

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1480

Port of *Montreal* Date of First Survey *Nov. 10. 1919* Date of Last Survey *Dec. 17. 1919* No. of Visits *5*  
 No. in *on the Iron or Steel* *S.S. CANADIAN RANCHER* Port belonging to *Montreal*  
 eg. Book Built at *Three Rivers Que* By whom *Sidewater Shipbuilders Ltd* When built *1919*  
 Owners *Canadian Government* Owners' Address *Ottawa*  
 Ord No. *6* Electric Light Installation fitted by *Builders* When fitted *1919*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*One 10 KW Canadian General Electric shunt wound dynamo direct connected to Goldie McCulloch engine (enclosed)*

Capacity of Dynamo *91* Amperes at *110* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *Upper deck level in Engine Room* Whether single or double wire system is used *double*

Position of Main Switch Board *Adjacent to dynamo* having switches to groups *6* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *distribution boxes used*

Are fuses 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

Are the fuses of non-oxidizable metal *yes* and constructed to fuse at an excess of *50%* 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 *Cartidge fuses used*

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases *yes*

Total number of lights provided for *198* arranged in the following groups :-

*Eng & Blk Room 38* lights each of *24-60W 14-40W* candle power requiring a total current of *16* Amperes

*Off Deck 29* lights each of *29-40W* candle power requiring a total current of *9* Amperes

*Crew Spaces 38* lights each of *30-40W 8-32* candle power requiring a total current of *18* Amperes

*Cargo Light 36* lights each of *36-40W* candle power requiring a total current of *12* Amperes

*Bridge Room 30* lights each of *30-40W* candle power requiring a total current of *10* Amperes

*Navigation 35* lights each of *24-40W 8-32* candle power requiring a total current of *16* Amperes

*2* Mast head light with *2* lamps each of *16* candle power requiring a total current of *1* Amperes

*2* Side light with *2* lamps each of *16-32* candle power requiring a total current of *3* Amperes

*5* Cargo lights of *5 lamps each 16* candle power, whether incandescent or arc lights *incandescent*

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

Where are the switches controlling the masthead and side lights placed *In wheelhouse or tell tale*

## DESCRIPTION OF CABLES.

Main cable carrying *150* Amperes, comprised of *19* wires, each *12* B & S S.W.G. diameter, *.094* square inches total sectional area

Branch cables carrying *46* Amperes, comprised of *4* wires, each *14* S.W.G. diameter, *.0226* square inches total sectional area

Branch cables carrying *33* Amperes, comprised of *4* wires, each *16* S.W.G. diameter, *.014* square inches total sectional area

Cables to lamps carrying *12* Amperes, comprised of *4* wires, each *22* S.W.G. diameter, *.0035* square inches total sectional area

Cargo light cables carrying *8* Amperes, comprised of *26* wires, each *30* S.W.G. diameter, *.00234* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

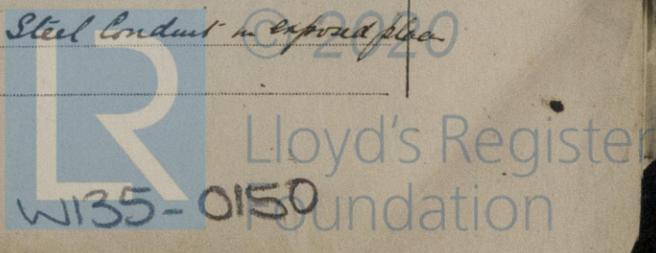
Insulation *encased with steel tape over lead throughout. Lead covered in cabins Rubber insulated*

Are there any joints in cables, how made, insulated, and protected *No joints, junction boxes used*

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 bunkers, 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 to bulkheads & under decks Steel conduit in exposed places*



**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 covered & Armoured & some steel conduit piping used

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered & Armoured & shut steel guards where passing over boilers

What special protection has been provided for the cables near boiler casings Lead covered and Armoured (steel)

What special protection has been provided for the cables in engine room Lead covered & Armoured

How are cables carried through beams Fibre fernules through bulkheads, &c. WT gland

How are cables carried through decks Galv iron deck tubes with screwed glands

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 Armoured cables carried through beams

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 Cast iron fittings with hinged covers over light

Where are the main switches and fuses for these lights fitted on main switch board

If in the spaces, how are they specially protected ✓

Are any switches or fuses fitted in bunkers none

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, fixed on Main Switch

**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.

Pridewater Shipbuilders Ltd  
D.C. McKeon  
manager.

Electrical Engineers

Date

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 96 feet

Distance between dynamo or electric motors and steering compass 93 feet

The nearest cables to the compasses are as follows:— No single wire is run within 12 ft of compasses.

A cable carrying <u>6.75</u> Amperes	<u>12</u> feet from standard compass	<u>5</u> feet from steering compass
A cable carrying _____ 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.

Pridewater Shipbuilders Ltd  
D.C. McKeon  
manager

Builder's Signature.

Date

**GENERAL REMARKS.**

This installation has been fitted on board and tried under steam at varying loads with satisfactory results. The material and workmanship are good.

It is submitted that this vessel is eligible for THE RECORD ELEC. LIGHT 1275 5/3/20

W. Edw. Burne

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. AUG. 17 1920



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