

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 39608

Port of Glasgow Date of First Survey 13/11/19 Date of Last Survey 23/1/20 No. of Visits 6  
 No. in Reg. Book 28578 on the ~~Steel~~ S.S. Truverbryn Port belonging to St. Joes  
 Built at Govan By whom Messrs Harland & Wolff Ltd When built 1920  
 Owners Messrs John S.S. Co Ltd Owners' Address  
 Yard No. 530 G Electric Light Installation fitted by Messrs Harland & Wolff Ltd When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 10 H.P. "Holmes" Dynamo 520 R.P.M. D.C. to 5 1/2" x 5" Single Cylinder  
"Shanks" vertical enclosed steam engine giving an 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 154 Lights and arranged in the following groups:—

A	<u>Aft Accom.</u>	<u>22</u> lights each of <u>16</u>	candle power requiring a total current of	<u>13.2</u>	Amperes
B	<u>Mid. Accom.</u>	<u>49</u> lights each of <u>34 of 30 watt, 1 of low</u>	candle power requiring a total current of	<u>19.0</u>	Amperes
C	<u>Navigation</u>	<u>8</u> lights each of <u>5 of 32 C.P., 3 of 8</u>	candle power requiring a total current of	<u>8.0</u>	Amperes
D	<u>Cargo</u>	<u>34</u> lights each of <u>16</u>	candle power requiring a total current of	<u>18.0</u>	Amperes
E	<u>Machinery Spaces</u>	<u>41</u> lights each of <u>2 of 30 watt, 39 of 16</u>	candle power requiring a total current of	<u>24.0</u>	Amperes
	<u>2 Mast head lights with</u>	<u>1</u> lamp each of <u>32</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
	<u>2 Side lights with</u>	<u>1</u> lamp each of <u>32</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
	<u>5 - 6 Light Cargo lights of</u>	<u>16</u>	candle power, whether incandescent or arc lights	<u>Incandescent</u>	

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

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

## DESCRIPTION OF CABLES.

Main cable carrying	<u>84</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>19</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>13.2</u> Amperes, comprised of	<u>7</u> wires, each	<u>18</u> S.W.G. diameter,	<u>.0125</u> square inches total sectional area
Leads to lamps carrying	<u>2.1</u> Amperes, comprised of	<u>1</u> wires, 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>90</u> wires, each	<u>36</u> S.W.G. diameter,	<u>.00407</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cable of 600 megohm grade classed to C.W.A. Insulated with pure and vulcanized rubber, protected with lead covering in accommodation cables in Engine Rm. and where exposed protected with steel armouring  
 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 and braided cable run in galvanized steel tubing where exposed to moisture, armoured and braided cable in Engine and Boiler Rooms and other places where exposed.  
Lead covered cable in accommodation.



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 galvanized steel tubing

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

What special protection has been provided for the cables near boiler casings Armoured and braided exposed

What special protection has been provided for the cables in engine room Armoured and braided exposed

How are cables carried through beams beams bushed with lead through bulkheads, &c. in glands if w.t.

How are cables carried through decks in bushed galvanized iron 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 cable 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 —

Cargo light cables, whether portable or permanently fixed permanent to socket How fixed Armoured and braided cable  
portable from socket clipped to bulkhead where 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 —

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.

FOR HARLAND & WOLFE LTD.  
John Dickinson  
 Managing Director

Electrical Engineers

Date 27-1-20

COMPASSES.

Distance between dynamo or electric motors and standard compass 102 feet

Distance between dynamo or electric motors and steering compass 98 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>8</u>	Amperes	<u>8</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>2.1</u>	Amperes	<u>8</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>1.2</u>	Amperes	<u>10</u>	feet from standard compass	<u>8</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 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 & WOLFE LTD.  
John Dickinson  
 Managing Director

Builder's Signature.

Date 27-1-20

GENERAL REMARKS.

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

It is submitted that  
 this vessel is eligible for  
 THE RECORD

ELEC. LIGHT

12/2/20

J. Stanley Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 10 FEB 1920 FRI. DEC. 3 1920

Elec. Lights



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 Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.