

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 229

Port of *Vancouver, B.C.* Date of First Survey *22/1/19* Date of Last Survey *10/4/19* No. of Visits *12*  
 No. in on the Iron or Steel *S.S. War Conroy* Port belonging to *London*  
 Reg. Book Built at *Vancouver, B.C.* By whom *J. Coughlan & Son* When built *1919*  
 Owners *Imperial Munitions Board* Owners' Address *Rathburn & Co. Managing Owners, Glasgow*  
 Card No. *8* Electric Light Installation fitted by *J. Coughlan & Son* When fitted *1919*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Two Terry Steam Turbines Direct Coupled to Two Direct Current 1/2 H.P. Generators Speed 3600 R.P.M.*

Capacity of Dynamo *60* Amperes at *110* Volts, whether continuous or alternating current *Continuous*

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

Position of Main Switch Board *Engine Room, Starboard* 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 *A, Engine Room Starboard 12 Switches*

*B, Crews quarters Starboard 6 Switches, C, Running lights in wheelhouse*

*6 Switches, D, Wheel motor, E, Officers quarters 8 Switches in Starboard alleyway*

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 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 *10* 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 *170* arranged in the following groups:—

A	<i>60</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>30</i>	Amperes
B	<i>45</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>22.5</i>	Amperes
C	<i>14</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>8</i>	Amperes
D	<i>Wheel Motor</i>	lights each of	<i>—</i>	candle power requiring a total current of	<i>5</i>	Amperes
E	<i>51</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>26 (8)</i>	Amperes
	<i>2</i>	Mast head light with <i>1</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes
	<i>2</i>	Side light with <i>1</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes
	<i>9</i>	Cargo lights of	<i>16</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 Wheelhouse*

## DESCRIPTION OF CABLES.

Main cable carrying	<i>75</i>	Amperes, comprised of	<i>19/14</i> wires, each	<i>4</i>	S.W.G. diameter,	<i>.09372</i> square inches total sectional area
Branch cables carrying	<i>46</i>	Amperes, comprised of	<i>7/14</i> wires, each	<i>24</i>	S.W.G. diameter,	<i>.03459</i> square inches total sectional area
Branch cables carrying	<i>33</i>	Amperes, comprised of	<i>8/16</i> wires, each	<i>192</i>	S.W.G. diameter,	<i>.02214</i> square inches total sectional area
Leads to lamps carrying	<i>13</i>	Amperes, comprised of	<i>1/12</i> wires, each	<i>104</i>	S.W.G. diameter,	<i>.008495</i> square inches total sectional area
Cargo light cables carrying	<i>10</i>	Amperes, comprised of	<i>1/14</i> wires, each	<i>1080</i>	S.W.G. diameter,	<i>.005024</i> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*All Cables are run in Steel Conduit & Terminate in Watertight Boxes, Cables are all Double Braided and Rubber Covered.*

Joints in cables, how made, insulated, and protected *Joints are all Western Union with three layers of rubber tape, and one layer of Friction Tape, coated with P.B. Paint and the resistance is equal to the 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 *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 *In Conduit*

W10-0045



**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 Conduit

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Asbestos Covered in Conduit

What special protection has been provided for the cables near boiler casings Asbestos Covered in Conduit

What special protection has been provided for the cables in engine room Asbestos Covered in Conduit

How are cables carried through beams In Conduit through bulkheads, &c. In Conduit

How are cables carried through decks In Conduit

Are any cables run through coal bunkers Yes or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes.

If so, how are they protected In 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 ✓

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 ✓

Is the installation supplied with a voltmeter Yes, and with an amperemeter Yes. Two. 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 2500 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.

*J. Cunningham & Sons*  
*by J. Cunningham*

Electrical Engineers Date April 9/19

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 150 feet

Distance between dynamo or electric motors and steering compass 200 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>8</u>	Amperes	<u>10</u>	feet from standard compass	<u>100.</u>	feet from steering compass
A cable carrying	<u>6</u>	Amperes	<u>100.</u>	feet from standard compass	<u>3.</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 any course in the case of the standard compass and Nil degrees on any course in the case of the steering compass.

*J. Cunningham & Sons*  
*by J. Cunningham*

Builder's Signature. Date April 9 1919

**GENERAL REMARKS.**

The Electric Light Installation is of Good Quality and Workmanship tested under working conditions and found Satisfactory. Eligible in my opinion to be noted Electric Light in Register Book- 4-19

G. M. Gown

ELEC. LIGHT Roll 20/5/19. *J. W. D.* Surveyor to Lloyd's Register of Shipping.

Committee's Minute. FRI. 23 MAY 1919

FRI. 25 JUL. 1919



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.