

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 780

Port of *Boston* Date of First Survey *Aug 10* Date of Last Survey *Sept 15* No. of Visits *10*  
 Book *2* on the *Iron or Steel* *1/2* *PACIFIC* Port belonging to *Boston*  
 Built at *Quincy* By whom *Fore River Shipbuilding Corp.* When built *1914*  
 Owners *Emerg Steamship Co.* Owners' Address *114 State St Boston*  
 No. *225* Electric Light Installation fitted by *Fore River S. B. Corporation* When fitted *1914*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*One 15 K.W. 6 pole compound wound generator direct driven by vertical steam engine.*

Capacity of Dynamo *130* Amperes at *115* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *engine room*

Position of Main Switch Board *engine room* having switches to groups *A, B, C, D, E, F, G, H, J* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *One in aft quarters with 7, One in midship house with 10, one tell tale board in pilot house with 4*

Cut outs 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 *none* and to each lamp circuit *no*

Vessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits *all but lamp circuits*

Are the cut outs of non-oxidizable metal *yes* and constructed to fuse at an excess of *less than 100* per cent over the normal current

Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases *yes*

Total number of lights provided for *174* arranged in the following groups:—

<i>Searchlight &amp; Wireless</i> lights each of <i>✓</i>	candle power requiring a total current of <i>35</i>	Amperes
<i>Midship house</i> 57 lights each of <i>16</i>	candle power requiring a total current of <i>23.5</i>	Amperes
<i>Aft Quarters</i> 59 lights each of <i>16</i>	candle power requiring a total current of <i>25.7</i>	Amperes
<i>Blower Room</i> 8 lights each of <i>16</i>	candle power requiring a total current of <i>3.4</i>	Amperes
<i>Boiler Room</i> 11 lights each of <i>16</i>	candle power requiring a total current of <i>4.7</i>	Amperes
<i>2 Mast head light with 1 lamps each of 32</i>	candle power requiring a total current of <i>2</i>	Amperes
<i>2 Side light with 1 lamps each of 32</i>	candle power requiring a total current of <i>2</i>	Amperes
<i>Set of 6 x 10 single Cargo lights of 16</i>	candle power, whether incandescent or arc lights <i>incandescent</i>	

Are 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 <i>112</i> Amperes, comprised of <i>61</i> wires, each <i>.0453"</i> L.S.G. diameter, <i>.099</i> square inches total sectional area
Branch cables carrying <i>35</i> Amperes, comprised of <i>19</i> wires, each <i>.05"</i> L.S.G. diameter, <i>.033</i> square inches total sectional area
Branch cables carrying <i>23.5</i> Amperes, comprised of <i>37</i> wires, each <i>.0453"</i> L.S.G. diameter, <i>.06</i> square inches total sectional area
Cables to lamps carrying <i>5</i> Amperes, comprised of <i>1</i> wires, each <i>.064"</i> L.S.G. diameter, <i>.003</i> square inches total sectional area
Cargo light cables carrying <i>3</i> Amperes, comprised of <i>32</i> wires, each <i>.01"</i> L.S.G. diameter, <i>.003</i> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

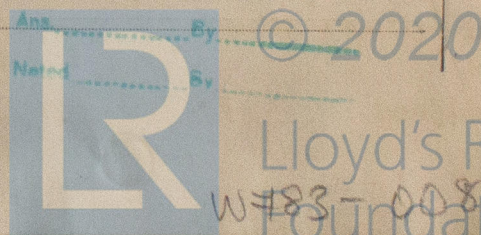
*Heavy rubber insulation, lead covered or covered with leaded waterproof fibre & carried in steel conduits throughout vessel. All cables U.S. Navy standard.*

How are the cables, how made, insulated, and protected *Soldered, thoroughly taped & made in metal function boxes throughout.*

Are all the joints of cables thoroughly soldered, *good fluid* only having been used as a flux *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 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 *steel conduits made watertight*

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 *do*

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

How are cables carried through beams *steel conduits* through bulkheads, &c. *steel conduits*

How are cables carried through decks *steel conduits made watertight*

Are any cables run through coal bunkers *yes* 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 cut outs for these lights fitted *✓*

If in the spaces, how are they specially protected *✓*

Are any switches or cut outs fitted in bunkers *no*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *Plugs provided in convenient positions*

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 *✓*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas *✓*

Are any switches, cut outs, 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 installation is supplied with a voltmeter and *with* an amperemeter, fixed *on main switchboard*

The copper used is guaranteed to have a conductivity of *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile after 24 hours' immersion in seawater.

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 Corp'n

PRESIDENT.

Electrical Engineers

Date *Sept. 25, 1914*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 240 feet*

Distance between dynamo or electric motors and steering compass *about 240 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	Distance from standard compass	Distance from steering compass
<i>1/4</i>	<i>close to</i>	<i>close to</i>	<i>close to</i>
<i>4</i>	<i>about 12</i>	<i>about 8</i>	<i>about 8</i>
<i>23.5</i>	<i>about 22</i>	<i>about 17</i>	<i>about 17</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 *Fore River Shipbuilding Corp'n* course in the case of the steering compass.

PRESIDENT.

Builder's Signature.

Date *Sept 25, 1914*

GENERAL REMARKS. *This installation has been fitted in accordance with the Rules & approved plans & has been satisfactorily tried under full load. The workmanship & material are good. The vessel is 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, Elec. light.*

*John S. Hook.*  
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute *TUE. OCT. 13, 1914* *TUE. OCT. 20, 1914*

Rpt. 9a.

Port of

*Boston*

Continuation of Report No. *780* dated

on the

*Electric Light Installation*  
*% PACIFIC.*

*Groups of Lights continued*

G	Engine room	10 lights each of 16 cp	requiring a total current of 4.3 amps
H	"	4 " " 16 " " " " "	1.7 "
J	"	6 " " 16 " " " " "	2.6 "

*Description of Cables continued*

C	carrying 25.7 amps	comprised of 7 wires each .057" dia .023" total sectional area
D	3.4 " " " 7 " " .025" .0035 " " " "	
E	4.7 " " " 7 " " .025" .0035 " " " "	
F	4 " " " 7 " " .036" .007	
G	4.3 " " " 7 " " .025" .0035	
H	1.7 " " " 7 " " .025" .0035	
J	2.6 " " " 7 " " .025" .0035	



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