

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3521

Port of Philadelphia Date of First Survey June 18th 1919 Date of Last Survey Nov 4th 1919 No. of Visits 15
 No. in Reg. Book on the ~~Iron~~ Steel Screw Steamer "SUNSHINE" Port belonging to Philadelphia Pa
 Built at Lechester Pa By whom Sun Ship Bldg Co When built 1919
 Owners The Sun Company Owners' Address Philadelphia Pa
 Yard No. 18 Electric Light Installation fitted by Sun Ship Bldg Co When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two General Electric compound wound ^{direct current} direct connected to two General Electric vertical engines

Capacity of Dynamo 136 Amperes at 115 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Upper engine room platform Whether single or double wire system is used Double

Position of Main Switch Board Dynamo room having switches to groups Ten of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 - 6 circuit panel box in Bridge house, 1 - 6 circuit panel in Dynamo room, 1 - 6 circuit panel box in galley, 2 - W.T junction boxes in stove room for pump room.

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. (Slate)

Total number of lights provided for 210 arranged in the following groups :-

A Bridge House 45 lights each of	40	candle power requiring a total current of	20	Amperes
B Eng & fire room 45 lights each of	40	candle power requiring a total current of	20	Amperes
C Port & upper deck 4 lights each of	40	candle power requiring a total current of	24	Amperes
D Pump room 7 lights each of	40	candle power requiring a total current of	4	Amperes
E Forecastle 7 lights each of	40	candle power requiring a total current of	4	Amperes
4 Mast head lights with 2 lamps each of	60	candle power requiring a total current of	3	Amperes
2 Side lights with 2 lamps each of	60	candle power requiring a total current of	2	Amperes
36 Cargo lights of	40	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 Tell Tale Panel in Pilot House

DESCRIPTION OF CABLES.

Main cable carrying <u>150</u> Amperes, comprised of <u>2</u> wires, each <u>00</u> S.W.G. diameter, <u>0.105</u> square inches total sectional area
Branch cables carrying <u>60</u> Amperes, comprised of <u>2</u> wires, each <u>4</u> S.W.G. diameter, <u>0.0328</u> square inches total sectional area
Branch cables carrying <u>30</u> Amperes, comprised of <u>2</u> wires, each <u>8</u> S.W.G. diameter, <u>0.0130</u> square inches total sectional area
Leads to lamps carrying <u>4</u> Amperes, comprised of <u>2</u> wires, each <u>14</u> S.W.G. diameter, <u>0.00323</u> square inches total sectional area
Cargo light cables carrying <u>2</u> Amperes, comprised of <u>2</u> wires, each <u>16</u> S.W.G. diameter, <u>0.00203</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

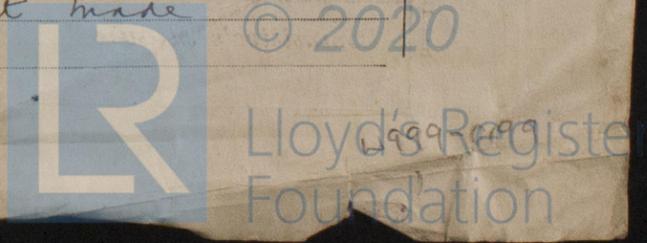
All wire used is rubber covered, double braided wire in engine & boiler room asbestos covered wire is used. Steel conduit and armoured cable used throughout ship.

Joints in cables, how made, insulated, and protected All joints are well made mechanically, then soldered, wrapped with rubber & friction tape.

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 steel conduit made water tight



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 *Run in steel conduit made water tight*

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

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 *Steel conduit* through bulkheads, &c. *Steel conduit*

How are cables carried through decks *" " made water tight*

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

If so, how are they protected *Steel conduit fastened to beams*

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

If so, how are the lamp fittings and cable terminals specially protected *Water tight lamps & steel conduit*

Where are the main switches and fuses for these lights fitted *In stone room*

If in the spaces, how are they specially protected *In water tight fuse junction box*

Are any switches or fuses fitted in bunkers *No*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *To cargo clusters*

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 Sillibone*

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 *Water tight & vapour proof*

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.

Robert Hall

Electrical Engineers

Date 21-11-19

COMPASSES. SUN SHIPBUILDING COMPANY

Distance between dynamo or electric motors and standard compass *250'*

Distance between dynamo or electric motors and steering compass *250'*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>4</i>	Amperes	<i>4</i>	feet from standard compass	<i>3</i>	feet from steering compass
A cable carrying	<i>35</i>	Amperes	<i>10</i>	feet from standard compass	<i>5</i>	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 *Yes*

The maximum deviation due to electric currents, etc., was found to be *no* degrees on *all* courses in the case of the standard compass and *no* degrees on *all* courses in the case of the steering compass.

Robert Hall

Builder's Signature.

Date 21-11-19

GENERAL REMARKS. SUN SHIPBUILDING COMPANY

This electric lighting installation has been well fitted, and proved satisfactory at full power.

It is submitted that this vessel is eligible for THE RECORD, ELEC. LIGHT

W.C.
18/12/19

W. Tunham

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec. Lt.



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Im. 11, 12 - Transfer.