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# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 746.

Port of Vancouver, B.C. Date of First Survey Dec 3/19 Date of Last Survey July 16/19 No. of Visits 29  
 No. in Reg. Book on the Iron or Steel S.S. War Colonna Port belonging to London  
 Built at Vancouver, B.C. By whom J. Coughlan & Son When built 1919  
 Owners Imperial Munitions Board Owners' Address Raeburn West Manager Glasgow  
 Yard No. 9 Electric Light Installation fitted by J. Coughlan & Son When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two of 12 H.P. Terry Steam Turbines. Direct Coupled to 60 Ampere, 4 Pole. Compound Wound Canadian General Electric Generators Speed 3600 R.P.M. 88 P. 190 lb

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, 12 switches, B Crews Quarters 6 switches, C Wheelhouse 6 switches, D Wireless motor, E Officer's Quarters, 8 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 or cables of all circuits including lamp circuits Yes.

Are the fuses of non-oxidisable 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	60	lights each of	16	candle power requiring a total current of	30	Amperes
B	45	lights each of	16	candle power requiring a total current of	22.5	Amperes
C	14	lights each of	16	candle power requiring a total current of	8	Amperes
D	Wireless Motor	lights each of	1/2 H.P.	candle power requiring a total current of	5	Amperes
E	51	lights each of	16	candle power requiring a total current of	25.5	Amperes
	2	Mast head light with 1 lamps each of	32	candle power requiring a total current of	2	Amperes
	2	Side light with 1 lamps each of	32	candle power requiring a total current of	2	Amperes
	5	Cargo lights of	80	candle power, whether incandescent or arc lights	Incandescent	

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	75	Amperes, comprised of	#19/14 wires, each	.400	S.W.G. diameter,	.09372	square inches total sectional area
Branch cables carrying	46	Amperes, comprised of	#7/14 wires, each	.240	S.W.G. diameter,	.03459	square inches total sectional area
Branch cables carrying	33	Amperes, comprised of	#4/16 wires, each	.192	S.W.G. diameter,	.02214	square inches total sectional area
Leads to lamps carrying	13	Amperes, comprised of	#1/2 wires, each	.104	S.W.G. diameter,	.008495	square inches total sectional area
Cargo light cables carrying	10	Amperes, comprised of	#1/4 wires, each	.080	S.W.G. diameter,	.005027	square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

All cables are run in Steel Conduit and terminate in Watertight Boxes. cables are all Double Braided + Rubber Covered.

Joints in cables, how made, insulated, and protected Joints are Western Union with 3 layers of Rubber Tape + one layer of Friction Tape, coated with an insulated varnish 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.



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 and watertight fittings

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Asbestos covered wire 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 amperometer 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 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.

J. Houghlan & Sons  
Per. S. Houghlan partner Electrical Engineers Date July 23/19

COMPASSES.

Distance between dynamo or electric motors and standard compass 150 ft.

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

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	<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 nil course in the case of the standard compass and Nil degrees on any course in the case of the steering compass.

J. Houghlan & Sons  
Per. S. Houghlan Builder's Signature. Date July 23/19

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.

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

J. W. D.  
29/8/19  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute. FRI AUG 22 1919

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

