

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 989

Port of Vancouver, B.C. Date of First Survey Dec. 1919 Date of Last Survey March 22/20 No. of Visits 18
 No. in Reg. Book on the Iron or Steel S.S. Canadian Exporter Port belonging to Montreal que.
 Built at Vancouver, B.C. By whom J. Coughlan & Sons When built 1920
 Owners Canadian Government Department Marine Owners' Address Ottawa, Ont., Canada
 Yard No. 12 Electric Light Installation fitted by J. Coughlan & Sons When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1-10 H.P. Continuous Current Compound 110-120 Volt, Canadian General Electric Co. Dynamo, Direct coupled to a 7x4 Vertical Simple Engine

Capacity of Dynamo 90 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 wire
 Position of Main Switch Board Engine Room Starboard having switches to groups A, B, C, D, E & F of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each A. Chart House - 10 circuits, B. Wireless 1 1/2 H.P. motor, C. Crew messroom 10 circuits, D. Engine Room Casings 8, E. Cargo Clusters, F. Forward accommodation Stairs 10 circuits, Port 10 circuits
 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 cessel 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 209 arranged in the following groups :-

Group	Description	Number of Lights	Candle Power	Current (Amperes)
A	lights each of	16	16	6
B	Motors for Wireless	lights each of	1 1/2 H.P.	14
C	lights each of	33	32	12.5
D	lights each of	42	32	19.5
E	lights each of	14	32	14
F	67 lamps & 2 fans			30
	2 Mast head light with 1 lamps each of		32	2
	2 Side light with 1 lamps each of		32	2
	5 Cargo lights of		192	Incandescent

If arc lights, what protection is provided against fire, sparks, &c. ✓

Where are the switches controlling the masthead and side lights placed Chart House.

DESCRIPTION OF CABLES.

Main cable carrying 90 Amperes, comprised of 19 wires, each #14 S.W.G. diameter, .09760 square inches total sectional area
 Branch cables carrying 38 Amperes, comprised of 7 wires, each #17 S.W.G. diameter, .01758 square inches total sectional area
 Branch cables carrying 28 Amperes, comprised of 7 wires, each #18 S.W.G. diameter, .01292 square inches total sectional area
 Leads to lamps carrying 24 Amperes, comprised of 7 wires, each #20 S.W.G. diameter, .00727 square inches total sectional area
 Cargo light cables carrying 6 Amperes, comprised of 7 wires, each #16 S.W.G. diameter, .003217 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All cables are Rubber Insulated, Braided & Lead Sheathed and armoured with Steel wire Braid.
 Joints in cables, how made, insulated, and protected No cables spliced any joints that are made are in watertight Junction Boxes.
 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 armoured cable.



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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 Sheathed and Steel armour with watertight fittings

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Armoured Cable

What special protection has been provided for the cables near boiler casings Armoured Cables

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

How are cables carried through beams Lead Bushings through bulkheads, &c. Bulkhead Glands,

How are cables carried through decks Deck Tubes,

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 Armoured Cables.

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 Approved Cargo Space Fittings

Where are the main switches and fuses for these lights fitted Main Switch Board.

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 Permanently Fixed How fixed Brass Straps

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. 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.

BY John Coughlan Electrical Engineers Date July 27 1920

COMPASSES.

Distance between dynamo or electric motors and standard compass 30 ft.

Distance between dynamo or electric motors and steering compass 35 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>10</u>	Amperes	<u>13</u>	feet from standard compass	<u>15</u>	feet from steering compass
A cable carrying	<u>28.5</u>	Amperes	<u>38</u>	feet from standard compass	<u>38</u>	feet from steering compass
A cable carrying	<u>18</u>	Amperes	<u>38</u>	feet from standard compass	<u>38</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 None degrees on any course in the case of the standard compass and any degrees on any course in the case of the steering compass.

BY John Coughlan Builder's Signature. Date July 27 1920

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

Wm. L. M. Howie
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI JUN. 4 1920 FRI DEC. 31 1920
FRI JUL. 2 1920 TUE AUG. 10 1920 FRI. 4 MAR. 1921
TUE. SEP. 7 1920 TUE. SEP. 27 1921

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

