

REC'D NEW YORK NOV 20 1920

RETAIN  
No. 5000  
TUE. DEC. 7 1920

Rpt. 13.

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of Baltimore Md Date of First Survey 18 June Date of Last Survey 26 Oct 1920 No. of Visits 8  
 on the ~~Iron~~ or Steel Steamer Colin Livingston Port belonging to Alexandria Va.  
 No. in Reg. Book 79048 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	5	lights each of 10 Watts	candle power requiring a total current of	45	Amperes
B	27	lights each of 60 ..	candle power requiring a total current of	15	Amperes
C	86	lights each of 40 ..	candle power requiring a total current of	31	Amperes
D	76	lights each of 25 ..	candle power requiring a total current of	18	Amperes
E	9	lights each of 10 ..	candle power requiring a total current of	8-2	Amperes
2	Must head light with 1	lamps each of 60	candle power requiring a total current of	1	Amperes
2	Side light with 1	lamps each of 60	candle power requiring a total current of	2	Amperes

6 Cargo lights of 24 lamps lamp 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 90 Amperes, comprised of 4 wires, each 1 S.W.G. diameter, .83690 <sup>Cm</sup> square inches total sectional area

Branch cables carrying 30 Amperes, comprised of 12 wires, each 6 S.W.G. diameter, 2.6250 square inches total sectional area

Branch cables carrying 20 Amperes, comprised of 6 wires, each 12 S.W.G. diameter, 6.530 square inches total sectional area

Leads to lamps carrying 15 Amperes, comprised of 56 wires, each 14 S.W.G. diameter, 4.107 square inches total sectional area

Cargo light cables carrying 5 1/2 Amperes, comprised of 4 wires, each 12 S.W.G. diameter, 6.530 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

**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 *Bridgeland*

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.

*Virginia Shipbuilding Corp*  
*Jas. G.M. Lagergren* Electrical Engineers Date *11/9/20*

**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>35</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*  
*Jas. G.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

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

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