

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41328.

Port of Glasgow. Date of First Survey 5.6.21. Date of Last Survey 10.8.21. No. of Visits 5.
 No. in on the Iron or Steel S.S. "ERA" Port belonging to Melbourne.
 Reg. Book 341628 Built at Port Glasgow By whom Messrs Wm Hamilton & Co When built 1921.
 Owners Messrs Howard Smith Ltd. Owners' Address
 Yard No. 381 Electric Light Installation fitted by Messrs A.V. Dunlop & Co When fitted 1921.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

A second hand dynamo & engine fitted Syd. 6.4 in place of existing one 40 KW. 110 volt 360 amps.
 Engine High Speed Enclosed Vertical Type 520 RPM 100 lb steam cylinder 5 1/2 x 5.
 Dynamo Compound wound Open Type direct coupled on combination bedplate.
 Capacity of Dynamo 10 K.W. 100 Amperes at 100 Volts, whether continuous or alternating current Continuous.
 Where is Dynamo fixed On Engine Room floor. Whether single or double wire system is used Double wire.
 Position of Main Switch Board In Engine Room near Dynamo having switches to groups Five of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each

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 and at each position where a cable is branched or reduced in size 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 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 Porcelain mounted on wood blocks.

Total number of lights provided for 137 arranged in the following groups:—

A	<u>29</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>17.4</u>	Amperes
B	<u>34</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>20.4</u>	Amperes
C	<u>44</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>26.4</u>	Amperes
D	<u>15</u>	lights each of equal to <u>20 @ 16</u>		candle power requiring a total current of	<u>12.0</u>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
<u>Two Mast head lights with 1 lamp each of 32 candle power requiring a total current of 2.4 Amperes</u>						
<u>Two Side lights with 1 lamp each of 32 candle power requiring a total current of 2.4 Amperes</u>						
<u>Five Cargo lights of 5 X 16 candle power, whether incandescent or arc lights Incandescent.</u>						

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

No arc lamps fitted

Where are the switches controlling the masthead and side lights placed On Tell Tale board in Chart Room

DESCRIPTION OF CABLES.

Main cable carrying 100 Amperes, comprised of 37 wires, each 14 S.W.G. diameter, .182 square inches total sectional area
 Branch cables carrying 26.4 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .01216 square inches total sectional area
 " " 20.4 " " 7 " " 20 " " .007005 " "
 Branch cables carrying 12 Amperes, comprised of 7 wires, each 22 S.W.G. diameter, .004238 square inches total sectional area
 Leads to lamps carrying 3.6 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00181 square inches total sectional area
 Cargo light cables carrying 15 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007005 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with pure para, vulcanized, taped + covered overall with continuous sheath of pure lead.

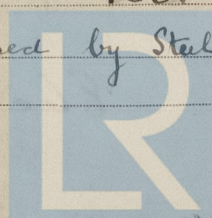
Armoured cables as above but with fibre serving + steel wire armouring.

Joints in cables, how made, insulated, and protected Cables where jointed fitted with porcelain joint box, this where exposed to mechanical injury covered with cast iron shield.

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 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 Protected where exposed by steel armour.



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible Yes, with the exception of masthead where extension is placed at base of mast.
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture The lead sheathing providing the necessary protection
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Cables where not armoured are laid on wood grounds.
 What special protection has been provided for the cables near boiler casings Cables are armoured + served overall with asbestos.
 What special protection has been provided for the cables in engine room Armoured cables used
 How are cables carried through beams Clear holes drilled + glands through bulkheads, &c. where necessary
 How are cables carried through decks In 1/2" Iron deck tubes packed with oakum + pitch
 Are any cables run through coal bunkers yes or cargo spaces yes or spaces which may be used for carrying cargo, stores, or baggage
 If so, how are they protected Covered with steel wire armour.
 Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage yes, three only.
 If so, how are the lamp fittings and cable terminals specially protected with strong iron guards.
 Where are the main switches and fuses for these lights fitted Outside cargo space.
 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.

A. V. DUNLOP & CO.

Electrical Engineers

Date 31 AUG 1921

COMPASSES.

Distance between dynamo or electric motors and standard compass

110 ft.

Distance between dynamo or electric motors and steering compass

100 ft.

The nearest cables to the compasses are as follows:—

A cable carrying <u>6</u> Amperes <u>for lighting</u>	feet from standard compass	<u>for lighting</u>	feet from steering compass
A cable carrying _____ Amperes _____	feet from standard compass	_____	feet from steering compass
A cable carrying _____ Amperes _____	feet from standard compass	_____	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power with 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.

WILLIAM HAMILTON & CO., LIMITED.

Mr. Andrew Murray

Builder's Signature.

Date 2 September 1921.

GENERAL REMARKS.

This installation has been fitted on board under special survey. Tested under full working conditions & found satisfactory

FREE £10.0.0 9/6 6/9/21.

Elec Light
bell
8/9/21

J. S. Rankin

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

Committee's Minute

GLASGOW.

6-SEP-1921

Elec Light



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