

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1692

Port of *Bremerhaven* Date of First Survey *24th May* Date of Last Survey *29th Nov* No. of Visits *ten*
 No. in on the *lower* Steel *S. S. Greinfels* Port belonging to *Bremer*
 Reg. Book *596* Built at *Leestermünde* By whom *J. C. Tackenberg A.G.* When built *1910*
 Owners *D. J. Gen. Hansa* Owners' Address *Bremer*
 Yard No. *237* Electric Light Installation fitted by *Hanseatische Siemens Maschinenbau* When fitted *1910*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One compound wound dynamo type Siemens-Schickel directly coupled to one compound steam engine

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 *double wire*

Position of Main Switch Board *engine room* having switches to groups *3 groups* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *engine room with 4 switches, 1 near the post-room with 2 switches, 1 foreship with 3 switches, 1 in the lift with 3 switches, 1 near the saloon with 8 switches, 1 in the storeroom with 8 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 *100* 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, on fuse plugs*

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *porcelain & marble*

Total number of lights provided for *141* arranged in the following groups:—

A *Engine* *Porter's Tunnel* *34* lights each of *16* candle power requiring a total current of *17* Amperes

B *foreship* *13* lights each of *5 & 10* candle power requiring a total current of *27* Amperes

C *midship* *49* lights each of *10 & 32* candle power requiring a total current of *44* Amperes

D *lift* *15* lights each of *5 & 10* candle power requiring a total current of *8* Amperes

E *two arc lamps* lights each of *1200* candle power requiring a total current of *6* Amperes

2 Mast head light with *2* lamps each of *32* candle power requiring a total current of *2.2* Amperes

2 Side light with *2* lamps each of *32* candle power requiring a total current of *2.2* Amperes

8 Cargo lights of *5 lamps each of 16* candle power, whether incandescent or arc lights

If arc lights, what protection is provided against fire, sparks, &c. *glass globes enclosed in wire with asbestos trays*

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

DESCRIPTION OF CABLES.

Main cable carrying *120* Amperes, comprised of *19* wires, each *2.52* *mm* *95* *mm* total sectional area *77 = .150*

Branch cables carrying *246* Amperes, comprised of *7* wires, each *1.4* *mm* *16* *mm* total sectional area *16 = .024*

Branch cables carrying *9* Amperes, comprised of *1* wires, each *2.26* *mm* *6* *mm* total sectional area *5.8 = .009*

Leads to lamps carrying *0.8* Amperes, comprised of *1* wires, each *1.38* *mm* *1.5* *mm* total sectional area *.32 = .0005*

Cargo light cables carrying *1.5* Amperes, comprised of *19* wires, each *.32* *mm* *2 x 1.5* *mm* total sectional area *.99 = .0015*

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main and branch cables are insulated by vulcanized rubber lead sheathed and iron armed.

Joints in cables, how made, insulated, and protected *in the watertight boxes*

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 *cables partly laid in channels filled up with bitumastic partly fastened with screwed clips, all cables rubber insulated lead covered and iron armed.*

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 *The main cables are laid in cement channels filled up with bitumastic.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *They are armed by iron*

What special protection has been provided for the cables near boiler casings *They are armed by iron*

What special protection has been provided for the cables in engine room *They are armed by iron*

How are cables carried through beams *iron pipes* through bulkheads, &c. *stiffing boxes*

How are cables carried through decks *iron pipes partly brass stiffing boxes*

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 *double wire system*

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 supplied with a voltmeter and an amperemeter, fixed *on 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

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 *20 Million Siemens Units* - *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.

HAUSELATSCH
SIEMENS-SCHUCKERT-WERKE

Electrical Engineers

Date *December 1st 1910*

COMPASSES.

Distance between dynamo or electric motors and standard compass

90' 0"

Distance between dynamo or electric motors and steering compass

100' 0"

The nearest cables to the compasses are as follows:—

A cable carrying <i>24.6</i>	Amperes <i>20'</i>	feet from standard compass <i>23'</i>	feet from steering compass
A cable carrying <i>9</i>	Amperes <i>20'</i>	feet from standard compass <i>23</i>	feet from steering compass
A cable carrying <i>1.5</i>	Amperes <i>20</i>	feet from standard compass <i>23</i>	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 *any* course in the case of the standard compass and *no* degrees on *any* course in the case of the steering compass.

JOH. C. TECKLENBORG & CO.

Builder's Signature.

Date *8th December 1910*

GENERAL REMARKS.

This electric installation has been tried on a ten hours trial trip and found to work satisfactorily, so that in my opinion the notation Electric Lighted might be added to the steamers class.

It is submitted that

this vessel is eligible for

THE RECORD. Elec. light.

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

Committee's Minute



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.