

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2069

Port of *Baltimore Md.* Date of First Survey *Jan 26<sup>th</sup>* Date of Last Survey *March 26<sup>th</sup>* No. of Visits *11*  
 No. in Reg. Book *on the Iron or Steel* *from Jones Steamer "James H. Lee"* Port belonging to *Bayonne N. J.*  
 Built at *Spencer Point* By whom *Bethlehem Steel Co.* When built *1917*  
 Owners *Standard Oil Co.* Owners' Address *Bayonne N. J.*  
 Yard No. *158* Electric Light Installation fitted by *Bethlehem Steel Co.* When fitted *1917*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Two Generating sets - each rated at 20 H.P. Direct coupled to Reciprocating Engines 9"x7" - 100 H.P. Also emergency set rated at 10 H.P.*  
 Capacity of Dynamo *160* ✓ Amperes at *125* ✓ Volts, whether continuous or alternating current *Continuous* ✓  
 Where is Dynamo fixed *Engine Room* Whether single or double wire system is used *Double* ✓  
 Position of Main Switch Board *Near Generator* having switches to groups *3* of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each *A. Upper deck aft 10 circuits - B Pump Room Panel 14 circuits C. Midship House 8 circuits: D. Emergency Panel 5 circuits: E. Forward Panel 3 circuits Engine Room 10 circuits*

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 *Yes*

Are the fuses of non-oxidizable metal *Yes* and constructed to fuse at an excess of *30* 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 *Yes*

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

Total number of lights provided for *243* arranged in the following groups:—

A	<i>58</i>	lights each of	<i>20</i>	candle power requiring a total current of	<i>13.19</i>	Amperes
B	<i>8</i>	lights each of	<i>20</i>	candle power requiring a total current of	<i>1.81</i>	Amperes
C	<i>60</i>	lights each of	<i>20</i>	candle power requiring a total current of	<i>13.81</i>	Amperes
D	<i>83</i>	lights each of	<i>20</i>	candle power requiring a total current of	<i>18.87</i>	Amperes
E	<i>15</i>	lights each of	<i>20</i>	candle power requiring a total current of	<i>3.41</i>	Amperes
<i>Two</i>	<i>Mast head light with</i>	<i>Two</i>	<i>lamps each of</i>	<i>32</i>	candle power requiring a total current of	<i>64</i> Amperes
<i>Two</i>	<i>Side light with</i>	<i>Two</i>	<i>lamps each of</i>	<i>32</i>	candle power requiring a total current of	<i>64</i> Amperes
	<i>12 Bunkers</i>	<i>Cargo lights of</i>	<i>20</i>	candle power, whether incandescent or arc lights	<i>Incandescent</i>	

If are lights, what protection is provided against fire, sparks, &c. *None*

Where are the switches controlling the masthead and side lights placed *On Tell tale in Pilot House.*

## DESCRIPTION OF CABLES.

Main cable carrying	<i>115</i>	Amperes, comprised of	<i>37</i>	wires, each	<i>11</i>	S.W.G. diameter,	<i>3/4</i> ✓	<i>100</i> square inches total sectional area	<i>.392</i>
Branch cables carrying	<i>62.9</i>	Amperes, comprised of	<i>37</i>	wires, each	<i>11</i>	S.W.G. diameter,	<i>3/4</i> ✓	<i>100</i> square inches total sectional area	<i>.392</i>
Branch cables carrying	<i>25</i>	Amperes, comprised of	<i>19</i>	wires, each	<i>15</i>	S.W.G. diameter,	<i>0.65</i> ✓	<i>100</i> square inches total sectional area	<i>.077</i>
Leads to lamps carrying	<i>32</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>14</i>	S.W.G. diameter,	<i>0.05</i> ✓	<i>100</i> square inches total sectional area	<i>.005</i>
Cargo light cables carrying	<i>128</i>	Amperes, comprised of	<i>41</i>	wires, each	<i>29</i>	S.W.G. diameter,	<i>0.03</i> ✓	<i>100</i> square inches total sectional area	<i>.006</i>

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Wires covered with 3/32" pure gum, insulating tape, jute filler and bound with insulating tape*

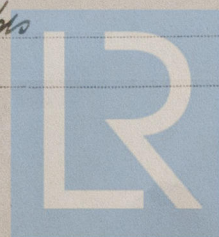
*All wiring except in quarters led through conduits*

Joints in cables, how made, insulated, and protected *Soldered, soldered, taped with a layer of rubber compound equal to thickness of rubber wall, then taped with rubber impregnated linen tape and the joint painted 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 iron enamel lined pipes*



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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 *In conduits*

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

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

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

How are cables carried through beams *Iron Pipes*

through bulkheads, &c. *Iron Pipes with stuffing boxes*

How are cables carried through decks *In iron pipes with stuffing boxes*

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

If so, how are they protected *In iron pipes*

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 *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 *\_\_\_\_\_*

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. for each generator, fixed Gen. Main Switchboard*

**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 *Yes*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *No*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *Water tight fixtures with metal guards*

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.

*Bethlehem Steel Company*  
*Maryland Shipbuilding Plant*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *400 feet*

Distance between dynamo or electric motors and steering compass *400 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>32</i>	<i>1</i>	<i>8</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 *\_\_\_\_\_* course in the case of the standard compass and *Nil* degrees on *\_\_\_\_\_* course in the case of the steering compass.

*Bethlehem Steel Company*  
*Maryland Shipbuilding Plant*

Builder's Signature. Date

**GENERAL REMARKS.**

*This installation has been fitted in an efficient manner & the workmanship and materials are good and in accordance with the rules of this Society. The generators have been tried under full load and found satisfactory. Side and mast head lights tested.*

*Geo. Lully & H. H. Stewart*

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

Committee's Minute

*Elec Light*

New York APR 12 1917

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

