

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1891

Port of Montreal Date of First Survey Nov. 17. 1920 Date of Last Survey Apr. 19. 1921 No. of Visits 9.  
 No. in on the Iron or Steel S.S. "CANADIAN COMMANDER" Port belonging to Montreal  
 Reg. Book Built at Montreal By whom Canadian Dickers Ltd. When built 1921  
 Owners Canadian Government Merchant Marine Owners' Address St James St Montreal  
 Yard No. 79 Electric Light Installation fitted by Builders When fitted 1921.

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

1- 13 1/2 KW. BTH dynamo driven coupled to Ashworth Patent forced lubrication single cylinder engine.

Capacity of Dynamo 122.7 Amperes at 110 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed 120 mm platform in Engine Room Whether single or double wire system is used double  
 Position of Main Switch Board " " " " 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 Distribution boxes fitted 1 in Engine Room 1 in saloon pantry 1 in Engineers pantry 1 in beams quarters 1 in chart room 1 near carpenter cabin 1 in Engine casing 1 on upper deck.

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 80 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 Cartridge fuses used  
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 185 arranged in the following groups :-  
 A Food accommodation 76 lights each of 2-16 cp. 3-15W. 12-25W <sup>59-40W</sup> candle power requiring a total current of 25.6 Amperes  
 B Up 24 lights each of 2-2 cp. 1-16 cp. 6-8 cp. 2-32 <sup>15-40W 6-25W</sup> candle power requiring a total current of 7.5 Amperes  
 C Navigation 31 lights each of 10-2 cp. 8-16 cp. 6-8 cp. 2-32 <sup>5-40W</sup> candle power requiring a total current of 10.5 Amperes  
 D 8 x B Room 46 lights each of 5-16 cp. 4-32 cp. 37-40 candle power requiring a total current of 20.0 Amperes  
 E Cargoespace & Indlers lights each of 42-32 cp. 8-40W. candle power requiring a total current of 45.5 Amperes  
 2 Mast head light with 2 lamps each of 16 candle power requiring a total current of 1.08 Amperes  
 2 Side light with 2 lamps each of P. 16 cp 532 candle power requiring a total current of 1.56 Amperes  
 5 Cargo lights of 6 lights each 32 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 On navigation indicator on bridge

**DESCRIPTION OF CABLES.**

Main cable carrying 122.7 Amperes, comprised of 19 wires, each .084" S.W.G. diameter, .105 square inches total sectional area  
 Branch cables carrying 22.5 Amperes, comprised of 7 wires, each .0613" S.W.G. diameter, .02 square inches total sectional area  
 Branch cables carrying 31.7 Amperes, comprised of 7 wires, each .048" S.W.G. diameter, .0129 square inches total sectional area  
 Leads to lamps carrying 5. Amperes, comprised of 7 wires, each .024" S.W.G. diameter, .0087 square inches total sectional area  
 Cargo light cables carrying 6. Amperes, comprised of 27 wires, each .01" S.W.G. diameter, .012 square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

Rubber insulated, lead covered and armoured cables. 20% pure rubber used for insulation

Joints in cables, how made, insulated, and protected None.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances ✓ Are all joints in accessible positions, none being made in bunks, 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 Clipped & dished & bulkheads with smooth ended clips. Steel shield casing in bunks.



**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible *Yes except for a short run through bunkers (bitty space)*  
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead conduit and armoured*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *ditto.*

What special protection has been provided for the cables near boiler casings *ditto.*

What special protection has been provided for the cables in engine room *ditto.*

How are cables carried through beams *in lead bushings* through bulkheads, &c. *W.T. glands*

How are cables carried through decks *W.T. deck tubes.*

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 *by steel guard plating and conduit.*

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 *Lamps in heavy cast fitting. cable in conduit.*

Where are the main switches and fuses for these lights fitted *on distribution box in E.R.*

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 *Permanent to W.T. switch box* How fixed *Portable & clusters.*

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 *Main 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 *1500* 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. H. Miller*  
General Manager

Electrical Engineers

Date

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *107 feet*

Distance between dynamo or electric motors and steering compass *98 feet*

The nearest cables to the compasses are as follows:—

A cable carrying <i>10.5</i> Amperes	<i>12</i> feet from standard compass	<i>5</i> feet from steering compass
A cable carrying <i>As single wire to run wiring 12 ft of compass.</i> Amperes	feet from standard compass	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

The maximum deviation due to electric currents, etc. was found to be \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the

standard compass and \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the steering compass.

*J. H. Miller*  
General Manager

Builder's Signature.

Date

**GENERAL REMARKS.**

*This installation has been fitted on board and tried out under varying loads with satisfactory results. The materials and workmanship are good.*

**It is submitted that this vessel is eligible for THE RECORD.**

*See light recd 20/5/21*  
Fee (per J.R.B.) \$67.50

*W. J. Alderson*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE MAY 31 1921



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Im. 7.11. Transfer.