

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5620

Port of *Middlesbrough* Date of First Survey *17<sup>th</sup> Aug.* Date of Last Survey *2<sup>nd</sup> Oct. 08* No. of Visits *3*  
 No. in on the ~~Iron~~ or Steel *S.S. "Onaida"* Port belonging to *London*  
 Reg. Book *3* Built at *Grangemouth* By whom *Greenock & Grang. D. Co.* When built *1908*  
 Owners *Anglo-American Oil Co.* Owners' Address *London*  
 Yard No. *309* Electric Light Installation fitted by *W. G. Martin & Co* When fitted *1908*

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

*Compound wound Dynamo Multipolar with carbon brushes direct coupled to single cylinder double acting steam engine.*

Capacity of Dynamo *42* Amperes at *100* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *Starting Platform* Whether single or double wire system is used *double*

Position of Main Switch Board *near dynamo* 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 *Forecastle - 1-6 way Wheelhouse 1-6 way Pantry 1-8 way Aft Entrance 1-8 way Engine Room 1-8 way.*

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-oxidizable 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*

Total number of lights provided for *74* arranged in the following groups:—

A	<i>14</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>8</i>	Amperes
B	<i>14</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>8</i>	Amperes
C	<i>0</i>			candle power requiring a total current of	<i>7</i>	Amperes
D	<i>21</i>	lights each of	<i>16 &amp; 32</i>	candle power requiring a total current of	<i>12</i>	Amperes
E	<i>16</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>9</i>	Amperes
<i>2</i>	<i>Mast head light with</i>	<i>2</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2.2</i>	Amperes
<i>2</i>	<i>Side light with</i>	<i>2</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2.2</i>	Amperes
<i>no</i>	<i>Cargo lights of</i>			candle power, whether incandescent or arc lights		

If arc lights, what protection is provided against fire, sparks, &c. *No arc Lights.*

Where are the switches controlling the masthead and side lights placed *Wheelhouse*

**DESCRIPTION OF CABLES.**

Main cable carrying *44* Amperes, comprised of *19* wires, each *16* L.S.G. diameter, *.06* square inches total sectional area  
 Branch cables carrying *9* Amperes, comprised of *4* wires, each *18* L.S.G. diameter, *.012* square inches total sectional area  
 Branch cables carrying *7* Amperes, comprised of *7* wires, each *20* L.S.G. diameter, *.007* square inches total sectional area  
 Leads to lamps carrying *3* Amperes, comprised of *1* wires, each *16* L.S.G. diameter, *.003* square inches total sectional area  
 Cargo light cables carrying *—* Amperes, comprised of *—* wires, each *—* L.S.G. diameter, *—* square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

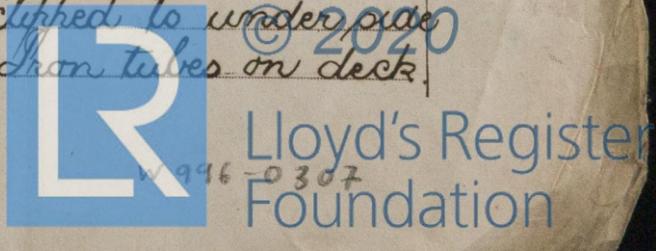
*H. C. Copper wire tinned, insulated with pure V.I.R. and tape the whole vulcanised together, braided & compounded. Sheathed in lead or steel armour or drawn into Iron Tubes.*

Joints in cables, how made, insulated, and protected *No joints*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *no joints* 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 *no joints*

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 *Steel armoured cables clipped to under side of decks protected by beams. V.I.R. cables drawn into Iron tubes on deck. Lead sheathed in rooms.*



**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 steel armour

What special protection has been provided for the cables near boiler casings steel armour.

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

How are cables carried through beams Insulating bushings through bulkheads, &c. W.T. Glands

How are cables carried through decks Metal tubes fitted watertight to decks.

Are any cables run through coal bunkers yes or cargo spaces no or spaces which may be used for carrying cargo, stores, or baggage yes.

If so, how are they protected Steel armour with tubes in addition in Bunkers.

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 cut outs for these lights fitted —

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 none How fixed —

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

How are the returns from the lamps connected to the hull no hull connections.

Are all the joints with the hull in accessible positions —

The installation is at present supplied with a voltmeter and also with an amperemeter, fixed on Switch B.

**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 yes

Are any switches, cut outs, 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 Gas tight globes with rubber joints

The copper used is guaranteed to have a conductivity of 98 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 2,500. 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.

W. C. Martin Electrical Engineers

Date 29<sup>th</sup> Oct 1908

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 48 ft.

Distance between dynamo or electric motors and steering compass 52 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>9</u>	Amperes	<u>16</u>	feet from standard compass	<u>12</u>	feet from steering compass
A cable carrying	<u>1.1</u>	Amperes	<u>16</u>	feet from standard compass	<u>12</u>	feet from steering compass
A cable carrying	<u>3</u>	Amperes	<u>1</u>	feet from standard compass	<u>1</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 nil degrees on every course in the case of the standard compass and nil degrees on every course in the case of the steering compass.

Builder's Signature. Date

**GENERAL REMARKS.**

This Electric Light Installation has been fitted in accordance with the Rules and tried under full working conditions with satisfactory results.

J. Kerr

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

Committee's Minute

It is submitted that the Board Rec. Light be noted in the Reg. Book.



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 1, 1908, 2m, 34.