

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 22062

Port of Sunderland Date of First Survey  Date of Last Survey 21st Nov. 04 No. of Visits   
 No. in Reg. Book on the Iron or Steel 55 "Bermudian" Port belonging to London  
 Built at Sunderland By whom Mr James Lang & Sons Ltd When built 1904  
 Owners Quebec Steamship Coy Owners' Address London  
 Yard No. 604 Electric Light Installation fitted by Sunderland Forge & Eng Co Ltd When fitted 1904

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Compound Open Type Engines fitted direct coupled to Multipolar Compound Wound Dynamos.  
 Capacity of Dynamo each 250 Amperes at 110 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed on Platform over Thrust in Engine Room  
 Position of Main Switch Board near Dynamos having switches to groups Eight of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Middle of Shelter Deck, Berth 8-way  
Middle of Bridge Deck Berths 4-way Saloon 3-way Engineers Quarters  
2-way 2nd Class Accommodations 2nd-3-way  
 If cut outs 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes  
 Are the cut outs of non-oxidizable metal Yes and constructed to fuse at an excess of 100% per cent over the normal current  
 Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 550 arranged in the following groups:—

Group	Number of lights	Each of	Candle power	requiring a total current of	Amperes
A	150	16	75	75	Amperes
B	130	16	65	65	Amperes
C	60	16	30	30	Amperes
D	50	16	25	25	Amperes
E	56	16	23	23	Amperes
D 1	1	1 lamp each of <u>32</u>	32	49	Amperes
D 2	1	1 lamp each of <u>32</u>	32	20	Amperes
B 3	3	Cargo lights of <u>6 - 16</u>	16	each	Incandescent

If are lights, what protection is provided against fire, sparks, &c.  
 Where are the switches controlling the masthead and side lights placed

## DESCRIPTION OF CABLES.

Main cable carrying 250 Amperes, comprised of 37 wires, each 12 L.S.G. diameter, .75 square inches total sectional area  
 Branch cables carrying 75 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .095 square inches total sectional area  
 Branch cables carrying 35 Amperes, comprised of 7 wires, each 14 L.S.G. diameter, .035 square inches total sectional area  
 Leads to lamps carrying 5 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .009 square inches total sectional area  
 Cargo light cables carrying 3 Amperes, comprised of 138 wires, each 38 L.S.G. diameter, .005 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires & cables insulated then insulated with pure V Vulcanized india rubber. Taped & Braided  
 Joints in cables, how made, insulated, and protected No joints used wiring carried out on the distribution & Looping in System  
 Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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  
 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 Main cables lead through passage quarters on Bridge Deck in Stout Wood casing

W633-0158



**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 screeled soled draag steel tubes specially enamelled

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

What special protection has been provided for the cables near boiler casings do

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

How are cables carried through beams / soles basted with Fibre through bulkheads, &c. W.T. Glance used

How are cables carried through decks W.T. Deck Tubes used

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 Special Steel Tubes as above

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 strong quassels

Where are the main switches and cut outs for these lights fitted water tight enclosed switch fitted at gangway

If in the spaces, how are they specially protected in Metal case

Are any switches or cut outs fitted in bunkers No

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 \_\_\_\_\_

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas \_\_\_\_\_

Are any switches, cut outs, 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 installation is \_\_\_\_\_ supplied with a two two an amperemeter, fixed on Switchboard

The copper used is guaranteed to have a conductivity of 98 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile after 24 hours' immersion in seawater.

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.

**THE SURBERLAND FORK & ENGINEERING CO., LTD.**

*H. Wright*  
*Newry*

Electrical Engineers

Date 22 Nov 1907

**COMPASSES.**

Distance between dynamo or electric motors and standard compass \_\_\_\_\_

Distance between dynamo or electric motors and steering compass \_\_\_\_\_

The nearest cables to the compasses are as follows:—

A cable carrying	<u>2</u>	Amperes	<u>3</u>	feet from standard compass	<u>3</u>	feet from steering compass
A cable carrying	<u>5</u>	Amperes	<u>any</u>	feet from standard compass	<u>any</u>	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 1/20 degrees on all course in the case of the standard compass and 1/20 degrees on all course in the case of the steering compass.

**FOR SIR JAMES LAING & SONS, LIMITED.**

*J. Laing*

Builder's Signature.

Date 2 Dec 1907

**GENERAL REMARKS.**

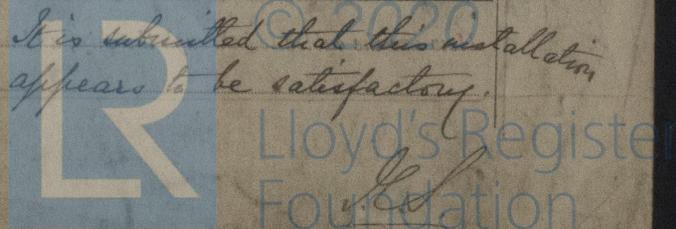
The above particulars appear to comply with the Rules for the Record of "Electric Light" in the Register Book

*A. Boyd*

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

It is submitted that this installation appears to be satisfactory.



6.12.04

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 11.