

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4176.6

Port of *Amsterdam* Date of First Survey *17 July* Date of Last Survey *18 Oct* No. of Visits *14*.
 No. in *114* on the *Steel twin Screw motor vessel 'Witte'* Port belonging to *S. Groenewald*
 Book *114* Built at *Dordrecht* By whom *N. Y. Scheepswaerf Dordrecht* When built *1916*.
 Owners *Med. Indische Tank & Stoomboot Maatschappij* Owners' Address *S. Groenewald*
 No. *114* Electric Light Installation fitted by *Groenewald, van de Poll & Co* When fitted *1916*.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One compound dynamo direct coupled up to a Stromhout crude oil motor
 Capacity of Dynamo *30.5* Amperes at *115* Volts, whether continuous or alternating current *Continuous*
 Where is Dynamo fixed *in Motor room* Whether single or double wire system is used *double*
 Position of Main Switch Board *in Motor room SB* having switches to groups *Six* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *1 in chart room, 1 in motor room 1 for charging board for accumulator lamps in holds, 1 in forecabin, one in bridge deckhouse & one in chart room.*
 Are fuses 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*.
 Are all circuits 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 *100* 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 *No wire fuses*.
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases

Total number of lights provided for *90* arranged in the following groups :-

<i>13</i>	lights each of <i>25</i>	candle power requiring a total current of <i>2.86</i>	Amperes
<i>8</i>	lights each of <i>25</i>	candle power requiring a total current of <i>1.76</i>	Amperes
<i>26</i>	lights each of <i>25</i>	candle power requiring a total current of <i>5.50</i>	Amperes
<i>22</i>	lights each of <i>25</i>	candle power requiring a total current of <i>4.84</i>	Amperes
<i>6</i>	lights each of <i>25</i>	candle power requiring a total current of <i>1.32</i>	Amperes
<i>1</i>	Mast head light with <i>1</i> lamps each of <i>32</i>	candle power requiring a total current of <i>1. -</i>	Amperes
<i>2</i>	Side light with <i>1</i> lamps each of <i>32</i>	candle power requiring a total current of <i>2. -</i>	Amperes
<i>4</i>	Mouse lamp / Cargo lights of <i>6" x 16"</i>	<i>32</i> candle power, whether incandescent or arc lights <i>3.56</i>	

Are arc lights, what protection is provided against fire, sparks, &c. *None*.

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

DESCRIPTION OF CABLES.

Main cable carrying <i>30</i> Amperes, comprised of <i>7</i> wires, each <i>0.7</i> S.W.G. diameter, <i>16</i> square inches total sectional area
Branch cables carrying <i>8</i> Amperes, comprised of <i>1</i> wires, each <i>2.75</i> S.W.G. diameter, <i>6</i> square inches total sectional area
Branch cables carrying <i>8</i> Amperes, comprised of <i>1</i> wires, each <i>2.75</i> S.W.G. diameter, <i>6</i> square inches total sectional area
Cables to lamps carrying <i>0.12</i> Amperes, comprised of <i>1</i> wires, each <i>1.4</i> S.W.G. diameter, <i>1/4</i> square inches total sectional area
Cargo light cables carrying <i>0.4</i> Amperes, comprised of <i>1</i> wires, each <i>1.4</i> S.W.G. diameter, <i>1/4</i> square inches total sectional area

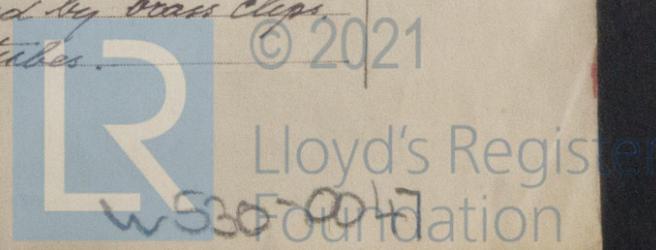
DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of *tinned copper wire insulated pure & vulcanized India Rubber, Coated tape, the whole vulcanized together, Cable provided with Armature*
 How made, insulated, and protected *no joints in cables.*

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 *on wooden shelves fastened by brass clips, rain cables on deck through galvanized iron U.T. tubes.*



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 Watertight tubing

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat tubing

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

What special protection has been provided for the cables in engine room in motor room cables provided with Armature

How are cables carried through beams through bulkheads, &c.

How are cables carried through decks by watertight screwed deck plates.

Are any cables run through coal bunkers ✓ or cargo spaces ✓ or spaces which may be used for carrying cargo, stores, or baggage ✓

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 fuses for these lights fitted ✓

If in the spaces, how are they specially protected ✓

Are any switches or fuses fitted in bunkers ✓

Cargo light cables, whether portable or permanently fixed portable How fixed with plugs.

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 on main switchboard

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 Yes.

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 In these places. Accumulator lamps

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 2000 megohms 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. 4000

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.

J. W. ... Electrical Engineers Date _____

COMPASSES.

Distance between dynamo or electric motors and standard compass 100 ft

Distance between dynamo or electric motors and steering compass 95 "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>4</u>	Amperes	<u>15</u>	feet from standard compass	<u>10</u>	feet from steering compass
A cable carrying	<u>0.3</u>	Amperes	<u>for</u>	feet from standard compass	<u>and for</u>	feet from steering compass
A cable carrying	<u>✓</u>	Amperes	<u>✓</u>	feet from standard compass	<u>✓</u>	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 nil degrees on ✓ course in the case of the standard compass and ✓ degrees on ✓ course in the case of the steering compass.

Andrew ... Builder's Signature. Date October 1916.

GENERAL REMARKS. The Electric light installation in this vessel has been fitted in an efficient manner and proved to be during the trial trips in good working condition. no hitches or heating whatever

It is submitted that this vessel is eligible for THE RECORD Elec. light.

J.W.D. 10/11/16

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

Committee's Minute TUE. 14 NOV. 1916

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

