

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 670

Port of *Vancouver B.C.* Date of First Survey *5th Aug 1918* Date of Last Survey *5 Oct 1918* No. of Visits *8*  
 No. in Reg. Book *107* on the *Iron or Steel* *High Speed Motor* *Wax* *Belmont* Port belonging to *Victoria B.C.*  
 Built at *Victoria B.C.* By whom *Sanitation Co.* When built *1918*  
 Owners *Garra Engineering Co.* Owners' Address *Glasgow*  
 Yard No. *3* Electric Light Installation fitted by *H. H. Taggart of Vancouver B.C.* When fitted *10-1918*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*15 H. P. De Laval Steam Turbo Generator*  
*(Generator by General Electric Co., Ltd.)*  
 Capacity of Dynamo *90* Amperes at *110* Volts, whether continuous or alternating current *continuous*  
 Where is Dynamo fixed *Engine room (Lower platform)* Whether single or double wire system is used *double*  
 Position of Main Switch Board *Engine room near dynamo* having switches to groups *6* Six in all of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each *Navigation + Officers in bridge quarters 12 switches*  
*Forecastle 3 switches, large deck at midships quarters 8 switches, midships circuit 7 seven switches*  
*Engine room circuit 8 switches, wireless 1 switch in Captains room + wireless room*  
 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 *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  
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases  
 Total number of lights provided for *200* arranged in the following groups:—  

A Forty	lights each of	16	candle power requiring a total current of	19.2	Amperes
B Thirty	lights each of	16	candle power requiring a total current of	14.4	Amperes
C Thirty Two	lights each of	16	candle power requiring a total current of	15.4	Amperes
D Sixty Two	lights each of	16	candle power requiring a total current of	29.8	Amperes
E Sixteen	lights each of	16	candle power requiring a total current of	7.7	Amperes
One Mast head light with One lamps each of	16	candle power requiring a total current of	4.8	Amperes	
Two Side light with One lamps each of	16	candle power requiring a total current of	9.6	Amperes	
Thirteen Cargo lights of	4-16	candle power, whether incandescent or arc lights	Incandescent		

  
 If arc lights, what protection is provided against fire, sparks, &c. *None*

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

## DESCRIPTION OF CABLES.

Main cable carrying *90* Amperes, comprised of *37* wires, each *15* S.W.G. diameter, *148.9* square inches total sectional area  
 Branch cables carrying *20* Amperes, comprised of *7* wires, each *16* S.W.G. diameter, *02227* square inches total sectional area  
 Branch cables carrying *10* Amperes, comprised of *7* wires, each *18* S.W.G. diameter, *01254* square inches total sectional area  
 Leads to lamps carrying *5* Amperes, comprised of *1* wires, each *17* S.W.G. diameter, *003* square inches total sectional area  
 Cargo light cables carrying *15* Amperes, comprised of *7* wires, each *18* S.W.G. diameter, *01254* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*30 % Pure Para Rubber, tape and braiding*  
*with water-proof compound.*  
 Joints in cables, how made, insulated, and protected *Spliced, soldered, taped with pure rubber + 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 *In watertight galvanised iron conduit*  
*Except in living quarters which are all in wood moulding.*



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *yes except in cargo spaces where holds are full of cargo*  
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *all wires in such places are in galvanised iron conduit*  
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Iron conduit*  
 What special protection has been provided for the cables near boiler casings *Iron conduit*  
 What special protection has been provided for the cables in engine room *Iron conduit*  
 How are cables carried through beams *Iron conduit* through bulkheads, &c. *Water-tight glands*  
 How are cables carried through decks *water-tight glands*  
 Are any cables run through coal bunkers or cargo spaces or spaces which may be used for carrying cargo, stores, or baggage  
 If so, how are they protected *In iron conduit no wires terminate in cargo spaces*  
 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 *Portable* How fixed *From water-tight fittings on deck*  
 In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Double wire*  
 How are the returns from the lamps connected to the hull *None*  
 Are all the joints with the hull in accessible positions *None*  
 Is the installation supplied with a voltmeter *yes*, and with an amperemeter *yes*, fixed *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.

*W. W. Fraser*

Electrical Engineers

Date *18th October 1918*

COMPASSES.

Distance between dynamo or electric motors and standard compass *150 feet +*  
 Distance between dynamo or electric motors and steering compass *150 feet +*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>20</i>	<i>20</i>	<i>✓</i>	<i>✓</i>
<i>15</i>	<i>12</i>	<i>✓</i>	<i>✓</i>
<i>0.4</i>	<i>fitted in compass</i>	<i>fitted in compass</i>	<i>fitted in compass</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 *Nothing* degrees on *✓* course in the case of the standard compass and *✓* degrees on *✓* course in the case of the steering compass.

*W. W. Fraser (Electrical Eng)*

Builder's Signature.

Date *19th October 1918*

GENERAL REMARKS.

*The Electric Light Installation is of Good Quality and Workmanship. Tested under working conditions and found satisfactory. It is eligible in my opinion to be noted in the Register. Date of Electric Light 10-18*  
*It is submitted that this vessel is eligible for THE RECORD. ELEC. LIGHT.*  
*James Hardoch*  
 Surveyor to Lloyd's Register of Shipping.  
 7/12/18.

Committee's Minute

TUE 10 DEC 1918

THE 18 MAR 1919

FRI AUG 20 1920



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.