

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1166

Port of Boston, Mass. Date of First Survey 16 Apr 1919 Date of Last Survey 14 June 1919 No. of Visits 11
 No. in on the ~~Iron~~ Steel Sts SHENANDOAH Port belonging to Bath, Me.
 Reg. Book Bath, Me. Built at Bath, Me. By whom The Texas Steamship Co. When built 1915
 Owners U.S. Shipping Board, Emergency Fleet Corp. Owners' Address Washington D.C.
 Card No. 11 Electric Light Installation fitted by The Texas Steamship Co. When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 10 KW General Electric Generators direct driven by vertical steam engines

Capacity of ^{each} Dynamo 91 Amperes at 110 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed Engine room Whether single or double wire system is used double
 Position of Main Switch Board Engine room having switches to groups A,B,C,D,E,F,G,H,I,K,L,M of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each One in #1 pump room companion with 6, One in #2 pump room companion with 6, One in bridge house with 4, One in forepeak with 4, One in pipe alley with 2, One in aft quarter port & One in aft quarter starboard with 2, One in engine room with 2 each, One in Boiler room entrance with 6, One in steering engine room with 2.
 Are fuses 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 no
 Are all circuits on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits all but lamp circuits
 Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of less than 100 per cent over the normal current
 Are all fuses fitted in easily accessible positions yes Are the fuses of standard dimensions standard type 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 on fuse cases
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes
 Total number of lights provided for 230 arranged in the following groups:—

Location	Number of lights	Each of	Candle power	Requiring a total current of	Amperes
Hospital Tent				13	
Pump Rooms	12	average 80		10.8	
Quarters Fore	43	average 32		19.7	
Wireless				18	
Searchlight				30	
4 Mast head light with 1 lamp each of 48					
2 Side light with 1 lamp each of 48				3.3	
8 Cargo lights of 320					

 candle power, whether incandescent or arc lights incandescent.

Where are the switches controlling the masthead and side lights placed engine room & pilot house

DESCRIPTION OF CABLES.

Cable carrying	Amperes	Comprised of	Wires	Each	Diameter	Square inches total sectional area
1 cable carrying 91	19	wires, each	0.074"	13 B+S	0.083	0.774
each cables carrying 13	7	wires, each	0.04"	18 B+S	0.014	0.0875
each cables carrying 10.8	7	wires, each	0.04"	18 B+S	0.014	0.0875
to lamps carrying 4	1	wires, each	0.064"	14 B+S	0.003	0.0312
to light cables carrying 4	1	wires, each	0.064"	14 B+S	0.003	0.0312

DESCRIPTION OF INSULATION, PROTECTION, ETC.

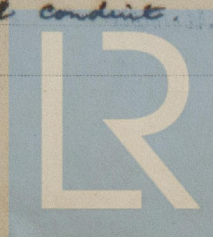
Heavy rubber insulation covered with braided waterproof fibre & buried in steel conduit throughout.

Are the joints in cables, how made, insulated, and protected Soldered, well taped & made in metal junction boxes throughout.

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 bunks, 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

Are the cables led through the ship, and how protected Steel conduit.



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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 *Steel conduit*

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

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

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

How are cables carried through beams *Steel conduit* through bulkheads, &c. *Steel conduit made tight*

How are cables carried through decks *Steel conduit made watertight*

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

If so, how are they protected *Steel conduits run high up under deck*

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

If so, how are the lamp fittings and cable terminals specially protected *Vessel intended for oil fuel. If ever compelled to burn coal, lamp fittings in bunkers will be removed*

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

If in the spaces, how are they specially protected *no*

Are any switches or fuses fitted in bunkers *no*

Cargo light cables, whether portable or permanently fixed *Permanently fixed* How fixed *Standards on bridge + poop*

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 with 2*, fixed *on main switch*

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 *Heavy gas tight globe with wire guards*

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.

The Texas Steam Ship Co. Electrical Engineers Date *June 25. 1919*
Geo. R. C. Plante, Supt.

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 200 feet*

Distance between dynamo or electric motors and steering compass *about 200*

The nearest cables to the compasses are as follows:—

Cable	Amperes	Distance from standard compass	Distance from steering compass
A cable carrying <i>Binnacle</i>	$\frac{1}{4}$	<i>close to</i>	<i>close to</i>
A cable carrying <i>Signal light</i>	3.3	<i>alt 6</i>	<i>alt 6</i>
A cable carrying <i>Search light</i>	30	<i>about 12</i>	<i>about 12</i>

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 _____ degrees on _____ course in the case of standard compass and _____ degrees on _____ course in the case of the steering compass.

The Texas Steam Ship Co. Builder's Signature. Date *June 25. 1919*
Geo. R. C. Plante, Supt.

GENERAL REMARKS. This Electric Light Installation has been fitted in accordance with the Rules + the workmanship + material are good. It has been satisfactorily tried in full load + it is now in good + safe working condition + eligible, in my opinion, to receive the notation 'ELEC LIGHT' in the Register Book.

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

John S. Heck
18/7/19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec Lt

New York JUL - 1 1919

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t of *Bristol*

Continuation of Report No. 1166 dated 21 June 1919 on the

Electric Light Installation of

S/S Shenandoah of Bath, Me

Groups of Lights continued

Location	Quantity	Watts	Volts	Amperes
Quarters	173	73	32	30
Lower E.R.	18	"	32	6
Upper "	25	"	32	10
Boiler Room	42	"	32	15.3
Poop	3	"	32	1.2

Description of Cables continued

G, D, E requiring a maximum of 30 amperes comprised of 7 wires each .064" dia .022" total sectional area

Cable	Wires	Watts	Volts	Amperes
F, H, J, K, L, M	7	30	7	.04

John S. Heck



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