Yes* and constructed to fuse at an excess of *25* 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 *none used*  
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases *Yes*

Number of lights provided for *90* arranged in the following groups:—

<i>16</i>	<i>lights each of 40 watts</i>	<i>candle power requiring a total current of</i>	<i>6.40</i>	<i>Amperes</i>
<i>20</i>	<i>lights each of 60 "</i>	<i>candle power requiring a total current of</i>	<i>12.00</i>	<i>Amperes</i>
<i>29</i>	<i>lights each of 40 "</i>	<i>candle power requiring a total current of</i>	<i>11.60</i>	<i>Amperes</i>
<i>20</i>	<i>lights each of 60 "</i>	<i>candle power requiring a total current of</i>	<i>12.00</i>	<i>Amperes</i>
	<i>lights each of</i>	<i>candle power requiring a total current of</i>		<i>Amperes</i>
<i>1</i>	<i>Must head light with one lamps each of 60 watts</i>	<i>candle power requiring a total current of</i>	<i>.60</i>	<i>Amperes</i>
<i>2</i>	<i>Side lights with one lamps each of 60 "</i>	<i>candle power requiring a total current of</i>	<i>1.20</i>	<i>Amperes</i>
<i>5</i>	<i>Cargo lights of 4 lights each 60 watts</i>	<i>candle power, whether incandescent or arc lights</i>	<i>Incandescent</i>	

Are lights, what protection is provided against fire, sparks, &c: *none used*

Where are the switches controlling the masthead and side lights placed *In front of steering wheel*

## DESCRIPTION OF CABLES.

<i>1</i>	<i>cable carrying 90 Amperes, comprised of 7 wires, each</i>	<i>#7 BYS</i>	<i>.2893 diameter, .131</i>	<i>.05213 square inches total sectional area</i>
<i>2</i>	<i>each cables carrying 10 Amperes, comprised of 2 wires, each</i>	<i>#10 BYS</i>	<i>.1018 diameter, .016</i>	<i>.008153 square inches total sectional area</i>
<i>3</i>	<i>each cables carrying 6 Amperes, comprised of 2 wires, each</i>	<i>#14 BYS</i>	<i>.0640 diameter, .0064</i>	<i>.003225 square inches total sectional area</i>
<i>4</i>	<i>lights to lamps carrying 4 Amperes, comprised of 2 wires, each</i>	<i>#14 BYS</i>	<i>.0640 diameter, .0064</i>	<i>.003225 square inches total sectional area</i>
<i>5</i>	<i>10 light cables carrying 24 Amperes, comprised of 2 wires, each</i>	<i>#16 BYS</i>	<i>.0508 diameter, .004</i>	<i>.002028 square inches total sectional area</i>

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

All wires exposed to mechanical injury are enclosed in conduit while those in the Officers Quarters are protected with wooden moulding.  
 How are the cables, how made, insulated, and protected *Regulation splice, soldered taped with both rubber and friction tape to same resistance as original wire*  
 Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances *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 *No*  
 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 *by galvanized steel conduit.*



**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 Enclosed in galvanized conduits & supplied with weatherproof fittings

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Kept away from hot places

What special protection has been provided for the cables near boiler casings Conduit so run as to avoid excessive heat

What special protection has been provided for the cables in engine room do do do

How are cables carried through beams in conduit through bulkheads, &c. metallic stuffing boxes

How are cables carried through decks by deck tubes with rubber gaskets

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 Run in steel conduit

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 Portable How fixed with watertight plug

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 Yes

Is the installation supplied with a voltmeter Yes and with an amperemeter Yes, fixed on switchboard

**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 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 warrant that it is at this date in good order and safe working condition.

Murray Rowland & Co per R.S.C.

Electrical Engineers

Date 27<sup>th</sup> January

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 20 ft

Distance between dynamo or electric motors and steering compass 20 ft

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>1/2</u>	<u>10</u>	<u>10</u>	<u>✓</u>
<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>

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.

THE WILLIAM LYALL SHIPBUILDING CO., LTD.

BY W. S. Brown

Builder's Signature.

Date Jan 27 1919

**GENERAL REMARKS.**

The Electric Light Installation of good quality and workmanship tested under working conditions and found satisfactory.

Eligible in my opinion to be noted in the Register Book

Electric Light 1-19

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

J.W.D. 10/2/19

James Murdoch  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 14 MAR. 1919

