

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No 37357.

Port of Glasgow Date of First Survey 28.3.17 Date of Last Survey 20.12.17 No. of Visits 111  
 No. in Reg. Book 153 on the Iron or Steel S.S. MAIZAR Port belonging to Liverpool  
 Built at Glasgow By whom Cornell + Co Ltd When built 1914  
 Owners J. + J. Maclelland Ltd Owners' Address \_\_\_\_\_  
 Yard No. 369 Electric Light Installation fitted by H. G. Robertson + Co When fitted 1914

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two dynamos Compound wound multipolar (4 pole) type, each dynamo coupled direct to a vertical engine having cylinder 8" x 7" & 275 rev  
 Capacity of Dynamo each 135 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Engine room Starting platform Whether single or double wire system is used Double wire

Position of Main Switch Board near dynamo having switches to groups A, B, C, D, E, F of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each No auxiliary switch boards

If fuses are fitted on main switch board to the cables of main circuit yes and on each auxiliary <sup>fuse</sup> 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 \_\_\_\_\_

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 wire 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 177 arranged in the following groups:—

A	<u>Two 2 arc lamps &amp; projector</u> lights each of _____	candle power requiring a total current of _____	Amperes
B	lights each of _____	candle power requiring a total current of _____	Amperes
C	lights each of _____	candle power requiring a total current of _____	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
	<u>Two</u> Mast head lights with <u>1</u> lamps each of <u>16</u>	candle power requiring a total current of _____	Amperes
	<u>Two</u> Side lights with <u>1</u> lamps each of <u>16</u>	candle power requiring a total current of _____	Amperes

Six Cargo lights of 9.6 candle power, whether incandescent or arc lights Both

If arc lights, what protection is provided against fire, sparks, &c. Strong hexagon glass lanterns and double enclosure glass

Where are the switches controlling the masthead and side lights placed on Bridge & also Bridge Starting shaft

## DESCRIPTION OF CABLES.

Main cable carrying 135 Amperes, comprised of 37 wires, each 15 S.W.G. diameter, .151 square inches total sectional area

Branch cables carrying 24 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .0225 square inches total sectional area

Branch cables carrying 12 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0127 square inches total sectional area

Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 14 S.W.G. diameter, .00246 square inches total sectional area

Cargo light cables carrying 9.6 Amperes, comprised of 119 wires, each 28 S.W.G. diameter, .00322 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

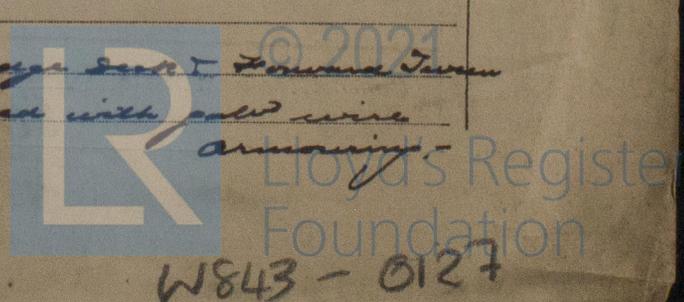
Pure india rubber then vulcanising india rubber, rubber coated tape, the whole vulcanised together. Tapes clean covered in accommodation, or armoured with galv wire armouring claustrus.

Joints in cables, how made, insulated, and protected No joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances no joints 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 no joints

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 Forward under bridge deck & Forward from deck, aft thro' shaft tunnel to poop. Armoured with galv wire armouring.



**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  
insulated in galv iron pipes

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

What special protection has been provided for the cables near boiler casings Lead covered & armoured

What special protection has been provided for the cables in engine room Armoured with galv wire armouring

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

How are cables carried through decks in galv iron 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 galv wire armouring

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage None in Bunkers

If so, how are the lamp fittings and cable terminals specially protected (Connectors only) in strong iron cases

Where are the main switches and fuses for these lights fitted in Engine room

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 (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 2 amperemeters —, 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.

A. J. Robertson & Co.

Electrical Engineers

Date 7/2/18

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 112 Feet

Distance between dynamo or electric motors and steering compass 116 Feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>10</u>	Amperes	<u>6</u>	feet from standard compass	<u>7</u>	<u>6</u>	feet from steering compass
A cable carrying	<u>4.5</u>	Amperes	<u>6</u>	feet from standard compass	<u>7</u>	<u>6</u>	feet from steering compass
A cable carrying	<u>.3</u>	Amperes	<u>into</u>	feet from standard compass	<u>7</u>	<u>.3</u>	into 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 nil degrees on any course in the case of the standard compass and nil degrees on any course in the case of the steering compass.

For CHARLES CONNELL & CO., Limited.

D. McCallum SECRETARY.

Builder's Signature.

Date 16 Febry 1918

**GENERAL REMARKS.**

This installation has been well fitted on board and when examined under full working conditions was found satisfactory

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

Elec. light. JWD 20/2/18.

A. McKeand

Surveyor to Lloyd's Register of Shipping.

Lloyd's Register

Committee's Minute **GLASGOW, 19 FEB 1918**

Elec. Light



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