

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 26955

Port of SUNDERLAND Date of First Survey 30 Mar Date of Last Survey 30 Apr 1917 No. of Visits 4  
 No. in Reg. Book on the Iron or Steel S/S Dockleaf Port belonging to London  
 Built at Sunderland By whom Messrs Bartlam & Sons Ltd When built 1916-1917  
 Owners H. M. Government Owners' Address London  
 Yard No. 238 Electric Light Installation fitted by Messrs Blakie Chapman & Co Ltd When fitted 1916-1917

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Enclosed Type Vertical Engine direct coupled to a continuous current compound wound dynamo.  
 One Vertical Open Type Double Acting Engine direct coupled to a continuous current compound wound dynamo.  
 Capacity of Dynamos 250 + 60 Amperes at 100/5 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed in Engine Room Whether single or double wire system is used Double  
 Position of Main Switch Board near Dynamos 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 Each light & group of lights provided with switches as required.

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 50 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, slate & porcelain

Total number of lights provided for 222 arranged in the following groups:—

Group	Description	Lights	Each of	Candle Power	Requiring a total current of	Amperes
A	Forward	43	27-16cp, 16-50cp		42	Amperes
B	Midships	86	7-8cp, 62-16cp, 32-16-50cp		64.4	Amperes
C	Engine Room	38	38-16cp		21.3	Amperes
D	Aft	55	39-16cp, 16-50cp		48.7	Amperes
E	Wireless				35	Amperes
	Mast head light with 1 lamp		each of 32cp		2.2	Amperes
	Side light with 1 lamp		each of 16cp & 1-32cp		1.6	Amperes
	Cargo lights of		8-50, 4-16			

candle power, whether incandescent or arc lights incandescent

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

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

## DESCRIPTION OF CABLES.

Main cable carrying 250 Amperes, comprised of 37 wires, each .112" S.W.G. diameter, .350 square inches total sectional area  
 Branch cables carrying 64.4 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .060 square inches total sectional area  
 Branch cables carrying 42 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .035 square inches total sectional area  
 Leads to lamps carrying 56 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 13.4 Amperes, comprised of 19 wires, each 22 S.W.G. diameter, .0017 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

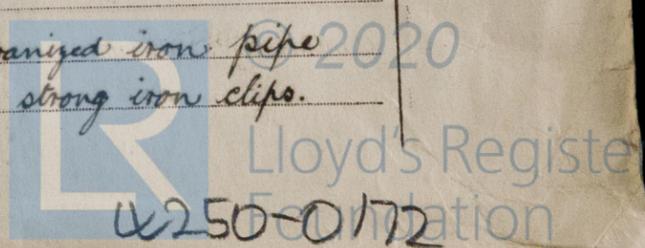
Vulcanized india rubber, taped & braided & lead covered where exposed steel armoured overall.

Joints in cables, how made, insulated, and protected No joints except mechanical ones.

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, 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 Lead covered cables run in galvanized iron pipe under fore & aft gangway & clipped to underside of same with strong iron clips.



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**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 & steel armoured cables

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

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

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

How are cables carried through beams in lead bushes through bulkheads, &c. in W.T. Glands

How are cables carried through decks in Galvanized Iron Deck Tubes

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 No

Cargo light cables, whether portable or permanently fixed portable How fixed to W.T. connection Boxes

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Double wire system

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 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 special Brass 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 2500 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 Clarke, Chapman & Co. Ltd.

H. W. Walker Electrical Engineers

Date April 30<sup>th</sup> 1914

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 192 feet

Distance between dynamo or electric motors and steering compass 186 "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>.56</u>	<u>12</u>	<u>6</u>	<u>6</u>
<u>.56</u>	<u>6</u>	<u>12</u>	<u>12</u>
<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.

For Bartram & Sons Ltd.

William A. Bartram Builder's Signature

Date May 2<sup>nd</sup> 1914

**GENERAL REMARKS.**

Director.  
The above installation has been fitted in accordance with the requirements, it has been tried under full power with satisfactory results. In my opinion the vessel is eligible for record of Elec. Light.

Charles Cooper Surveyor to Lloyd's Register of British and Foreign Shipping

Committee's Minute 21/5/14  
FR 15-JUN-1914

Im. 912.—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

