

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 16491

Port of Greenock Date of First Survey 19<sup>th</sup> May 11 Date of Last Survey 16<sup>th</sup> June 1913 No. of Visits 8  
 No. in on the Iron or Steel S.S. Bergasimos Port belonging to  
 Reg. Book Wild Mitchell  
 Built at Harbour & Miller By whom Harper & Miller Ltd When built 1913  
 Owners  
 Yard No. 190 Electric Light Installation fitted by J. A. Holmes & Co When fitted 1913

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

On 6 1/2' x 6' open type Casquin Coupled direct to 1-Holmes  
Dynamo Coupled wound. 350 Revs per min  
 Capacity of Dynamo 90 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed \_\_\_\_\_ Whether single or double wire system is used double  
 Position of Main Switch Board Near Dynamo having switches to groups A. B. C. D of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each 6 way SA DP. fuse Box with Swt fixed in Eng Rm. 6 way SA DP. fuse Box fixed in Passage. 3 way SA fuse Box Rm. Rm. 9 way SA DP. fuse Box with Swt fixed in Eng Rm. 2 way 15A fuse Box in Pastry 6 way SA fixed in Pastry 9 way DP. fuse Box in Chart Rm 6 way SA fuse Box in Eng Rm.  
 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 100 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 \_\_\_\_\_ arranged in the following groups :-

| Group | Number of Lights | Each of                                 | Candle Power | Requiring a total current of | Amperes |
|-------|------------------|---|--------------|------------------------------|---------|
| A     | 45               | lights each of 40 - 16 / 3 - 32         |              | 25.8                         |         |
| B     | 20               | lights each of 32                       |              | 22.4                         |         |
| C     | 38               | lights each of 30 - 16 / 8 - 32         |              | 25.8                         |         |
| D     | 30               | lights each of                          |              | 16.8                         |         |
| E     |                  | lights each of                          |              |                              |         |
|       | 2                | Mast head light with 1 lamps each of 32 |              | 2.24                         |         |
|       | 2                | Side light with 2 lamps each of 32      |              | 2.24                         |         |
|       | 5                | Cargo lights of 6 x 16                  |              |                              |         |

\_\_\_\_\_ candle power, whether incandescent or arc lights Incandescent.

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 90 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .094 square inches total sectional area  
 Branch cables carrying 22.4 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .022 square inches total sectional area  
 Branch cables carrying 25.8 Amperes, comprised of 7 wires, each 15 L.S.G. diameter, .028 square inches total sectional area  
 Leads to lamps carrying 56 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 2.8 Amperes, comprised of 3 wires, each 20 L.S.G. diameter, .003 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulation with pure Para rubber, 2 layers of high grade vulcanized rubber covered with proof tape the whole vulcanized together & braided overall  
 Joints in cables, how made, insulated, and protected Carefully twisted. Soldered & insulated with white & black tapes  
 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 now  
 Are there any joints in or branches from the cable leading from dynamo to main switch board now  
 How are the cables led through the ship, and how protected L. Covered wires clipped up in Access Spaces. L. Covered & Arms in Eng Rm clipped up. U.S.P wires in wire pipes in Cargo Spaces



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

Are they in places always accessible *Yes except when Cargo is being carried in the holds*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *L.C. Armoured or V.I.R. in pipes*

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

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 *bushed with fibre* through bulkheads, &c. *Stuffing glands*

How are cables carried through decks *in deck tubes flanges & made water-tight*

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 *in strong iron pipes*

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 *C.I. fittings with metal covers*

Where are the main switches and cut outs for these lights fitted *in Engine Room*

If in the spaces, how are they specially protected *none*

Are any switches or cut outs fitted in bunkers *none*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *W.T. Brass 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

The installation is supplied with a voltmeter and *not* an amperemeter, fixed *on 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 *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.

*J. H. Williams & Co.* Electrical Engineers Date *2/6/13*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *approx 96 feet*

Distance between dynamo or electric motors and steering compass *approx 91*

The nearest cables to the compasses are as follows:—

|                  |           |         |               |                            |           |                            |
|------------------|-----------|---------|---------------|----------------------------|-----------|----------------------------|
| A cable carrying | <i>25</i> | Amperes | <i>14</i>     | feet from standard compass | <i>10</i> | feet from steering compass |
| A cable carrying | <i>12</i> | Amperes | <i>10</i>     | feet from standard compass | <i>6</i>  | feet from steering compass |
| A cable carrying | <i>56</i> | Amperes | <i>inside</i> | feet from standard compass | <i>3</i>  | 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 *no deviation* degrees on *steering* course in the case of the standard compass and *no deviation* degrees on *steering* course in the case of the steering compass.

*For Hafey & Miller Ltd* Builder's Signature. Date *24 June 1913*

**GENERAL REMARKS.**

*The materials & workmanship are good. On completion the installation was tested and worked satisfactorily. It is submitted that this vessel is eligible for THE RECORD. Elec. light.*

*J.W.D. 3/7/13*

*Wm. A. Austin*

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

Committee's Minute

GLASGOW 1-JUL 1913

*Elec. light.*



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

*L.H. 30/5/13*