

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1140

Port of *Bremerhaven* Date of First Survey *15<sup>th</sup> Feb 06* Date of Last Survey *3<sup>rd</sup> April 06* No. of Visits *Six*  
 No. in Reg. Book on the *Iron or Steel* *S. S. Lothringen* Port belonging to *Bremen*  
 Built at *Bremen* By whom *A. J. Weser* When built *1906*  
 Owners *Norddeutscher Lloyd* Owners' Address *Bremen*  
 Yard No. *149* Electric Light Installation fitted by *Ally Electr. Ges. Berlin* When fitted *1906*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Directly current Generator Type M.P.M. 20 with 8 poles 132 H.P. 300 turns p.m. 110 Volts shunt wound. Im. comp. Engine 2 Cyl. 6 1/2" diam. 6" stroke*

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 *single*

Position of Main Switch Board " " " " having switches to groups *12 1/2* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *1* " *1* Switchboard with 3 switches under Forecastle  
*1* " " " " *1* " for searchlight under Forecastle

*1* Switchboard in Deckhouse on Briggedeck with 13 switches

*1* " " " " *1* " on Poop with 3 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

Are the cut outs of non-oxidizable metal *Yes* and constructed to fuse at an excess of *50* 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 \_\_\_\_\_ arranged in the following groups:—

A	<i>141</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>70</i>	Amperes
B	<i>21</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>10 1/2</i>	Amperes
C	<i>02</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>31</i>	Amperes
D	<i>14</i>	lights each of	<i>5, 16 or 32</i>	candle power requiring a total current of	<i>8</i>	Amperes
E	<i>1 1/2</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>8 1/2</i>	Amperes
<i>2</i>	Mast head light with <i>1</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes	
<i>2</i>	Side light with <i>1</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes	
	Cargo lights of	<i>16</i>	candle power, whether incandescent or arc lights	<i>12</i>	"	

If arc lights, what protection is provided against fire, sparks, &c. *are lights are not on board*

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

## DESCRIPTION OF CABLES.

Main cable carrying *120* Amperes, comprised of *19* wires, each *3 1/2 mm* L.S.G. diameter, *70 mm* square inches total sectional area

Branch cables carrying *26* Amperes, comprised of *1* wires, each *6 "* L.S.G. diameter, *6 "* square inches total sectional area

Branch cables carrying *44* Amperes, comprised of *7* wires, each *3 5/8 "* L.S.G. diameter, *25 "* square inches total sectional area

Leads to lamps carrying *40* Amperes, comprised of *7* wires, each *3 5/8 "* L.S.G. diameter, *25 "* square inches total sectional area

Cargo light cables carrying *3* Amperes, comprised of *96* wires, each *0.03* L.S.G. diameter, *3 "* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*For all the main lines as well as for the engine- and boiler room and on deck iron armoured india rubber lead cables are used. For all the other lines, heavy insulated india rubber wires are used.*

Joints in cables, how made, insulated, and protected *The joints of iron armoured cables are connected by means screw couplings. The thin joints have soldering which are protected with insulating or similar material*

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 *no*

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 *fastened with iron chaps or brass chaps respectively.*



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 armoured india rubber lead cables*

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

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

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

How are cables carried through beams *liquorice bushes* through bulkheads, &c. *water tight stuffing boxes*

How are cables carried through decks *water tight branches*

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 *iron armoured india rubber lead cables*

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 *on deck*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *wooden base*

How are the returns from the lamps connected to the hull *by means of screw couplings*

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

The installation is *1* supplied with a voltmeter and *1* an amperemeter, fixed *engine room*

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 *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.

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT.

*J. K. Müller* Electrical Engineers Date *6 April 1906*

COMPASSES.

Distance between dynamo or electric motors and standard compass } *about 130 feet*

Distance between dynamo or electric motors and steering compass }

The nearest cables to the compasses are as follows:—

A cable carrying	<i>10</i>	Amperes	<i>16 ÷ 0</i>	feet from standard compass	<i>16 ÷ 0</i>	feet from steering compass
A cable carrying	<i>6</i>	Amperes	<i>60</i>	feet from standard compass	<i>20 ÷ 0</i>	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 course in the case of the standard compass and *none* degrees on course in the case of the steering compass.

ACTION-GESELLSCHAFT "WESER"

*Anger Graf* Builder's Signature. Date *12. 4. 1906.*

GENERAL REMARKS. *This installation has been tried on a six hours trial trip and found to work well in every respect, so that in my opinion the notation "Electric Lighted" can be added to the class in the Register Book.*

*F. 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 Reg. Book.*

Lloyd's Register Foundation  
23. 4. 06

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

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