

Rpt. 13.

Received at London Office

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 803.

Port of Vancouver B.C. Date of First Survey March 4/20 Date of Last Survey April 24/20 No. of Visits 15  
 No. in Reg. Book on the Iron or Steel S.S. Braekholm Port belonging to Gottenburg  
 Built at Vancouver, B.C. By whom J. Coughlan Sons Ltd. When built 1920  
 Owners Swedish American Mercantile Co. Ltd. Owners' Address Gottenburg  
 Yard No. 17 Electric Light Installation fitted by J. Coughlan Sons Ltd. When fitted 1920.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

115 Volt. - 10 H.P. Continuous Current Compound Wound Dynamos. Two off. Direct Connected to Two 6x6 Simple Engines  
 Capacity of Dynamo 87 Amperes at 115 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Engine Room Starboard Whether single or double wire system is used Double Wire System  
 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, 11 Circuits; B. Wheelhouse 6 Circuits; C. Officers Quarters 11 Circuits; D. Prop Panel, Crews Quarters 6 Circuits; E. Wireless

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 25 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 215, arranged in the following groups:—

Group	Number of Lights	Wattage per Light	Total Current (Amperes)
A	95	40	40
B	12	3-32, 4-16, 5-8	5.5
C	61	28-32, 33-16	21.5
D	43	14-32, 29-16	12.5
E	Wireless	1 1/2 H.P.	14
Mast head light	2	32	2
Side light	2	32	2
Cargo lights	5	6x16 = 96	Incandescent

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

Where are the switches controlling the masthead and side lights placed In Wheelhouse.

## DESCRIPTION OF CABLES.

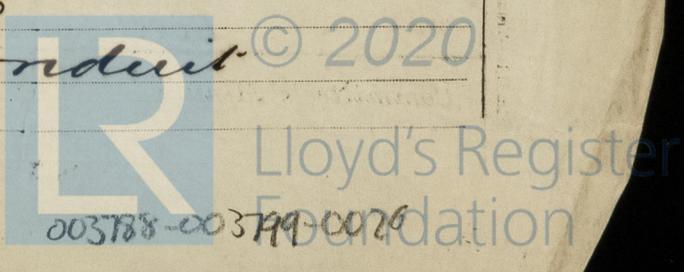
Main cable carrying 87 Amperes, comprised of 247 wires, each # 13 S.W.G. diameter, .093056 square inches total sectional area  
 Branch cables carrying 40 Amperes, comprised of 27 wires, each # 17 S.W.G. diameter, .017241 square inches total sectional area  
 Branch cables carrying 215 Amperes, comprised of 27 wires, each # 18 S.W.G. diameter, .012663 square inches total sectional area  
 Leads to lamps carrying 3 Amperes, comprised of 1 wires, each # 16 S.W.G. diameter, .003217 square inches total sectional area  
 Cargo light cables carrying 3 Amperes, comprised of 1 wires, each # 16 S.W.G. diameter, .003217 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Double Braided Rubber Insulated Wires enclosed in Steel Conduit

Joints in cables, how made, insulated, and protected Western Union Splices Soldered and Insulated with Two Thickness Rubber Tape. Two Thickness Juction Tape The whole painted with Insulating compound.

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 Steel 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 *Steel Conduit*

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 Wire in Conduit*

What special protection has been provided for the cables in engine room *Steel 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 *No* 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 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 *Permanently Fixed* How fixed *Iron 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 *Two*, fixed *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 *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.

*John Coughlan* Electrical Engineers Date *April 28 1920*

COMPASSES.

Distance between dynamo or electric motors and standard compass *200 ft.*

Distance between dynamo or electric motors and steering compass *150 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>5.5.</i>	Amperes	<i>16</i>	feet from standard compass	<i>8</i>	feet from steering compass
A cable carrying	<i>21.5</i>	Amperes	<i>24</i>	feet from standard compass	<i>16</i>	feet from steering compass
A cable carrying	<i>160</i>	Amperes	<i>84</i>	feet from standard compass	<i>76</i>	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 *No* degrees on *any* course in the case of the standard compass and *No* degrees on *any* course in the case of the steering compass.

*John Coughlan* Builder's Signature. Date *April 28 1920*

GENERAL REMARKS.

*Vessel fitted for wireless, but no wireless installation fitted. The Electric Light Installation is of Good Quality Tested under working conditions & found Satisfactory. Eligible in my opinion to be noted Electric Light in Register Book, in the case of this Vessel.*

*W. L. M. Green*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. MAY 28 1920*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

