

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 42.

Port of Cleveland O. Date of First Survey June 29<sup>th</sup> 1914 Date of Last Survey August 24<sup>th</sup> 1914 No. of Visits 6  
 No. in Reg. Book on the Iron or Steel SS "International" Port belonging to New York, N.Y.  
 Built at Ecorse, Mich. By whom Great Lakes Engineering Works When built 1914  
 Owners Atlantic Coast, S.S. Co. Owners' Address New York, N.Y.  
 Yard No. 135 Electric Light Installation fitted by Great Lakes Engineering Works When fitted 1914.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

1-10KW 6 pole compound wound dynamo direct driven by vertical steam engine.

Capacity of 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 ABCD E (11 in all) of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one in For<sup>d</sup> Cabin with 5 switches and one tell tale board in Pilot House with 4 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 none 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 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 yes

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

Total number of lights provided for 110 arranged in the following groups :-

A	Are lamps	lights each of	<u>about 500</u>	candle power requiring a total current of	<u>4</u>	Amperes
B	Port Hold	lights each of	<u>16</u>	candle power requiring a total current of	<u>1/2</u>	Amperes
C	St <sup>d</sup> Hold	lights each of	<u>16</u>	candle power requiring a total current of	<u>1/2</u>	Amperes
D	Forward Cabins	lights each of	<u>16</u>	candle power requiring a total current of	<u>1/2</u>	Amperes
E	Aft cabin St <sup>d</sup>	lights each of	<u>16</u>	candle power requiring a total current of	<u>1/2</u>	Amperes
	1 Mast head light with	2 lamps each of	<u>16</u>	candle power requiring a total current of	<u>1</u>	Amperes
	2 Side light with	1 lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
	26 Cargo lights of	<u>16</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>		

If arc lights, what protection is provided against fire, sparks, &c. 4 Arc lamps with inner and outer globes and heavy steel guards.

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

## DESCRIPTION OF CABLES.

Main cable carrying 110 Amperes, comprised of 19 wires, each 0.74 S.W.G. diameter, .074 square inches total sectional area

Branch cables carrying 3/4 Amperes, comprised of 1 wires, each 14 B.T.S.W.G. diameter, .003 square inches total sectional area

Branch cables carrying 3/4 Amperes, comprised of 1 wires, each 14 B.T.S.W.G. diameter, .003 square inches total sectional area

Leads to lamps carrying 5 Amperes, comprised of 1 wires, each 14 B.T.S.W.G. diameter, .003 square inches total sectional area

Cargo light cables carrying 4 Amperes, comprised of 26 wires, each 30 B.T.S.W.G. diameter, .002 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Heavy rubber insulation with braided waterproof fibre and carried in steel conduits. In cabins carried in hard wood mouldings.

Joints in cables, how made, insulated, and protected Soldered heavily taped and made in metal junction boxes. In cabins carried in hard wood mouldings.

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.



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F.	Aft. Cabin Port Lights each of 16 candle power requiring a total current of $\frac{1}{2}$ amperes											
G.	Outside lights	"	"	"	"	"	"	"	"	"	"	"
H.	Fan Tale	"	"	"	"	"	"	"	"	"	"	"
I.	Boiler room	"	"	"	"	"	"	"	"	"	"	"
J.	Engine room	"	"	"	"	"	"	"	"	"	"	"
K.	Engine Stbd.	"	"	"	"	"	"	"	"	"	"	"
L.	Engine Port	"	"	"	"	"	"	"	"	"	"	"
M.	Engine columns	"	"	"	"	"	"	"	"	"	"	"
N.	Compound room	"	"	"	"	"	"	"	"	"	"	"
O.	Signal lights	"	"	"	"	"	"	"	"	"	"	"

**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 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.

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 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 permanent How fixed in steel conduit & outlet boxes fitted to deck beams.

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, fixed on main switch board.

**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.

Great Lakes Engineering Works,

Electrical Engineers

Date 23<sup>rd</sup> September 1914

**COMPASSES.**

Distance between dynamo or electric motors and standard compass about 150 feet

Distance between dynamo or electric motors and steering compass about 150 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>1/4</u>	Amperes	<u>close to</u>	feet from standard compass	<u>close to</u>	feet from steering compass
A cable carrying	<u>10</u>	Amperes	<u>15</u>	feet from standard compass	<u>10</u>	feet from steering compass
A cable carrying	<input checked="" type="checkbox"/>	Amperes	<input checked="" type="checkbox"/>	feet from standard compass	<input checked="" type="checkbox"/>	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.

Great Lakes Engineering Works,

Builder's Signature.

Date 23<sup>rd</sup> September 1914

**GENERAL REMARKS.** There are 11 distribution switches on main switch board in Engine room to operate all branch circuits aft of coal bunkers no switch carrying more than 10 lights. This Electric Light Installation has been fitted under Special Survey in accordance with the Rules or approved plans for Vessels whose class is restricted to service on the Great Lakes. The workmanship & material is good & the installation has been satisfactorily tried under full load. The Vessel is eligible in my opinion Egan & Edwards to receive the notation "ELECT. LIGHT" in Register Book. Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

