

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1590.

Port of *Bremerhaven* Date of First Survey *1st July* Date of Last Survey *23rd July 1910* No. of Visits *six*
 No. in Reg. Book *684* on the *Iron* Steel *S.L. Birkenfels* Port belonging to *Bremen*
 Built at *Geestemünde* By whom *Th. C. Tecklenburg A.-G.* When built *1910*
 Owners *J. J. Gen. Hansa* Owners' Address *Bremen*
 Yard No. *236* Electric Light Installation fitted by *Hansatürk Siemens Schuckert Werke* When fitted *1910*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One skint wound dynamo type Siemens-Schuckert 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* 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 charthouse 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-oxidisable 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, boilers, & 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 *4* Amperes
 C *midship 29* lights each of *16 & 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 *about 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 charthouse*

DESCRIPTION OF CABLES.

Main cable carrying *120* Amperes, comprised of *19* wires, each *2.52* (dia) mm *95* *sq. in.* total sectional area
 Branch cables carrying *24.6* Amperes, comprised of *7* wires, each *1.7* (dia) mm *16* *sq. in.* total sectional area
 Branch cables carrying *9* Amperes, comprised of *1* wires, each *2.20* (dia) mm *6* *sq. in.* total sectional area
 Leads to lamps carrying *0.5* Amperes, comprised of *1* wires, each *1.38* (dia) mm *15* *sq. in.* total sectional area
 Cargo light cables carrying *1.5* Amperes, comprised of *19* wires, each *.32* (dia) mm *2.15* *sq. in.* total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

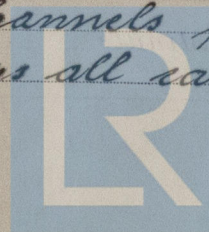
Main and branch cables are insulated by vulcanised rubber lead sheathed and iron armed.

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 lead in cement channels filled up with bitumastic.*

What special protection has been provided for the cables near galley or oil lamps or other sources of heat *Use 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. *stuffing boxes*

How are cables carried through decks *iron pipes partly brass stuffing 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 */*

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 *double wire system*

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 *50 Million Siemens Units* megohms per *kilometre* or *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.

COMPASSES

Distance between dynamo or electric motors and standard compass

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>24.6</i>	<i>23'-0"</i>	<i>25'-0"</i>	<i>25'-0"</i>
<i>9</i>	<i>23'-0"</i>	<i>25'-0"</i>	<i>25'-0"</i>
<i>1.5</i>	<i>23'-0"</i>	<i>25'-0"</i>	<i>25'-0"</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

standard compass and

degrees on

degrees on

course in the case of the

course in the case of the steering compass.

GENERAL REMARKS.

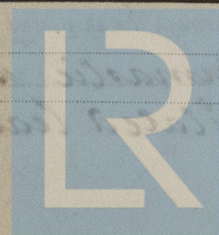
This electric installation has been surveyed while being fitted on board and tried on a twelve hours trial trip when it worked well, so that in my opinion the notation "Electric lighted" may be added to the steamer's character.

J. Thomson.

Committee's Minute

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

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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