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REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 550

Port of *Baltimore Md* Date of First Survey *18 June* Date of Last Survey *26 Oct 1920* No. of Visits *8*
No. in on the ~~Iron~~ or Steel *Steamer Colin Livingston* Port belonging to *Alexandria Va.*
Reg. Book *28048* Built at *Alexandria Va.* By whom *Virginia SB Co* When built *1920*
Owners *U S Shipping Board* Owners' Address *Broad & Cherry St. Philadelphia Pa.*
Yard No. *9* Electric Light Installation fitted by *Virginia Ship building Co* When fitted *1920*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Engberg Dynamo direct connected to a Vertical Engberg engine 400 RPM

Capacity of Dynamo *80* Amperes at *125* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Eng. room Starboard side* Whether single or double wire system is used *double*

Position of Main Switch Board *adjacent to dynamo* 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 *Forecastle 6 switches. Captain Cabin 4 switches*
Midship cabin 8 switches. After cabin 6 switches. Engine room 8 switches. Pilot
house 5 switches

If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits

Are the fuses of non-oxidizable metal *yes* and constructed to fuse at an excess of *50* per cent over the normal current

Are all fuses 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

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases *yes*

Total number of lights provided for *210* arranged in the following groups:—

A	<i>5</i>	lights each of <i>10 Watts</i>	candle power requiring a total current of <i>45</i>	Amperes
B	<i>27</i>	lights each of <i>60</i> ..	candle power requiring a total current of <i>15</i>	Amperes
C	<i>86</i>	lights each of <i>40</i> ..	candle power requiring a total current of <i>31</i>	Amperes
D	<i>76</i>	lights each of <i>25</i> ..	candle power requiring a total current of <i>18</i>	Amperes
E	<i>9</i>	lights each of <i>10</i> ..	candle power requiring a total current of <i>8-2</i>	Amperes
<i>2</i>	Mast head light with <i>1</i>	lamps each of <i>60</i>	candle power requiring a total current of <i>1</i>	Amperes
<i>2</i>	Side light with <i>1</i>	lamps each of <i>60</i>	candle power requiring a total current of <i>2</i>	Amperes

6 Cargo lights of *24 lamps lamps 24* candle power, whether incandescent or ~~arc light~~ *Incandescent*

If arc lights, what protection is provided against fire, sparks, &c. *Search light in metal case with glass door*

Where are the switches controlling the masthead and side lights placed *In wheel house*

DESCRIPTION OF CABLES.

Main cable carrying *80* Amperes, comprised of *4* wires, each *1* S.W.G. diameter, *.83690* *Cm* square inches total sectional area

Branch cables carrying *30* Amperes, comprised of *12* wires, each *6* S.W.G. diameter, *26250* square inches total sectional area

Branch cables carrying *20* Amperes, comprised of *6* wires, each *12* S.W.G. diameter, *6536* square inches total sectional area

Leads to lamps carrying *15* Amperes, comprised of *56* wires, each *14* S.W.G. diameter, *4107* square inches total sectional area

Cargo light cables carrying *5 1/2* Amperes, comprised of *4* wires, each *12* S.W.G. diameter, *6530* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All wires covered with 3/32 insulation braided on outside

Joints in cables, how made, insulated, and protected *junction boxes (weather proof) where splices are made. Some are soldered and covered with rubber tape properly insulated and covered with Shellac*

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances *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 *In metal conduit*



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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 *Metal Conduit*

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

What special protection has been provided for the cables near boiler casings *In rigid Metal Conduit*

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

How are cables carried through beams *Conduit-lock nuts both sides* through bulkheads, &c. *Conduit-lock nuts both sides*

How are cables carried through decks *In rigid Conduit & lock nuts*

Are any cables run through coal bunkers *no* or cargo spaces *no* or spaces which may be used for carrying cargo, stores, or baggage *Bridge & engine room*

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 fuses for these lights fitted —

If in the spaces, how are they specially protected —

Are any switches or fuses fitted in bunkers —

Cargo light cables, whether portable or permanently fixed *Permanent* How fixed *to outrigger on mast*

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 —

Is the installation supplied with a voltmeter *yes* and with an amperemeter *yes*, fixed *Main switch board*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas —

Are any switches, fuses, 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 not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

COMPASSES.

Distance between dynamo or electric motors and standard compass *One hundred feet*

Distance between dynamo or electric motors and steering compass *Twenty five feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>4 1/2</i>	Amperes	<i>10</i>	feet from standard compass	<i>4</i>	feet from steering compass
A cable carrying	<i>33</i>	Amperes	<i>10</i>	feet from standard compass	<i>4</i>	feet from steering compass
A cable carrying	<i>5</i>	Amperes	<i>1</i>	feet from standard compass	<i>1</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 *nil* degrees on *Various* course in the case of the standard compass and *nil* degrees on *Various* course in the case of the steering compass.

Virginia Shipbuilding Corp.
J. M. Lagergren Builder's Signature. Date *11/9/20*

GENERAL REMARKS.

Insulation has been fitted in an approved manner. Tested under varying loads and found to work in a satisfactory manner.

S. Norworthy
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec. St.

New York NOV 23 1920



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