

May 22 1917

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2566

Port of PHILADELPHIA Date of First Survey 25th Oct '15 Date of Last Survey 12th May 1917 No. of Visits 79
 No. in Reg. Book 555 on the ~~Iron or Steel~~ 3/8 "BENJAMIN BREWSTER" Port belonging to Bayonne, New Jersey
 Built at Wilmington By whom Harlan & Hollingsworth When built 1914
 Owners Standard Oil Co of New York Owners' Address 26 Broadway New York City
 Yard No. 441 Electric Light Installation fitted by Harlan & Hollingsworth When fitted 1914

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Dynamos Direct Connected to Sturtevant Steam Engines using Steam at 80 Lbs. 450 R.P.M. 2 - 12 1/2 H.P.

Capacity of Dynamo 228 Amperes at 110 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine room Emergency Dynamo under center house on upper deck Whether single or double wire system is used Double
 Position of Main Switch Board Engine room having switches to groups of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Auxiliary switch board for Emergency Dynamo
Located upper deck under center house. Eng. room (6) Forecastle (4) Midship (10) Upper deck aft (4)

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 Not used

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 180 Fixed 24 Portable arranged in the following groups :-

A	Eng. room	62 lights each of 20-60 Watt	42-40 candle power	requiring a total current of	13.5	Amperes
B	Forecastle	18 lights each of 40 Watt	"	requiring a total current of	6.5	Amperes
C	Midship	59 lights each of 40 "	"	requiring a total current of	21.5	Amperes
D	Upper deck aft	4 lights each of 40 "	"	requiring a total current of	15	Amperes
E		lights each of		requiring a total current of		Amperes
2	Mast head light with 2 lamps each of 32			requiring a total current of	2	Amperes
2	Side light with 2 lamps each of 32			requiring a total current of	2	Amperes
4	Cargo lights of Each 64			candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. Not any arc lights used.

Where are the switches controlling the masthead and side lights placed In wheel house

DESCRIPTION OF CABLES.

Auxiliary Dynamo 68.2 amp. 7 strands #10 wire, .0900
 Main cable carrying 114 Amperes, comprised of 19 wires, each 12 S.W.G. diameter, .161 square inches total sectional area
 Branch cables carrying 13.5 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .0352 square inches total sectional area
 Branch cables carrying 6.5 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .0225 square inches total sectional area
 Leads to lamps carrying 21.5 } 15 } Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .0352 square inches total sectional area
 Cargo light cables carrying 2 Amperes, comprised of 40 wires, each 28 S.W.G. diameter, .00688 square inches total sectional area

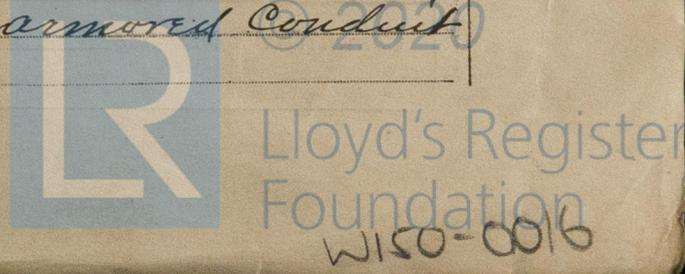
DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main feeder cables are Rubber covered & Braided Lead encased. Installed in Galvanized Iron armored Conduit.
All auxiliary Boards are placed in steel boxes, having steel doors and steel lining
 Joints in cables, how made, insulated, and protected Branch wires where tapped are wrapped Mechanically tight, soldered, and taped with Oxonite and friction tape, and painted with insulating compound.

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 Galvanized Iron armored Conduit throughout ship.



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 Iron armored Conduit and Watertight Junction boxes

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

What special protection has been provided for the cables near boiler casings Air space of 10 ft. Boxed in.

What special protection has been provided for the cables in engine room Iron armored Conduit

How are cables carried through beams Iron Armored Conduit through bulkheads, &c. Iron Armored Conduit

How are cables carried through decks Brass nipples, Lamp wick and lock nuts,

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

If so, how are they protected Iron armored Conduit securely boxed in.

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 Heavy guarded S.P.G. fixtures,

Where are the main switches and fuses for these lights fitted In Steel box, slate lined, in Eng. room.

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 —

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 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 —

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.

W. J. Carnes Chief Engineer Electrical Engineers Date —

COMPASSES.

Distance between dynamo or electric motors and standard compass 300 feet

Distance between dynamo or electric motors and steering compass 300 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>1/5</u>	<u>2</u>	<u>2</u>	<u>—</u>
<u>21.5</u>	<u>30</u>	<u>24</u>	<u>—</u>
<u>4</u>	<u>10</u>	<u>8</u>	<u>—</u>

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.

W. J. Carnes Chief Engineer Builder's Signature. Date May 11th 1917

GENERAL REMARKS.

This electric lighting installation has been fitted in accordance with the Rules and found satisfactory. The lighting system has been tried at full power and found to work well.

It is submitted that this vessel is eligible for THE RECORD. Elec. light. J. W. D. 21/6/17 J. Bellock Surveyor to Lloyd's Register of Shipping.

Committee's Minute Electric Light

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.