

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 24719

Port of Sunderland Date of First Survey Feb. 1 Date of Last Survey Feb. 11, 1911 No. of Visits 3  
 No. in Reg. Book 44 on the Iron or Steel 55 Terrier Part belonging to Lonsberg  
 Built at Sunderland By whom Jos. L. Thompson & Sons Ltd When built 1911  
 Owners W. Wilhelmsen Owners' Address Grange, near Lonsberg  
 Yard No. 478 Electric Light Installation fitted by Sunderland Forge Engineering Co. Ltd When fitted 1911

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

A 15-hp steam set fitted 5.41. There is also a 10kw set not in parallel  
Multipolar compound wound dynamo direct coupled to Open-type inverted  
Engine both by Sunderland Forge Engineering Co. Ltd

See No. 11799

Capacity of Dynamo 55 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Bottom of Engine room Star-side Whether single or double wire system is used double  
 Position of Main Switch Board Close to dynamo having switches to groups Three of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each None fitted

If cut outs 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes  
 Are the cut outs of non-oxidizable metal Yes and constructed to fuse at an excess of 100 per cent over the normal current  
 Are all cut outs fitted in easily accessible positions Yes Are the fuses of standard dimensions No 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 cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 85 arranged in the following groups:—

A	<u>40</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>22.40</u>	Amperes
B	<u>28</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>15.68</u>	Amperes
C	<u>17</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>9.52</u>	Amperes
D		lights each of		candle power requiring a total current of		Amperes
E		lights each of		candle power requiring a total current of		Amperes
		Mast head light with		lamps each of		Amperes
		Side light with		lamps each of		Amperes
	<u>8</u>	Cargo lights of	<u>5 each</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. None fitted  
 Where are the switches controlling the masthead and side lights placed None fitted

### DESCRIPTION OF CABLES.

Main cable carrying	<u>55</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>16</u>	L.S.G. diameter,	<u>0.6039</u>	square inches total sectional area
Branch cables carrying	<u>22.40</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>16</u>	L.S.G. diameter,	<u>0.4477</u>	square inches total sectional area
Branch cables carrying	<u>15.68</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>17</u>	L.S.G. diameter,	<u>0.172</u>	square inches total sectional area
Leads to lamps carrying	<u>1.12</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>18</u>	L.S.G. diameter,	<u>0.0187</u>	square inches total sectional area
Cargo light cables carrying	<u>2.8</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>16</u>	L.S.G. diameter,	<u>0.0322</u>	square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Births etc.: Pure rubber vulcanized rubber tapes & lead covered  
Engine room & Storehold: Announced & braided  
Main cables: Vulcanized rubber drawn in iron pipes  
 Joints in cables, how made, insulated, and protected There are none

Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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 No  
 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 Led through iron decks in iron pipes



**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? Iron pipes

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

What special protection has been provided for the cables near boiler casings? Armoured Braided cables

What special protection has been provided for the cables in engine room? No

How are cables carried through beams? holes bushed with fibre through bulkheads, &c. Watertight glands

How are cables carried through decks? watertight 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? By iron pipes

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 cut outs for these lights fitted? /

If in the spaces, how are they specially protected? /

Are any switches or cut outs fitted in bunkers? No

Cargo light cables, whether portable or permanently fixed? Portable How fixed? /

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? /

The installation is Yes supplied with a voltmeter and No an amperemeter, fixed on Switchboard

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas? /

Are any switches, cut outs, 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 99 per cent, that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile after 24 hours' immersion in seawater.

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.

P. PRO THE BORDERLAND FORCE & ENGINEERING CO. LTD

Myron Mar Director Electrical Engineers Date 23 March 1911

**COMPASSES.**

Distance between dynamo or electric motors and standard compass about 120 ft

Distance between dynamo or electric motors and steering compass 170

The nearest cables to the compasses are as follows:—

A cable carrying	<u>2. 25</u>	Amperes	<u>about 12</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>1. 12</u>	Amperes	<u>6</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying		Amperes		feet from standard compass		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 \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the standard compass and \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the steering compass.

Builder's Signature. Date Thomas Thompson

**GENERAL REMARKS.**

This installation has been well fitted & ran satisfactorily under steam at full load.

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

J.W.D. A.R.S.  
4/4/11

William Butler

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

Committee's Minute

REPORT FORM No. 13.-2m.34.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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