

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 38137

38317

Port of Glasgow Date of First Survey Oct 3. 1918 Date of Last Survey 8<sup>th</sup> Nov. 1918 No. of Visits 4  
 No. in Reg. Book on the Steel "War. Arjan" Port belonging to London  
 Built at Lowan By whom Messrs Harland & Wolff Ltd. When built 1918  
 Owners The Shipping Controller Owners' Address \_\_\_\_\_  
 Yard No. 528 Electric Light Installation fitted by Messrs Harland & Wolff Ltd. When fitted 1918

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

One 10 K.W. "Holmes" Dynamo 520 R.P.M. D/C to 5 1/2" x 5" Single cylinder "banks" 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 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-oxidisable 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 \_\_\_\_\_  
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes.

Total number of lights provided for 158 & 1 Morse lamp arranged in the following groups :-

A	Aft Accom. 26 lights each of	16	candle power requiring a total current of	15.6	Amperes
B	Mid Accom. 47 lights each of 39 of 30W & 8 of 16		candle power requiring a total current of	16.5	Amperes
C	Navigation 7 lights each of 4 of 16 GP & 3 of 8 & Morse lamp		candle power requiring a total current of	4.7	Amperes
D	Cargo 30 lights each of	16	candle power requiring a total current of	18.0	Amperes
E	M/cy. Spaces 48 lights each of 2 of 30W & 46 of 16		candle power requiring a total current of	28.2	Amperes
1	Mast head light with 1 lamps each of	16	candle power requiring a total current of	6	Amperes
2	Side lights with 1 lamps each of	16	candle power requiring a total current of	1.2	Amperes
	5-6 light Cargo lights of	16	candle power, whether incandescent or arc lights	incandescent	

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

Where are the switches controlling the masthead and side lights placed in wheelhouse.

**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 16.5 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area  
 Branch cables carrying 6.0 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 36 S.W.G. diameter, .0029153 square inches total sectional area

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

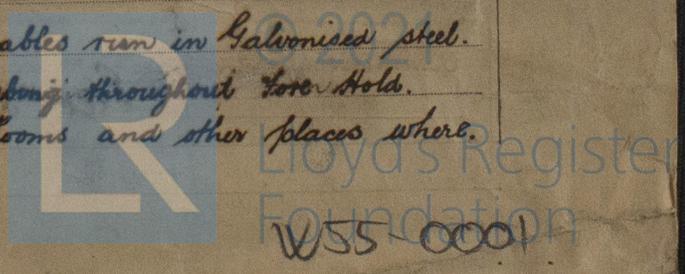
Cable of 600 megohm grade classed to G.M.A. insulated with pure & vulcanised rubber protected with lead covering in Accommodation. Cables in Engine Room and where exposed protected with steel armouring and braided over-all

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 and braided cables run in Galvanised steel tubing where exposed to moisture, lead covered cable in tubing throughout fore hold, armoured and braided cable exposed, in Engine & Boiler Rooms and other places where exposed and 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 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 glands if W.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 pocket. Portable from pocket 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 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 & WOLFF, LTD.  
*John Dickson*  
Managing Director

Electrical Engineers

Date 13.11.18

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 100 ft

Distance between dynamo or electric motors and steering compass 95 ft

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>4.7</u>	<u>10</u>	<u>6</u>	<u>6</u>
<u>2.1</u>	<u>10</u>	<u>7</u>	<u>7</u>
<u>1.2</u>	<u>16</u>	<u>14</u>	<u>14</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, LTD.  
*John Dickson*  
Managing Director

Builder's Signature.

Date 14.11.18

**GENERAL REMARKS.**

This installation has been fitted on board under special survey, tested under full working conditions for a period of six hours & found satisfactory. Electrical stores & spares all on board as per specifications.

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

*J.W.D.*  
20/11/18

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

Committee's Minute

GLASGOW

19 NOV 1918

*Elec. Light.*

*J.W.D.*



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

*H.C.*  
16.11.18

Im. 11.18.—Transfer.