

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

JUL. 22 OCT 1908

No. 5605

Port of *Middlesbrough* Date of First Survey *18<sup>th</sup> Sept.* Date of Last Survey *5<sup>th</sup> Oct.* No. of Visits *6*

No. in *Sup.* on the ~~Iron~~ *Steel* *S.S. "Jamaica"* Port belonging to *Middlesbrough*  
 Reg. Book *9* Built at *Middlesbrough* By whom *W. Harkness & Son L<sup>d</sup>* When built *1908*

Owners *Elder, Dempster & Co.* Owners' Address *175*  
 Yard No. *175* Electric Light Installation fitted by *Campbell & Isherwood* When fitted *1908*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*A Campbell & Isherwood compound wound dynamo direct coupled to a Matthew Paul enclosed engine*

Capacity of Dynamo *105* Amperes at *100* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *Starboard side Engineer room* Whether single or double wire system is used *single*

Position of Main Switch Board *"* *"* *"* having switches to groups *5* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Engineer room 6 Captain's room*  
*79 a switch in a convenient position for each light*

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 *121* arranged in the following groups:—

A *Engine room* lights each of *16 of 16* candle power requiring a total current of *9.6* Amperes

B *Arched cargo* lights each of *2 arcs 5 amp 18 of 16* candle power requiring a total current of *20.8* Amperes

C *Forward aft* lights each of *18 of 16 2 of 32* candle power requiring a total current of *13.2* Amperes

D *Officers & Cabin* lights each of *23 of 16 5 of 32* candle power requiring a total current of *19.2* Amperes

E *Passenger Room* lights each of *32 of 16* candle power requiring a total current of *19.2* Amperes

*2* Mast head light with *1* lamps each of *32* candle power requiring a total current of *2.4* Amperes

*2* Side light with *1* lamps each of *32* candle power requiring a total current of *2.4* Amperes

*3-6 light* Cargo lights of *16* candle power, whether incandescent or arc lights *both*

If arc lights, what protection is provided against fire, sparks, &c. *Enamelled sheet iron reflector with plate glass bottom*

Where are the switches controlling the masthead and side lights placed *Captain's Room*

## DESCRIPTION OF CABLES.

Main cable carrying *105* Amperes, comprised of *37* wires, each *16* L.S.G. diameter, *.1184* square inches total sectional area

Branch cables carrying *20.8* Amperes, comprised of *7* wires, each *16* L.S.G. diameter, *.0234* square inches total sectional area

Branch cables carrying *13.2* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.0126* square inches total sectional area

Leads to lamps carrying *1.8* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.0018* square inches total sectional area

Cargo light cables carrying *3.6* Amperes, comprised of *68* wires, each *33* L.S.G. diameter, *.004* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

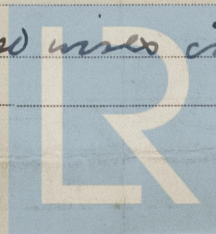
*In Engineer room & boiler spaces lead covered & armoured. In cargo holds vulcanised in galvanised steel tubing cabins vulcanised in wood casings*

Joints in cables, how made, insulated, and protected *none made*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *—* 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 *In holds vulcanised wires in galvanised steel tubing, cabins wood casings*



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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 *steel tubing*

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

What special protection has been provided for the cables near boiler casings *lead covered & armoured*

What special protection has been provided for the cables in engine room *lead covered & armoured*

How are cables carried through beams *fibre females* through bulkheads, &c. *glands*

How are cables carried through decks *galvanised deck tubes flanged*

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

If so, how are they protected *galvanised steel tubing*

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 *Portable fitting brass cover for terminals*

Where are the main switches and cut outs for these lights fitted *Companion to Storage*

If in the spaces, how are they specially protected \_\_\_\_\_

Are any switches or cut outs fitted in bunkers \_\_\_\_\_

Cargo light cables, whether portable or permanently fixed *portable* How fixed *special plug socket*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *set bolt into frame of dynamo*

How are the returns from the lamps connected to the hull *brass lap screws of large surface*

Are all the joints with the hull in accessible positions *yes*

The installation is *yes* supplied with a voltmeter and *yes* an amperemeter, fixed *main board*

**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 *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *2500* 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.

*Campbell & Iskerwood Ltd*

Electrical Engineers

Date *Oct 15<sup>th</sup> 1908*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *65 ft.*

Distance between dynamo or electric motors and steering compass *60 ft.*

The nearest cables to the compasses are as follows:—

| A cable carrying | Amperes   | feet from standard compass | feet from steering compass |
|------------------|-----------|----------------------------|----------------------------|
| <i>7</i>         | <i>17</i> | <i>12</i>                  | <i>12</i>                  |
| <i>7</i>         | <i>21</i> | <i>16</i>                  | <i>16</i>                  |
| 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 *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.*

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

Committee's Minute \_\_\_\_\_

*It is submitted that the Record Elec. Light be noted in the Reg. Book.*