

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 9765

Port of Middlesbrough Date of First Survey and Date of Last Survey while building No. of Visits

No. in Reg. Book on the Iron or Steel ROBERT BRUCE Port belonging to

Built at Middlesbrough By whom Sir Raylton Dixon & Co When built 1917

Owners' Address

Yard No. 595 Electric Light Installation fitted by Wm Campbell & Isherwood Lim. When fitted 1917

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

Campbell & Isherwood 4 pole compound wound Dynamo direct coupled to an open type engine

Capacity of Dynamo 125 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Steering Gear Station whether single or double wire system is used Double

Position of Main Switch Board Star Bulkhead having switches to groups 4 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine Room, 6, Chestroom, and a switch in a convenient position to each light.

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 75% 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

Total number of lights provided for 90 of 16 of 32 arranged in the following groups:—

A <u>Midships</u>	lights each of <u>42 of 16 of 32</u>	candle power requiring a total current of <u>29.7</u>	Amperes
B <u>Engine room</u>	lights each of <u>30 of 16 of 32</u>	candle power requiring a total current of <u>16.5</u>	Amperes
C <u>Engine room</u>	lights each of <u>21 of 16</u>	candle power requiring a total current of <u>13.2</u>	Amperes
D <u>Masthead</u>	lights each of	candle power requiring a total current of <u>15</u>	Amperes
E	lights each of	candle power requiring a total current of	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>included in A</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>included in A</u>	Amperes
<u>4</u>	Cargo lights of <u>6 of 16 of 32</u>	candle power, whether incandescent or arc 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 Chockhouse

### DESCRIPTION OF CABLES.

Main cable carrying 74.4 Amperes, comprised of 37 wires, each 16 S.W.G. diameter, .117 square inches total sectional area

Branch cables carrying 29.7 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area

Branch cables carrying 16.5 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007 square inches total sectional area

Leads to lamps carrying 16.5 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area

Cargo light cables carrying 3.3 Amperes, comprised of 70 wires, each 36 S.W.G. diameter, .006 square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Engine Room & Boiler Room V.I.R. Armoured & Braided, Holds, V.I.R. in use, piping, Galvan lead covered

Joints in cables, how made, insulated, and protected None made

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

How are the cables led through the ship, and how protected Engine Room & Boiler Room V.I.R. Armoured & Braided, Holds V.I.R. in use, piping, Galvan lead covered



**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 tubes

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

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

What special protection has been provided for the cables in engine room Armoured & Braided

How are cables carried through beams Fiber pessales through bulkheads, &c. Glands

How are cables carried through decks Deck tubes flanged to Deck

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

If so, how are they protected Armoured & Braided

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 Special W.T. connection

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 Yes

Is the installation supplied with a voltmeter Yes and with an amperemeter Yes, fixed Immersed

**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 \_\_\_\_\_ 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.

Campbell & Shewood Ltd Electrical Engineers Date 11th July 1917

**COMPASSES.**

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

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

The nearest cables to the compasses are as follows:—

A cable carrying	55.	Amperes	1	feet from standard compass	1.	feet from steering compass
A cable carrying	1.65.	Amperes	6.	feet from standard compass	6.	feet from steering compass
A cable carrying	10.	Amperes	12	feet from standard compass	12	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power \_\_\_\_\_

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. N.S.

FOR SIR RAYLTON DIXON & COMPANY, LIMITED

J.H. Harroway Builder's Signature. Date 14 JUL 1917

**GENERAL REMARKS.**

This Electric Light Installation has been fitted on board in accordance with the Rules tried under full working conditions and found good.

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

J.H.D. 21/7/17

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

Committee's Minute



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