

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 924

Port of Boston Date of First Survey 11 June 1917 Date of Last Survey 1 July 1917 No. of Visits 7
 No. in on the ~~Iron~~ Steel 5/8 PENNSYLVANIA Port belonging to New York
 Reg. Book 1 Built at Quincy, Mass. By whom Fore River S. B. Corporation When built 1917
 Owners The Texas Co. Owners' Address 17 Battery Place, New York City
 Card No. 253 Electric Light Installation fitted by Fore River S. B. Corporation When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2-10 K.W. 6 pole compound wound generators direct driven by 6 1/2 x 5" vertical engines
 Capacity of ^{each} Dynamo 91 Amperes at 110 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed aft end of engine room Whether single or double wire system is used double
 Position of Main Switch Board aft end of engine room having switches to groups A, B, C, D, E, F, G, H, J, K, L, M of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each One in forecabin with 4 switches, One in midship house with 6 switches, One in aft quarters with 8 switches

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 no

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 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 British 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 306 arranged in the following groups:—

A	Coal Bunker	14	lights each of	16	candle power requiring a total current of	7	Amperes
B	E. R. Upper	28	lights each of	"	candle power requiring a total current of	14	Amperes
C	Boiler Room	20	lights each of	"	candle power requiring a total current of	10	Amperes
D	Wireless		lights each of		candle power requiring a total current of	19	Amperes
E	Cargo lights	36	lights each of	16	candle power requiring a total current of	18	Amperes
{	2 Mast head light with	1	lamps each of	32	candle power requiring a total current of	2	Amperes
	2 Side light with	1	lamps each of	32	candle power requiring a total current of	2	Amperes
	6 Cargo lights of	6 lamp clusters			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 engine room + pilot house

DESCRIPTION OF CABLES.

Main cable carrying 91 Amperes, comprised of 61 wires, each .04 " ~~S.W.G.~~ diameter, .078 square inches total sectional area
 Branch cables carrying 7 Amperes, comprised of 7 wires, each .045 " ~~S.W.G.~~ diameter, .011 square inches total sectional area
 Branch cables carrying 14 Amperes, comprised of 7 wires, each .05 " S.W.G. diameter, .014 square inches total sectional area
 Leads to lamps carrying 5 Amperes, comprised of 7 wires, each .025 " ~~S.W.G.~~ diameter, .003 square inches total sectional area
 Cargo light cables carrying 3 Amperes, comprised of 13 wires, each .01 " S.W.G. diameter, .002 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Heavy insulation of rubber covered with braided waterproof fibre + carried in steel conduits throughout, except in officers quarters where wooden mouldings are used.

Joints in cables, how made, insulated, and protected Soldered, well taped + made in metal junction boxes

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

How are the cables led through the ship, and how protected Steel conduits



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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 Conduits*

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

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

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

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

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 *no*

If so, how are they protected *Steel conduits made 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* *vessel is intended for oil* *but if she should go into a* *lamp room wiring can be easily* *terminals protected by non conductive*

If so, how are the lamp fittings and cable terminals specially protected *engine room*

Where are the main switches and fuses for these lights fitted *no*

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 *Portable & Permanent* How fixed *Attachment boxes provide*

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 *Vapor proof metallic fittings with lens* *glass globes & 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 v. 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.

FORE RIVER SHIPBUILDING CORPORATION

H. Brown

Electrical Engineers

Date

COMPASSES.

VICE PRESIDENT

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

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

The nearest cables to the compasses are as follows:—

A cable carrying *1/4* Amperes *close to* *feet from standard compass* *close to* *feet from steering compass*

A cable carrying *5* Amperes *about 8* feet from standard compass *about 8* feet from steering compass

A cable carrying *30* Amperes *about 20* feet from standard compass *about 20* 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 _____ degrees on _____ course in the case of _____ standard compass and _____ degrees on _____ course in the case of the steering compass.

FORE RIVER SHIPBUILDING CORPORATION

H. Brown

Builder's Signature.

Date

GENERAL REMARKS. This Electric Light Installation has been fitted in accordance with the Rules & approved plans & the workmanship & material are good. The installation has been satisfactorily tried under full load & the vessel is eligible, in my opinion, to receive the notation ELEC LIGHT in the Register Book. This case is a duplicate of S's Trans, Boston report 836 & S's New York, Boston report 845.

It is submitted that this vessel is eligible to THE RECORD. Elec. light *AWD* *7/8/17*

John S. Heck

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Electric Light Installation of the

S's Pennsylvania of New York

Groups of Lights continued

G Outside Lights	8 lights each of 16 c.p. requiring a total current of 4 amperes
H Pump Room	24 " " " 16 " " " " " 12 "
J Engine Room Lower	12 " " " 16 " " " " " 6 "
K Quarters Aft	94 " " " 16 " " " " " 47 "
L Search Light	" " " " " " " 30 "
M Quarters Fore	75 " " " 16 " " " " " 37 "

Description of Cables continued

C Carrying 10 lamps comprised of 7 wires each .045 diameter .011" total sectional area
D " 19 " " " 19 " " .045 " .031 " " " "
E " 18 " " " 19 " " .04 " .028 " " " "
F " 5 " " " 7 " " .05 " .014 " " " "
G " 4 " " " 7 " " .036 " .007 " " " "
H " 12 " " " 7 " " .057 " .018 " " " "
J " 6 " " " 7 " " .045 " .011 " " " "
K " 47 " " " 37 " " .04 " .047 " " " "
L " 30 " " " 19 " " .045 " .031 " " " "
M " 37 " " " 61 " " .04 " .078 " " " "

John S. Heck



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