

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1102

Port of Philadelphia Date of First Survey 3.3.02 Date of Last Survey 23.6.02 No. of Visits 19
 No. in Reg. Book 40 on the Iron or Steel S.S. "Kroonland" Port belonging to New York
 Built at Philadelphia By whom Wm Cramp & Co When built 6.1902
 Owners International Navigation Co Owners' Address ✓
 Yard No. 311 Electric Light Installation fitted by Wm Cramp & Co When fitted 6.1902

DESCRIPTION OF DYNAMO, ENGINE, ETC.

4 Dynamos compound Multipolar type Direct connected to
 Engine 9' x 5 1/2' upright Double cylinder

Capacity of Dynamo 350 Amperes at 110 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Orlop Dk abaft of Engine Room

Position of Main Switch Board Orlop Dk abaft of Engine Room having switches to groups 14

Positions of auxiliary switch boards and numbers of switches on each See attached list "A" of lights, &c., as below

If 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 Yes and to each lamp circuit Yes

If 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 —

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

Are all cut outs 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 —

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 1638 arranged in the following groups:—

A <u>6</u>	lights each of <u>32</u>	candle power requiring a total current of <u>6</u>	Amperes
B <u>14/10</u>	lights each of <u>16</u>	candle power requiring a total current of <u>719.10</u>	Amperes
C <u>222</u>	lights each of <u>8</u>	candle power requiring a total current of <u>62.16</u>	Amperes
D <u>✓</u>	lights each of <u>✓</u>	candle power requiring a total current of <u>✓</u>	Amperes
E <u>✓</u>	lights each of <u>✓</u>	candle power requiring a total current of <u>✓</u>	Amperes
<u>2</u>	Mast head light with <u>2</u> lamps each of <u>32</u>	candle power requiring a total current of <u>2</u>	Amperes
<u>2</u>	Side light with <u>2</u> lamps each of <u>32</u>	candle power requiring a total current of <u>2</u>	Amperes
<u>20 (6 light)</u>	Cargo lights of <u>16</u>	candle power, ^{lamp} whether incandescent or arc lights <u>Incandescent</u>	Amperes

If arc lights, what protection is provided against fire, sparks, &c. no arc lights

Where are the switches controlling the masthead and side lights placed Tell Tale Device in Pilot House (wheel house)

DESCRIPTION OF CABLES. See attached list "B"

Main cable carrying <u>350</u>	Amperes, comprised of <u>127</u> wires, each <u>16</u>	L.S.G. diameter, <u>.429</u>	<u>542</u> square inches total sectional area
Branch cables carrying <u>88</u>	Amperes, comprised of <u>19</u> wires, each <u>14</u>	L.S.G. diameter, <u>.0974</u>	square inches total sectional area
Branch cables carrying <u>20</u>	Amperes, comprised of <u>7</u> wires, each <u>16</u>	L.S.G. diameter, <u>.023</u>	square inches total sectional area
Leads to lamps carrying <u>1/2</u>	Amperes, comprised of <u>1</u> wires, each <u>16</u>	L.S.G. diameter, <u>.003146</u>	square inches total sectional area
Cargo light cables carrying <u>3</u>	Amperes, comprised of <u>7</u> wires, each <u>16</u>	L.S.G. diameter, <u>.023</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

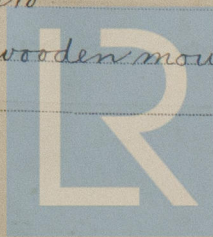
Cables, 1st an insulation of pure Para rubber, 2nd vulcanized rubber, 3rd Braid, 4th compound

Joints in cables, how made, insulated, and protected are made in Brass or Iron junction boxes with suitable slate Bases and copper terminals and bars. Where splices are made the splice is soldered then a layer of compound is put on followed by a layer of tape.

Are all the joints of cables thoroughly soldered, resin 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 In Iron Conduit and wooden moulding



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 *Carried in iron conduit*

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

What special protection has been provided for the cables near boiler casings *Carried in iron conduit*

What special protection has been provided for the cables in engine room *Carried in iron conduit*

How are cables carried through beams *In hard rubber tubing* through bulkheads, &c. *In brass stuffing tubes lined with hard rubber*

How are cables carried through decks *In Deck stuffing tubes or Conduit with W.T. Gaskets*

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 *Carried in iron conduit*

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

If so, how are the lamp fittings and cable terminals specially protected *In water tight junction Boxes*

Where are the main switches and cut outs for these lights fitted *Outside of Compartments*

If in the spaces, how are they specially protected *In brass cast boxes*

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

Cargo light cables, whether portable or permanently fixed *portable from receptacle* How fixed *With W.T. plug & recept.*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Soldered into Brass shoes and fastened to deck with Bolts tapped into deck*

How are the returns from the lamps connected to the hull *Soldered to brass washers and fastened to deck with brass screws tapped into deck*

Are all the joints with the hull in accessible positions *Yes*

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 *now* supplied with *five* voltmeters and *four* amperemeters 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 *1000* 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.

Wm. J. Dougherty

Electrical Engineers

Date *7/2/1902*

COMPASSES.

Distance between dynamo or electric motors and standard compass *30 ft. to nearest motor*

Distance between dynamo or electric motors and steering compass *30 ft. to nearest motor*

The nearest cables to the compasses are as follows:—

A cable carrying *20* Amperes *—* feet from standard compass *15* feet from steering compass

A cable carrying *30* Amperes *35* feet from standard compass *—* feet from steering compass

A cable carrying *70* Amperes *35* feet from standard compass *35* 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 *nil* degrees on *—* course in the case of the

standard compass and *—* degrees on *—* course in the case of the steering compass.

The Wm. Cramp & Sons Ship & Engine Building Co.

Chas. H. Cramp

Builder's Signature.

Date *7.7.02*

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules of Lloyd's Register

Robert Haig.

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

It is submitted that this installation appears to be satisfactory



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 43.