

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 Accommodation 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:—

A	150	lights each of	16	candle power requiring a total current of	75	Amperes
B	130	lights each of	16	candle power requiring a total current of	65	Amperes
C	60	lights each of	16	candle power requiring a total current of	30	Amperes
D	50	lights each of	16	candle power requiring a total current of	25	Amperes
E	56	lights each of	16	candle power requiring a total current of	23	Amperes
D 1	1	Must head light with 1 lamp each of	32	candle power requiring a total current of	49	Amperes
2	1	Side light with 1 lamp each of	32	candle power requiring a total current of	20	Amperes
B 3	3	Cargo lights of 6 - 16	16	candle power, whether incandescent or are lights	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, *25* 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 & Vulcanized india rubber. Taped & Braided

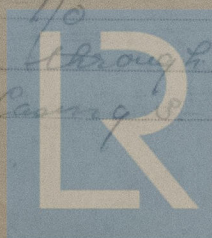
Joints in cables, how made, insulated, and protected *No joints used wiring carried out on the distribution & Looping in System*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *✓* 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*

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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 *any special*
screamed solid drawn 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 *holes 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* *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 SURVEILLANCE ENGINEERING CO., LTD.

H. Wright
Newry

Electrical Engineers

Date *xx 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	Amperes	feet from standard compass	feet from steering compass
<i>2</i>	<i>3</i>	<i>3</i>	<i>3</i>
<i>5</i>	<i>on</i>	<i>on</i>	<i>on</i>
<i>5</i>	<i>on</i>	<i>on</i>	<i>on</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 *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.

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. Lloyd

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

Committee's Minute _____

It is submitted that this installation appears to be satisfactory.

Lloyd's Register Foundation

6.12.04

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.