

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7364

Port of *Hamburg* Date of First Survey *4/2.03* Date of Last Survey *14/3.03* No. of Visits *6*  
 No. in on the ~~Steel~~ *St. Pr. "Lichtenfels"* Port belonging to *Bremen*  
 Reg. Book *Supp. 137* Built at *Flensburg* By whom *Flomb. Schiffb. Ges.* When built *1903*  
 Owners *Deutsche Dampfschiff. Ges. Hansa* Owners' Address *Bremen*  
 Yard No. *222* Electric Light Installation fitted by *builders* When fitted *1903*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Single Cylinder Steam Engine coupled direct to Siemens & Halske Dynamo running at about 250 revolutions per minute.*

Capacity of Dynamo *120* Amperes at *65* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *in Engine room*

Position of Main Switch Board *Engine room* having switches to groups *A. B. C. D. & E* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *1 in space for Main Steering gear with 4 switches, 1 in Chartroom with 2 switches, 1 switch for Engine and 1 switch for space lamps on and near Main Switchboard.*

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 *25* 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*

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

Total number of lights provided for *42* arranged in the following groups:—

A <i>Engine &amp; Machinery</i>	<i>32</i> lights each of <i>16</i>	candle power requiring a total current of <i>13</i>	Amperes
B <i>Surge tank</i>	<i>2</i> lights each of <i>45 + 20 dup.</i>	candle power requiring a total current of <i>Arc.</i>	<i>65</i> Amperes
C <i>Cargo</i>	<i>2</i> lights each of <i>9 dup.</i>	candle power requiring a total current of <i>Arc.</i>	<i>18</i> Amperes
D <i>Masthead &amp; Side lights</i>	<i>4</i> lights each of <i>70 + 100</i>	candle power requiring a total current of <i>9</i>	Amperes
E <i>Chartroom</i>	<i>2</i> lights each of <i>16</i>	candle power requiring a total current of <i>1</i>	Amperes
<i>in (2) Mast head light with 2 lamps each of 35</i>		candle power requiring a total current of <i>4</i>	Amperes
<i>also 2 Side light with 2 lamps each of 35 + 50</i>		candle power requiring a total current of <i>6</i>	Amperes
<i>also 2 Cargo lights of 9 dup. each</i>		candle power, whether incandescent or arc lights <i>Arc.</i>	

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

Where are the switches controlling the masthead and side lights placed *In Chartroom for Side- & Fore-Masthead lights, in Steering gear space for Aft-Masthead light.*

## DESCRIPTION OF CABLES.

Main cable carrying <i>120</i> Amperes, comprised of <i>19</i> wires, each <i>—</i>	L.S.G. diameter, <i>70</i>	square inches total sectional area <i>yes</i>
Branch cables carrying <i>45</i> Amperes, comprised of <i>1</i> wires, each <i>—</i>	L.S.G. diameter, <i>16</i>	square inches total sectional area <i>yes</i>
Branch cables carrying <i>20</i> Amperes, comprised of <i>1</i> wires, each <i>—</i>	L.S.G. diameter, <i>10</i>	square inches total sectional area <i>yes</i>
Leads to lamps carrying <i>1/2 x 1</i> Amperes, comprised of <i>1</i> wires, each <i>—</i>	L.S.G. diameter, <i>1.5 + 2.5</i>	square inches total sectional area <i>yes</i>
Cargo light cables carrying <i>9</i> Amperes, comprised of <i>7</i> wires, each <i>—</i>	L.S.G. diameter, <i>10</i>	square inches total sectional area <i>yes</i>

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Copper wires lined, coated with layers of Para rubber, vulcanized, cablehouse, coated with hemp tape impregnated with cablehouse solution, covered with lead and iron bound where exposed to moisture, and hemp 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 *No special protection except where cables are exposed to heat or moisture, where cables are led through iron pipes.*



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 *Iron bound cables carried through pipes where exposed to sea spray.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Iron bound*

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

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

How are cables carried through beams *hard wood ferrules* through bulkheads, &c. *hard wood ferrules*

How are cables carried through decks *brass standpipes lined with hardwood.*

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 *no*

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 *by brass lap bolt and washer*

How are the returns from the lamps connected to the hull *by brass screws and washers*

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 *yes* supplied with a voltmeter and *yes* an amperemeter, fixed *Chain Saw Table*

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 *50 Millions Siemens Watts 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.

*The Builders are the* Electrical Engineers. Date *—*

COMPASSES.

Distance between dynamo or electric motors and standard compass *abt. 96 ft.*

Distance between dynamo or electric motors and steering compass *86 ft.*

The nearest cables to the compasses are as follows:— *All cables near compasses are laid bipolar.*

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>2</i>	<i>3</i>	<i>8</i>	<i>8</i>
<i>2</i>	<i>3</i>	<i>8</i>	<i>8</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 *yes*

The maximum deviation due to electric currents, etc., was found to be *imperceptible* degrees on *—* course in the case of the standard compass and *imperceptible* degrees on *—* course in the case of the steering compass.

*Flensburger Schiffsbau-Gesellschaft*

Builder's Signature. Date *13<sup>th</sup> March 1903*

GENERAL REMARKS.

*The electric light installation on board of this vessel is in my opinion fitted in conformity with the Society's Rules and eligible for a vessel classed in the Society's Register Book with the notation of: "Elec. light."*

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

19.3.03

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.