

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2906

Port of Philadelphia Date of First Survey 2<sup>nd</sup> April 1918 Date of Last Survey 29<sup>th</sup> June 1918 No. of Visits 11No. in Reg. Book on the Iron or Steel S.S. "Santa Olivia" Port belonging toBuilt at Philadelphia By whom The Wm Cramp & Son Ship Bld Co When built 1918Owners Evergreen Steam Corp Owners' Address WashingtonYard No. 444 Electric Light Installation fitted by The Wm Cramp & Son Ship Bld Co When fitted 1918

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

S. S. Santa Olivia  
There are installed two (2) generating sets, Marine Type, Engine Driven 15 KW, 425 RPM, 110 Volt. Compound Wound with forced lubrication as manufactured by General Electric Co.Capacity of Dynamo 137 Amperes at 110 Volts, whether continuous or alternating current ContinuousWhere is Dynamo fixed Engine Room, Starboard (aft) Whether single or double wire system is used DoublePosition of Main Switch Board Engine Room, Starboard (aft) having switches to groups 7 of lights, &c., as belowPositions of auxiliary switch boards and numbers of switches on each 1-8 Branch N.W. in Pantry, 1-6 Branch W.J. in Engine Room.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 reduced in size Yes and to each lamp circuit NoIf 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 YesAre the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 100 per cent over the normal currentAre 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 YesAre all switches and fuses constructed of incombustible materials and fitted on incombustible bases YesTotal number of lights provided for 262 arranged in the following groups:—

A	<u>5</u>	lights each of	<u>5</u>	candle power requiring a total current of	<u>1.4</u>	Amperes
B	<u>18</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>6</u>	Amperes
C	<u>113</u>	lights each of	<u>25 Watt</u>	candle power requiring a total current of	<u>27</u>	Amperes
D	<u>47</u>	lights each of	<u>40 Watt</u>	candle power requiring a total current of	<u>2</u>	Amperes
E	<u>1</u>	lights each of	<u>50 Watt</u>	candle power requiring a total current of	<u>21</u>	Amperes
	<u>4</u>	lights each of	<u>300 Watt</u>	candle power requiring a total current of	<u>3</u>	Amperes
	<u>2</u>	Mast head light with	<u>2</u> lamps each of <u>50 Watt</u>	candle power requiring a total current of	<u>18</u>	Amperes
	<u>2</u>	Side light with	<u>2</u> lamps each of <u>50 Watt</u>	candle power requiring a total current of	<u>2</u>	Amperes
	<u>14</u>	Cargo lights of	<u>200 Watt</u>	candle power, whether incandescent or arc lights	<u>2</u>	Amperes

If arc lights, what protection is provided against fire, sparks, &c. IncandescentWhere are the switches controlling the masthead and side lights placed On Tell-tale Board in Pilot House

## DESCRIPTION OF CABLES.

Main cable carrying 137 Amperes, comprised of 61 wires, each 16 B&S 0.01236 square inches total sectional areaBranch cables carrying 42 Amperes, comprised of 37 wires, each 18 B&S 0.0471 square inches total sectional areaBranch cables carrying 6 Amperes, comprised of 1 wires, each 14 B&S 0.0032 square inches total sectional areaLeads to lamps carrying .5 Amperes, comprised of 1 wires, each 16 B&S 0.0020 square inches total sectional areaCargo light cables carrying 5 Amperes, comprised of 1 wires, each 14 B&S 0.0032 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

First a layer of rubber compound  $\frac{3}{32}$ " thick, then a layer of cotton braid, third, a black weatherproof preservative compound. Wire installed in conduit has an additional fibrous braid  $\frac{1}{32}$ " in thicknessJoints in cables, how made, insulated, and protected Joints are spliced, soldered, covered with rubber compound and tape.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 bunks, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage YesAre there any joints in or branches from the cable leading from dynamo to main switch board NoHow are the cables led through the ship, and how protected Conduit and moulding.

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**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible Except in cargo space.

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Conduit

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

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

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

How are cables carried through beams Conduit through bulkheads, &c. Cond. & Hard Rubber Bushings

How are cables carried through decks Conduit

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 Conduit

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, fixed on 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 —

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 —

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.

G. Prince

Electrical Engineers

Date 6-29-18

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 110'

Distance between dynamo or electric motors and steering compass 105'

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>1</u>	<u>13</u>	<u>6</u>	<u>6</u>
<u>6</u>	<u>13</u>	<u>5</u>	<u>5</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

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 all course in the case of the standard compass and nil degrees on all course in the case of the steering compass.

W. L. Cramp & Sons Ship & Engine Building Co. Builder's Signature. Date June 29/18

**GENERAL REMARKS.**

This installation has been well fitted, and proved satisfactory on trial. It is submitted that this vessel is eligible for THE RECORD. ELEC. LIGHT

J. H. 18

A. T. Thomas

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec. Lt.



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