

12 1921

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 20474

Port of New York Date of First Survey Jan 6/21 Date of Last Survey Jan 6/21 No. of Visits 10
 No. in Reg. Book on the Steel Screw Steamer E. T. BEDFORD Port belonging to New Jersey
 Built at Kearny, New Jersey By whom Federal Ship Building Co When built 1921
 Owners Standard Oil Co of New Jersey Owners' Address 26 Broadway, New York
 Yard No. 48 Electric Light Installation fitted by Federal Ship Building Co When fitted 1921

DESCRIPTION OF DYNAMOS, ENGINES, ETC. 2-20K. W. - 110/225 Volts, multipolar, flat compound wound generators, each direct connected to vertical steam reciprocating engine having automatic cut off, & forced lubrication
1-10K. W. 115 Volt, multipolar flat compound wound generator, direct connected to 4 cycle, 4 cylinder gasoline engine

Capacity of DYNAMOES, 183 Main Amperes at 110 Volts, whether continuous or alternating current Continuous
91 aux

Where is MAIN Dynamo fixed Dynamo flat in engine room Whether single or double wire system is used Double

Position of Main Switch Board On Dynamo flat having switches to groups 5, A, B, C, D, E of lights, &c., as below

Positions of auxiliary switch boards, and numbers of switches on each 1-Aux Switchboard located in Emer Generator Room in forecabin, 3 lighting distribution panels, 2 having 12 switches each & 1 with 14 switches, 1 Main distribution panel having 8 switches located on Saloon deck.

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 50 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 370 arranged in the following groups:—

			WATTS.		
A	<u>134</u>	lights each of <u>50</u>	<u>candle power</u> requiring a total current of	<u>61</u>	Amperes
B	<u>42</u>	lights each of <u>50</u>	<u>candle power</u> requiring a total current of	<u>19.2</u>	Amperes
C	<u>12</u>	lights each of <u>50</u>	<u>candle power</u> requiring a total current of	<u>5.5</u>	Amperes
	<u>22</u>	lights each of <u>50</u>	<u>candle power</u> requiring a total current of	<u>10.0</u>	Amperes
D	<u>13</u>	lights each of <u>50</u>	<u>candle power</u> requiring a total current of	<u>5.9</u>	Amperes
	<u>48</u>	lights each of <u>50</u>	<u>candle power</u> requiring a total current of	<u>21.8</u>	Amperes
E	<u>99</u>	lights each of <u>50</u>	<u>candle power</u> requiring a total current of	<u>40.45</u>	Amperes
<u>2</u>	Mast head lights with <u>2</u> lamps each of <u>32</u>	<u>candle power</u> requiring a total current of	<u>4</u>	Amperes	
<u>2</u>	Side lights with <u>2</u> lamps each of <u>32</u>	<u>candle power</u> requiring a total current of	<u>4</u>	Amperes	
<u>3</u>	Cargo lights of <u>500</u>	<u>candle power</u> , whether incandescent or arc lights	<u>Incandescent.</u>		

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 On tell-tale panel in pilot house.

DESCRIPTION OF CABLES.

<u>2</u> Main cables carrying <u>175</u> Amperes, each comprised of <u>2</u> wires, each <u>#4</u> A.W.G. diameter, <u>211.600</u> square inches total sectional area	<u>61.00</u>	<u>133.100</u>	<u>41.740</u>	<u>4.107</u>	<u>4.107</u>
Branch cables carrying <u>40.45</u> Amperes, comprised of <u>2</u> wires, each <u>#2</u> A.W.G. diameter, <u>300.000</u> square inches total sectional area	<u>19.2</u>	<u>41.740</u>	<u>4.107</u>	<u>4.107</u>	<u>4.107</u>
Branch cables carrying <u>10.00</u> Amperes, comprised of <u>2</u> wires, each <u>#4</u> A.W.G. diameter, <u>41.740</u> square inches total sectional area	<u>1/2</u>	<u>4.107</u>	<u>4.107</u>	<u>4.107</u>	<u>4.107</u>
Leads to lamps carrying <u>1/2</u> Amperes, comprised of <u>2</u> wires, each <u>#14</u> A.W.G. diameter, <u>4.107</u> square inches total sectional area	<u>4.55</u>	<u>4.107</u>	<u>4.107</u>	<u>4.107</u>	<u>4.107</u>
Cargo light cables carrying <u>4.55</u> Amperes, comprised of <u>2</u> wires, each <u>#14</u> A.W.G. diameter, <u>4.107</u> square inches total sectional area					

DESCRIPTION OF INSULATION, PROTECTION, ETC.

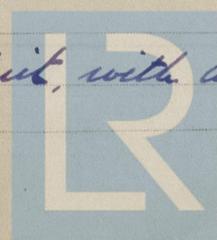
Rubber covered, double braided wires pulled in rigid galvanised iron conduit

Joints in cables, how made, insulated, and protected Soldered joints, covered with rubber insulation and friction tape. Joints made with a non-corrosive flux

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 Through rigid iron conduit, with additional protection where required.



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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 *Conduit is made watertight.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Conduit, asbestos covered wire.*

What special protection has been provided for the cables near boiler casings *Asbestos covered wire.*

What special protection has been provided for the cables in engine room *In iron conduit.*

How are cables carried through beams *In conduit* through bulkheads, & *In conduit, made watertight*

How are cables carried through decks *In conduit made W.T. with locknuts & washers & canvas.*

Are any cables run through coal bunkers *Yes* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes.*

If so, how are they protected *By conduit.*

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

If so, how are the lamp fittings and cable terminals specially protected *With wire guards.*

Where are the main switches and fuses for these lights fitted *In tween deck passage.*

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 *Plug Boxes.*

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 *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 *Vapor proof globes with wire guards.*

The copper used is guaranteed to have a conductivity of not less than that of the *Association of Electrical Engineers* 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 *500* megohms per ^{1000 ft.} statute mile at 60° Fahrenheit after *2* 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.

J. H. Osborne Electrical Engineers Date *June 7, 1921*

COMPASSES.

Distance between dynamo or electric motors and standard compass *330 ft aft or 100 ft forward.*

Distance between dynamo or electric motors and steering compass *60 ft*

The nearest cables to the compasses are as follows:—

A cable carrying <i>1/2</i>	Amperes <i>5</i>	feet from standard compass <i>8</i>	feet from steering compass
A cable carrying	Amperes	feet from standard compass	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 *Not yet adjusted*

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.

The Pedal Shipbuilding Co., W.W. Smith, Ch. Eagle Builder's Signature. Date *June 7, 1921*

GENERAL REMARKS.

The above installation has been fitted on board the Vessel in a satisfactory manner. The material & workmanship, so far as can be seen, are sound & good & proved satisfactory under test.

Special Survey Fee. = \$275.00 *8/7/21* *J. Hockhart*
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *New York JUN 28 1921*
Elect light



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

2m.11.10—Transfer.