

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 32462.

Port of **GLASGOW** Date of First Survey **23.1.13** Date of Last Survey **12.3.13** No. of Visits **12**  
 No. in Reg. Book **62 Sup.** on the Iron or Steel **5/8** " **LINMERE** Port belonging to **Manchester**  
 Built at **Port Glasgow.** By whom **Murdoch & Murray** When built **1913.**  
 Owners **H. Watson & Co.** Owners' Address **Haadon & Co.** When fitted **1913**  
 Yard No. **253.** Electric Light Installation fitted by **Haadon & Co.**

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

*One Compound Wound Dynamo coupled direct on same bed plate to One Double Acting Open Fronted Steam Engine*  
 Capacity of Dynamo **65** Amperes at **100** Volts, whether continuous or alternating current **Continuous**  
 Where is Dynamo fixed **Engine Room** Whether single or double wire system is used **Double**  
 Position of Main Switch Board **Alongside Dynamo** having switches to groups **A. B. C. D.** of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each **Pantry - two circuits, Wheel House - six circuits, Steering Gear Space - eight circuits, Engine Room - four circuits**

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 **25** 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 **103** arranged in the following groups :-

A	<b>44</b>	lights each of	<b>16</b>	candle power requiring a total current of	<b>26.4</b>	Amperes
B	<b>8</b>	lights each of	<b>7</b>	candle power requiring a total current of	<b>4.8</b>	Amperes
C	<b>33</b>	lights each of	<b>7</b>	candle power requiring a total current of	<b>19.8</b>	Amperes
D	<b>14</b>	lights each of	<b>7</b>	candle power requiring a total current of	<b>8.4</b>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
	<b>2</b>	Mast head light with <b>1</b> lamps each of	<b>32</b>	candle power requiring a total current of	<b>2.4</b>	Amperes
	<b>2</b>	Side light with <b>1</b> lamps each of	<b>32</b>	candle power requiring a total current of	<b>2.4</b>	Amperes
	<b>5</b>	Cargo lights of <b>5 lamps of 16</b>		candle power, whether incandescent or arc lights	<b>Included in above</b>	

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

Where are the switches controlling the masthead and side lights placed **Wheel House**

**DESCRIPTION OF CABLES.**

Main cable carrying **65** Amperes, comprised of **19** wires, each **15** L.S.G. diameter, **.07286** square inches total sectional area  
 Branch cables carrying **26.4** Amperes, comprised of **7** wires, each **15** L.S.G. diameter, **.02803** square inches total sectional area  
 Branch cables carrying **19.8** Amperes, comprised of **7** wires, each **16** L.S.G. diameter, **.02214** square inches total sectional area  
 Leads to lamps carrying **.6** Amperes, comprised of **1** wires, each **18** L.S.G. diameter, **.001810** square inches total sectional area  
 Cargo light cables carrying **3** Amperes, comprised of **3** wires, each **20** L.S.G. diameter, **.002994** square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

*Pure Rubber, Vulcanized Rubber, taped, braided & compounded overall*

Joints in cables, how made, insulated, and protected **No joints, all wires looped in & extension boxes used.**

Are all the joints of cables thoroughly soldered, resin only having been used as a flux  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 **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 **Lead covered in cabins etc, armoured elsewhere**



**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 In Tubes

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 Do.

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

How are cables carried through beams Fibre tube through bulkheads, &c. Stuffing Glands

How are cables carried through decks Iron pipes flanged to deck

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 Yes in Spaces

If so, how are the lamp fittings and cable terminals specially protected Cast iron hinged cover over lamp

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

If in the spaces, how are they specially protected ✓

Are any switches or cut outs fitted in bunkers No

Cargo light cables, whether portable or permanently fixed Portable How fixed Brass Sockets & Plugs

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 Main Switch Bed.

**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 2,500 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.

Haddow & Co, Glasgow. Electrical Engineers Date March 24th 1915.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 80 ft

Distance between dynamo or electric motors and steering compass 85 "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>26.4</u>	<u>16</u>	<u>22</u>	<u>22</u>
<u>4.8</u>	<u>10</u>	<u>18</u>	<u>18</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 Nil degrees on Nil course in the case of the standard compass and Nil degrees on Nil course in the case of the steering compass.

**MURDOCH & MURRAY, LIMITED.**

James Murray Director. Builder's Signature. Date 29th March 13

**GENERAL REMARKS.**

The installation has been examined, tried and found satisfactory

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

J.W.D. 27/4/13.

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

Committee's Minute GLASGOW 1- APR. 1913

Elec. Light



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.