

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4134<sup>c</sup>

Port of *Rotterdam* Date of First Survey *8 October* Date of Last Survey *21 Nov. 04* No. of Visits *five*  
 No. in on the Iron or Steel *S.S. Perlak* Port belonging to *Pangkalan Beranden*  
 Reg. Book *27 Feb.* Built at *Rotterdam* By whom *Maats van S. & N. Flymen* When built *1904*  
 Owners *Kon. Al. tot Exp. Petr. Br. in Ned. Ind.* Owners' Address *the Hague*  
 Yard No. *196* Electric Light Installation fitted by *de Rietstap & Hoonen* When fitted *1904*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*One single cylinder engine coupled to one compound-wound dynamo*

Capacity of Dynamo *100* Amperes at *110* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *in engine room* Whether single or double wire system is used *double wire*

Position of Main Switch Board *near dynamo* having switches to groups *5* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *each group of 8 lamps is concentrated in one distributing box with double pole switch*

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 *tin wire* 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 *all fuses of equal section*

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

Total number of lights provided for *92* arranged in the following groups:—*5 Ventilators and 1 Lucz-Searchlight*

A) *4 groups* lights each of *together* candle power requiring a total current of \_\_\_\_\_ Amperes

B) *of about* lights each of *5 lights of 8* candle power requiring a total current of *1.25* Amperes

C) *20-25 lamps* lights each of *83* candle power requiring a total current of *41.5* Amperes

D) *5 Ventilators* lights each of *motor* candle power requiring a total current of *2.5* Amperes

E) *1 Search light* lights each of \_\_\_\_\_ candle power requiring a total current of *45.0* Amperes

*2* Mast head light with *1* lamp each of *32* candle power requiring a total current of *2.0* Amperes

*2* Side light with *1* lamp each of *32* candle power requiring a total current of *2.0* Amperes

*2* Cargo lights of *4 lights of 16* candle power, whether incandescent or are lights *incandescent*

If are lights, what protection is provided against fire, sparks, &c. *no are lights*

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

## DESCRIPTION OF CABLES.

Main cable carrying *45* Amperes, comprised of *13* wires, each *1.93* L.S.G. diameter, *35* square inches total sectional area

Branch cables carrying *12* Amperes, comprised of *7* wires, each *1.4* L.S.G. diameter, *10* square inches total sectional area

Branch cables carrying *2* Amperes, comprised of *3* wires, each *1.0* L.S.G. diameter, *2.5* square inches total sectional area

Leads to lamps carrying *0.5* Amperes, comprised of *1* wires, each *1.13* L.S.G. diameter, *1.0* square inches total sectional area

Cargo light cables carrying *2* Amperes, comprised of *14* wires, each *2.3* L.S.G. diameter, *0.00634* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Tinned copper conductor insulated with pure and vulcanized India rubber; taped and cased in continuous drawn lead*

Joints in cables, how made, insulated, and protected *no joints*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux \_\_\_\_\_ 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 \_\_\_\_\_

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 *by steel tubes in cabins with brass staples*



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

Are they in places always accessible *throughout accessible*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *watertight steel tubes*

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

What special protection has been provided for the cables near boiler casings *These cables are armoured*

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

How are cables carried through beams *by watertight glands* through bulkheads, &c.

How are cables carried through decks *by watertight conducting boxes*

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

If so, how are they protected *by steel tubes*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *no*

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 *no lamps in the spaces*

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 *double wire system*

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

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

The installation is *duly* supplied with a voltmeter and *also* an amperemeter, fixed *on switchboard*

**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 *by airtight armatures with brass guards*

*Cables are protected by steel tubes*

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 *1000* 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.

*P. van Rietschoten & Houtmans,*

*Electricians.*

Electrical Engineers

Date *29 Nov. 1904*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *about 60 feet*

Distance between dynamo or electric motors and steering compass *60 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>45</i>	<i>20</i>	<i>20</i>	
<i>10</i>	<i>10</i>	<i>10</i>	

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

The maximum deviation due to *WATTSCHAPPE'S TOOR SCHIEPES- & WERKTUIGEN* etc. was found to be *no* degrees on course in the case of the standard compass and *no* degrees on course in the case of the steering compass.

*D. Oude*

Builder's Signature. Date *5 December 1904.*

**GENERAL REMARKS.**

*This installation is in accordance with the Rules and is most satisfactory during repeated trials.*

*H. F. D. van Olphen*

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

Committee's Minute

*It is submitted that this installation appears to be satisfactory.*

Lloyd's Register Foundation  
7.12.04

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.