

## REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 14138

Port of Hamburg Date of First Survey 3rd April Date of Last Survey 6th June No. of Visits 10  
 No. in Reg. Book 97 on the Iron or Steel Fe. St. "Frothing" Port belonging to Bremen  
 Built at Kiel By whom Hovalottswerke When built 1914  
 Owners Deutsche Dampfschiff. Ges. "Hansa" Owners' Address Bremen  
 Yard No. 583 Electric Light Installation fitted by the Builders When fitted 1914

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 Compound Steam Engine, coupled direct a Allgemeine Electr. Ges. Dynamo, running at about 300 revol. per minute.

Capacity of Dynamo 123 Amperes at 115 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine Room Whether single or double wire system is used double

Position of Main Switch Board Engine Room 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 1 Main switch board in Eng. Room with 9 switches, 1 Staring house with 7 switches, 1 Salon passage with 8 switches, 1 Forecastle with 3 switches, 1 Charterhouse with 4 switches.

If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits yes

Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 25 per cent over the normal current

Are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases yes  
 Total number of lights provided for 267 arranged in the following groups:—

A Eng. & Boil. Space	54 lights each of	16	candle power requiring a total current of	25	Amperes
B Aftship	85 lights each of	16	candle power requiring a total current of	38	Amperes
C Midship	86 lights each of	16	candle power requiring a total current of	38	Amperes
D Forecastle	37 lights each of	16	candle power requiring a total current of	17	Amperes
E Charterhouse	5 lights each of	32	candle power requiring a total current of	5	Amperes
1 Mast head light with	1 lamps each of	32	candle power requiring a total current of	—	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	—	Amperes
18 cluster lamps included in A, B, C & D.					
2 Cargo lights of			candle power, whether incandescent or arc lights	10	

If arc lights, what protection is provided against fire, sparks, &c. Glas Globes

Where are the switches controlling the masthead and side lights placed Charthouse

## DESCRIPTION OF CABLES.

Main cable carrying	123 Amperes, comprised of	19 wires, each	2 S.W.G. diameter,	70	square inches total sectional area
Branch cables carrying	45 Amperes, comprised of	7 wires, each	2 S.W.G. diameter,	25	square inches total sectional area
Branch cables carrying	41 Amperes, comprised of	19 wires, each	1.5 S.W.G. diameter,	35	square inches total sectional area
Leads to lamps carrying	2 Amperes, comprised of	2 wires, each	1.36 S.W.G. diameter,	10	square inches total sectional area
Cargo light cables carrying	8 Amperes, comprised of	19 wires, each	32 S.W.G. diameter,	2.5	square inches total sectional area

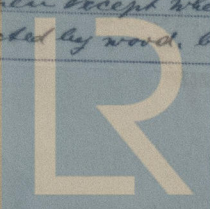
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main and Branch cables copper tinned, coated with Bra. caoutchouc, coated with impregnated jute tape, lead covered, spun with impregnated jute band, double iron bound and jute spun and asphalted.  
 Circuits & Lamp leads: Copper tinned coated with caoutchouc & rubber and spun with tape in section.  
 Joints in cables, how made, insulated, and protected: Soldered and coated with caoutchouc and tape for lamp circuits and leads, metallic screw joints in water light boxes on incombustible bases for main and branch cables.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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: Main and branch cables carried open except where they are exposed to moisture, where they are led in iron boxes. Circuits and lamp leads protected by wood, battens.



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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 *Iron bound leads covered cables, protected by iron casings.*

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

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

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

How are cables carried through beams *hard wood. bushes* through bulkheads, &c. *screwed brass bushes*

How are cables carried through decks *Iron galvanized stand pipe 12" high, filled with asphalt*

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 *by iron casings.*

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 *by iron casings.*

Where are the main switches and fuses for these lights fitted *Steering house and fore-castle*

If in the spaces, how are they specially protected *iron casings.*

Are any switches or fuses 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 *—*

Is the installation supplied with a voltmeter *yes*, and with an amperemeter *yes*, fixed *ham switch board*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas *—*

Are any switches, fuses, 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 not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than *50 million Siemens Units* per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

*The Builders are the* Electrical Engineers Date *—*

COMPASSES.

Distance between dynamo or electric motors and standard compass *145 ft*

Distance between dynamo or electric motors and steering compass *155 ft*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>.6</i>	<i>close to</i>	<i>close to</i>	<i>close to</i>
<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>
<i>—</i>	<i>—</i>	<i>—</i>	<i>—</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.

*HOWALDTSWERKE*  
*W. Degner*

Builder's Signature. Date *29<sup>th</sup> May 1914*

GENERAL REMARKS.

*The Electric Light installation on board of this vessel is in my opinion fitted in conformity with the Society's Rules and eligible to be recorded 'Elec. Light' in the Society's Register Book.*

*It is submitted that this vessel is eligible for*

**THE RECORD. Elec. light**

*JWD*  
*15/6/14*

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

Committee's Minute TUE. JUN. 16. 1914

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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