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REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4110

Port of Philadelphia, Date of First Survey 11th Nov 1920 Date of Last Survey 29th Jan 1921 No. of Visits 11.
 No. in Reg. Book on the Iron or Steel S.S. "ALBERT E. WATTS" Port belonging to New York,
 Built at Wilmington, Del. By whom Bethlehem S.B. Corpn. (Harlan Plant) When built 1920.
 Owners Sinclair Navigation Company Owners' Address New York.
 Yard No. 3474 Electric Light Installation fitted by Bethlehem S.B. Co. (Harlan Plant) When fitted 1921.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 15 K.W. D.C. Generators, direct coupled to single cylinder steam engines, made by General Electric Company, Schenectady, N.Y.

Capacity of Dynamo 120 Amperes at 115 Volts, whether continuous or alternating current Continuous,
 Where is Dynamo fixed Engine Room - Middle Platform, Whether single or double wire system is used Double,
 Position of Main Switch Board at dynamos having switches to groups A - B - C - D & E of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each A - Forecastle, 4 ckts., 12 lights; B - Midship, 6 ckts., 55 lights; C - Quarters under Poop Deck, 8 ckts., and Qts. on Poop deck, 4 ckts., 86 lights; D - Running light circuit, 7 lights; E - Eng. & Fire Room, 57 lights; F - Wireless; G - Pump Room, 14 lights;
H - Cargo plug line.

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

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

Total number of lights provided for 231 arranged in the following groups:—
 G 14 lights, each of 40 Watts, 3 amps, Amperes
 A 12 lights each of 40 " 2-1/2 " Amperes
 B 55 lights each of 40 " 19 " Amperes
 C 86 lights each of 40 " 31 " Amperes
 D 7 lights each of 32 candle power requiring a total current of 7 " Amperes
 E 57 lights each of 40 Watts 20 " Amperes
1 Mast head light with 2 lamps each of 32 35 Amp. searchlight, 35 " Amperes
2 Side light with 1 lamps each of 32 candle power requiring a total current of 1 " Amperes
6 Cargo lights of 150 Watts 2 " Amperes

If arc lights, what protection is provided against fire, sparks, &c. No arc lights used,
 candle-power, whether incandescent or arc lights Incandescent,

Where are the switches controlling the masthead and side lights placed Pilot House,

DESCRIPTION OF CABLES.

Main cable carrying	<u>120</u> Amperes, comprised of	<u>61</u> wires, each	<u>14</u> S.W.G. diameter,	<u>.166</u> square inches total sectional area
Branch cables carrying	<u>19</u> Amperes, comprised of	<u>37</u> wires, each	<u>18</u> S.W.G. diameter,	<u>.052</u> square inches total sectional area
Branch cables carrying	<u>31</u> Amperes, comprised of	<u>19</u> wires, each	<u>17</u> S.W.G. diameter,	<u>.033</u> square inches total sectional area
Leads to lamps carrying	<u>3</u> Amperes, comprised of	<u>7</u> wires, each	<u>22</u> S.W.G. diameter,	<u>.003</u> square inches total sectional area
Cargo light cables carrying	<u>2</u> Amperes, comprised of	<u>26</u> wires, each	<u>30</u> S.W.G. diameter,	<u>.002</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

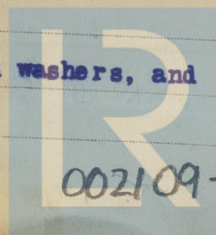
Main feeder cables are U.S. Navy Standard wire, in Galv. iron armored conduit, all auxiliary panels are placed in steel boxes with steel doors, steel lined.

Joints in cables, how made, insulated, and protected Soldered and taped with Okonite and friction tape, and painted with insulating compound. Branch wires were tapped are wrapped mechanically tight, securely

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 the cables led through the ship, and how protected In W.I. pipe conduit, with lock nuts and washers, and
grooved through decks 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 **In water tight conduit,**

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat **In conduit at safe distance.**

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

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

How are cables carried through beams through bulkheads, &c. **lock nuts and washers, ✓**

How are cables carried through decks

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

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.

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
35	8	6	6
1/5	2	2	2
7	12	10	10

Have the compasses been adjusted with and without the electric installation at work at full power

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.

Bethlehem S. B. Co. (Harlan Plant)

Builder's Signature. Date

GENERAL REMARKS.

This installation has been well fitted as described above, and tried under full power with satisfactory results.

It is submitted that this vessel is eligible for THE RECORD Elec. light.

[Signature]
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

New York FEB 15 1921

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.