

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 16712

Port of **GREENOCK** Date of First Survey **20/5/14** Date of Last Survey **19/6/14** No. of Visits **10**  
 No. in on the Iron or Steel **SS Santa Isabel** Port belonging to **Liverpool**  
 Reg. Book **Built at Port. Glasgow** By whom **Messrs. Dunlop & Phipps** When built **1914**  
 Owners **Santa Clara & Co. Ltd** Owners' Address **Liverpool**  
 Card No. **281** Electric Light Installation fitted by **Messrs. Clarke Chapman & Co. Ltd** When fitted **1914**

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

**One single cylinder double acting open type vertical engine direct coupled to a continuous current compound wound dynamo**

Capacity of Dynamo **56** Amperes at **100** Volts, whether continuous or alternating current **continuous**

Where is Dynamo fixed **in Engine Room** Whether single or double wire system is used **double**

Position of Main Switch Board **near Dynamo** having switches to groups **A B C** of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each **Each light & group of lights provided with switches as required**

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-oxidisable metal **Yes** and constructed to fuse at an excess of **50** 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 slate & porcelain**

Total number of lights provided for **93.16** arranged in the following groups:

A	46	lights each of	16	candle power requiring a total current of	25.7	Amperes
B	27	lights each of	16	candle power requiring a total current of	15.1	Amperes
C	20	lights each of	16	candle power requiring a total current of	11.8	Amperes
D	—	lights each of	—	candle power requiring a total current of	—	Amperes
E	—	lights each of	—	candle power requiring a total current of	—	Amperes
7	Mast head light with	1 lamp each of	32	candle power requiring a total current of	2.2	Amperes
7	Side light with	1 lamp each of	32	candle power requiring a total current of	2.2	Amperes
4	Cargo lights of	6-16	candle power, whether incandescent or arc lights	incandescent		

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

Where are the switches controlling the masthead and side lights placed **in Chart Room**

## DESCRIPTION OF CABLES.

Main cable carrying **56** Amperes, comprised of **19** wires, each **16** S.W.G. diameter, **.0600** square inches total sectional area

Branch cables carrying **25.7** Amperes, comprised of **7** wires, each **17** S.W.G. diameter, **.01695** square inches total sectional area

Branch cables carrying **11.8** Amperes, comprised of **7** wires, each **20** S.W.G. diameter, **.00700** square inches total sectional area

Leads to lamps carrying **56** Amperes, comprised of **1** wires, each **18** S.W.G. diameter, **.00781** square inches total sectional area

Cargo light cables carrying **3.3** Amperes, comprised of **168** wires, each **38** S.W.G. diameter, **.00502** square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

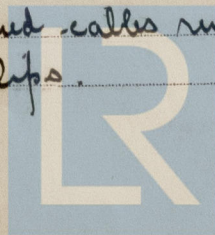
**Vulcanized india rubber taped & braided & lead covered where exposed steel armored cable**

Joints in cables, how made, insulated, and protected **no joints except mechanical ones**

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. No**

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 **Lead covered & steel armored cables run through holds & clipped to fore & aft plate with strong galvanized iron clips.**





**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 Lead covered & steel armored cables

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered & steel armored

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

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

How are cables carried through beams in lead bushes through bulkheads, &c. in WT glands

How are cables carried through decks in galvanized iron deck tiles

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 Lead covered & steel armored cables

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 to C.W.T. connection boxes

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Double wire system

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 —, fixed in bulkhead

**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.

*For Clarke, Chapman & Co. Ltd.*

Electrical Engineers

Date July 8<sup>th</sup> 1914

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 64 ft

Distance between dynamo or electric motors and steering compass 58

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>.56</u>	<u>108</u>	<u>6</u>	<u>17</u>
<u>.56</u>	<u>6</u>	<u>17</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

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 nil degrees on all course in the case of the

standard compass and nil degrees on all course in the case of the steering compass.

**DUNLOP, BREMNER & COY., LIMITED**

*Geo. G. Parker*

Builder's Signature.

Date 14<sup>th</sup> July 1914

**GENERAL REMARKS.**

*The installation was tried under full working conditions & found to work satisfactorily*

*It is submitted that this vessel is eligible for*

**THE RECORD. Elec. light.**

*JWD 23/7/14*

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

Committee's Minute

**GLASGOW 22 JUL.**

*Elec. Light*



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