

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4186

Port of Philadelphia Date of First Survey 30 June 1920 Date of Last Survey 21 June 1921 No. of Visits 66  
 No. in Reg. Book on the Iron or Steel SS PUENTE Port belonging to  
 Built at Cherter, Va By whom Merchants Shipbuilding Corp When built 1921  
 Owners Union Oil Company Owners' Address New York  
 Yard No. 381 Electric Light Installation fitted by Merchants Shipbuilding Corp When fitted 1921

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two (2) 10 KW Compound wound Generators direct connected to S.E. reciprocating Engines  
 Capacity of Dynamos 166 <sup>80 each</sup> Amperes at 125 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Dynamo Room 2<sup>nd</sup> deck Eng Room Whether single or double wire system is used double  
 Position of Main Switch Board Dynamo Room having switches to groups 9 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Engineers Quarters 10 switches  
Officers Quarters Midship 10 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 cessel is wired on the double wire system are fuses fitted to both flow and return wires to 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

Total number of lights provided for 190 arranged in the following groups

|   |                      |    |                |    |  |              |         |
|---|----------------------|----|----------------|----|--|--------------|---------|
| A | Engine Room          | 20 | lights each of | 16 | candle power requiring a total current of        | 5            | Amperes |
| B | Generator Room       | 6  | lights each of | 16 | candle power requiring a total current of        | 2.5          | Amperes |
| C | Ice Machine          | 5  | lights each of | 16 | candle power requiring a total current of        | 2            | Amperes |
| D | Midship Panel        | 86 | lights each of | 16 | candle power requiring a total current of        | 15           | Amperes |
| E | Radio                |    | lights each of |    | candle power requiring a total current of        | 20           | Amperes |
| 1 | Mast head light with | 2  | lamps each of  | 16 | candle power requiring a total current of        | 1/4          | Amperes |
| 2 | Side light with      | 2  | lamps each of  | 16 | candle power requiring a total current of        | 1/4          | Amperes |
| 5 | Cargo lights of      |    |                | 96 | candle power, whether incandescent or are lights | Incandescent |         |

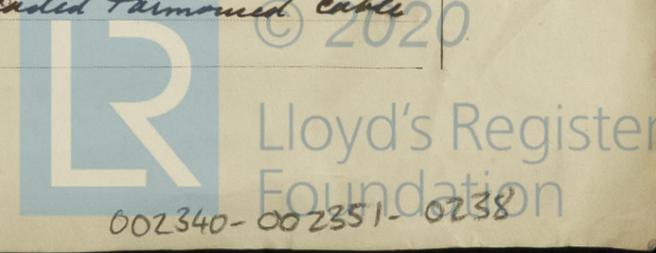
If arc lights, what protection is provided against fire, sparks, &c. ✓  
 Where are the switches controlling the masthead and side lights placed Pilot House

### DESCRIPTION OF CABLES.

|                             |     |                       |    |             |    |                        |                                    |
|-----------------------------|-----|-----------------------|----|-------------|----|------------------------|------------------------------------|
| Main cable carrying         | 64  | Amperes, comprised of | 37 | wires, each | 16 | S.W.G. diameter, .117  | square inches total sectional area |
| Branch cables carrying      | 20  | Amperes, comprised of | 37 | wires, each | 16 | S.W.G. diameter, .117  | square inches total sectional area |
| Branch cables carrying      | 15  | Amperes, comprised of | 19 | wires, each | 20 | S.W.G. diameter, .019  | square inches total sectional area |
| Leads to lamps carrying     | 5   | Amperes, comprised of | 1  | wires, each | 16 | S.W.G. diameter, .0032 | square inches total sectional area |
| Cargo light cables carrying | 0.5 | Amperes, comprised of | 40 | wires, each | 19 | S.W.G. diameter, .0032 | square inches total sectional area |

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Double braided 30% Pure Para Rubber covered wire, enclosed in Standard Galvanized Conduit.  
 Joints in cables, how made, insulated, and protected Western Union and twist splices soldered covered with Rubber & friction tape in water-tight and steam tight splice boxes  
 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 Galvanized Conduit and leaded & armoured cable



**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 *Galvanized Conduit*

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

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

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

How are cables carried through beams *Galvanized Conduit* through bulkheads, &c. *Stuffing tubes*

How are cables carried through decks *Galvanized Conduit and stuffing tubes*

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

If so, how are they protected *Galvanized Conduit.*

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

If so, how are the lamp fittings and cable terminals specially protected *Vapor proof fittings with guards*

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

If in the spaces, how are they specially protected *Galvanized Conduit.*

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 *Yes*

**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 *Vapor proof fittings*

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.

*Merchant Shipbuilding Corp.* Electrical Engineers Date *June 22, 1921*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *210 ft.*

Distance between dynamo or electric motors and steering compass *200 ft.*

The nearest cables to the compasses are as follows:—

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

*Merchant Shipbuilding Corp.* Builder's Signature. Date *June 22, 1921*

**GENERAL REMARKS.**

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

*It is submitted that this vessel is eligible for THE ABOARD. Elec Light Act 21/7/21*

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

Committee's Minute *New York JUN 29 1921*

*Elect light*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.