

REPORT ON ELECTRIC LIGHTING INSTALLATION. No 22609

Port of *S.S. Craighall* Date of First Survey *16 Jan 05* Date of Last Survey *11 March 05* No. of Visits *12*
 No. in Reg. Book *on the Iron or Steel* Port belonging to *S.S. Craighall*
 Built at *By whom* When built
 Owners *Owners' Address*
 Yard No. *Electric Light Installation fitted by Archibald Low (Parker)* When fitted *11/3/05*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 pole compound wound dynamo, slot wound armature, direct coupled to de Laval Patent Steam Turbine running at 2,400 revs per min.
 Capacity of Dynamo *66* Amperes at *100* Volts, whether continuous or alternating current *Continuous*
 Where is Dynamo fixed *In Engine Room*
 Position of Main Switch Board *Engine Room* having switches to groups of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each

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 *No* and at each position where a cable is branched or reduced in size *No* 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 *25* 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

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes*

Total number of lights provided for *96* arranged in the following groups:—

| | | | | | | |
|----------|----------------------|------------------------|-----------|--|-----------|---------|
| A | <i>42</i> | lights each of | <i>16</i> | candle power requiring a total current of | <i>25</i> | Amperes |
| B | <i>37</i> | lights each of | <i>16</i> | candle power requiring a total current of | <i>22</i> | Amperes |
| C | <i>17</i> | lights each of | <i>16</i> | candle power requiring a total current of | <i>10</i> | Amperes |
| D | | lights each of | | candle power requiring a total current of | | Amperes |
| E | | lights each of | | candle power requiring a total current of | | Amperes |
| <i>1</i> | Mast head light with | <i>1</i> lamp each of | <i>32</i> | candle power requiring a total current of | <i>1</i> | Amperes |
| <i>2</i> | Side lights with | <i>1</i> lamps each of | <i>32</i> | candle power requiring a total current of | <i>2</i> | Amperes |
| <i>5</i> | Cargo lights of | <i>6</i> . <i>16</i> | | candle power, whether incandescent or arc lights | | |

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 *47* Amperes, comprised of *19* wires, each *18* L.S.G. diameter, *.03399* square inches total sectional area
 Branch cables carrying *47* Amperes, comprised of *19* wires, each *18* L.S.G. diameter, *.03399* square inches total sectional area
 Branch cables carrying *20-680* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.017540* square inches total sectional area
 Leads to lamps carrying *6-800* Amperes, comprised of *18* wires, each *16* L.S.G. diameter, *.0032170* square inches total sectional area
 Cargo light cables carrying *3-6* Amperes, comprised of *108* wires, each *.006* L.S.G. diameter, — square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered wire used in Saloon & State Rooms
Armoured wire throughout Engine Room Forecastle

Joints in cables, how made, insulated, and protected *No joints — done with Klemm boxes*

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 *None*

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 *Armoured wire 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 In iron tube

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

What special protection has been provided for the cables near boiler casings _____

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

How are cables carried through beams Holes Bored through bulkheads, &c. ✓

How are cables carried through decks Watertight joints

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 Armoured wire

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 Portable How fixed Watertight Plugs

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

How are the returns from the lamps connected to the hull _____

Are all the joints with the hull in accessible positions Yes

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 No

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 _____

The installation is _____ supplied with a voltmeter and _____ an amperemeter, fixed on

Switchboard

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.

Richardson & Co.

Electrical Engineers

Date 13 March 1905

COMPASSES.

Distance between dynamo or electric motors and standard compass 150 feet

Distance between dynamo or electric motors and steering compass 96 feet

The nearest cables to the compasses are as follows:—

| | | | | | | |
|------------------|-----------|---------|-----------|----------------------------|-----------|----------------------------|
| A cable carrying | <u>25</u> | Ampères | <u>32</u> | feet from standard compass | <u>12</u> | feet from steering compass |
| A cable carrying | <u>22</u> | Ampères | <u>24</u> | feet from standard compass | <u>22</u> | feet from steering compass |
| A cable carrying | <u>10</u> | Ampères | <u>24</u> | feet from standard compass | <u>22</u> | feet from steering compass |

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

The maximum deviation due to electric currents, etc., was found to be One Minute degrees on _____ course in the case of the standard compass and _____ degrees on _____ course in the case of the steering compass.

DAVID & WILLIAM HENDERSON & CO., LIMITED

John R. Henderson Director

Builder's Signature.

Date 14th Mar 1905

GENERAL REMARKS.

This installation has been well fitted on board and when run under ordinary working conditions was satisfactory.

A. M. McLeod

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

Committee's Minute

Glasgow 27 MAR 1905

Approved Electric Light

It is submitted that this installation appears to be satisfactory.

Lloyd's Register Foundation

28.3.05

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM NO. 13.