

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1334

Port of Hamburg Date of First Survey 10<sup>th</sup> March Date of Last Survey 10<sup>th</sup> May No. of Visits 7  
 No. in Reg. Book on the Iron or Steel S.S. "Tecumseh" Port belonging to Hamburg  
 Built at Kiel By whom Howaldtswerke When built 1913  
 Owners Deutsch-Amerika. Petroleum Ges. Owners' Address Hamburg  
 Yard No. 563 Electric Light Installation fitted by The Builders When fitted 1913

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 Compound Steam Engine, made by C. Daewel, Kiel, coupled direct to a Allgemeine Electricitäts Gesellschaft's dynamo, running about 250 rev. per minute.

Capacity of Dynamo 150 Amperes at 110 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 Eng. room with 8 switches, 1 Saloon passage with 16 switches, 1 passage aft Stb. with 10 switches, 1 Messroom with 9 switches, 1 Forecastle with 6 switches, 1 Chart house with 5 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 20 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 192 arranged in the following groups:—

A Eng. Room 27 lights each of 25 candle power requiring a total current of 20 Amperes

B Messing Sal. 57 lights each of 25 candle power requiring a total current of 38 Amperes

C Aft " 63 lights each of 25 candle power requiring a total current of 47 Amperes

D Forecastle 14 lights each of 25 candle power requiring a total current of 10 Amperes

E Chart house 5 lights each of 4 off 32, 1 off 25 candle power requiring a total current of 4.5 Amperes

2 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

incl. in B. C. & D 4 Cargo lights of each 5 candle power, whether incandescent or arc lights incandescent 144

10 portable hand lamps 25 candle power, whether incandescent or arc lights 24

If arc lights, what protection is provided against fire, sparks, &c. no arc lights fitted.

Where are the switches controlling the masthead and side lights placed Chart house

## DESCRIPTION OF CABLES.

Main cable carrying 150 Amperes, comprised of 19 wires, each 2.5 <sup>mm</sup> L.S.G. diameter, 95 <sup>sq in</sup> square inches total sectional area

Branch cables carrying 120 Amperes, comprised of 19 wires, each 2.2 L.S.G. diameter, 70 <sup>sq in</sup> square inches total sectional area

Branch cables carrying 60 Amperes, comprised of 19 wires, each 2 L.S.G. diameter, 35 <sup>sq in</sup> square inches total sectional area

Leads to lamps carrying 30 Amperes, comprised of 15 wires, each 1.5 L.S.G. diameter, 10 <sup>sq in</sup> square inches total sectional area

Cargo light cables carrying 3.5 Amperes, comprised of 15 wires, each 1 L.S.G. diameter, 2.4 <sup>sq in</sup> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main and branch cables copper lined, coated with Para caulkhouse, coated with impregnated jute tape, lead covered, spun with impregnated jute band, double iron bound and jute spun, and resealed.

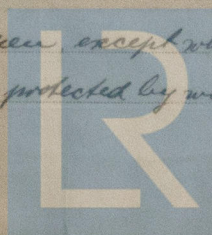
Circuits & lamp leads: Copper lined coated with caulkhouse and rubber and spun with tape insertion.

Joints in cables, how made, insulated, and protected Soldered and covered with caulkhouse and tape for lamp circuits and leads, metallic screw joints in water light boxes on incombustible bases for main & branch cables.

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 Main & Branch cables carried open except where they are exposed to moisture, where they are led in iron boxes. Circuits & lamp leads are protected by wood boxes.



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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 do*

What special protection has been provided for the cables in engine room *do 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 pipes 10" high filled with non conducting asphalt*

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 —

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 —

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 —

The installation is *yes* supplied with a voltmeter and *yes* an amperemeter, fixed *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 *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 *all fittings, screwed & painted tight*

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 *50 billions Siemens units* megohms per *kilometer* 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.

*The Builders are the* Electrical Engineers Date —

COMPASSES.

Distance between dynamo or electric motors and standard compass *120 ft.*

Distance between dynamo or electric motors and steering compass *110 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>—</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

*Frucht. Scherer & Co.*

Builder's Signature. Date *14th May 1913*

GENERAL REMARKS.

*The Elec. 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.** *J. W. D. J. W. D.* *1915/13*

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

Committee's Minute TUE. MAY. 20 1913



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