

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 26116

Port of Sunderland Date of First Survey 7-5-14 Date of Last Survey 11-5-14 No. of Visits 4  
 No. in Reg. Book on the Iron or Steel S.S. "Boden" Port belonging to  
 Built at Sunderland By whom Messrs Jos. L. Thompson & Sons Ltd. When built 1914  
 Owners' Rederi Aktief. Selsk. Copenhagen Owners' Address  
 Yard No. 506 Electric Light Installation fitted by Sunderland Forge & Engineering Co. When fitted 1914

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Multipolar compound wound dynamo coupled direct to open type vertical engine (inverted).  
 Capacity of Dynamo 120 Amperes at 110 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Bottom platform Whether single or double wire system is used Double  
 Position of Main Switch Board Bottom platform having switches to groups Six of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each One in Chartroom controlling 2 mastheads, 2 side lights, one stern light, compasses and telegraphs.

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 100 per cent over the normal current

Are all fuses fitted in easily accessible positions Yes Are the fuses of standard dimensions One 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 183 arranged in the following groups:—

A	60	lights each of	16 c.p.	candle power requiring a total current of	30.60	Amperes		
B	24	lights each of	16 c.p.	candle power requiring a total current of	12.24	Amperes		
C	38	lights each of	16 c.p.	candle power requiring a total current of	19.38	Amperes		
D	24	lights each of	16 c.p.	candle power requiring a total current of	12.24	Amperes		
E	37	lights each of	16 c.p.	candle power requiring a total current of	19.78	Amperes		
F. 2	Marconi.	Mast head light with	1	lamps each of	32 D.F.	candle power requiring a total current of	2.04	Amperes
		Side light with	1	lamps each of	32 D.F.	candle power requiring a total current of	2.04	Amperes
		Cargo lights of	5 x 32	candle power, whether incandescent or arc lights	incandescent.			

If arc lights, what protection is provided against fire, sparks, &c. There are none.

Where are the switches controlling the masthead and side lights placed Chart room.

## DESCRIPTION OF CABLES.

Main cable carrying 93.33 Amperes, comprised of 19 wires, each 15 S.W.G. diameter, .075 square inches total sectional area  
 Branch cables carrying 30.60 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .025 square inches total sectional area  
 Branch cables carrying 12.24 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .0070 square inches total sectional area  
 Leads to lamps carrying 2.04 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 5.1 Amperes, comprised of 7 wires, each 21 S.W.G. diameter, .0055 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

In berths lead covered. In Engine room lead covered and armoured, mains lead covered and armoured.

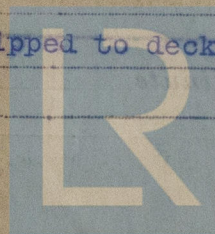
Joints in cables, how made, insulated, and protected

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 and armoured clipped to deck.



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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 and armoured.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered and armoured.

What special protection has been provided for the cables near boiler casings Lead covered and armoured.

What special protection has been provided for the cables in engine room Lead covered and armoured.

How are cables carried through beams Fibre pushed holes. through bulkheads, &c. Watertight glands.

How are cables carried through decks Water tight 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 Lead covered and 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

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 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 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.

PRO THE SUNDERLAND FORGE & ENGINEERING CO., LTD.

Electrical Engineers Date 19th May 1914.

COMPASSES.

Distance between dynamo or electric motors and standard compass 100 ft.

Distance between dynamo or electric motors and steering compass 96 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	.51	Amperes	led into	—feet from standard compass	about 6	feet from steering compass
A cable carrying	.51	Amperes	4	feet from standard compass	led into	—feet from steering compass
A cable carrying	2.04	Amperes	about 10	feet from standard compass	about 6	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 710 degrees on any course in the case of the standard compass and 710 degrees on any course in the case of the steering compass.

JOSEPH L. THOMPSON & SONS, Limited

Builder's Signature. Date May 21/14

GENERAL REMARKS.

*This installation as far as could be seen is fitted in accordance with the requirements of the Rules, Examined under working conditions, & found satisfactory*

*It is submitted that this vessel is eligible for THE RECORD. Elec. light.* J.W.D. 8/6/14

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

Committee's Minute

