

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4550

Port of Philadelphia Date of First Survey 11th Oct. 1922 Date of Last Survey 1st March, 1923 No. of Visits 24
 No. in Reg. Book on the ~~Iron~~ Steel S.S. "PENNSYLVANIA SUN" Port belonging to Philadelphia
 Built at Chester Pa By whom Sun Shipbuilding Co When built 1923
 Owners Sun Oil Co, Inc. Owners' Address Philadelphia
 Yard No. 42 Electric Light Installation fitted by Sun Shipbuilding Co When fitted 1923

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two (2) G. E. Compound wound continuous current Generators direct connected to two (2) G. E. Vertical Engines
 Capacity of Dynamo 174 Amperes at 115 Volts, whether continuous or alternating current Direct
 Where is Dynamo fixed Platform aft in Engine Room Whether single or double wire system is used Double
 Position of Main Switch Board Port-side Dynamo Room having switches to groups Screw of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each one six circuit-panel in Dynamo Room; one eight circuit-panel in Engine Room hatch; one six circuit-panel in Bridge Deck House; Junction boxes outside 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 Yes
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

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

A Bridge House	52 lights each of	32	candle power requiring a total current of	20	Amperes
B After Quarters	54 lights each of	32	candle power requiring a total current of	20	Amperes
C Engine Room	62 lights each of	32	candle power requiring a total current of	22	Amperes
D Deck House	28 lights each of	32	candle power requiring a total current of	15	Amperes
E Pump Room	16 lights each of	32	candle power requiring a total current of	4	Amperes
	Mast head light with 2 lamps each of	40	candle power requiring a total current of	1	Amperes
	2 Side light with 2 lamps each of	40	candle power requiring a total current of	2	Amperes
	6 Cargo lights of 36 - 32		candle power, whether incandescent or arc lights	Incandescent-87	

If arc lights, what protection is provided against fire, sparks, &c. None used
 Where are the switches controlling the masthead and side lights placed on Tell-tale panel in Pilot House

DESCRIPTION OF CABLES.

Main cable carrying 142 Amperes, comprised of 2 wires, each 000 S.W.G. diameter, 0.132 square inches total sectional area
 Branch cables carrying 22 Amperes, comprised of 2 wires, each 30000 cm S.W.G. diameter, 0.0260 square inches total sectional area
 Branch cables carrying 20 Amperes, comprised of 2 wires, each 30000 cm S.W.G. diameter, 0.0260 square inches total sectional area
 Leads to lamps carrying 4 Amperes, comprised of 2 wires, each 4000 cm S.W.G. diameter, 0.00323 square inches total sectional area
 Cargo light cables carrying 2 Amperes, comprised of 2 wires, each 1620 cm S.W.G. diameter, 0.00128 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All lead and armored cable used throughout ship: Stuffing tubes used going through bulkheads: Lead bushing used going through beams: Water-tight fixtures used
 Joints in cables, how made, insulated, and protected All joints made mechanically tight, then soldered and wrapped with linen and rubber 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 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 Shipped to decks and pans made for that purpose



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 *Lead & armored cable used and water-tight fittings*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead & armored cable*

What special protection has been provided for the cables near boiler casings *Lead & armored cable*

What special protection has been provided for the cables in engine room *Lead & armored cable*

How are cables carried through beams *Lead bushings* through bulkheads, &c. *Lead bushing* ✓

How are cables carried through decks *Lead & armored cable in conduit pipes* ✓

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 ✓

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 *Extension cord*

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 *in 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 *Vapor proof fixtures*

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.

John J. Sew, *Perst* Electrical Engineers Date *8th March, 1923.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *250 feet.*

Distance between dynamo or electric motors and steering compass *250 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>1/2</i>	Amperes	<i>1</i>	feet from standard compass	<i>1</i>	feet from steering compass
A cable carrying	<i>1/2</i>	Amperes	<i>3</i>	feet from standard compass	<i>6</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 *Nil* degrees on *all* course in the case of the standard compass and *Nil* degrees on *all* course in the case of the steering compass.

John J. Sew, *Perst* Builder's Signature. Date *8th March, 1923.*

GENERAL REMARKS.

This installation has been well fitted on board and proved satisfactory under full trial

It is submitted that this vessel is eligible for

THE RECORD. Elec. light.

JWD
3/4/23

J. Adamson
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elect. light



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