

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 718.

Port of *Boston Mass* Date of First Survey *Nov 11 1912* Date of Last Survey *Dec 30 1912* No. of Visits *7*
 No. in Reg. Book *37 Supp.* on the *Iron or Steel* *S/S FRIEDA* Port belonging to *New York*
 Built at *Quincy Mass.* By whom *Jos. River Shipbuilding Co.* When built *1912*
 Owners *Union Sulphur Company.* Owners' Address *82 Beaver Street New York.*
 Yard No. *208* Electric Light Installation fitted by *Jos. River Shipbuilding Co.* When fitted *1912*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 10 H.P. - 110 volt direct connected generators driven by two vertical steam engines. Both sets connected to the switchboard for parallel operation if required.

Capacity of Dynamo *100* Amperes at *110* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Starboard side of engine room* Whether single or double wire system is used *Double*

Position of Main Switch Board *Starboard side of engine room* having switches to groups *Five* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *One six circuit panel at engine room passage aft. One ten circuit panel in cabin passageway amidships. Self tale board for running lights in pilot house.*

If cut outs 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 *as required* and to each lamp circuit *yes*

If cessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits

Are the cut outs of non-oxidizable metal *Yes* and constructed to fuse at an excess of *100* per cent over the normal current

Are all cut outs 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 *N. E. Code.*

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes*

Total number of lights provided for *150* arranged in the following groups:—

| | | | |
|---|--------------------------|---|---------------------|
| A | <i>52</i> lights each of | <i>16</i> candle power requiring a total current of | <i>26.0</i> Amperes |
| B | <i>31</i> lights each of | <i>16</i> candle power requiring a total current of | <i>15.5</i> Amperes |
| C | <i>10</i> lights each of | <i>16</i> candle power requiring a total current of | <i>5.0</i> Amperes |
| D | <i>52</i> lights each of | <i>16</i> candle power requiring a total current of | <i>26.0</i> Amperes |
| E | Lights each of | candle power requiring a total current of | Amperes |

| | | | |
|-------------------------------|------------------------|---|------------------|
| <i>1</i> Mast head light with | <i>2</i> lamps each of | <i>32</i> candle power requiring a total current of | <i>1</i> Amperes |
| <i>1</i> Range | <i>2</i> " " " | <i>32</i> " " " | <i>1</i> " " |
| <i>2</i> Side light with | <i>2</i> lamps each of | <i>32</i> candle power requiring a total current of | <i>2</i> Amperes |

Five Cargo lights of *96* candle power, whether incandescent or arc lights *Incandescent*

If arc lights, what protection is provided against fire, sparks, &c. *No arc lights*

Where are the switches controlling the masthead and side lights placed *In pilot house.*

DESCRIPTION OF CABLES.

| | | | |
|-----------------------------|----------------------------------|--|--|
| Main cable carrying | <i>100</i> Amperes, comprised of | <i>19</i> wires, each <i>.075</i> dia L.S.G. diameter, | <i>.085</i> square inches total sectional area |
| Branch cables carrying | <i>35</i> Amperes, comprised of | <i>19</i> wires, each <i>16 B7S</i> L.S.G. diameter, | <i>.038</i> square inches total sectional area |
| Branch cables carrying | <i>53</i> Amperes, comprised of | <i>19</i> wires, each <i>.075</i> dia L.S.G. diameter, | <i>.085</i> square inches total sectional area |
| Leads to lamps carrying | <i>6.5</i> Amperes, comprised of | <i>7</i> wires, each <i>19 B7S</i> L.S.G. diameter, | <i>.007</i> square inches total sectional area |
| Cargo light cables carrying | <i>6</i> Amperes, comprised of | <i>7</i> wires, each <i>19 B7S</i> L.S.G. diameter, | <i>.007</i> square inches total sectional area |

DESCRIPTION OF INSULATION, PROTECTION, ETC.

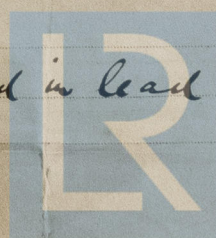
Layer of Para rubber, then vulcanized rubber then tape; two sizes conductors twisted together and covered with two layers of clove braid. The whole laid in metal conduit and wood sheathing in cabins. Lead sheathing in exposed places.

Joints in cables, how made, insulated, and protected *Insulation cut from ends, and wires twisted and a wireman's joint made and soldered. The joint is wrapped with rubber tape then friction tape, and laid in an iron junction box.*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *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 *No.*

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 conduit and in lead sheathing.*



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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 *Lead sheath and 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 *through bulkheads, &c. I am not and conduit*

How are cables carried through decks *I am not and conduit*

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

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 cut outs for these lights fitted *✓*

If in the spaces, how are they specially protected *✓*

Are any switches or cut outs 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 *✓*

The installation is *fitted and* supplied with a voltmeter and *with* an amperemeter, fixed at *main board*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas *✓*

Are any switches, cut outs, 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 *98%* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile after 24 hours' immersion in seawater.

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.

Fore River Shipbuilding Co.

S. J. MacQuarrie
Chief

Electrical Engineers

Date *February 28th 1913*

COMPASSES.

Distance between dynamo or electric motors and standard compass *150 feet*

Distance between dynamo or electric motors and steering compass *150 feet*

The nearest cables to the compasses are as follows:—

| | | | |
|------------------|------------|-------------------------------|-------------------------------|
| A cable carrying | 1 Amperes | 5 feet from standard compass | 10 feet from steering compass |
| A cable carrying | 35 Amperes | 15 feet from standard compass | 20 feet from steering compass |
| A cable carrying | Amperes | 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 *the* course in the case of the standard compass and *nil* degrees on *the* course in the case of the steering compass.

Fore River Shipbuilding Co.

S. J. MacQuarrie
Chief

Builder's Signature.

Date *February 28th 1913*

GENERAL REMARKS.

The workmanship and material throughout is good and in general accordance with the Rules

It is submitted that this vessel is eligible for THE RECORD Elec. light.

J. W. D.
12/3/13

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

Committee's Minute *FRI. 4PP 11 1013*



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