

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 25665

Port of SUNDERLAND Date of First Survey 21 Mar Date of Last Survey 15 April 1913 No. of Visits 3  
 No. in Reg. Book 496 on the Iron or Steel S.S. "Harewood" Port belonging to London  
 Built at Sunderland By whom Jos. L. Thompson & Sons Ltd When built 1913-4 mo.  
 Owners Harris & Dixon Ltd. Owners' Address Sunderland Forge & Eng. Co. Ltd. When fitted 1913  
 Yard No. 496 Electric Light Installation fitted by

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Standard Combined plant consisting of open type engine, direct coupled to Compound wound Dynamo.  
 Capacity of Dynamo 90 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Starboard side Bottom of E.R. Whether single or double wire system is used Double  
 Position of Main Switch Board Close to plant having switches to groups Five of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each One in chartroom controlling 2 Masthead 2 Side lights and 1 Stern and 2 compasses.

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 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 fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 135 arranged in the following groups:—

Group	Number of Lights	Each of	Candle Power	Requiring a total current of	Amperes
A	33	lights each of	16	18.48	Amperes
B	19	lights each of	16	10.64	Amperes
C	50	lights each of	16	28.00	Amperes
D	23	lights each of	16	12.38	Amperes
E	10	lights each of	16	5.6	Amperes
	2	Mast head light with 1 lamps each of	32 D.F.	1.12	Amperes
	2	Side light with 1 lamps each of	32 D.F.	1.12	Amperes
	5	Cargo lights of	5 x 32		incandescent

If arc lights, what protection is provided against fire, sparks, &c.

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

## DESCRIPTION OF CABLES.

Main cable carrying 85.6 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .060 square inches total sectional area  
 Branch cables carrying 28.0 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area  
 Branch cables carrying 12.38 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .0070 square inches total sectional area  
 Leads to lamps carrying 2.24 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 5.6 Amperes, comprised of 1 wires, each 16 S.W.G. diameter, .0032 square inches total sectional area

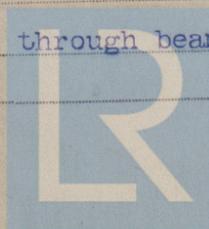
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

In berths etc., Lead covered wire.  
 In Engine room etc., Lead covered armoured.  
 Mains and Masts, Lead covered armoured.  
 Joints in cables, how made, insulated, and protected There are 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 armoured cable through beams. Holes bushed with fibre.



**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.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered 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 Holes bushed fibre. through bulkheads, &c. W.T. Glands.

How are cables carried through decks W.T. iron deck tubes.

Are any cables run through coal bunkers Yes or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Lead covered armoured.

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 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 \_\_\_\_\_

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.

per pro THE UNDERLAND FORGE & ENGINEERING CO. LD.

Electrical Engineers

Date 28/4/13.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass About 88 ft.

Distance between dynamo or electric motors and steering compass About 84 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>1.12</u>	Ampere	<u>about 4</u>	feet from standard compass	<u>led into</u>	feet from steering compass
A cable carrying	<u>1.12</u>	Ampere	<u>led into</u>	feet from standard compass	<u>about 4</u>	feet from steering compass
A cable carrying	<u>2.24</u>	Ampere	<u>about 8</u>	feet from standard compass	<u>about 6</u>	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 no degrees on any course in the case of the standard compass and no degrees on any course in the case of the steering compass.

per pro J.L. THOMPSON & SONS, LD.

Norman Thompson

Builder's Signature.

Date 3.5.1913

**GENERAL REMARKS.**

This installation has been examined as far as could be seen complies with rule requirements examined under working conditions found satisfactory

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

J.W.D. 7/6/13.

J. J. Findlay

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

