

THUR, SEP 24 1896

Received at London Office

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 11111.

Port of Greenock Date of First Survey 16th Sept. Date of Last Survey 19th Sept. 1896 No. of Visits 1
No. in Reg. Book 1 on the Iron Steel Ser Sch "Cidade de Manaus" Port belonging to Para
Built at Port Glasgow By whom Murdoch & Murray When built 1896
Owners Marques Braga & Co Owners Address Para
Yard No. 146 Electric Light Installation fitted by Haddow & Co. When fitted 1896

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One "Castle" dynamo (Compound wound) coupled direct on same bed-plate to One open framed automatic engine of the double acting type.
Capacity of Dynamo Eighty Amperes at Sixty Volts, whether continuous or alternating current continuous
Where is Dynamo fixed Engine Room
Position of Main Switch Board Engine Room 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 One in Captain's room: Five switches
One in Steward's Store: Five switches: One in Steward's Store: Two switches: One for Main Deck - Six Switches.
If cut outs are fitted on main switch board to the cables of main circuit Yes and on each auxiliary switch boards 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 cessel 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
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 ~~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 - Porcelain or Slate bases
Total number of lights provided for Sixty arranged in the following groups:-
A Eight lights each of 16 candle power requiring a total current of Eight Amperes
B Thirteen lights each of 16 candle power requiring a total current of Thirteen Amperes
C Fourteen lights each of 16 candle power requiring a total current of Fourteen Amperes
D Nineteen lights each of 16 candle power requiring a total current of Nineteen Amperes
E Six lights each of 16 candle power requiring a total current of Six Amperes
1 Mast head light with 2 lamps each of 16 candle power requiring a total current of Two Amperes
2 Side light with 2 lamps each of 16 candle power requiring a total current of Four Amperes
— Cargo lights of — candle power, whether incandescent or are lights

If are lights, what protection is provided against fire, sparks, &c.

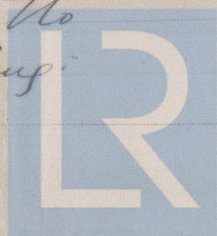
Where are the switches controlling the masthead and side lights placed Captain's Room

DESCRIPTION OF CABLES.

Main cable carrying 60 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .061 square inches total sectional area
Branch cables carrying 19 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .028 square inches total sectional area
Branch cables carrying 14 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .073 square inches total sectional area
Leads to lamps carrying 1 Amperes, comprised of 3 wires, each 20 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.

All wires & cables of tinned copper insulated with pure and vulcanized rubber and proofed taped, all thoroughly vulcanized to gether - taped and braided and served with special compound
Joints in cables, how made, insulated, and protected Soldered - Insulated with Pure Para rubber and special prepared Tape.
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 Yes
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 Leak wood casing



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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 *Lat casing*

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

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

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

How are cables carried through beams *Vulcanized plug* through bulkheads, &c.

How are cables carried through decks *Iron pipes*

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

If so, how are they protected

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 *None*

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 *Cast brass five screws tapped into beams*

How are the returns from the lamps connected to the hull *Brass screws with washers*

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

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 installation is supplied with a voltmeter and *Yes* an amperemeter, fixed *Switchboard*

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 *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.

Madeline & Co. Glasgow Electrical Engineers

Date *14th Sep^r 1896*

COMPASSES.

Distance between dynamo or electric motors and standard compass *Ninety feet (about)*

Distance between dynamo or electric motors and steering compass *Do do*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>Eight</i>	<i>15</i>	<i>15</i>	
A cable carrying	Amperes	feet from standard compass	feet from steering compass
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 *none* degrees on course in the case of the standard compass and *none* degrees on course in the case of the steering compass.

Murdock & Murray

Builder's Signature

Date *17th Sep^r 1896*

GENERAL REMARKS.

All lights adjacent to compasses are doubled wired to a distance of about thirty feet.

The installation appears to be fitted in accordance with the Rules

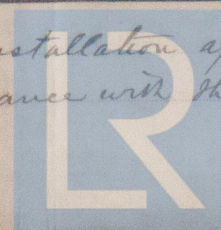
L. S. Nash

H. F. Rennie

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

Committee's Minute

This installation appears to be in accordance with the Rules



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