

MAY 1918

## REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 37834

Port of Glasgow Date of First Survey 6<sup>th</sup> April 1918 Date of Last Survey 16.5.18 No. of Visits 10  
 No. in Reg. Book 134 on the Iron Steel War African Port belonging to London  
 Built at Govan By whom Harland & Wolff When built 1918  
 Owners The Shipping Controller Owners' Address London  
 Yard No. 527 Electric Light Installation fitted by Harland & Wolff When fitted 1918

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 10 K.W. 100 Volt "Holmes" Dynamo 520 R.P.M. d/c. to 5 1/2 x 5" Single Cylinder  
Shanks Vertical Enclosed Steam Engine giving output of 15/16 B.H.P.  
 Capacity of Dynamo 100 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 Engine Room having switches to groups A, B, C, D, E of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each none

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 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 Lead 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 yes

Total number of lights provided for 170 1 Morse Lamp arranged in the following groups:—

A <u>Accommod.</u>	<u>30</u> lights each of <u>16</u> candle power requiring a total current of <u>18.0</u> Amperes
B <u>Midship Accom.</u>	<u>48</u> lights <del>each of 39 of 30 watt. &amp; 9 of 16</del> candle power requiring a total current of <u>17.1</u> Amperes
C <u>Navigation</u>	<u>9</u> lights <del>each of 5 of 16 C.P. &amp; 4 of 8</del> candle power requiring a total current of <u>5.5</u> Amperes
D <u>Cargo</u>	<u>30</u> lights each of <u>16</u> candle power requiring a total current of <u>18.0</u> Amperes
E <u>Machinery Space</u>	<u>53</u> lights <del>each of 2 of 30 watt &amp; 51 of 16</del> candle power requiring a total current of <u>31.2</u> Amperes
<u>Pump Room</u>	
1 <u>Mast head light</u> with <u>1</u> lamp each of <u>16</u> candle power requiring a total current of <u>.6</u> Amperes	
2 <u>Side light</u> with <u>1</u> lamp each of <u>16</u> candle power requiring a total current of <u>1.2</u> Amperes	
5-6 <u>Light</u> Cargo lights of <u>16</u> candle power, whether incandescent or arc lights <u>Incandescent</u>	

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

Where are the switches controlling the masthead and side lights placed In Whulhouse

## DESCRIPTION OF CABLES.

Main cable carrying <u>100</u> Amperes, comprised of <u>19</u> wires, each <u>14</u> S.W.G. diameter, <u>.094</u> square inches total sectional area
Branch cables carrying <u>17.1</u> Amperes, comprised of <u>7</u> wires, each <u>16</u> S.W.G. diameter, <u>.022</u> square inches total sectional area
Branch cables carrying <u>10.2</u> Amperes, comprised of <u>7</u> wires, each <u>20</u> S.W.G. diameter, <u>.004</u> square inches total sectional area
Leads to lamps carrying <u>1.5</u> Amperes, comprised of <u>1</u> wire, each <u>17</u> S.W.G. diameter, <u>.002463</u> square inches total sectional area
Cargo light cables carrying <u>3.6</u> Amperes, comprised of <u>108</u> wires, each <u>38</u> S.W.G. diameter, <u>.003153</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cable of 600 Megohm grade classed to C.M.A. insulated with pure vulcanised rubber protected with lead covering in Accommodation, cables in Engine Room where exposed protected with steel armouring and Braiding over all.  
 Joints in cables, how made, insulated, and protected 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 & Braided cable run in galvanised steel tubing where exposed to moisture, Lead covered in tubing throughout Pump Rooms, armoured and Braided cable exposed in Engine Room & Boiler Room and where exposed and Lead covered cable in accommodation.

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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 and Braided cable in galvanised Steel Tubing

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

What special protection has been provided for the cables near boiler casings Armoured & Braided exposed.

What special protection has been provided for the cables in engine room Armoured & Braided exposed.

How are cables carried through beams Beams Bushed. through bulkheads, &c. In Ylands if N.T.

How are cables carried through decks In galvanised Iron Deck Tubes. bushed.

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 & Braided cables protected by Sheet Iron casing.

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 Permanent to socket How fixed Armoured & Braided cable clipped to Bulkheads when permanent.

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 yes

Are any switches, fuses, or joints of cables fitted in the pump room or companion no.

How are the lamps specially protected in places liable to the accumulation of vapour or gas Fittings made gastight by rubber joints

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.

For HARLAND & WOLFF LIMITED

Isaac Johnston

Electrical Engineers

Date 22 May 1918

COMPASSES.

Distance between dynamo or electric motors and standard compass 90 feet.

Distance between dynamo or electric motors and steering compass 100 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>5.5</u>	<u>14.</u>	<u>6.</u>	<u>6.</u>
<u>2.1</u>	<u>10</u>	<u>4</u>	<u>4</u>
<u>1.2</u>	<u>15.</u>	<u>5.</u>	<u>5.</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 all the course in the case of the standard compass and nil degrees on all the course in the case of the steering compass.

For HARLAND & WOLFF LIMITED

Isaac Johnston

Builder's Signature.

Date 22 May 1918.

GENERAL REMARKS.

ASSISTANT SECRETARY

This installation has been fitted in accordance with the Rules and has been Been working satisfactorily.

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

HUR 29/5/18.

James Easthope

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW. 28 MAY 1918

Elec. Light



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

47.  
24.5.18

50, 51, 52—transfer.