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REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of PHILADELPHIA Date of First Survey JUNE 12 Date of Last Survey SEP 2 No. of Visits 10
 No. in on the Motor Steel MOTORSHIP "BIDWELL" Port belonging to PHILADELPHIA
 Reg. Book 4692 Built at BALTIMORE By whom BALTIMORE D.D.K.S. Co. When built 1920
 Owners SUN S.S. & D.D. Co. Owners' Address CHESTER, PA.
 Yard No. - Electric Light Installation fitted by BALTIMORE D.D.K.S. Co. When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

THE DYNAMO IS A GENERAL ELECTRIC Co. UNIT DIRECT CONNECTED TO AN 8 1/2 HP G.E. MARINE ENGINE 425 R.P.M. - 15 K.W.

Capacity of Dynamo 136 Amperes at 110 Volts, whether continuous or alternating current CONTINUOUS
 Where is Dynamo fixed ENGINE ROOM FLOOR Whether single or double wire system is used DOUBLE
 Position of Main Switch Board DE. DE. DE. having switches to groups A.B.C.D. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each NO AUXILIARY SWITCHBOARDS.

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 NONE USED
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases YES

Total number of lights provided for 168 arranged in the following groups:—

A	<u>17</u>	lights each of <u>60 WATT</u>	candle power requiring a total current of <u>6.5</u>	Amperes
B	<u>124</u>	lights each of <u>40 "</u>	candle power requiring a total current of <u>47</u>	Amperes
C	<u>20</u>	lights each of <u>25 "</u>	candle power requiring a total current of <u>8</u>	Amperes
D	<u>4</u>	lights each of <u>100 "</u>	candle power requiring a total current of <u>3.8</u>	Amperes
E		lights each of	candle power requiring a total current of	Amperes
	<u>1</u>	Mast head light with <u>2</u> lamps each of <u>60 WATT</u>	candle power requiring a total current of <u>1</u>	Amperes
	<u>2</u>	Side light with <u>2</u> lamps each of <u>60 "</u>	candle power requiring a total current of <u>2</u>	Amperes

Cargo lights of _____ candle power, whether incandescent or arc lights

Are arc lights, what protection is provided against fire, sparks, &c. -

Where are the switches controlling the masthead and side lights placed MAIN SWITCHBOARD WITH TELLTALE IN PILOT HOUSE.

DESCRIPTION OF CABLES.

Main cable carrying	<u>136</u>	Amperes, comprised of <u>2</u> wires, each <u>13/100</u> S.W.G. diameter, <u>.208</u> square inches total sectional area
Branch cables carrying	<u>4</u>	Amperes, comprised of <u>2</u> wires, each <u>10/32</u> S.W.G. diameter, <u>.016</u> square inches total sectional area
Branch cables carrying	<u>18</u>	Amperes, comprised of <u>2</u> wires, each <u>16/70</u> S.W.G. diameter, <u>.024</u> square inches total sectional area
Cables to lamps carrying	<u>4</u>	Amperes, comprised of <u>2</u> wires, each <u>4/107</u> S.W.G. diameter, <u>.006</u> square inches total sectional area
Cargo light cables carrying	<u>4</u>	Amperes, comprised of <u>2</u> wires, each <u>6/30</u> S.W.G. diameter, <u>.010</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

ALL WIRING IS DOUBLE BRAIDED, RUBBER COVERED, AND RUN IN GALVANIZED IRON CONDUITS.

How are the joints in cables, how made, insulated, and protected NO JOINTS MADE IN WIRES.

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 -

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 IRON CONDUITS.



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 CONDUITS.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat CONDUITS.

What special protection has been provided for the cables near boiler casings CONDUITS.

What special protection has been provided for the cables in engine room CONDUITS.

How are cables carried through beams — through bulkheads, &c. STUFFING BOXES.

How are cables carried through decks CONDUITS.

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 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 SWITCH AND RECEPTACLE.

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 DISTRIBUTION.

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 VAPOUR-PROOF GLOVES.

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 ^{RE} fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

T. Jackson.

Electrical Engineers

Date Sept 5th '23

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 <u>1/2</u> Amperes	<u>1</u> feet from standard compass	<u>1</u> feet from steering compass
A cable carrying <u>2</u> Amperes	<u>4</u> feet from standard compass	<u>4</u> feet from steering compass
A cable carrying <u>10</u> Amperes	<u>8</u> feet from standard compass	<u>8</u> 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 — degrees on — course in the case of the standard compass and — degrees on — course in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS.

THE ORIGINAL ELECTRIC INSTALLATION WAS MADE BY THE SURVEYORS. THE SHIP BUILDER, SO, MADE NO CHANGES IN THE WIRING THROUGHOUT THE QUARTERS. THE WHOLE SYSTEM WAS EXAMINED & TESTED & FOUND IN GOOD CONDITION. IN THE ENGINE ROOM THE LIGHTING SYSTEM WAS RE-ARRANGED TO SUIT THE INSTALLATION OF THE NEW OIL ENGINE. IT WAS TRIED UNDER WORKING CONDITIONS & FOUND SATISFACTORY.

J. M. Sullivan
Surveyor to Lloyd's Register of Shipping.

Committee's Minute New York SEP 11 1923

Elect Light

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN

J.S.H.

Im. 11.18.—Treasurer.

