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Surveyor.

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 18267

18 SEP 1900 of *Glasgow* Date of First Survey ☒ Date of Last Survey ☐ No. of Visits ☐
 No. in on the *Iron* Steel *"Bohemian"* Port belonging to *Liverpool*
 Ref. Book Built at *Glasgow* By whom *Alex. Stephen & Son* When built *1900*
 Owners *Messrs F. Heyland & Co.* Owners' Address *Liverpool*
 Yard No. Electric Light Installation fitted by *J. H. Allen & Co. Ltd.* When fitted *1900*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Two compound wound Siemens engines direct, 5 two vertical
 single cylinder engines 9" diam. 7" stroke running at 275 r.p.m.
 Capacity of Dynamo 5 each 175 Amperes at 62 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine room starting platform Starboard side.
 Position of Main Switch Board Eng. room near dynamo having switches to groups *40, 50, 75, 100* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *Engine room starting platform 6 switches
 Stateroom passage 4 switches Engine room top platform 10 switches
 Pantry 10 switches.**

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 *340* arranged in the following groups:—

A	<i>74</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>74</i>	Amperes
B	<i>122 (supplied by 2 mains)</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>122</i>	Amperes
C	<i>32</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>32</i>	Amperes
D	<i>32</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>32</i>	Amperes
E	<i>32</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>32</i>	Amperes
F	<i>32</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>32</i>	Amperes
G	<i>1</i>	Mast head light with <i>1</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>1</i>	Amperes
H	<i>2</i>	Side light with <i>1</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes
I	<i>8</i>	Cargo lights of <i>8 x 16 = 128</i>		candle power, whether incandescent or arc lights	<i>128</i>	Amperes

If arc lights, what protection is provided against fire, sparks, &c. *No arcs*

Where are the switches controlling the masthead and side lights placed *2 in shell house on bridge*

DESCRIPTION OF CABLES.

Main cable carrying *175* Amperes, comprised of *37* wires, each *14* L.S.G. diameter, *1897* square inches total sectional area
 Branch cables carrying *74* Amperes, comprised of *19* wires, each *15* L.S.G. diameter, *1709* square inches total sectional area
 Branch cables carrying *32* Amperes, comprised of *19* wires, each *17* L.S.G. diameter, *1047* square inches total sectional area
 Leads to lamps carrying *1* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *1008* square inches total sectional area
 Cargo light cables carrying *8* Amperes, comprised of *145* wires, each *38* L.S.G. diameter, *2042* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure india rubber, then vulcanized india rubber, india rubber coated tape, the whole vulcanized together, sheathed with lead, then covered with braided cotton and preservative compound.

Joints in cables, how made, insulated, and protected *Spliced joints, soldered and insulated with a layer of felt slaps, several layers of pure rubber tape, finished with oakum and varnished.*

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 *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 *Under upper bridge deck in joint & stateroom
 Alloway, under shell deck through beams & stateroom Alloway
 Fore & aft, lead covered wire & strong wood casing.*

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 *Lead covered & painted*

What special protection has been provided for the cables near galley or oil lamps or other sources of heat *Lead covered & painted*

What special protection has been provided for the cables near boiler casings *Lead covered & painted*

What special protection has been provided for the cables in engine room *Lead covered & painted, and had any? served & painted*

How are cables carried through beams *2 fibre funnels* through bulkheads, &c. *Fibre funnels & flange*

How are cables carried through decks *2 Galv. Iron pipes lined with fibre*

Are any cables run through coal bunkers or cargo spaces or spaces which may be used for carrying cargo, stores, or baggage *yes*

If so, how are they protected *Lead covered & painted in wood casing*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *on table deck only*

If so, how are the lamp fittings and cable terminals specially protected *Heavy ch. fittings with shutters*

Where are the main switches and cut outs for these lights fitted *In Engine room*

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 *—*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Bran socket in Engine room*

How are the returns from the lamps connected to the hull *As above connection 3/8 brass screw*

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 *2* voltmeters and *two* an amperemeter, fixed *at hatchway*

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 *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.

For W. H. ALLEN, SON & Co Ltd.

R. J. Burton.

Electrical Engineers

Date 12 Sept 1900

COMPASSES.

Distance between dynamo or electric motors and standard compass *About 180 feet*

Distance between dynamo or electric motors and steering compass *—*

The nearest cables to the compasses are as follows:—

Cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying <i>12</i>	<i>12</i>	<i>12</i>	<i>12</i>
A cable carrying <i>1</i>	<i>6</i>	<i>5</i>	<i>5</i>
A cable carrying <i>—</i>	<i>—</i>	<i>—</i>	<i>—</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 *every* course in the case of the standard compass and *—* degrees on *—* course in the case of the steering compass.

Ally Stephens

Builder's Signature.

Date

GENERAL REMARKS.

This installation has been well fitted on board and appears to be in accordance with the Rules

A. McRae

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

Committee's Minute *Glasgow. 25 SEP. 1900*

Receives Elec. light

It is submitted that this installation appears to meet the Rules requirements

Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 12

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