

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 15026.

Port of Greenock Date of First Survey 18th March Date of Last Survey 16th April No. of Visits 14
 No. in Reg. Book on the Iron or Steel S. Makambo Port belonging to Sydney
 Built at Port Glasgow By whom Clyde S.S. Eng. Co. Ltd. When built 1904
 Owners Burns, Philp & Co. Ltd. Owners' Address _____
 Yard No. 273 Electric Light Installation fitted by H. C. Martin & Co. When fitted 1904

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Clarke, Chapman & Co. Compound wound multipolar dynamo, coupled to Direct Acting Engine.

Capacity of Dynamo 90 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Engine Room Starting platform Whether single or double wire system is used Double wired

Position of Main Switch Board Beside 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 None

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 _____ 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 126 arranged in the following groups:—

A (Upper bridge & forward)	36 lights each of	16	candle power requiring a total current of	18	Amperes
B (Saloon etc.)	36 lights each of	16	candle power requiring a total current of	18	Amperes
C (Engineers quarters & aft)	40 lights each of	16	candle power requiring a total current of	20	Amperes
D (Engine Room)	14 lights each of	16	candle power requiring a total current of	7	Amperes
E	lights each of		candle power requiring a total current of		Amperes
2 Mast head lights with	1 lamps each of	32	candle power requiring a total current of	2	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	2	Amperes
3 Cargo lights of		96	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 chart Room

DESCRIPTION OF CABLES.

Main cable carrying 93.72 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .0956 square inches total sectional area

Branch cables carrying 20 Amperes, comprised of 19 wires, each 20 L.S.G. diameter, .0194 square inches total sectional area

Branch cables carrying 12.4 Amperes, comprised of 14 wires, each 18 L.S.G. diameter, .0127 square inches total sectional area

Leads to lamps carrying 3.2 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .00322 square inches total sectional area

Cargo light cables carrying 3.2 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .00322 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

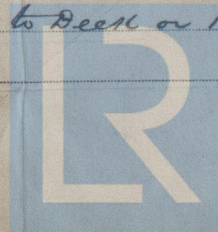
Rubber and tape. Some wires lead covered, others armoured.

Joints in cables, how made, insulated, and protected all joints formed by patent junction piece

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 No

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 and clipped to Deck or Bulkhead



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes, except in Hold.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Special Armoured*

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

What special protection has been provided for the cables near boiler casings *Armoured.*

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

How are cables carried through beams *Armoured & clipped to Decks through bulkheads, &c. By W.T. Stands*

How are cables carried through decks *Lead or iron Deck Tubes*

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 *Passed through beams*

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 *Hook & connector*

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 an amperemeter, fixed *on Switch 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.

W. C. Martin Electrical Engineers

Date *12th April 1907*

COMPASSES.

Distance between dynamo or electric motors and standard compass *47 feet*

Distance between dynamo or electric motors and steering compass *43 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>5</i>	<i>2</i>	<i>8</i>	<i>8</i>
<i>2.5</i>	<i>6</i>	<i>4</i>	<i>4</i>
<i>9</i>	<i>10</i>	<i>7</i>	<i>7</i>

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 *a certain* course in the case of the standard compass and *the same* course in the case of the steering compass.

Archibald Welch Director

Builder's Signature. Date *22nd April 1907*

GENERAL REMARKS.

The materials and workmanship are good. When completed the installation was tested and worked well.

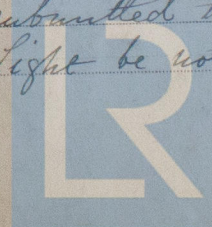
Wm. Austin

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

Committee's Minute

Glasgow 13 MAY 1907
Record Electric Light

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



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.