

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 981

Port of Boston Date of First Survey 17 Dec 1917 Date of Last Survey 3 Feb 1918 No. of Visits 14
 No. in 1 on the Iron-ore Steel 264 1 LUCKENBACH Port belonging to Boston
 Book 1 Built at Quincy, Mass By whom Bethlehem S.B. Corp - Fore River Plant When built 1918
 Owners U.S. Shipping Board Owners' Address Washington D.C.
 Ord No. 264 Electric Light Installation fitted by Bethlehem S.B. Corp - Fore River Plant When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

20 KW General Electric Co's generators, 6 pole compound wound, direct driven by vertical steam engines
 Capacity of Dynamo 174 Amperes at 115 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,N,P,Q of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each 1 in Quarter Fore with 10 switches
1 in Quarter aft with 4 switches, 1 Tell tale in Pilot house with 4 switches

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 *to all but lamp circuit*
 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 lamp circuit
 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 enclosed 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 254 arranged in the following groups :-

A	Quarters Fore	111	lights each of	20	candle power requiring a total current of	30	Amperes
B	" Aft	29	lights each of	20	candle power requiring a total current of	8	Amperes
C	E.R. Upper	13	lights each of	20	candle power requiring a total current of	3	Amperes
D	" Starb	10	lights each of	20	candle power requiring a total current of	4	Amperes
E	" Port	13	lights each of	20	candle power requiring a total current of	5	Amperes
F	2 Mast head light with 2 lamps each of	32	candle power requiring a total current of	2	Amperes		
	2 Side light with 2 lamps each of	32	candle power requiring a total current of				
G	Each 6 Cargo lights of 400 watts + 5-6 light clusters		candle power, whether incandescent or arc lights				<u>incandescent</u>

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 174 Amperes, comprised of 61 wires, each .057" S.W.G. diameter, .157 square inches total sectional area
 Branch cables carrying 30 Amperes, comprised of 37 wires, each .04" S.W.G. diameter, .047 square inches total sectional area
 Branch cables carrying 8 Amperes, comprised of 7 wires, each .057" S.W.G. diameter, .018 square inches total sectional area
 Leads to lamps carrying 3 Amperes, comprised of 7 wires, each .025" S.W.G. diameter, .003 square inches total sectional area
 Cargo light cables carrying 38 Amperes, comprised of 61 wires, each .04" S.W.G. diameter, .078 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure heavy rubber, covered with braided waterproof fibre in accordance with U.S. Navy standard + carried in steel conduit throughout.
 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 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 Steel conduits.



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 conduits through bulkheads, &c. Steel conduit made watertight

How are cables carried through decks Steel conduits made watertight

Are any cables run through coal bunkers or cargo spaces Yes 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 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 + permanent How fixed Permanent cables run in steel conduit to top of king posts + up masts etc

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 switchboard

J Shaft Alley

K Boiler Room

L Boiler Room

M Searchlight

N Wireless

P Ventilation

Q Machine shop

J carrying 4

K carrying 1

L carrying 3

M carrying 35

N carrying 20

P carrying 35

Q carrying 40

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.

BETHLEHEM SHIPBUILDING CORPORATION LTD, FORE RIVER PLANT

J. W. McKim Electrical Engineers Date _____

COMPASSES.

Distance between dynamo or electric motors and standard compass about 55 feet

Distance between dynamo or electric motors and steering compass about 50

The nearest cables to the compasses are as follows:—

A cable carrying	<u>1/4</u>	Ampere	<u>close to</u>	feet from standard compass	<u>close to</u>	feet from steering compass
A cable carrying	<u>2</u>	Ampere	<u>about 15</u>	feet from standard compass	<u>about 10</u>	feet from steering compass
A cable carrying	<u>35</u>	Ampere	<u>" 15</u>	feet from standard compass	<u>" 10</u>	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 the standard compass and _____ degrees on _____ course in the case of the steering compass.

J. W. McKim 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 + it is now in good + safe working condition + eligible, in my opinion, to receive the notation 'ELEC. LIGHT' in the Register Book. This is a duplicate of that fitted in the steamer '265' of Boston Boston report 964.

John S. Heck
Surveyor to Lloyd's Register of Shipping.

Committee's Minute Elec. Light

16c. L. 10—Treasurer.



Electric Light Installation

of

S.S. ' 264 ', of Boston, Mass.

Groups of lights continued:

- J Shaft Alleys 19 lights each of 20 c.p. requiring a total current of 4 amperes.
- K Boiler Room Upper 5 lights each of 20 c.p. requiring a total current of 1 ampere.
- L Boiler Room Lower 13 lights each of 20 c.p. requiring a total current of 3 amperes.
- M Searchlight requiring a total current of 35 amperes.
- N Wireless requiring a total current of 26 amperes.
- P Ventilation requiring a total current of 39 amperes.
- Q Machine shop requiring a total current of 49 amperes.

Description of Cables continued:

- J carrying 4 amperes, comprised of 7 wires, each .025 diameter .003 sq.in. sectional area.
- K carrying 1 ampere. comprised of 7 wires, each .025 diameter .003 sq.in. sectional area.
- L carrying 3 amperes, comprised of 7 wires, each .025 diameter .003 sq.in. sectional area.
- M carrying 35 amperes, comprised of 19 wires, each .04 diameter .023 sq.in. sectional area.
- N carrying 26 amperes, comprised of 37 wires, each .04 diameter .046 sq.in. sectional area.
- P carrying 39 amperes, comprised of 37 wires, each .04 diameter .046 sq.in. sectional area.
- Q carrying 49 amperes, comprised of 19 wires, each .04 diameter .023 sq.in. sectional area.

Arthur J. Healy