

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 16879

Port of Glasgow Date of First Survey 10 Mar 15 Date of Last Survey 19 June No. of Visits \_\_\_\_\_  
 No. in on the Iron or Steel S.S. "Elsiston" Port belonging to Glasgow  
 Reg. Book 6946 Built at Port Glasgow. By whom Messrs Russell & Co., When built 1915  
 Owners W & Miller & Co Owners' Address Glasgow  
 Yard No. 677 Electric Light Installation fitted by Sunderland Forge & Eng. Co., Ltd. When fitted 1915

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One multipolar compound wound dynamo direct coupled to open type inverted engine.

Capacity of Dynamo 80 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed bottom engine room stdb side. Whether single or double wire system is used double

Position of Main Switch Board close to dynamo having switches to groups three of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one in wheel house with switches for navigation lights.

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-oxidizable metal yes and constructed to fuse at an excess of 100% per cent over the normal current

Are all fuses fitted in easily accessible positions yes Are the fuses of standard dimensions no 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

Total number of lights provided for 112 arranged in the following groups:—

Group	Number of lights	Each of	Candle power	Requiring a total current of	Amperes
A	<u>59</u>	lights each of	<u>16</u>	<u>33.04</u>	Amperes
B	<u>30</u>	lights each of	<u>16</u>	<u>16.80</u>	Amperes
C	<u>w23</u>	lights each of	<u>16</u>	<u>12.88</u>	Amperes
D		lights each of			Amperes
E		lights each of			Amperes
2 Mast head light with <u>1</u> lamps each of <u>32 c.p. D.F</u> candle power requiring a total current of <u>2.24</u> included in above Amperes					
2 Side light with lamps each of <u>do</u> candle power requiring a total current of <u>2.24</u> above Amperes					
<u>5</u> Cargo lights of <u>5.16 c.p.</u> candle power, whether incandescent or arc lights <u>incandescent</u>					

If arc lights, what protection is provided against fire, sparks, &c. none fitted

Where are the switches controlling the masthead and side lights placed in wheel house

## DESCRIPTION OF CABLES.

Main cable carrying 60 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .060 square inches total sectional area  
 Branch cables carrying 33 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area  
 Branch cables carrying 16 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .0070 square inches total sectional area  
 Leads to lamps carrying 2.24 Amperes, comprised of 1 wires, each 16 S.W.G. diameter, .00322 square inches total sectional area  
 Cargo light cables carrying 2.8 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00181 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

In berths etc., pure rubber, vulcanised rubber taped and lead covered

Engine room etc., " " " armoured and braided

Main cables " " " "

Joints in cables, how made, insulated, and protected There are none.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances ✓ 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 armoured and braided cables led through beams on under side of deck.

**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 V.T.R. in iron pipes.

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

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 bushed/fibre through bulkheads, &c. W.T. glands

How are cables carried through decks W.T. deck tubes.

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 and braided 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

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

Is the installation supplied with a voltmeter yes, and with an amperemeter yes, fixed on switchboard

**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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO., LTD,

Electrical Engineers

Date 23/6/15

**COMPASSES.**

Distance between dynamo or electric motors and standard compass Director about 88 feet

Distance between dynamo or electric motors and steering compass about 85 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>9.52</u>	Amperes	<u>6</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>1.56</u>	Amperes	<u>6</u>	feet from standard compass	<u>led into</u>	<u>feet from steering compass</u>
A cable carrying	<u>.56</u>	Amperes	<u>led into</u>	<u>feet from standard compass</u>	<u>6</u>	feet 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.

Russell & Co. Engineers Builder's Signature. Date 20 June 1915

**GENERAL REMARKS.**

The fitting of the wires in this vessel are as stated in this report, and appear to be in accordance with the Committee's requirements.

It is submitted that this vessel is eligible for

**THE RECORD Elec. Light.**

J.W.D.

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

Committee's Minute

GLASGOW 21 JUL 1915

Elec. Light.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 11.13.—Transfer.

20/7/15