

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1692

Port of Bremen Date of First Survey 2nd May Date of Last Survey 29th Nov No. of Visits ten
 No. in Reg. Book 596 on the Iron Steel S. S. Graefels Port belonging to Bremen
 Built at Leestemünde By whom J. C. Tschlenberg A.G. When built 1910
 Owners D. J. Gen. Hansa Owners' Address Bremen
 Yard No. 237 Electric Light Installation fitted by Hanseatische Siemens Maschinen Fab. When fitted 1910

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One compound wound dynamo type Siemens-Schickel directly coupled to one compound steam engine

Capacity of Dynamo 120 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed in the engine room Whether single or double wire system is used double wire

Position of Main Switch Board engine room having switches to groups 3 groups of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each engine room with 4 switches, 1 near the post-room with 2 switches, 1 fore-cabin with 3 switches, 1 in the lift with 3 switches, 1 near the saloon with 8 switches, 1 in the storeroom with 8 switches.

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 yes

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 yes, on fuse plugs

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases porcelain & marble.

Total number of lights provided for 141 arranged in the following groups:—

A. <u>Engine</u>	<u>34</u> lights each of	<u>16</u> candle power requiring a total current of	<u>17</u> Amperes
B. <u>Fore-cabin</u>	<u>13</u> lights each of	<u>5 x 10</u> candle power requiring a total current of	<u>27</u> Amperes
C. <u>Mid-cabin</u>	<u>49</u> lights each of	<u>10 x 32</u> candle power requiring a total current of	<u>44</u> Amperes
D. <u>Lift</u>	<u>15</u> lights each of	<u>5 x 10</u> candle power requiring a total current of	<u>8</u> Amperes
E. <u>Two arc lamps</u>	lights each of	<u>1200</u> candle power requiring a total current of	<u>6</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>2.2</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>2.2</u> Amperes	
<u>8</u> Cargo lights of <u>5</u> lamps each of	<u>16</u> candle power, whether incandescent or arc lights		

If arc lights, what protection is provided against fire, sparks, &c. glass globes enclosed in wire with asbestos trays

Where are the switches controlling the masthead and side lights placed in the storeroom

DESCRIPTION OF CABLES.

Main cable carrying <u>120</u> Amperes, comprised of <u>19</u> wires, each <u>2.52</u> <u>mm</u> diameter, <u>95</u> <u>sq. mm</u> total sectional area	
Branch cables carrying <u>246</u> Amperes, comprised of <u>7</u> wires, each <u>1.7</u> <u>mm</u> diameter, <u>16</u> <u>sq. mm</u> total sectional area	
Branch cables carrying <u>9</u> Amperes, comprised of <u>1</u> wires, each <u>2.26</u> <u>mm</u> diameter, <u>6</u> <u>sq. mm</u> total sectional area	
Leads to lamps carrying <u>20</u> Amperes, comprised of <u>1</u> wires, each <u>1.38</u> <u>mm</u> diameter, <u>1.6</u> <u>sq. mm</u> total sectional area	
Cargo light cables carrying <u>15</u> Amperes, comprised of <u>19</u> wires, each <u>.52</u> <u>mm</u> diameter, <u>2 x 1.5</u> <u>sq. mm</u> total sectional area	

DESCRIPTION OF INSULATION, PROTECTION, ETC.

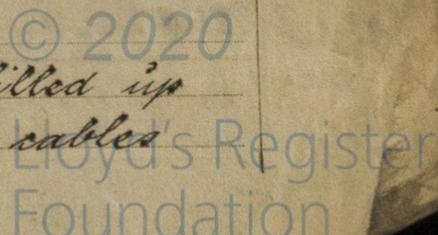
Main and branch cables are insulated by vulcanized rubber lead sheathed and iron armed.

Joints in cables, how made, insulated, and protected in the watertight boxes

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 cables partly laid in channels filled up with bitumastic partly fastened with screwed clips, all cables rubber insulated lead covered and iron armed.



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 The main cables are laid in cement channels filled up with bitumastic.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat They are armed by iron

What special protection has been provided for the cables near boiler casings They are armed by iron

What special protection has been provided for the cables in engine room They are armed by iron

How are cables carried through beams iron pipes through bulkheads, &c. stiffing-boxes.

How are cables carried through decks iron pipes partly brass stiffing boxes

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

If so, how are they protected

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

If so, how are the lamp fittings and cable terminals specially protected

Where are the main switches and cut outs for these lights fitted

If in the spaces, how are they specially protected

Are any switches or cut outs 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 double wire system.

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions

The installation is _____ supplied with a voltmeter and _____ an amperemeter, fixed on main switch-board.

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 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 20 Million Siemens Units - 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.

**HANSEATISCHE
SIEMENS-SCHUCKERT-WERKE**
Gesellschaft mit beschränkter Haftung

Electrical Engineers

Date December 1st 1910

COMPASSES.

Distance between dynamo or electric motors and standard compass 90' 0"

Distance between dynamo or electric motors and steering compass 100' 0"

The nearest cables to the compasses are as follows:—

A cable carrying <u>24.6</u> Amperes	<u>20'</u>	feet from standard compass	<u>23'</u>	feet from steering compass
A cable carrying <u>9</u> Amperes	<u>20'</u>	feet from standard compass	<u>23</u>	feet from steering compass
A cable carrying <u>1.5</u> Amperes	<u>20</u>	feet from standard compass	<u>23</u>	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 none degrees on any course in the case of the standard compass and no degrees on any course in the case of the steering compass.

JOH. C. TECKLENBORG & G.
Schiffswerft und Maschinenfabrik

Builder's Signature.

Date 8th December 1910

GENERAL REMARKS.

This electric installation has been tried on a ten hours trial trip and found to work satisfactorily, so that in my opinion the notation Electric lighted might be added to the steamers class.

It is submitted that this vessel is eligible for

THE RECORD, Elec. light.

JWD 19/11/10

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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