

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17

Port of Duluth, Minn. Date of First Survey Apr. 3rd Date of Last Survey Oct. 4th No. of Visits 10
 No. in Reg. Book on the ~~Steel~~ Screw Steamer "Lake Indian" Port belonging to Duluth, Minn.
 Built at Duluth, Minn. By whom M^r. Duggall Duluth Co. When built 1918
 Owners U. S. S. Board Emergency Fleet Corp. Owners' Address Washington D. C.
 Yard No. 9 Electric Light Installation fitted by M^r. Duggall Duluth Co. When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Generating set $7\frac{1}{2}$ K.W. directly connected to an American Blower engine $5' \times 5' \times 550$ H.P.

Capacity of Dynamo 60 Amperes at 115 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Starboard side of engine room Whether single or double wire system is used double

Position of Main Switch Board Eng. room having switches to groups _____ of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one in Starboard alleyway Captain's Quarters, one in Galley
one in Crews quarters - each with 5 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 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 10 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 _____ arranged in the following groups: -

Group	Description	Watts	Candle power	Amperes
A	Captain's Quarters { 4 lights each of 25	100	2.6	Amperes
B	Galley 47 lights each of 25	1175	10.2	Amperes
C	Crews Quarters 18 lights each of 25	450	3.9	Amperes
D	Eng. & Blr room { 30 lights each of 40	1200	11.5	Amperes
E	Tow deck 8 lights each of 40	320	2.8	Amperes
	2 Mast head light with 1 lamps each of 60	120	1.1	Amperes
	2 Side light with 1 lamps each of 60	120	1.1	Amperes
	16 Cargo lights of 40	640	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed Chart. room

DESCRIPTION OF CABLES.

Main cable carrying	Amperes	wires	S.W.G. diameter	square inches total sectional area
60	1	2	66370	Circular Mils
Branch cables carrying 30	1	8	16510	square inches total sectional area
Branch cables carrying 25	1	10	10380	square inches total sectional area
Leads to lamps carrying 12	1	14	4107	square inches total sectional area
Cargo light cables carrying 12	1	14	4107	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber, double braided, led through galvanized iron conduit. In cabins in wood moulding. All cables to specifications and tests of the National Board of Fire Underwriters

Joints in cables, how made, insulated, and protected Soldered, rubbered and friction taped. In iron boxes where iron conduit is used

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 Galvanized iron 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 *Conduit and W.T. fittings*

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

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

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

How are cables carried through beams *Conduit* through bulkheads, &c. *Conduit and W.T. fittings*

How are cables carried through decks *Conduit and W.T. fittings*

Are any cables run through coal bunkers *No* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes*

If so, how are they protected *Conduit secured to deck beams*

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* 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*, fixed *Switchboard*

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.

McDOUGALL-DULUTH CO.
GENERAL MANAGER

Electrical Engineers

Date

COMPASSES.

Distance between dynamo or electric motors and standard compass *About 50 feet*

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

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>.25</i>	<i>1.5</i>	<i>1.5</i>	<i>1.5</i>
<i>.25</i>	<i>1.5</i>	<i>1.5</i>	<i>1.5</i>
<i> </i>	<i> </i>	<i> </i>	<i> </i>

Have the compasses been adjusted with and without the electric installation at work at full power *No*

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.

McDOUGALL-DULUTH CO.

Builder's Signature.

Date

GENERAL REMARKS.

The above installation has been fitted in a satisfactory manner and proved satisfactory under test.

It is submitted that this vessel is eligible for THE RECORD. Elec. light

HWD
4/12/18

Geo. Tully

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec. Lt

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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