

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 16374

Port of Greenock Date of First Survey 22nd Nov. 1912 Date of Last Survey 28th Dec. 1912 No. of Visits 16
 No. in Reg. Book on the Iron or Steel S.S. Penang Mann Port belonging to Tosko
 Built at Port Glasgow By whom Russell & Co. When built 1912
 Owners Owners' Address
 Yard No. 642 Electric Light Installation fitted by Bennett & Rutherford When fitted 1912

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 4" x 6" Single Cylinder Open type Engine mounted on same plate as
1 Mulpoca Dynamo speed 300 revs steam pressure 80 lbs Clarke Chapman make
 Capacity of Dynamo 66 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Main Platform Engine Room Whether single or double wire system is used Double
 Position of Main Switch Board Near Dynamo having switches to groups Six of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Forecastle, Saloon, Pantry, Chart Room
Engineers Mess. & Engine Room

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 50 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 123 arranged in the following groups:—

A	Forecastle 11 lights each of	16	candle power requiring a total current of	6	Amperes
B	Saloon etc 16 lights each of	16	candle power requiring a total current of	8.4	Amperes
C	Navigations 14 lights each of	16	candle power requiring a total current of	9.2	Amperes
D	Engine mess 24 lights each of	16	candle power requiring a total current of	14.4	Amperes
E	Engine Room 30 lights each of	16	candle power requiring a total current of	16.3	Amperes
	2 Mast head light with 1 lamps each of	32	candle power requiring a total current of	2.0	Amperes
	2 Side light with 1 lamps each of	32	candle power requiring a total current of	2.0	Amperes
	5 Cargo lights of	80	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 Chart Room.

DESCRIPTION OF CABLES.

Main cable carrying 66 Amperes, comprised of 19 wires, each 15 L.S.G. diameter, .0473 square inches total sectional area
 Branch cables carrying 9.2 Amperes, comprised of 4 wires, each 18 L.S.G. diameter, .0124 square inches total sectional area
 Branch cables carrying 16.3 Amperes, comprised of 4 wires, each 16 L.S.G. diameter, .0225 square inches total sectional area
 Leads to lamps carrying 2 Amperes, comprised of 3 wires, each 20 L.S.G. diameter, .00005 square inches total sectional area
 Cargo light cables carrying 2.9 Amperes, comprised of 3 wires, each 20 L.S.G. diameter, .00005 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

In accommodation are protected with lead covering. Holds etc are armoured with galv iron wires. The cables are protected with pure vul India rubber, Taped & Vulcanized together
 Joints in cables, how made, insulated, and protected No joints throughout ship, mechanical boxes used.

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 bunks, 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

Armoured, clipped back

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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 Armoured

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

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

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

How are cables carried through beams Ferrules of fibre through bulkheads, &c. fibre

How are cables carried through decks Iron Deck Lubes

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 Armoured

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 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 /

How are the returns from the lamps connected to the hull /

Are all the joints with the hull in accessible positions /

The installation is / supplied with a voltmeter and / an amperemeter, fixed on Switchboard

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 99 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.

Bennett & Rutherford Electrical Engineers Date 31st Dec 1912

COMPASSES.

Distance between dynamo or electric motors and standard compass 200 ft

Distance between dynamo or electric motors and steering compass 200 ft

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>9</u>	<u>9</u>	<u>6</u>	<u>6</u>
A cable carrying <u>1.0</u>	Amperes <u>for Compass light</u>	feet from standard compass <u>/</u>	feet from steering compass <u>/</u>
A cable carrying <u>2.0</u>	Amperes <u>2</u>	feet from standard compass <u>4</u>	feet from steering compass <u>4</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 / degrees on / course in the case of the standard compass and / degrees on / course in the case of the steering compass.

Russell & Co. Builder's Signature. Date 7th Jan 1913

GENERAL REMARKS.

The materials and workmanship are good. When completed the installation was tried and worked satisfactorily.

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

JWD
15/1/13

Wm. Austin

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

Committee's Minute

GLASGOW

14 JAN. 1913

Elec Light

glib



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.