

WED. MAY 29. 1912

## REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of *Greenock* Date of First Survey *27<sup>th</sup> Jan, 1912* Date of Last Survey *9<sup>th</sup> Mar, 1912* No. of Visits *16239*  
 No. in Reg. Book *on the Iron or Steel T. S. S. BELTANA.* Port belonging to *Greenock*  
 Built at *Greenock* By whom *Baird & Co* When built *1912*  
 Owners *P. & O. Steam Nav. Comp.* Owners' Address *London*  
 Yard No. *319* Electric Light Installation fitted by *Siemens Bros. Dynamo Works Ltd.* When fitted *1912*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*3. Siemens 4 pole compound Dynamos, each coupled direct to a Brotherhood vertical enclosed compound Engine 6 1/2" x 11" x 7.*

Capacity of Dynamo *350*. Amperes at *105*. Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *Main Engine room* Whether single or double wire system is used *single*

Position of Main Switch Board *"* having switches to groups *8. Port Lights* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *5. Power:*

*None*

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 cessel 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

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

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes*.

Total number of lights provided for *662*. arranged in the following groups:—

Group	Lights	Each of	Candle power	Requiring a total current of	Amperes
A	1-118	9	16	1-60	9-42
B	2-84	10	1	2-50	10-42
C	3-102	11	1	3-61	11-42
D	4-89	12	1	4-53	12-160
E	5-63	13	1	5-37	13-160
F	6-62	14	1	6-37	14-50
G	7-88	15	1	7-52	15-120
H	8-56	16	1	8-34	16-25

*2* Mast head light with *1* lamps each of *16* candle power requiring a total current of *1.2*. Amperes

*2* Side light with *1* lamps each of *16* candle power requiring a total current of *1.2*. Amperes

*28*. Cargo lights of *3-16*. candle power, whether incandescent or arc lights *incandescent*.

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

*Cargo lights & Arc lamps supplied by Owners.*

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

## DESCRIPTION OF CABLES.

Main cable carrying *350*. Amperes, comprised of *61*. wires, each *12*. L.S.G. diameter, *.50*. square inches total sectional area

Branch cables carrying *160* Amperes, comprised of *37*. wires, each *.083*. L.S.G. diameter, *.20*. square inches total sectional area

Branch cables carrying *50* Amperes, comprised of *19*. wires, each *16*. L.S.G. diameter, *.060*. square inches total sectional area

Leads to lamps carrying *.6*. Amperes, comprised of *1*. wires, each *18*. L.S.G. diameter, *.0018*. square inches total sectional area

Cargo light cables carrying *1.8* Amperes, comprised of *7*. wires, each *20*. L.S.G. diameter, *.0070*. square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Tinned copper conductors insulated with pure & vulcanized rubber taped, braided & compounded, then laid in well seasoned pine or teak casings or gal. steel conduit.*

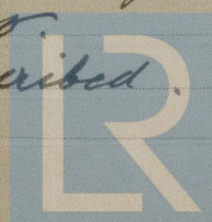
Joints in cables, how made, insulated, and protected

*Generally jointless system.*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *Yes where necessary* 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 *as above described*



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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 seal casing or gal. steel conduit

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

What special protection has been provided for the cables near boiler casings gal. steel conduit

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

How are cables carried through beams in fibre plugs through bulkheads, &c. special glands

How are cables carried through decks special Deck tubes

Are any cables run through coal bunkers No or cargo spaces No or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected steel conduit

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage

If so, how are the lamp fittings and cable terminals specially protected

Where are the main switches and cut outs for these lights fitted

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers

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 by gun metal shoe

How are the returns from the lamps connected to the hull 3/8" brass whitworth screw & washer

Are all the joints with the hull in accessible positions Yes

The installation is supplied with 1 voltmeter and 3 amperemeter, fixed on main switch board

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 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 2000 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.

SIEMENS BROTHERS DYNAMO WORKS LTD.,  
MARINE DEPARTMENT.

W.S.P.  
Manager.

Electrical Engineers

Date 17<sup>th</sup> May 1912

COMPASSES.

Distance between dynamo or electric motors and standard compass over 100 feet

Distance between dynamo or electric motors and steering compass over 100 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Ampere	feet from standard compass	feet from steering compass
<u>7</u>	<u>about 12</u>	<u>about 12</u>	<u>about 12</u>
A cable carrying	Ampere	feet from standard compass	feet from steering compass
A cable carrying <u>6</u>	Ampere <u>3</u>	feet <u>112</u> from standard compass	feet <u>112</u> 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.

FOR CAIRD AND COMPANY LIMITED

Builder's Signature.

Date

21<sup>st</sup> May 1912

GENERAL REMARKS.

The materials and workmanship are good. The insulation on being tried worked satisfactorily.

It is submitted that this vessel is eligible for THE RECORD Elec. light.

Wm. Austin.

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

Committee's Minute

GLASGOW

28 MAY 1912

Elec. Light



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

27/5/12