

# REPORT ON ELECTRIC LIGHTING INSTALLATION No. 11185

Port of **WEST HARTLEPOOL** Date of First Survey **14 May 1900** Date of Last Survey **14 May 1900** No. of Visits **1**  
 No. in Reg. Book **1481** on the Iron or Steel **as 'Merburg'** Port belonging to **Bremer**  
 Built at **W. Hartlepool** By whom **Jurges Witky Holm** When built **1900**  
 Owners **Norddeutscher Lloyd** Owners Address **Bremer**  
 Yard No. **1481** Electric Light Installation fitted by **J. H. Holmes & Co.** When fitted **May 1900**

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One  $4\frac{1}{2} \times 7$ " Open Automatic Engine 100 lbs L. hand, Ecc strap lined with W.M. or brass coupled to  $\frac{1}{2}$  Compounded wound dynamo output 100 V 90A 325 R  
 Capacity of Dynamo ~~100~~ **90** Amperes at **100** Volts, whether continuous or alternating current **continuous**

Where is Dynamo fixed **in engine room**  
 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 **Pantry 5 sw 1 Wheelhouse 4 sw 1 in engine room 5 sw 1 in Passage 3 sw**

If cut outs are fitted on main switch board to the cables of main circuit **yes** and on each auxiliary switch boards 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**

Total number of lights provided for **139** arranged in the following groups :-

A Eng room & Stables 31 lights each of	16	candle power requiring a total current of	18.6	Amperes
B Engineers 14 lights each of	16	candle power requiring a total current of	8.4	Amperes
C Saloon 24 lights each of	16	candle power requiring a total current of	14.4	Amperes
D Ford & aft 21 <sup>(3x32)</sup> lights each of	16	candle power requiring a total current of	12.6	Amperes
E Cargo & Hatches 30 1/2 lights each of	16	candle power requiring a total current of	24.6	Amperes
2 Mast head light with 4 lamps each of	16	candle power requiring a total current of	2.4	Amperes
2 Side light with 4 lamps each of	16	candle power requiring a total current of	4.8	Amperes
6 Cargo lights of 5 x 16		candle power, whether incandescent or lights		

If are lights, what protection is provided against fire, sparks, &c. **✓**

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

## DESCRIPTION OF CABLES.

Main cable carrying	90 Amperes, comprised of	19 wires, each	14 L.S.G. diameter,	.0943 square inches total sectional area
Branch cables carrying	17.4 Amperes, comprised of	4 wires, each	17 L.S.G. diameter,	.0174 square inches total sectional area
Branch cables carrying	28.9 Amperes, comprised of	7 wires, each	15 L.S.G. diameter,	.0289 square inches total sectional area
Leads to lamps carrying	8.5 .6 Amperes, comprised of	4 wires, each	19 L.S.G. diameter,	.0085 square inches total sectional area
Cargo light cables carrying	5 Amperes, comprised of	7 wires, each	20 L.S.G. diameter,	.0018 square inches total sectional area
			21 1/2 L.S.G. diameter,	.005 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables are insulated with pure rubber, vulcanised, taped braided & compounded & further protected by lead & iron sheathing where necessary

Joints in cables, how made, insulated, and protected **Spliced & soldered, insulated and protected with approved rubber & protective tapes etc**

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 bunks, 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 **wood casing & iron pipes**  
 All wires in casings are lead covered, & in engine room the lead covered & iron sheathed

**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible *yes when cargo is out*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *lead covering + iron pipes*

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

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

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

How are cables carried through beams *insulating bushes* through bulkheads, &c. *stuffing boxes*

How are cables carried through decks *deck tubes*

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

If so, how are they protected *as 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 *iron or brass guards*

Where are the main switches and cut outs for these lights fitted *in engine room*

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 *—*

How are the returns from the lamps connected to the hull *—*

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

**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 *yes*

Are any switches, cut outs, or joints of cables fitted in the pump room or companion *no*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *air tight fittings*

The installation is *sw. board* supplied with a voltmeter and *not* an amperemeter, fixed *on main*

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.

*J. H. Thomas. Co.* Electrical Engineers Date *17-5-1900*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *93 ft*

Distance between dynamo or electric motors and steering compass *89 ft*

The nearest cables to the compasses are as follows:—

A cable carrying <i>6 amp</i> <del>10</del> Amperes	<i>20</i> feet from standard compass	<i>15</i> feet from steering compass
A cable carrying <i>4</i> " Amperes	<i>10</i> feet from standard compass	<i>5</i> feet from steering compass
A cable carrying <i>.6</i> " Amperes	<i>8</i> feet from standard compass	<i>3</i> feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power *✓*

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

*J. Mills* Builder's Signature Date *June 11 1900*

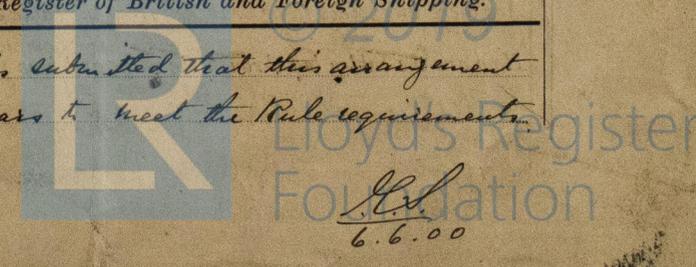
**GENERAL REMARKS.** *The bulkheads and decks where pierced are made O.T. by fitting the cables through O.T. metal glands. No cables are led through the bunkers. The cables are led up inside of engine casing and along underside of decks through the beams. Portable lights to cargo holds.*

*E. B. Champness. Richard Stira*  
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

*It is submitted that this arrangement appears to meet the Rule requirements.*

*Already posted*



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 13.

6.6.00