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## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1190

Port of Philadelphia Date of First Survey Dec 6<sup>th</sup> Date of Last Survey June 23<sup>rd</sup> No. of Visits 21  
 No. in Reg. Book on the Iron Steel Motor Ship William Penn Port belonging to Phila. City  
 Built at Joseph Jones Shipyard By whom Pusey & Jones Coy When built 1921  
 Owners Emergency Fleet Corp. Owners' Address Washington D C  
 Yard No. 14 Electric Light Installation fitted by Wm. Crump & Sons S. T. & B. Coy When fitted 1921

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

MOTORSHIP WM. PENN.

THREE 67 KW, 220 VOLT GENERATING SETS EACH CONSISTING OF BURMEISTER & WAIN'S OIL  
 ENGINE DIRECT CONNECTED TO THOMAS B THRIE GEN. TYPE CR22, ONE 15 KW MOTOR GENERATOR <sup>220</sup>/<sub>110</sub>

Capacity of Dynamo 305 Amperes at 220 Volts, whether continuous or alternating current CONTINUOUS

Where is Dynamo fixed ENG. ROOM, PORT SIDE, OUTBOARD Whether single or double wire system is used DOUBLE

Position of Main Switch Board ENG. RM. FORD having switches to groups 29 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each ONE 8 BRANCH W.T. IN REFR. ENG. RM., ONE  
 6 BRANCH N.W.T. IN FORD BRIDGE DECK HSE., TWO 8 BRANCH W.T. ENG. RM. FORD.

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~~ reduced in size YES and to each lamp circuit NO

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

Total number of lights provided for 285 arranged in the following groups:—

|   |     |                      |                      |  |              |         |
|---|-----|----------------------|----------------------|--|--------------|---------|
| A | 3   | lights each of       | 10 WATTS             | <del>candle power</del> requiring a total current of         | .31          | Amperes |
| B | 72  | lights each of       | 25 "                 | <del>candle power</del> requiring a total current of         | 15.8         | Amperes |
| C | 194 | lights each of       | 50 "                 | <del>candle power</del> requiring a total current of         | 87.3         | Amperes |
| D | 10  | lights each of       | 100 "                | <del>candle power</del> requiring a total current of         | 9.0          | Amperes |
| E | 6   | lights each of       | 100 "                | <del>candle power</del> requiring a total current of         | 2.7          | Amperes |
|   | 2   | Mast head light with | 2 lamps each of 50 " | <del>candle power</del> requiring a total current of         | .4           | Amperes |
|   | 2   | Side light with      | 2 lamps each of 50 " | <del>candle power</del> requiring a total current of         | .4           | Amperes |
|   | 9   | Cargo lights of      | 300 "                | <del>candle power</del> , whether incandescent or arc lights | INCANDESCENT |         |

If arc lights, what protection is provided against fire, sparks, &c. NO ARC LIGHTS INSTALLED

Where are the switches controlling the masthead and side lights placed ON TELL-TALE BOARD IN PILOT HSE.

## DESCRIPTION OF CABLES.

Main cable carrying 305 Amperes, comprised of 61 wires, each 12 S.W.G. diameter, .5 square inches total sectional area

Branch cables carrying 93 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area

Branch cables carrying 15 Amperes, comprised of 3 wires, each 18 S.W.G. diameter, .0053 square inches total sectional area

Leads to lamps carrying .54 Amperes, comprised of 1 wires, each 14 S.W.G. diameter, .0050 square inches total sectional area

Cargo light cables carrying 2.6 Amperes, comprised of 1 wires, each 14 S.W.G. diameter, .0050 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

INSULATION TO COND. (a) A LAYER OF VULCANIZED RUBBER COMPOUND, (b) A LAYER OF COTTON BRAID, (c) A BLACK  
 LEATHERPROOF PRESERVATIVE COMPOUND. TWO CONDUCTORS ARE LAID FLAT AND COVERED WITH A  
 LEATHERPROOF BRAID OVER WHICH IS LAID THE ARMORING OR LEAD & ARMOR AS CASE MAY BE.

Joints in cables, how made, insulated, and protected JOINTS ARE SPLICED, SOLDERED, COVERED WITH A LAYER OF  
 RUBBER COMPOUND AND A LAYER OF TAPE. CONNECTIONS, IN GENERAL, ARE MADE IN  
 JUNCTION 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 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 LEADED AND ARMORED CABLE PROTECTED BY CONDUIT  
 AT DECK AND BULKHEADS.



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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 LEADED AND ARMORED CABLE

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat CABLES NOT NEAR THESE SOURCES

What special protection has been provided for the cables near boiler casings CABLES NOT NEAR BOILER CASINGS

What special protection has been provided for the cables in engine room LEADED & ARMORED CABLE & W.T. BOXES

How are cables carried through beams LEAD BUSHINGS through bulkheads, &c. N.W.T. LEAD BUSHINGS

How are cables carried through decks IN COND. WITH COND. TERM. TUBES & STAR BUSHINGS

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 LEADED & ARMORED CABLE

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 & FIXED How fixed FOUR LIGHTS ON EACH MAST, FASTENED TO SPEC. BRACKETS

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 \_\_\_\_\_

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.

Barber Electrical Engineers

Date 6-24-21

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 15 FT.

Distance between dynamo or electric motors and steering compass 5 FT.

The nearest cables to the compasses are as follows:—

A cable carrying .1 Amperes 3 feet from standard compass 13 feet from steering compass

A cable carrying .1 Amperes 13 feet from standard compass 3 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 no degrees on all courses in the case of the standard compass and no degrees on all courses in the case of the steering compass.

Wm. Cramp Sons & Co. Bldg. Barber Builder's Signature. Date 6-24-21

**GENERAL REMARKS.**

This installation is well fitted & is in accordance with the Rules. All auxiliaries (except small steam driven compressor) are motor driven & were run under working condition as were also the steering gear & windlass. A electric lighting installation & all found satisfactory.

Fee \$342.45

pd 29/7/21 RBT

William B. Butler

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

New York JUL 12 1921

Elect light

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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