

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 39118

Port of Glasgow Date of First Survey 7/7/19 Date of Last Survey 5/9/19 No. of Visits 2
 No. in Reg. Book 28577 on the ~~Iron~~ Steel S.S. "Leval" Port belonging to S. J. J. J.
 Built at Govan By whom Harland & Wolff Ltd When built 1919
 Owners Hains S.S. Co. Ltd. Owners' Address Harland & Wolff Ltd When fitted 1919
 Yard No. 549 Electric Light Installation fitted by Harland & Wolff Ltd

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 10 K.W. "Holmes" Dynamo 520 R.P.M. $10/6$ to $5\frac{1}{2} \times 5$ Single
 Cylinder vertical Steam Engine giving output of $15\frac{1}{6}$ B.H.P.
 Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine Rm Whether single or double wire system is used Double
 Position of Main Switch Board Engine Rm 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 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 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 —
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 161 and 1 More arranged in the following groups:—

A Accommodation	27 lights each of <u>16</u>	candle power requiring a total current of <u>16.2</u>	Amperes
B Mid Accommodation	50 lights each of <u>37-30w, 5-40w, 8-16cp and 1 Fan</u>	candle power requiring a total current of <u>18.3</u>	Amperes
C Navigation	8 lights each of <u>5-32cp, 3-8cp, 1 Mast Lamp</u>	candle power requiring a total current of <u>8.1</u>	Amperes
D Berge and Forward	34 lights each of <u>16</u>	candle power requiring a total current of <u>20.4</u>	Amperes
E Machinery Spaces	42 lights each of <u>2-30w and 40-16</u>	candle power requiring a total current of <u>24.6</u>	Amperes
2 Mast head lights	with 1 lamp each of <u>32</u>	candle power requiring a total current of <u>2.4</u>	Amperes
2 Side lights	with 1 lamp each of <u>32</u>	candle power requiring a total current of <u>2.4</u>	Amperes
5-6 Light	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. —

Where are the switches controlling the masthead and side lights placed In Whal House

DESCRIPTION OF CABLES.

Main cable carrying	100 Amperes, comprised of	19 wires, each	14 S.W.G. diameter,	.094 square inches total sectional area
Branch cables carrying	18.3 Amperes, comprised of	7 wires, each	18 S.W.G. diameter,	.0125 square inches total sectional area
Branch cables carrying	8.1 Amperes, comprised of	7 wires, each	20 S.W.G. diameter,	.007 square inches total sectional area
Leads to lamps carrying	1.5 Amperes, comprised of	1 wires, each	17 S.W.G. diameter,	.002463 square inches total sectional area
Cargo light cables carrying	3.6 Amperes, comprised of	108 wires, each	30 S.W.G. diameter,	.0023153 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cable of 600 Megohm grade classed to C.M.A. Insulated with pure & vulcanized rubber protected with lead covering in accommodation.
 Cables in Engine Room & where exposed, protected with steel armoring & Braided overall
 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 galvanized steel tubing where exposed to moisture. Armoured & Braided cable used in Engine & Boiler Rooms & 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 & Braided in galvanized 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 glands if W.T.

How are cables carried through decks In bushed galvanized iron duct 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 & 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 No

Cargo light cables, whether portable or permanently fixed Permanent to socket How fixed Armoured & Braided cable 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 yes

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 & WOLFF, LTD.

John Dickinson

Managing Director

Electrical Engineers

Date

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	Amperes	feet from standard compass	feet from steering compass
6.0	10	7	7
2.4	10	7	7
1.2	11	8	8

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, LTD.

John Dickinson

Managing Director

Builder's Signature.

Date

GENERAL REMARKS.

This Installation has been fitted on board under special Survey. Tested under full working conditions for six hours & found satisfactory in every way.

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

Elec Light Recd. 20/10/19

Stanley Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 14 OCT 1919

Elec. Light.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

HC.
4.10.19

50,817.—1 transfer.