

## REPORT ON ELECTRIC LIGHTING INSTALLATION.

TUE. 17 MAY. 1921  
No. 20242

Port of **NEW YORK** Date of First Survey **5 Mar** Date of Last Survey **April 9 1921** No. of Visits **9**  
 No. in Reg. Book on the Iron or Steel **S.S. SAN UBALDO** Port belonging to **LONDON**  
 Built at **NEW YORK** By whom **STANDARD SHIPBUILDING CORP.** When built **1921**  
 Owners **EAGLE OIL TRANSPORT COMPANY** Owners' Address **LONDON**  
 Yard No. **30** Electric Light Installation fitted by **BUILDERS** When fitted **1921**

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Sunderland Forge Company - 8" x 6" Steam Engines each driving a 12-1/2 K.W. generator

Capacity of Dynamo **5** each **125** Amperes at **100** Volts, whether continuous or alternating current **continuous**  
 Where is Dynamo fixed **after engine room** Whether single or double wire system is used **double**  
 Position of Main Switch Board **Dynamo room** having switches to groups **four (4) groups** of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each **Upper Engine room, poop deck quarters, midship quarters, forecabin.**

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

Are the fuses of non-oxidizable metal **yes** and constructed to fuse at an excess of **25** 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 **no wire fuses**

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases **yes**Total number of lights provided for **177** arranged in the following groups:—

|          |                      |                        |           |  |                     |         |
|----------|----------------------|------------------------|-----------|--|---------------------|---------|
| A        | <b>37</b>            | lights each of         | <b>16</b> | candle power requiring a total current of        | <b>45.92</b>        | Amperes |
| B        | <b>40</b>            | lights each of         | <b>16</b> | candle power requiring a total current of        | <b>22.40</b>        | Amperes |
| C        | <b>53</b>            | lights each of         | <b>16</b> | candle power requiring a total current of        | <b>29.68</b>        | Amperes |
| D        | <b>18</b>            | lights each of         | <b>16</b> | candle power requiring a total current of        | <b>10.08</b>        | Amperes |
| E        |                      | lights each of         |           | candle power requiring a total current of        |                     | Amperes |
| <b>2</b> | Mast head light with | <b>2</b> lamps each of | <b>16</b> | candle power requiring a total current of        | <b>2.24</b>         | Amperes |
| <b>2</b> | Side light with      | <b>2</b> lamps each of | <b>16</b> | candle power requiring a total current of        | <b>2.24</b>         | Amperes |
| <b>4</b> | Cargo lights of      |                        | <b>16</b> | candle power, whether incandescent or arc lights | <b>Incandescent</b> |         |

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 **Pilot House Tell tale**

## DESCRIPTION OF CABLES.

|                             |                              |                       |                        |             |                            |                      |                             |                                    |
|-----------------------------|------------------------------|-----------------------|------------------------|-------------|----------------------------|----------------------|-----------------------------|------------------------------------|
| Main cable carrying         | <b>161</b>                   | Amperes, comprised of | <b>2x61</b>            | wires, each | <b>.65</b>                 | B&S S.W.G. diameter, | <b>.389</b>                 | square inches total sectional area |
| Branch cables carrying      | <b>5.92</b>                  | Amperes, comprised of | <b>7</b>               | wires, each | <b>.052</b>                | B&S S.W.G. diameter, | <b>.0148</b>                | square inches total sectional area |
| Branch cables carrying      | <b>22.40</b><br><b>92.68</b> | Amperes, comprised of | <b>19</b><br><b>60</b> | wires, each | <b>.040</b><br><b>.057</b> | B&S S.W.G. diameter, | <b>.0237</b><br><b>.153</b> | square inches total sectional area |
| Leads to lamps carrying     | <b>1.12</b>                  | Amperes, comprised of | <b>1</b>               | wires, each | <b>.051</b>                | B&S S.W.G. diameter, | <b>.0020</b>                | square inches total sectional area |
| Cargo light cables carrying | <b>13.44</b>                 | Amperes, comprised of | <b>1</b>               | wires, each | <b>.064</b>                | S.W.G. diameter,     | <b>.0032</b>                | square inches total sectional area |

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

The cables are insulated their entire length with a para rubber compound properly applied and vulcanized. Covered with one woven cotton braid and 5/64" lead sheath after which three more woven cotton braids and basket weave navy standard steel armor.

Joints in cables, how made, insulated, and protected **Joints all pigtailed, soldered, rubber and friction taped****No joints except in brass or galv.iron junction boxes or fixture blocks.**

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 **Lead and Steel Armored navy standard.**

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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 and Steel Armored**

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat **Lead and Steel armored**

What special protection has been provided for the cables near boiler casings **Lead and Steel Armored**

What special protection has been provided for the cables in engine room **Lead and steel armored**

How are cables carried through beams **Holes in beams Lead Sleeved** through bulkheads, &c. **Stuffing Tubes**

How are cables carried through decks **Kick Pipes and Stuffing Tubes**

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 **Lead and Steel Armored**

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 **Connected to Plug Boxes**

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel **2 Wire throughout**

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 **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 **No Lamps so placed.**

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. **All in accordance with Navy Specification #15 C I D**

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.

Sgnd.

*David Livingstone Moffat* Electrical Engineers

Date *April 18 1921*

COMPASSES.

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

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

The nearest cables to the compasses are as follows:—

A cable carrying **2.8** Amperes **6 Ft.** feet from standard compass **12** feet from steering compass

A cable carrying **.56** Amperes **1 ft.** feet from standard compass **1** 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 **N11** degrees on *all* courses in the case of the

standard compass and **N11** degrees on *all* course in the case of the steering compass.

*David Livingstone Moffat* Builder's Signature. Date *April 18 1921*

GENERAL REMARKS.

*The Installation has been fitted in accordance with the Standard Marine Rules adopted by the American Institute of Electrical Engineers. Material and Workmanship are good and in my opinion the vessel is eligible for the notation "Elec. Light"*

*It is submitted that this vessel is eligible for*

THE RECORD Committee's Minute

*Light bell 2 1/2 ft. Elec. Lt.*

*Alex. Lawrence*  
Surveyor to Lloyd's Register of Shipping.

New York MAY 3 1921

TUE 27 MAR. 1923



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.