

REPORT ON ELECTRIC LIGHTING INSTALLATION.

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Port of *Bremerhaven* Date of First Survey *22.5* Date of Last Survey *27.5.09* No. of Visits *6*
 No. in Reg. Book *70 in Reg.* on the *Iron or Steel* *S.S. Minneburg* Port belonging to *Bremen*
 Built at *Leestermünde* By whom *Joh. C. Tschubert & Co.* When built *1909*
 Owners *T. J. Ges. Hansa* Owners' Address *Bremen*
 Yard No. *230* Electric Light Installation fitted by *SIEMENS-SCHUCKERT WERKE* When fitted *1909*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

HAMBURG.

One short wound dynamo type Siemens-Schuckert 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 system*

Position of Main Switch Board *in the engine room* having switches to groups *1 for dynamo* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *engine room with 8 switches 1 near the port room with 5 switches 1 foreship with 3 switches 1 aft with 3 switches 1 in sec. mess. room with 2 switches 1 in the chart house with 4 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 *147* arranged in the following groups:—

A	<i>Engine room</i>	<i>16</i> lights each of <i>16</i> candle power requiring a total current of <i>16.5</i> Amperes
B	<i>Fore and Aft</i>	<i>6</i> lights each of <i>16</i> candle power requiring a total current of <i>9</i> Amperes
C	<i>Fore and Aft</i>	<i>48</i> lights each of <i>10.16</i> candle power requiring a total current of <i>22.5</i> Amperes
D	<i>Fore and Aft</i>	<i>13</i> lights each of <i>16</i> candle power requiring a total current of <i>5.5</i> Amperes
E	<i>Two arc lamps</i>	<i>2</i> lights each of <i>800</i> candle power requiring a total current of <i>15</i> Amperes
	<i>2 Mast head light with 2 lamps each of 32</i>	<i>32</i> candle power requiring a total current of <i>22</i> Amperes
	<i>2 Side light with 2 lamps each of 32</i>	<i>32</i> candle power requiring a total current of <i>22</i> Amperes
	<i>8 Cargo lights of 5 lamps each of 16</i>	<i>16</i> candle power, whether incandescent or arc lights

If arc lights, what protection is provided against fire, sparks, &c. *glas globes enclosed in wire with ashes tray*

Where are the switches controlling the masthead and side lights placed *in the chart house*

DESCRIPTION OF CABLES.

Main cable carrying	<i>120</i> Amperes, comprised of <i>19</i> wires, each <i>2.52</i> L.S.G. diameter, <i>95</i> square inches total sectional area
Branch cables carrying	<i>60</i> Amperes, comprised of <i>7</i> wires, each <i>1.7</i> L.S.G. diameter, <i>16</i> square inches total sectional area
Branch cables carrying	<i>13</i> Amperes, comprised of <i>1</i> wires, each <i>2.26</i> L.S.G. diameter, <i>6</i> square inches total sectional area
Leads to lamps carrying	<i>0.5</i> Amperes, comprised of <i>1</i> wires, each <i>1.38</i> L.S.G. diameter, <i>1.5</i> square inches total sectional area
Cargo light cables carrying	<i>25</i> Amperes, comprised of <i>19</i> wires, each <i>0.32</i> L.S.G. diameter, <i>28.15</i> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main and branch cables are insulated by vulcanised rubber lead sheathed and iron armoured

Joints in cables, how made, insulated, and protected *in 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 protected by bitumastic, partly fastened with screwed clips; all cables rubber insulated, lead covered and iron armoured*

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 led in cement channels filled in 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 *Yes*

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

How are cables carried through beams *iron pipes* through bulkheads, &c. *stufing boxes*

How are cables carried through decks *iron pipes & partly brass stufing boxes*

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 *lead and iron as specified above*

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 *special strong iron fittings*

Where are the main switches and cut outs for these lights fitted *on the auxiliary switch board*

If in the spaces, how are they specially protected *No*

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

Cargo light cables, whether portable or permanently fixed *portable* How fixed *Yes*

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 *double wire system*

Are all the joints with the hull in accessible positions *double wire system*

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 *100* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* 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.

COMPASSES.

Distance between dynamo or electric motors and standard compass *110'-0"*

Distance between dynamo or electric motors and steering compass *148'-0"*

The nearest cables to the compasses are as follows:— *cables are led on the double wire system*

A cable carrying *G.R. 2 x 1.5* Amperes *20'-0"* feet from standard compass *G.R. 2 x 6* feet from steering compass

A cable carrying *G.R. 2 x 16* Amperes *20'-0"* feet from standard compass feet from steering compass

A cable carrying Amperes feet from standard compass 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 *none* degrees on *any* course in the case of the steering compass.

JOH. C. TECKLENBORG A-G.
Schiffswerft und Maschinenfabrik.

Builder's Signature. Date *28/5 09*

GENERAL REMARKS.

This Installation has been tried on all courses during a nine hours trial trip and found to work very well not causing any deviation to the compass. I therefore beg to submit that the notation Electric Light might be added to the class of this steamer.

J. Thomsen.

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

Committee's Minute

It is submitted that the Record Elec. Light be noted in the Rep. Book

Lloyd's Register
Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.