

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

WED. JUL 17. 1912  
No. 7482

Port of MIDDLESBRO Date of First Survey 2nd June Date of Last Survey 14th July, 1912 No. of Visits 12  
 No. in Reg. Book on the Iron or Steel S.S. Twickenham Port belonging to London  
 Built at Stockton-on-Tees By whom Messrs Popner & Sons Ltd When built 1912  
 Owners The British Steamship Co. Ltd. Owners' Address London  
 Yard No. 470 Electric Light Installation fitted by Messrs Clarke Chapman & Co When fitted 1912

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

One single cylinder double acting open type vertical engine direct coupled to a continuous current <sup>6 Pole</sup> compound wound dynamo.  
 Capacity of Dynamo 85 Amperes at 100 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 dynamo having switches to groups A B & C 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 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-oxidisable metal Yes and constructed to fuse at an excess of 50 per cent over the normal current  
 Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases Yes slate & porcelain.

Total number of lights provided for 156 arranged in the following groups :-

A	<u>80</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>46.4</u>	Amperes
B	<u>52</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>30.1</u>	Amperes
C	<u>24</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>13.9</u>	Amperes
D	<u>—</u>	lights each of	<u>—</u>	candle power requiring a total current of	<u>—</u>	Amperes
E	<u>—</u>	lights each of	<u>—</u>	candle power requiring a total current of	<u>—</u>	Amperes
	<u>2</u>	Mast head light with	<u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>1.2</u> Amperes
	<u>2</u>	Side light with	<u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>1.2</u> Amperes
	<u>8</u>	Cargo lights of	<u>4-16</u> <u>6-16</u>	candle power, whether incandescent or are lights	<u>incandescent</u>	

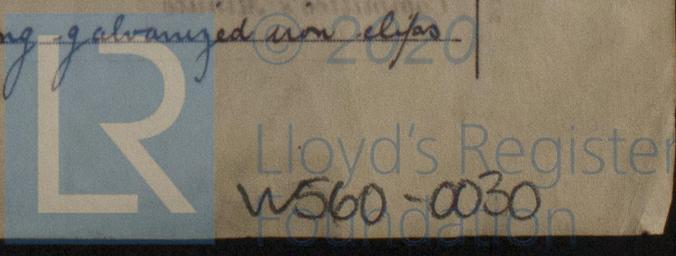
If arc lights, what protection is provided against fire, sparks, &c. —  
 Where are the switches controlling the masthead and side lights placed in Wheel House.

### DESCRIPTION OF CABLES.

Main cable carrying 85 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .09372 square inches total sectional area  
 Branch cables carrying 34 Amperes, comprised of 7 wires, each 14 L.S.G. diameter, .03459 square inches total sectional area  
 Branch cables carrying 7 Amperes, comprised of 7 wires, each 20 L.S.G. diameter, .00705 square inches total sectional area  
 Leads to lamps carrying .6 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .00181 square inches total sectional area  
 Cargo light cables carrying 3.6 Amperes, comprised of 168 wires, each 38 L.S.G. diameter, .00502 square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized india rubber taped & braided & lead covered small where exposed steel armoured over the lead covering  
 Joints in cables, how made, insulated, and protected no joints except mechanical ones  
 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 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 & steel armoured cable run through beams & clipped to underside of deck with strong galvanized iron clips



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible no

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture lead covered & steel removed

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead covered & steel removed

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 glands

How are cables carried through decks in galvanized iron deck tiles

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 & steel removed

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 C1 fittings with strong guard & C cover

Where are the main switches and cut outs for these lights fitted in galley

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 to W.T.C.I. Connection Boxes double wire system

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 "

The installation is now supplied with a voltmeter and also 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 100 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.

For Clarke, Chapman & Co., Ltd.

W. Woodson Director.

Electrical Engineers

Date July 5, 1912

COMPASSES.

Distance between dynamo or electric motors and standard compass 108 ft

Distance between dynamo or electric motors and steering compass 102 "

The nearest cables to the compasses are as follows:—

A cable carrying	.6	Amperes	12	feet from standard compass	6	feet from steering compass
A cable carrying	.6	Amperes	6	feet from standard compass	12	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 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.

ROPNER & SONS LIMITED,

W. Smith

Builder's Signature.

Date July 9/12

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules and tried under full working conditions with satisfactory results

W. Morrison

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

Committee's Minute

FRI, JUL 19 1912

24.1.12—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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