

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No.

Port of Gothenburg Date of First Survey Dec 23 1921 Date of Last Survey March 18 1922 No. of Visits 15  
 No. in on the Iron or Steel M/S Laponia Port belonging to Stockholm  
 Reg. Book 3199 Built at Gothenburg By whom A/B Götaverken When built 1922  
 Captains Trafik AB. Grängesberg - Oxelösund Owners' Address  
 Card No. M/S 357 Electric Light Installation fitted by Nya Luth & Roséns Elektr. A/Bol. When fitted 1922.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Converter from 220 volts continuous current to 110 volts continuous current. This converter is delivered by "Allmänna Svenska Elektriska Aktiebolaget", Västerås. This motor generator is driven from the main dynamo, 3 in number, each of 50 K.W., 220 volts and 227 amperes.  
 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 " " " having switches to groups 9 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one (A) of 5 groups in the after-accommodation, one (B) of 7 gr. in the officers-accommodation, one (C) of 9 gr. in the saloon-accommodation, one (D) of 3 gr. in the fore-accommodation, one (E) of 4 gr. in the chart-room, one (F) of 12 gr. in the engine-room, one (G) of 6 gr. on the stern-mast, one (H) of 3 gr. on deck mid-ships, one (J) of 6 gr. on the fore-mast.

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 vessels 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 yes

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

Total number of lights provided for 257 arranged in the following groups:—

<u>A</u>	<u>30</u>	lights each of	<u>16-32</u>	candle power requiring a total current of	<u>6</u>	Amperes
<u>B</u>	<u>45</u>	lights each of	<u>16-25</u>	candle power requiring a total current of	<u>9</u>	Amperes
<u>C</u>	<u>49</u>	lights each of	<u>16-25</u>	candle power requiring a total current of	<u>10</u>	Amperes
<u>D</u>	<u>17</u>	lights each of	<u>16-32</u>	candle power requiring a total current of	<u>3.5</u>	Amperes
<u>E</u>	<u>4</u>	lights each of	<u>32</u>	candle power requiring a total current of	<u>4</u>	Amperes
<u>F</u>	<u>57</u>	lights each of	<u>16-100</u>	candle power requiring a total current of	<u>17</u>	Amperes
<u>G</u>	<u>22</u>	lights each of	<u>25-1000</u>	candle power requiring a total current of	<u>15</u>	Amperes
<u>H</u>	<u>11</u>	lights each of	<u>25-1000</u>	candle power requiring a total current of	<u>7.5</u>	Amperes
<u>J</u>	<u>22</u>	lights each of	<u>25-1000</u>	candle power requiring a total current of	<u>15</u>	Amperes
<u>2</u>	Mast head light with <u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes	
<u>2</u>	Side light with <u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes	
<u>10</u>	Cargo lights of	<u>125</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>		
<u>5</u>		<u>1000</u>				

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

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

## DESCRIPTION OF CABLES.

Main cable carrying	<u>87</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>2.17</u>	S.W.G. diameter,	<u>70 mm<sup>2</sup></u>	square inches total sectional area
Branch cables carrying	<u>9</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>0.86</u>	S.W.G. diameter,	<u>4 "</u>	square inches total sectional area
Branch cables carrying	<u>4</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>0.67</u>	S.W.G. diameter,	<u>2.5"</u>	square inches total sectional area
Leads to lamps carrying	<u>2</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>0.52</u>	S.W.G. diameter,	<u>1.5"</u>	square inches total sectional area
Cargo light cables carrying	<u>1.5</u>	Amperes, comprised of	<u>51</u>	wires, each	<u>0.25</u>	S.W.G. diameter,	<u>2.5"</u>	square inches total sectional area
			<u>30</u>	wires, each	<u>0.25</u>	S.W.G. diameter,	<u>1.5"</u>	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables are insulated with vulcanized rubber, lead armour covered with rubber tape. Where necessary rubber tape and steel armour is used.

How are the joints in cables, how made, insulated, and protected by porcelain boxes and, where required, by watertight metal boxes.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 by steel clips, screwed fast and where required protected iron pipes.



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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 protected by lead and steel armour.  
What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead and steel armoured  
What special protection has been provided for the cables near boiler casings lead and steel armoured  
What special protection has been provided for the cables in engine room lead and steel armoured  
How are cables carried through beams cables carried through beams and through bulkheads, &c. are steel armoured  
How are cables carried through decks through iron pipes  
Are any cables run through coal bunkers no or cargo spaces yes or spaces which may be used for carrying cargo, stores, or baggage yes  
If so, how are they protected steel armoured and iron pipes where required  
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 fuses for these lights fitted  
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 yes, and with an amperemeter yes, 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 1000 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.

NYA LUTH & ROSÉNS ELEKTRISKA AKTIEBOLAG

Herman Duse

Electrical Engineers

Date 23/2 1922.

COMPASSES.

Brorhusterson

Distance between dynamo or electric motors and standard compass Engine room to flying bridge

Distance between dynamo or electric motors and steering compass Engine room to flying bridge

The nearest cables to the compasses are as follows:—

Table with 4 columns: Cable description, Amperes, feet from standard compass, feet from steering compass. Three rows of data.

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.

Abicbolaget Götaverken  
Ewert A. Hedew

Builder's Signature.

Date 1 April 1922

GENERAL REMARKS. This electric installation has been fitted on board under our inspection and has been tested and found satisfactory. All the Rule requirements have been complied with.

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

Elec. Light

7/4/22

W. Wilson Abunden

Surveyor to Lloyd's Register of Shipping.

For 618,80. Applied for March 17<sup>th</sup> 1922

Committee's Minute FRI 21 APR 1922

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN

2.11.20.—Transfer.



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