

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 25996

Port of Sunderland Date of First Survey 29 Jan '14 Date of Last Survey 3 Feb '14 No. of Visits 4
 No. in 1 on the New Steel S S Eupion Port belonging to London
 Reg. Book 1 Built at Alcoa By whom Blackay Bros Ltd When built 1914
 Owners Eupion Ltd Owners' Address Waddow & Co, Glasgow
 Yard No. 21 Electric Light Installation fitted by Waddow & Co, Glasgow When fitted 1914

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Direct Coupled Engines & Compound dynamos, Engines of the open front double acting type
 Capacity of Dynamo 1/2 Amperes at 110 Volts, whether continuous or alternating current Continuous
 Where are Dynamos fixed Engine Room Whether single or double wire system is used Double
 Position of Main Switch Board Alongside Dynamos having switches to groups A.B.C.D.E.F.G.H.I. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Engine Room - 8 circuits, Storing Engine Rm. - 8 Circuits, Engine Room Passage - 10 circuits, Poultry Passage, 12 circuits, Forecastle - 4 Circuits, Wheel House - 8 circuits, Officers passage - 6 circuits
 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 and constructed to fuse at an excess of 25 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 220 arranged in the following groups:—

A	30	lights each of	16	candle power requiring a total current of	16	Amperes
B	31	lights each of	16	candle power requiring a total current of	17	Amperes
C	48	lights each of	16	candle power requiring a total current of	26	Amperes
D	49	lights each of	16	candle power requiring a total current of	27	Amperes
E.F.G.	14 12 28	lights each of	16	candle power requiring a total current of	29	Amperes
4	Mast head light with D.F. lamps each of	32	candle power requiring a total current of	4.3	Amperes	
2	Side light with D.F. lamps each of	32	candle power requiring a total current of	2	Amperes	
6	Cargo lights of 6 Lamps of 16		candle power, whether incandescent or arc lights	<u>Incandescent</u>		

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

Where are the switches controlling the masthead and side lights placed Wheel House

DESCRIPTION OF CABLES.

Main cable carrying	<u>1/2</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>15</u>	S.W.G. diameter, <u>.07586</u> square inches total sectional area
Branch cables carrying	<u>16</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>17</u>	S.W.G. diameter, <u>.04695</u> square inches total sectional area
Branch cables carrying	<u>26</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>15</u>	S.W.G. diameter, <u>.02803</u> square inches total sectional area
Leads to lamps carrying	<u>3</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>16</u>	S.W.G. diameter, <u>.003217</u> square inches total sectional area
Cargo light cables carrying	<u>3</u>	Amperes, comprised of	<u>3</u>	wires, each	<u>20</u>	S.W.G. diameter, <u>.002994</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

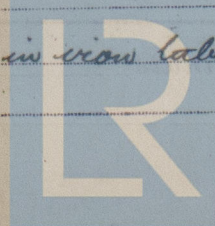
Pure Rubber, Vulcanized Rubber, tapes, braided & compounded over all

Joints in cables, how made, insulated, and protected Soldered & Insulated with Pure Para rubber
Vulcanized tape & rubber solution

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances Yes 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 Yes

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 cove in Rooms, run in iron tubes in open, Armoured in Engine Room, etc.



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 Ran in G.I. Tubes

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

What special protection has been provided for the cables near boiler casings Do

What special protection has been provided for the cables in engine room Do

How are cables carried through beams Lead Liners through bulkheads, &c. Slipping Glands

How are cables carried through decks Iron tubes flanged to deck

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 Yes

If so, how are the lamp fittings and cable terminals specially protected Heavy guarded iron fittings

Where are the main switches and fuses for these lights fitted Engine Room

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 Portable How fixed Connections in iron boxes

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 2 voltmeters and with 2 amperemeters, fixed On Main Switch Box

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 Gas tight fittings

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 2,000 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.

Hadden & Co., Glasgow,

Electrical Engineers

Date Feb. 11th 1914

COMPASSES.

Distance between dynamo or electric motors and standard compass 196

Distance between dynamo or electric motors and steering compass 192

The nearest cables to the compasses are as follows:—

Cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying <u>30</u>	<u>15</u>	<u>12</u>	<u>12</u>
A cable carrying <u>10</u>	<u>10</u>	<u>8</u>	<u>8</u>
A cable carrying <u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</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 course in the case of the standard compass and Nil degrees on all course in the case of the steering compass.

Mackay Brothers

Builder's Signature.

Date 17th Feb. 1914

GENERAL REMARKS.

This installation is well fitted & was found satisfactory on steaming trial under full load.

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

William Duthie

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.