

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4104

Port of *Philadelphia* Date of First Survey *2nd Sept. 1921* Date of Last Survey *4th February* No. of Visits *36*
 No. in Reg. Book on the ~~Iron~~ *Steel* *New S.S. Joseph M. Cudahy* Port belonging to
 Built at *Leicester* By whom *Sun Shipbuilding Co* When built *1921*
 Owners *Sinclair Navigation Company* Owners' Address *New York*
 Yard No. *35* Electric Light Installation fitted by *Sun Shipbuilding Co* When fitted *1921*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two (2) G & C Compound wound continuous current Generator direct connected to two G & C Vertical Engines

Capacity of Dynamo *136* Amperes at *115* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Off Engine room platform* Whether single or double wire system is used *double*

Position of Main Switch Board *Off in Dynamo room* having switches to groups *Ten* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *One six circuit-panel box in Bridge House, one six circuit-panel box in Engine room casing, and one six circuit-panel box in Dynamo 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 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 *100* 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* *State*

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

<i>A Bridge House</i>	<i>48</i> lights each of <i>32</i>	candle power requiring a total current of <i>15</i>	Amperes
<i>B After House</i>	<i>40</i> lights each of <i>32</i>	candle power requiring a total current of <i>18</i>	Amperes
<i>C Engine Room</i>	<i>50</i> lights each of <i>32</i>	candle power requiring a total current of <i>15</i>	Amperes
<i>D Pump Room</i>	<i>16</i> lights each of <i>32</i>	candle power requiring a total current of <i>5</i>	Amperes
<i>E Deck Forecastle</i>	<i>30</i> lights each of <i>32</i>	candle power requiring a total current of <i>9</i>	Amperes
<i>4 Mast head light with 2 lamps each of 40</i>		candle power requiring a total current of <i>1</i>	Amperes
<i>2 Side light with 2 lamps each of 40</i>		candle power requiring a total current of <i>1</i>	Amperes
<i>36 Cargo lights of 16</i>		candle power, whether incandescent or arc lights <i>Incandescent</i>	

If arc lights, what protection is provided against fire, sparks, &c. *✓*

Where are the switches controlling the masthead and side lights placed *on tell tale panel in Pilot House*

DESCRIPTION OF CABLES.

136 see above
 Main cable carrying *150* Amperes, comprised of *2* wires, each *000* S.W.G. diameter, *0.132* square inches total sectional area
 Branch cables carrying *15* Amperes, comprised of *2* wires, each *8* S.W.G. diameter, *0.0130* square inches total sectional area
 Branch cables carrying *47* Amperes, comprised of *2* wires, each *6* S.W.G. diameter, *0.0521* square inches total sectional area
 Leads to lamps carrying *4* Amperes, comprised of *2* wires, each *14* S.W.G. diameter, *0.00323* square inches total sectional area
 Cargo light cables carrying *3* Amperes, comprised of *2* wires, each *16* S.W.G. diameter, *0.00203* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All galvanized conduit used, made watertight going through bulkheads
All wire used in Engine room and Fire room asbestos covered, all other wires rubber covered, wire larger than #10 stranded

Joints in cables, how made, insulated, and protected *All joints well made mech then soldered and wrapped with heavy rubber and friction 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 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 galvanized conduit made watertight*

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 *Ran in galvanized conduits made tight*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Detectors covered wire used*

What special protection has been provided for the cables near boiler casings *Detectors covered wire used*

What special protection has been provided for the cables in engine room *Detectors covered wire used*

How are cables carried through beams *Galvanized conduit* through bulkheads, &c. *Galvanized conduit* ✓

How are cables carried through decks *Galvanized 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 *Galvanized conduit made water-tight*

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

If so, how are the lamp fittings and cable terminals specially protected *In water-tight lamp fixtures*

Where are the main switches and fuses for these lights fitted *In tidily hatch*

If in the spaces, how are they specially protected *In water-tight fixtures*

Are any switches or fuses fitted in bunkers *No*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *In Cargo clusters*

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 *Yes*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *On outside in water-tight box*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *Sealed globe and rubber jacket*

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 *250 ft.*

Distance between dynamo or electric motors and steering compass *250 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>35</i>	<i>10</i>	<i>4</i>	<i>4</i>
<i>2</i>	<i>5</i>	<i>5</i>	<i>5</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 *all* course in the case of the standard compass and *Nil* degrees on *all* course in the case of the steering compass.

GENERAL REMARKS.

This installation has been well fitted aboard and proved satisfactory under trial

It is submitted that this vessel is eligible for

TUB RECORD. Elec. light.

Committee's Minute

New York FEB 15 1921

J. Adamson
Surveyor to Lloyd's Register of Shipping.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.