

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 11566.

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Port of *Greenock* Date of First Survey *24th Aug* Date of Last Survey *14 Oct* No. of Visits *10*
 No. in *14* on the *Iron or Steel* *Twin S. S. Rio Affud* Port belonging to *Para*
 Reg. Book *14* Built at *Port Glasgow* By whom *Russell & Co*
 Owners *A. Berncard & Co.* Owners Address *Para, Brazil* When built *1896*
 Yard No. *400* Electric Light Installation fitted by *Laddow & Co* When fitted *1896*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One compound wound "Castle" dynamo coupled direct to One Brownell
 Sindley & Co double acting engine
 Capacity of Dynamo *80* Amperes at *65* 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.F.* of lights, &c., as below:
 Positions of auxiliary switch boards and numbers of switches on each *One in Captain's Room having eight switches*
One Engine room having one switch & 7 fuses: Two in Steward's Stores having nine 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 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 - Porcelain or slate*
 Total number of lights provided for *Seventy three* arranged in the following groups:—

A	<i>Eleven</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>Ten</i>	Amperes
B	<i>Fourteen</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>Twelve</i>	Amperes
C	<i>Twelve</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>11.5</i>	Amperes
D	<i>Twenty four</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>Twenty</i>	Amperes
E	<i>Eleven</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>Ten</i>	Amperes
One Mast head light with		lamps each of double filaments		candle power requiring a total current of	<i>two</i>	Amperes
Two Side light with		lamps each of <i>50</i> <i>Dr</i>		candle power requiring a total current of	<i>four</i>	Amperes
Four hand Cargo lights of		<i>16</i>		candle power, whether incandescent or arc lights	<i>incandescent</i>	

 If arc lights, what protection is provided against fire, sparks, &c. *One 16" projector inside sheet steel lantern*
 Where are the switches controlling the masthead and side lights placed *Captain's room*

DESCRIPTION OF CABLES.

Main cable carrying	<i>80</i>	Amperes, comprised of	<i>19</i>	wires, each	<i>15</i>	L.S.G. diameter, <i>0.173565</i> square inches total sectional area
Branch cables carrying	<i>20</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>15</i>	L.S.G. diameter, <i>0.0285015</i> square inches total sectional area
Branch cables carrying	<i>12</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>18</i>	L.S.G. diameter, <i>0.126672</i> square inches total sectional area
Leads to lamps carrying	<i>1</i>	Amperes, comprised of	<i>3</i>	wires, each	<i>20</i>	L.S.G. diameter, <i>0.030537</i> square inches total sectional area
Cargo light cables carrying	<i>1.5</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>24</i>	L.S.G. diameter, <i>0.026607</i> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

One layer pure rubber vulcanized rubber, taped, braided
 Joints in cables, how made, insulated, and protected *Soldered and covered with pure para rubber & vulcanized tape with I.R. solution*
 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

Teak wood casing and iron pipes

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

Iron sheathing

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

Do do

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

Do do

How are cables carried through beams

hard wood plug

through bulkheads, &c.

brass stuffing box

How are cables carried through decks

Flanged 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

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

Cargo light cables, whether portable or permanently fixed

Portable

How fixed

Watertight brass sockets

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

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

also

supplied with a voltmeter and

an amperemeter, fixed

Switchboard

The copper used is guaranteed to have a conductivity of

99

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.

Badeloni & Co

Electrical Engineers

Date

30th Sept 1896

COMPASSES.

Distance between dynamo or electric motors and standard compass

75 feet

Distance between dynamo or electric motors and steering compass

Do

The nearest cables to the compasses are as follows:—

A cable carrying

Ten

Amperes

15

feet from standard compass

15

feet from steering compass

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

nil

degrees on

course in the case of the

standard compass and

degrees on

course in the case of the steering compass.

Russell & Co

Builder's Signature

Date

2nd Oct 1896

GENERAL REMARKS.

The above named installation has been fitted under our inspection, and to our satisfaction.

J. J. House & Co

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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