

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

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No. 1462

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 Regt on the Iron or Steel S.S. Minneburg Built at Geestemünde Port belonging to Bremen  
 Owners T. J. Ges. Hansa By whom Joh. C. Schuckert A. G. When built 1909  
 Yard No. 230 Electric Light Installation fitted by SIEMENS-SCHUCKERT WERKE HAMBURG. When fitted 1909

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One shunt 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 2 for lights 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 2 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 14 1/2 arranged in the following groups:—

A	<u>2</u> lights each of <u>16</u> candle power requiring a total current of <u>16.5</u> Amperes
B	<u>6</u> lights each of <u>16</u> candle power requiring a total current of <u>9</u> Amperes
C	<u>48</u> lights each of <u>10.16</u> candle power requiring a total current of <u>22.5</u> Amperes
D	<u>13</u> lights each of <u>16</u> candle power requiring a total current of <u>5.5</u> Amperes
E	<u>2</u> arc lamps lights each of <u>800</u> candle power requiring a total current of <u>15</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>22</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>22</u> Amperes

8 Cargo lights of 5 lamps each of 16 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	<u>120</u> Amperes, comprised of <u>19</u> wires, each <u>2.52</u> L.S.G. diameter, <u>95</u> square inches total sectional area
Branch cables carrying	<u>60</u> Amperes, comprised of <u>7</u> wires, each <u>1.7</u> L.S.G. diameter, <u>16</u> square inches total sectional area
Branch cables carrying	<u>13</u> Amperes, comprised of <u>1</u> wires, each <u>2.26</u> L.S.G. diameter, <u>6</u> square inches total sectional area
Leads to lamps carrying	<u>0.5</u> Amperes, comprised of <u>1</u> wires, each <u>1.38</u> L.S.G. diameter, <u>1.5</u> square inches total sectional area
Cargo light cables carrying	<u>25</u> Amperes, comprised of <u>19</u> wires, each <u>0.32</u> L.S.G. diameter, <u>28.15</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

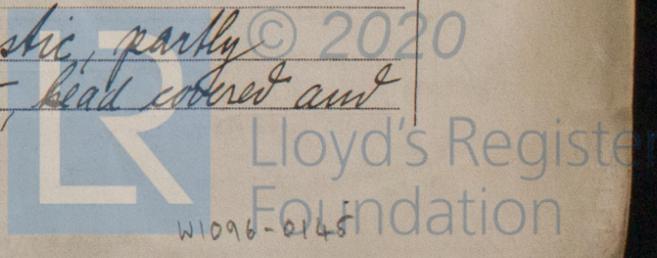
Main and branch cables are insulated by vulcanised rubber lead sheathed and iron armoured.

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.



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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 *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 armoured by iron*

What special protection has been provided for the cables near boiler casings *No*

What special protection has been provided for the cables in engine room *No*

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

How are cables carried through decks *iron pipes & partly brass stuffing 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 *—*

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 *} double wire system*

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 *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.

*A. Fisher*  
*J. Ferguson*

Electrical Engineers

Date *April 28<sup>th</sup> 09*

**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 *4.75 2x15* Amperes *20'-0"* feet from standard compass *4.75 2x6* feet from steering compass

A cable carrying *4.75 2x16* 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.**  
*Schiffswart und Maschinenbau.*

Builder's Signature.

Date *28/5 09*

**GENERAL REMARKS.**

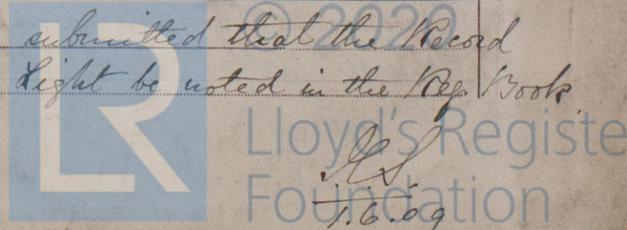
*This installation has been tried on all courses during a nine hours trial trip and found to work very well not causing any deviation to the compass. I therefore beg to submit that the notation Electric Light might be added to the class of this steamer*

*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*



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 13.-2m.34.