

## REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 16769

Port of *New York* Date of First Survey *21 Apr* Date of Last Survey *23 May 1919* No. of Visits *10*  
 No. in Reg. Book on the *Iron or Steel* *San. Scr. Ste. Lorain* Port belonging to *Kearny, N.J.*  
 Built at *Kearny, N.J.* By whom *Federal S. B. Co.* When built *1919*  
 Owners *U. S. Shipping Board* Owners' Address *Philadelphia, Pa.*  
 Yard No. *12* Electric Light Installation fitted by *Federal S. B. Co.* When fitted *1919*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Two direct-connected Generators, Gen. Electric Co. type M.P. 6 Pole 475 A.P.M. 6000  
 pound wound 10 K.W. Vert. sin. cyl. Engines (16 1/2" x 5") 125 lbs. steam pressure.*  
 Capacity of Dynamo *90/80* Amperes at *110/125* Volts, whether continuous or alternating current *Continuous*  
 Where is Dynamo fixed *Stbd lower engine room* Whether single or double wire system is used *Double*  
 Position of Main Switch Board *At Generators* having switches to groups *A. B. C. D. & E.* of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each *1-4 br. panel Aft quarters under Prop Dk.  
 1-6 br. panel Midship Dk. house, located in passage. 1-4 br. panel in Ford Dk. house,  
 1-6 br. panel in Engine 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 *25* 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 *Not used.*

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases *yes*.

Total number of lights provided for *196* arranged in the following groups:—

A	Panel 38	lights each of	50 Watts	candle power requiring a total current of	19	Amperes
B	" 59	lights each of	50 "	candle power requiring a total current of	27	Amperes
C	" 40	lights each of	50 "	candle power requiring a total current of	24	Amperes
D	" 20	lights each of	50 "	candle power requiring a total current of	10	Amperes
E	Feeder Ford 36	lights each of	50 "	candle power requiring a total current of	18	Amperes
ONLY ONE LAMP CAN OPERATE AT EACH INSTANT						
One	Mast head light with	2	lamps each of	32	candle power requiring a total current of	Amperes
Two	Side lights with	2	lamps each of	32	candle power requiring a total current of	Amperes
Nine	Cargo lights of	4-50 Watt lamps each	candle power, whether incandescent or are lights	Incandescent		

If arc lights, what protection is provided against fire, sparks, &c. *Not used.*

Where are the switches controlling the masthead and side lights placed *Pilot house (Automatic Indicators)*

## DESCRIPTION OF CABLES.

				EACH CABLE.	
Main cable carrying	90	Amperes, comprised of	2	wires, each	No. 8 W.G. diameter, 10550 CM. square inches total sectional area
Branch cables carrying	40	Amperes, comprised of	2	wires, each	" 4 Radiog. 41740 "
Branch cables carrying	20	Amperes, comprised of	2	wires, each	" 6 Radiog. 8 W.G. diameter, 26250 "
Branch cables carrying	30	Amperes, comprised of	2	wires, each	" 8 Radiog. 16510 "
Branch cables carrying	20	Amperes, comprised of	2	wires, each	" 10 8 W.G. diameter, 10380 "
Leads to lamps carrying	15	Amperes, comprised of	2	wires, each	" 14 8 W.G. diameter, 4107 "
Cargo light cables carrying	4	Amperes, comprised of	2	wires, each	" 10 8 W.G. diameter, 10380 "

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*All conductors are National Electric Code, rubber covered, double braid.  
 Twin conductor cables up to 30,000 C.M. are used where possible.  
 All conductors larger than 14 A.W.G. are stranded.*  
 Joints in cables, how made, insulated, and protected *Joints are soldered, using non-corrosive flux, insulated with  
 rubber tape, protected with a wrapping of friction tape & inclosed in approved fittings or  
 function 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 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 *All wires with the exception of 6 volt call bell systems  
 are carried in approved iron conduit.*



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**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible *Where possible to do so.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *all cables are inclosed in rigid iron conduit with W.T. couplings & fittings.*

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

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

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

How are cables carried through beams *Through holes provided & spaces are through bulkheads, &c. W.T. BLINDS. same as Decks. Drilled holes.*

How are cables carried through decks *In iron conduit made W.T. with lock-nuts, washers & canvas painted with lead.*

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 *In iron conduit clipped to the inside of longitudinal channels.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *Yes. 2 in cargo space. Shlt. dk.*

If so, how are the lamp fittings and cable terminals specially protected *With brass fixtures fitted with extra globe & guard.*

Where are the main switches and fuses for these lights fitted *Inside of W.T. door Shlt. dk.*

If in the spaces, how are they specially protected *Switches are extra heavy, heavy std. brass, protected by locating them in corners.*

Are any switches or fuses fitted in bunkers *No.*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *✓*

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. Two.* fixed *on main switchboards.*

**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 *625* 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.

*R. W. Euckson* Electrical Engineers Date *26.5.19*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *Approx. 110' 0"*

Distance between dynamo or electric motors and steering compass *" 110' 0"*

The nearest cables to the compasses are as follows:—

Cable	Amperes	feet from standard compass	feet from steering compass
A cable carrying <i>30 (Searchlight)</i>	<i>8</i>	<i>9</i>	<i>9</i>
A cable carrying <i>3</i>	<i>6</i>	<i>5</i>	<i>5</i>
A cable carrying <i>1/2</i>	<i>6</i>	<i>1.5</i>	<i>1.5</i>

Have the compasses been adjusted with and without the electric installation at work at full power *Yes. on trial.*

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.

*The Federal Shipbuilding Co., H. W. Smith, H. Sage.* Builder's Signature. Date *26.5.19.*

**GENERAL REMARKS.**

*The fitting of the wires throughout the vessel is as stated in the Report and appears to be in accordance with the Committee's requirements.*

*It is submitted that this vessel is eligible for*

**THE RECORD, ELEC. LIGHT.**

*B. J. Macdonald.*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *Elec. Lt.* New York JUN 17 1919