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REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3140

of Philadelphia Date of First Survey July 16. 1918 Date of Last Survey March 3. 1919 No. of Visits 39
 on the Iron or Steel S.S. "South Bend" Port belonging to Philadelphia Pa.
 Built at Chester Pa By whom Sun Ship Building Co When built 1918
 United States Shipping Board Owners' Address Washington D.C.
 No. 5 Electric Light Installation fitted by Sun Ship Building Co When fitted 1918-9

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Twenty five K.W. 115 direct connected General Electric Co.
 engine generating sets with reciprocating engines.
 Capacity of Dynamo 350 Amperes at 115 Volts, whether continuous or alternating current Continuous
 Is Dynamo fixed Engine room Hatch Port side Whether single or double wire system is used Double
 Location of Main Switch Board Dynamo Room Ford having switches to groups 12 of lights, &c., as below
 Locations of auxiliary switch boards and numbers of switches on each Two six circuit panel boards in
passage in Bridge House, One ten circuit panel board in after
noon, The ten circuit panel board in Ford mess room Bridge House shelter deck
 Are there any switches 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
 Is the system 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-oxidisable 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 there 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 (later)

number of lights provided for	266	arranged in the following groups:—
Bridge House lights each of	32	candle power requiring a total current of 25 Amperes
Engine & Fire room lights each of	32 75 200	candle power requiring a total current of 30 Amperes
Deck & 9 Deck lights each of	50 1250	candle power requiring a total current of 60 Amperes
7 Deck quarters lights each of	32	candle power requiring a total current of 10 Amperes
Power lights each of	Motor	candle power requiring a total current of 145 Amperes
1 Mast head light with 2 lamps each of	75	candle power requiring a total current of 1 Amperes
2 Side light with 2 lamps each of	75	candle power requiring a total current of 2 Amperes
60 Cargo lights of	75	candle power, whether incandescent or arc lights Incandescent

Are there any lights, what protection is provided against fire, sparks, &c. 303
 1 - 18" General Electric enclosed searchlight.
 Where are the switches controlling the masthead and side lights placed Tell tale panel in Pilot House

DESCRIPTION OF CABLES.

1 cable carrying 362 Amperes, comprised of	6	wires, each 0000 S.W.G. diameter, .0412 square inches total sectional area
1 cable carrying 25 Amperes, comprised of	2	wires, each #6 S.W.G. diameter, .0206 square inches total sectional area
1 cable carrying 30 Amperes, comprised of	2	wires, each #6 S.W.G. diameter, .0206 square inches total sectional area
1 cable to lamps carrying 15 Amperes, comprised of	2	wires, each #14 S.W.G. diameter, .0026 square inches total sectional area
1 cable to cargo light carrying 60 Amperes, comprised of	4	wires, each #4 S.W.G. diameter, .0328 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All wires are N.B.L. Double braided rubber covered wires, larger than #10 are stranded.
 How are the joints in cables, how made, insulated, and protected All joints are well made mechanically
in soldered and wrapped with rubber and linen 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 In approved standard conduit

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 approved*

Conduit with watertight fittings.

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

What special protection has been provided for the cables near boiler casings *In approved conduit*

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

How are cables carried through beams *In approved conduit through bulkheads, &c.*

How are cables carried through decks *through brass pipes*

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

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

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 *No*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *Plugs & receptacle*

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 Litch Board*

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

Are any switches, fuses, or joints of cables fitted in the pump room or companion

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.

Robert Hull
Sun Shipbuilding Co.
CHESTER, PA.

Electrical Engineers

Date *March 12-1919*

COMPASSES.

Distance between dynamo or electric motors and standard compass

100 ft

Distance between dynamo or electric motors and steering compass

90 ft

The nearest cables to the compasses are as follows:—

A cable carrying *35* Amperes *10* feet from standard compass *12* feet from steering compass

A cable carrying *5* Amperes *5* feet from standard compass *5* 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 *nil* degrees on *all* courses in the case of the

standard compass and *nil* degrees on *all* courses in the case of the steering compass.

Robert Hull

Builder's Signature.

Date *March 12-1919*

GENERAL REMARKS.

4. 1 1/2 HP on vent fans. 1. 4 1/2 HP motor in machine shop. 1. 1 HP motor on fire floor. 1. 5 HP motor on turbine turning gear.

This electric lighting has been well fitted, and proved satisfactory on trial. It is submitted that this vessel is eligible for

THE RECORD. ELEC LIGHT.

Wm. Furham

J.W.D.

15/4/19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec Lt New York MAR 26 1919



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