

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 34/133

Port of Glasgow Date of First Survey 24.5.14 Date of Last Survey 22.9.14 No. of Visits 29  
 No. in on the Iron or Steel m.s. "Glenavy" Port belonging to Glasgow  
 Reg. Book Built at Govan Glasgow By whom Messrs. Harland & Wolff Limited When built 1914  
 Owners Messrs The Glen Line Limited Owners' Address East India Avenue London E.C.  
 Yard No. 465 Electric Light Installation fitted by Messrs Harland & Wolff Limited When fitted 1914

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Messrs Laurence Scott & Co. Dynamos 150 H.P. 220 Volts, 682 Amps @ 250 R.P.M. D/C. to Messrs. Harland & Wolff's Diesel Engines, Cylinders 4/50 H.P.  
 Capacity of Dynamo 682 Amperes at 220 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Main Motor Room Whether single or double wire system is used Double  
 Position of Main Switch Board Main Motor Room having switches to groups A. B. C. & D. 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 none 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 Tinned Copper 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 1/32 S.W.G. 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 Porcelain

Total number of lights provided for 373 1 Motor Lantern arranged in the following groups:—

A Capt. Officers & 4 lights each of 16 C.P. 1 Motor Lamp candle power requiring a total current of 17.3 Amperes

B Accommodation 123 lights each of 16 C.P. & 16 Cabin Fans candle power requiring a total current of 45.4 Amperes

C Cargo Lts. 80 lights each of 16 C.P. & 2 of 2000 candle power requiring a total current of 33 Amperes

D Motor Room 124 lights each of 16 candle power requiring a total current of 44.2 Amperes

E lights each of candle power requiring a total current of Amperes

2 Mast head lights with 1 lamp each of 32 candle power requiring a total current of 1.2 Amperes

2 Side lights with 1 lamp each of 32 candle power requiring a total current of 1.2 Amperes

Gen 8 Lts. 16 C.P. Cargo lights & 2 large Lts each of 2000 candle power, whether incandescent or arc lights Incandescent

If arc lights, what protection is provided against fire, sparks, &c. no arc lights

Where are the switches controlling the masthead and side lights placed In Switch & Fuse Box in Chart Room

## DESCRIPTION OF CABLES.

Main cable carrying 45 Amperes, comprised of 19 wires, each 18 S.W.G. diameter, .034 square inches total sectional area

Branch cables carrying 9 Amperes, comprised of 4 wires, each 16 S.W.G. diameter, .022 square inches total sectional area

Branch cables carrying 4.6 Amperes, comprised of 4 wires, each 20 S.W.G. diameter, .007 square inches total sectional area

Leads to lamps carrying 2.4 Amperes, comprised of 3 wires, each 20 S.W.G. diameter, .003 square inches total sectional area

Cargo light cables carrying 2.4 Amperes, comprised of 90 wires, each 36 S.W.G. diameter, .004 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cable throughout of 2500 Megohm quality classed to Gra. insulated with pure and vulcanised rubber protected with lead covering in Accommodation, cables in Motor Rm and where run along exposed Deck further protected by Steel Armoring and 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 Lead covered in Accommodation exposed Lead Covered Armoured & Braided protected by Sheet Iron Plates where run along exposed Deck, Lead covered Armoured & Braided exposed throughout Motor Room



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 Lead covered  
Armoured & Braided in Open Alleyways covered with Sheet Iron on open Deck  
and Lead covered only under Bridge.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered Arm'd & Braided

What special protection has been provided for the cables near boiler casings No Boiler Room

What special protection has been provided for the cables in engine room Lead covered Armoured & Braided Exposed

How are cables carried through beams Beams bushed with Lead through bulkheads, &c. in Holds if W/S ✓

How are cables carried through decks in bushed & I. Deck Pipes ✓

Are any cables run through coal bunkers no or cargo spaces no or spaces which may be used for carrying cargo, stores, or baggage no

If so, how are they protected

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 When permanent & Lead covered  
Flexible from Socket Armoured & Braided clipped

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 to 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 2,500 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.

Isaac Johnston Electrical Engineers Date 26th Sept. 1914

COMPASSES.

Distance between dynamo or electric motors and standard compass 60 ft.

Distance between dynamo or electric motors and steering compass 50 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>17.3</u>	<u>10</u>	<u>8</u>	<u>8</u>
<u>2.4</u>	<u>10</u>	<u>8</u>	<u>8</u>
<u>1.2</u>	<u>8</u>	<u>6</u>	<u>6</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.

Isaac Johnston Builder's Signature. Date 26th Sept. 1914

GENERAL REMARKS.

This Installation has been fitted under special Survey, tried under full working conditions and found satisfactory

It is submitted that this vessel is eligible for THE RECORD. Elec. light. JWD as Eustace  
 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute GLASGOW 9 - OCT 1917

Elec. Light. JWD



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im 11.13.—Transfer.

2/10/17