

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 53291.

Port of *Newcastle* Date of First Survey *21 June 07* Date of Last Survey *27 July 07* No. of Visits *6*  
 No. in *Reg. Book* *772* on the Iron or Steel *S. S. "Löwenburg"* Port belonging to *London - Bremen*  
 Built at *Low Walker* By whom *Messrs Swan Hunter & W. Richardson* When built *1904*  
 Owners *Deutsche Dampfschiff-Fahrts-Gesellschaft* Owners' Address *Bremen*  
 Yard No. *448* Electric Light Installation fitted by *Messrs Clark Chapman & Co Ltd.* When fitted *1904*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*One vertical double acting open type compound engine coupled direct to a continuous current compound wound dynamo.*  
 Capacity of Dynamo *120* Amperes at *110* Volts, whether continuous or alternating current *Continuous*  
 Where is Dynamo fixed *Engine room, Bottom platform* Whether single or double wire system is used *Double*  
 Position of Main Switch Board *Near dynamo* 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 *Each light & groups of lights fitted with switches as required.*  
 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 *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 *Yes*  
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes, slate & porcelain*  
 Total number of lights provided for *130* arranged in the following groups:—  

A	<i>45</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>24.5</i>	Amperes
B	<i>36</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>19.6</i>	Amperes
C	<i>20</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>11</i>	Amperes
D	<i>29</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>15.8</i>	Amperes
E	<i>1-20" Projector</i>	lights each of	<i>20,000</i>	candle power requiring a total current of	<i>60</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>2.2</i>
	<i>2</i>	Side light with	<i>1</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2.2</i>
	<i>8</i>	Cargo lights of each	<i>5-16</i>	candle power, whether incandescent or arc lights	<i>incandescent</i>	

 If arc lights, what protection is provided against fire, sparks, &c. *2-15 Ampere lamps totally enclosed in hexagonal clear glass lanterns.*  
 Where are the switches controlling the masthead and side lights placed *In chart Room.*

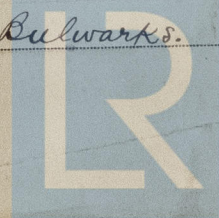
## DESCRIPTION OF CABLES.

Main cable carrying	<i>120</i>	Amperes, comprised of	<i>34</i>	wires, each	<i>15</i>	L.S.G. diameter,	<i>.1500</i>	square inches total sectional area
Branch cables carrying	<i>19.6</i>	Amperes, comprised of	<i>4</i>	wires, each	<i>16</i>	L.S.G. diameter,	<i>.02214</i>	square inches total sectional area
Branch cables carrying	<i>11</i>	Amperes, comprised of	<i>4</i>	wires, each	<i>18</i>	L.S.G. diameter,	<i>.01246</i>	square inches total sectional area
Leads to lamps carrying	<i>34</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>18</i>	L.S.G. diameter,	<i>.0018</i>	square inches total sectional area
Cargo light cables carrying	<i>3</i>	Amperes, comprised of	<i>176</i>	wires, each	<i>38</i>	L.S.G. diameter,	<i>.00504</i>	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Vulcanized rubber, taped & braided, & lead covered overall, where exposed steel armoured over the lead covering, braided & heavily bitumen compounded overall.*  
 Joints in cables, how made, insulated, and protected *No joints except mechanical ones.*

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, 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 *Lead covered, armoured, braided & heavily bitumen compounded, clipped with wrought iron clips to side bulwarks.*





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 *Lead covered*  
*armoured, braided & heavily bitumen Compounded overall*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead covered, armoured & braided*

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

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

How are cables carried through beams *in lead bushes* through bulkheads, &c. *in watertight glands*

How are cables carried through decks *in galvanized iron watertight deck tubes*

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

If so, how are they protected *Lead covered & armoured*

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 *to watertight c. i. Connection Boxes*

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 *now* supplied with a voltmeter and *also* an amperemeter, fixed *main switchboard*

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 *2000* 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.

*J. D. Walker*

Director Electrical Engineers

Date *Aug 22<sup>nd</sup> 1907*

COMPASSES.

Distance between dynamo or electric motors and standard compass *94* feet.

Distance between dynamo or electric motors and steering compass *90* "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>5</i>	<i>6</i>	<i>3</i>	<i>3</i>
<i>5</i>	<i>3</i>	<i>6</i>	<i>6</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 *nil* degrees on course in the case of the standard compass and *nil* degrees on course in the case of the steering compass.

*J. H. Hunter*

Builder's Signature.

Date *Sept 1907*

GENERAL REMARKS.

*The installation examined & found satisfactory.*

*John H. Heck.*

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 Register Books.*

Lloyd's Register Foundation

*13.9.07*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.