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## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2710

Port of Philadelphia Date of First Survey 4<sup>th</sup> Dec 1916 Date of Last Survey 3<sup>rd</sup> Dec 1917 No. of Visits 56

No. in Reg. Book 45 on the Iron or Steel S. S. Mink Port belonging to New York  
 Built at Chester Pa. By whom Chester S. B. Co. Pa. When built 1917  
 Owners M. S. Shipping Board Owners' Address Washington D. C.  
 Yard No. 350 Electric Light Installation fitted by Joe J. Barrelet When fitted 1917

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Westinghouse 15 K. W. Generator Compound wound, direct connected to A. B. C. single cylinder engine  
 Capacity of Dynamo 136 Amperes at 140 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Dynamo Platform in Engine Room Whether single or double wire system is used Double wire  
 Position of Main Switch Board Beside dynamo having switches to groups F. B. C. D. E. + WIRELESS of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each A. Engineer's Accommodation 6 switches, B. Midship Accommodation 6 switches, C. Navigation Right 6 switches, D. Forward Room 6 switches, E. Pump Room 3 switches on main switch board 3 switches for Engine Room and 1 switch for Wireless apparatus  
 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 Yes  
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes  
 Total number of lights provided for 128 arranged in the following groups:—  
 A 24 lights each of 25 watts = 20 candle power requiring a total current of 5 1/2 Amperes  
 B 31 lights each of 25 " 20 candle power requiring a total current of 7 Amperes  
 C 5 1/2 lights each of 40 " 32 candle power requiring a total current of 3 1/4 Amperes  
 D 17 lights each of 25 " 20 candle power requiring a total current of 4 Amperes  
 E Pump Room 8 lights each of 25 " 20 candle power requiring a total current of 6 1/4 Amperes  
Engine Room 19 lights each of 25 " 20 candle power requiring a total current of 30 2/3 Amperes  
Wireless apparatus  
2 Mast head light with 1 lamps each of 40 watt 32 candle power requiring a total current of 2 1/3 Amperes  
7 Side light with 1 lamps each of 40 " 32 candle power requiring a total current of 2 1/3 Amperes  
7 Cargo lights of 6 lamps @ 25 watt 20 candle power, whether incandescent or arc lights incandescent  
 If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed indicating distribution panel in Chart room

## DESCRIPTION OF CABLES.

Main cable carrying 60 Amperes, comprised of 2 cables 19 wires, each 17 S.W.G. diameter, .1042 square inches total sectional area  
 Branch cables carrying 30 Amperes, comprised of 7 wires, each 17 S.W.G. diameter, .0206 square inches total sectional area  
 Branch cables carrying 7 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0129 square inches total sectional area  
 Leads to lamps carrying 2 Amperes, comprised of 1 wires, each 16 S.W.G. diameter, .0037 square inches total sectional area  
 Cargo light cables carrying 2 Amperes, comprised of 47 wires, each 31 S.W.G. diameter, .0037 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

The cables are insulated their entire length with a rubber compound properly applied and vulcanized then covered with two woven fabric bands impregnated with a moisture repelling compound  
 Joints in cables, how made, insulated, and protected all joints or splices made in metal junction or fixture boxes, made up mechanically secure, soldered up with rubber splicing compound for first covering, then adhesive flax tape as protection from abrasion  
 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 in galvanized rigid conduit made up watertight throughout with metal boxes, threaded, at all junction and light outlets



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 galvanneal  
used conduit made up watertight

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

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

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

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

How are cables carried through decks in conduit made up watertight

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 Main Control Room

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 in vapour proof glass globes further  
protected by metal guard over same

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.

COMPASSES.

Distance between dynamo or electric motors and standard compass

Electrical Engineers Date Dec 18/17

Distance between dynamo or electric motors and steering compass

Dynamo to Standard Compass 240"  
" " Steering " 235"

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>4</u>	<u>10</u>	<u>8</u>	<u>8</u>
<u>3 1/2</u>	<u>13</u>	<u>4</u>	<u>4</u>
<u>1 1/4</u>	<u>7</u>	<u>0</u>	<u>0</u>

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.

GENERAL REMARKS.

This Electric Lighting Installation has been fitted on board the vessel 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. E. P. Grant 13/2/18.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec. Light

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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