

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1309

Port of *Halifax N. S.* Date of First Survey *Nov. 30th 1920* Date of Last Survey *Dec. 14th 1920* No. of Visits *9*
 No. in Reg. Book on the ~~Iron~~ *Steel* *Screw Steamer "Canadian Sapper"* Port belonging to *Montreal*
 Built at *New Glasgow N. S.* By whom *Nova Scotia Steel & Coal Co Ltd.* When built *1920*
 Owners *Canadian Govt Merchant Marine Ltd.* Owners' Address *Montreal P. Q.*
 Yard No. *8* Electric Light Installation fitted by *Nova Scotia Steel & Coal Co Ltd* When fitted *1920*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Dynamo :- *Four pole compound wound, 10 K.W. 110 volts. Goldie McCulloch & Co.*
 Engine :- *Single Cylinder open type, direct connected to dynamo.*
 Capacity of Dynamo *85* Amperes at *110* Volts, whether continuous or alternating current *Continuous*
 Where is Dynamo fixed *Starboard side of engine room* Whether single or double wire system is used *Double wire*
 Position of Main Switch Board *4' abaft of dynamo* 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 *Galley 3 switches, Stewards Pantry 3 switches, Crew's quarters (Poop) 2 switches, Fo'ble 1 switch, wheel house 4 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-oxidizable metal *Yes* and constructed to fuse at an excess of *3* 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 *No wire fuses used.*
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases *Yes.*
 Total number of lights provided for *158* arranged in the following groups :-

A	<i>18</i>	lights each of	<i>25 Watts</i>	candle power requiring a total current of	<i>3.5</i>	Amperes
B	<i>18</i>	lights each of	<i>25 "</i>	candle power requiring a total current of	<i>3.5</i>	Amperes
C	<i>18</i>	lights each of	<i>25 "</i>	candle power requiring a total current of	<i>3.5</i>	Amperes
D	<i>36</i>	lights each of	<i>15 "</i>	candle power requiring a total current of	<i>5</i>	Amperes
E	<i>14</i>	lights each of	<i>25 "</i>	candle power requiring a total current of	<i>3.5</i>	Amperes
<i>2</i>	<i>Mast head light with</i>	<i>2</i>	<i>lamps each of</i>	<i>60</i>	candle power requiring a total current of	<i>1</i> Amperes
<i>2</i>	<i>Side light with</i>	<i>2</i>	<i>lamps each of</i>	<i>60</i>	candle power requiring a total current of	<i>1</i> Amperes
<i>15</i>	<i>Cargo lights of</i>		<i>40</i>	candle power, whether incandescent or arc lights	<i>Incandescent.</i>	

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

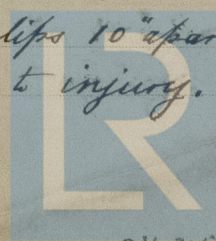
Where are the switches controlling the masthead and side lights placed *In wheel house.*

DESCRIPTION OF CABLES.

Main cable carrying	<i>65</i>	Amperes, comprised of	<i>19</i>	wires, each	<i>14</i>	<i>B & S</i> S.W.G. diameter, <i>.0613</i>	square inches total sectional area
Branch cables carrying	<i>14</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>18</i>	<i>B & S</i> S.W.G. diameter, <i>.00893</i>	square inches total sectional area
Branch cables carrying	<i>10</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>18</i>	<i>B & S</i> S.W.G. diameter, <i>.00893</i>	square inches total sectional area
Leads to lamps carrying	<i>5</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>14</i>	<i>B & S</i> S.W.G. diameter, <i>.0032</i>	square inches total sectional area
Cargo light cables carrying	<i>14</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>16</i>	<i>B & S</i> S.W.G. diameter, <i>.0142</i>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All cables in engine room, tunnel, holds and other exposed spaces, are lead covered and armoured with wire braid, galvanized iron wire; lead covered wire in cabins.
 Joints in cables, how made, insulated, and protected *Made in cast iron junction boxes, insulated with two plies rubber splicing tape, and two plies of black friction tape*
 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 *Clamped with double end clips 10" apart, and covered with wood, and iron tubing where exposed and liable to injury.*



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 *All are lead covered and protected with iron tubing, and wood casing.*

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 cable*

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

How are cables carried through beams *In lead bushings* through bulkheads, &c. *water tight glands*

How are cables carried through decks *Leak tubes 18" long, wood bushings.*

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 cable & wood casing.*

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 *With wood casings*

Where are the main switches and fuses for these lights fitted *In engine room*

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* How fixed *Double end clips & wood casing*

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 switch board*

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.

Nova Scotia Steel & Coal Co. Limited

Electrical Engineers

Date *30/12/20*

COMPASSES:

Distance between dynamo or electric motors and standard compass *About eight feet*

Distance between dynamo or electric motors and steering compass *About seventy five feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>1/2</i>	<i>1</i>	<i>1</i>	
<i>1/2</i>	<i>1</i>	<i>5</i>	

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.

Nova Scotia Steel & Coal Co. Limited

Builder's Signature.

Date *30/12/20*

GENERAL REMARKS.

The electric light installation on the vessel has been efficiently fitted according to the rules and requirements. The dynamo engine is to be fitted on board in Halifax, and the installation tried out under working conditions. — The engine has been fitted on board in Halifax N.S. & tried under working conditions with satisfactory results. J. S. MacArthur and B. T. Jones. Surveyors to Lloyd's Register of Shipping.

FRI. 11 FEB. 1921

Committee's Minute



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.