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## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 272.

Port of DETROIT MICH. Date of First Survey 3<sup>RD</sup> JUNE 1920 Date of Last Survey 19<sup>TH</sup> JULY 1920 No. of Visits 8  
 No. in on the ~~Iron or Steel~~ SCREW STEAMER "KIOWA" Port belonging to WYANDOTTE.  
 Reg. Book Built at WYANDOTTE MICH. By whom DETROIT SHIPBUILDING Co., When built 1920  
 Owners INDEPENDENT STEAMSHIP Co. Owners' Address  
 Yard No. 286 Electric Light Installation fitted by DETROIT SHIPBUILDING Co., When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

1-10 K.W. Engberg Generator, Compound, Multipole, direct-coupled to a single Cylinder, Vertical, enclosed type engine 6"x6"x450 R.P.M.

Capacity of Dynamo 91 Amperes at 110 Volts, whether continuous or alternating current CONTINUOUS

Where is Dynamo fixed ENGINE ROOM PLATFORM Whether single or double wire system is used DOUBLE

Position of Main Switch Board " " " having switches to groups 14 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each STARB. CABIN - 10  
CREW'S QUARTERS AFT - 5

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 30 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 170 arranged in the following groups:—

A <u>STARB. CABIN</u> lights each of <u>25 WATTS</u> <del>candle power</del> requiring a total current of <u>17</u> Amperes
B <u>CREW'S QRTRS AFT</u> lights each of <u>25</u> " <del>candle power</del> requiring a total current of <u>7</u> Amperes
C <u>MACHINERY SPACE</u> lights each of <u>50</u> " <del>candle power</del> requiring a total current of <u>16</u> Amperes
D lights each of <u>      </u> <del>candle power</del> requiring a total current of <u>      </u> Amperes
E lights each of <u>      </u> <del>candle power</del> requiring a total current of <u>      </u> Amperes
F / Mast head light with / lamp each of <u>50</u> " <del>candle power</del> requiring a total current of <u>1/2</u> Amperes
G 2 Side lights with / lamp each of <u>50</u> " <del>candle power</del> requiring a total current of <u>1</u> Amperes
H (4 LAMP) Cargo lights of <u>200</u> " <del>candle power</del> , 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 WHEEL HOUSE

## DESCRIPTION OF CABLES.

Main cable carrying <u>90</u> Amperes, comprised of <u>2</u> wires, each <u>Nº 2</u> <u>B.&amp;S.</u> S.W.G. diameter, <u>66,370</u> square inches total sectional area
Branch cables carrying <u>24</u> Amperes, comprised of <u>2</u> wires, each <u>" 10</u> S.W.G. diameter, <u>10,380</u> square inches total sectional area
Branch cables carrying <u>24</u> Amperes, comprised of <u>2</u> wires, each <u>" 10</u> S.W.G. diameter, <u>10,380</u> square inches total sectional area
Leads to lamps carrying <u>10</u> Amperes, comprised of <u>2</u> wires, each <u>" 14</u> S.W.G. diameter, <u>4,107</u> square inches total sectional area
Cargo light cables carrying <u>10</u> Amperes, comprised of <u>2</u> wires, each <u>" 14</u> S.W.G. diameter, <u>4,107</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

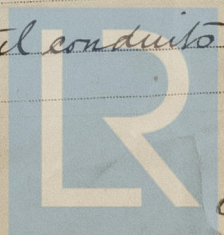
Vulcanized rubber, double braided, led through galvanized steel conduits.

Joints in cables, how made, insulated, and protected All joints soldered, taped first with rubber, then covered with friction tape & heavily coated with D.S. solution.

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 Through galvanized steel conduits



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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

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 STEEL CONDUITS

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

How are cables carried through beams STEEL CONDUITS through bulkheads, &c. W.T. STEEL CONDUITS

How are cables carried through decks W.T. STEEL CONDUITS

Are any cables run through coal bunkers NO or cargo spaces YES or spaces which may be used for carrying cargo, stores, or baggage NO

If so, how are they protected STEEL CONDUITS

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 PLUGS ON DECK HOUSES

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 MAIN 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.

John Sinclair 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 " 50 "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>1/4</u>	<u>5</u>	<u>4.5</u>	<u>5</u>
<u>1/4</u>	<u>4</u>	<u>5</u>	<u>5</u>
<u>1/4</u>	<u>4</u>	<u>5</u>	<u>5</u>

Have the compasses been adjusted with and without the electric installation at work at full power \_\_\_\_\_

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.

John Sinclair Builder's Signature. Date \_\_\_\_\_

GENERAL REMARKS. This installation has been fitted in accordance with the Rules & in a satisfactory manner. The materials & workmanship are of good quality. It has been tried under working conditions & found satisfactory.

It is submitted that this vessel is eligible for THE RECORD. Elec Light Recd. 14/11/20

Wm R. Mitchell  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute Elec Lt New York NOV 16 1920

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.