

120 lights each of 32 candle power requiring a total current of 35 Amps.

110	"	"	"	32	"	"	"	"	"	"	"	33	"
85	"	"	"	32	"	"	"	"	"	"	"	25	"
85	"	"	"	32	"	"	"	"	"	"	"	25	"
70	"	"	"	32	"	"	"	"	"	"	"	21	"
70	"	"	"	32	"	"	"	"	"	"	"	21	"
70	"	"	"	32	"	"	"	"	"	"	"	21	"
50	"	"	"	32	"	"	"	"	"	"	"	15	"
40	"	"	"	32	"	"	"	"	"	"	"	12	"
50 fans												25	"
46 "												23	"
2 motors												20	"
1 motor												60	"
1 "												25	"
wireless telegr.												20	"
spare													

firma Van Rietochoten & Houwers

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Lloyd's Register
Foundation

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 9842

S. S. Ecuador

Port of Rotterdam Date of First Survey 8 Jun 1915 Date of Last Survey 14 October 1915 No. of Visits 5
 No. in on the Iron or Steel S. S. Ecuador Port belonging to Amsterdam
 Reg. Book Built at Flushing By whom Koninklijke Maatschappij "De Schelde" When built 1915
 Owners Koninklijke West Indische Maatschappij Owners' Address Amsterdam
 Yard No. 159 Electric Light Installation fitted by Mans. Van Ritschoten, Huisman When fitted 1915

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two steam dynamos, consisting of double acting compound engines, direct coupled to compound wound dynamos

Capacity of Dynamos 300 Amperes at 115 Volts, whether continuous or alternating current continuous

Where ~~is~~ Dynamo fixed in Engine room Whether single or double wire system is used double

Position of Main Switch Board in Engine room, near dynamos having switches to groups 16 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each no auxiliary switchboards, only distribution boxes in different places, each with one double pole switch and one double pole fuse for the box and double pole fuses for each lamp circuit

If fuses 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 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

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 100 lamps, 4 fans and 4 motors arranged in the following groups:

A	lights each of	candle power requiring a total current of	Amperes
B	lights each of	candle power requiring a total current of	Amperes
C	lights each of	candle power requiring a total current of	Amperes
	lights each of	candle power requiring a total current of	Amperes
E	lights each of	candle power requiring a total current of	Amperes

2 Mast head light with 1 lamps each of 32 candle power requiring a total current of 0.6 Amperes

2 Side light with 1 lamps each of 32 candle power requiring a total current of 0.6 Amperes

10 Cargo lights of 5 lamps each of 32 candle power, whether incandescent or arc lights incandescent

If arc lights, what protection is provided against fire, sparks, &c.

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

DESCRIPTION OF CABLES.

Main cable carrying	<u>60</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>2.13</u>	S.W.G. diameter,	<u>2.5</u>	square inches total sectional area
Branch cables carrying	<u>25</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>1.36</u>	S.W.G. diameter,	<u>1.6</u>	square inches total sectional area
Branch cables carrying	<u>6</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>1.06</u>	S.W.G. diameter,	<u>6</u>	square inches total sectional area
Leads to lamps carrying	<u>0.5</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>1.13</u>	S.W.G. diameter,	<u>1</u>	square inches total sectional area
Cargo light cables carrying	<u>5</u>	Amperes, comprised of	<u>35</u>	wires, each	<u>0.40</u>	S.W.G. diameter,	<u>4</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Timed copper wire, insulated with white and black vulcanised I.R., I.R. coated tape, braided cotton, Preservative compound. In engine room, stoke hold and from deck lead covered and armoured.

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

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 in teakwood casings, except in engine room, stoke hold and from deck, where they are lead covered and armoured.

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 *Teakwood casings filled with whitelead, or lead covered and armoured cables*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *galv. iron tubes or lead covered and armoured*

What special protection has been provided for the cables near boiler casings *lead covered and armoured*

What special protection has been provided for the cables in engine room *lead covered and armoured*

How are cables carried through beams *through hard wood fittings* through bulkheads, &c. *hard wood fittings*

How are cables carried through decks *brass glands, lined with teakwood*

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

If so, how are they protected *galvanised iron tubes*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *Yes*

If so, how are the lamp fittings and cable terminals specially protected *bullets with strong iron grating*

Where are the main switches and fuses for these lights fitted *outside the cargo spaces*

If in the spaces, how are they specially protected *—*

Are any switches or fuses 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 *—*

Is the installation supplied with a voltmeter *one for each dynamo* and with an amperemeter *one for each dynamo, fixed on 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 *—*

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 *—*

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 *600* 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.

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.

firma Van Rietsochten & Houwens Electrical Engineers Date *24th August '15*

COMPASSES.

Distance between dynamo or electric motors and standard compass *40'*

Distance between dynamo or electric motors and steering compass *40'*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>4</i>	<i>22'</i>	<i>24'</i>	<i>—</i>
<i>6</i>	<i>22'</i>	<i>24'</i>	<i>—</i>
<i>20</i>	<i>40'</i>	<i>40'</i>	<i>—</i>

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

The maximum deviation due to electric currents, etc., was found to be *—* degrees on *—* course in the case of the standard compass and *—* degrees on *—* course in the case of the steering compass.

Koninklijke Maatschappij „DE SCHEDEL”
Scheepsbouwen Werking
St. Jan Rijk
Builder's Signature. Date *16/10/15*

GENERAL REMARKS *Installation has been fitted in accordance with the Rules, and is satisfactory when tried and meets in my opinion the approval of the Committee.*

It is submitted that this vessel is eligible for THE RECORD. Elec. light. *J.W.D.*
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute *UE. 26 OCT. 1915*