

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5898.

Port of **Gothenburg** Date of First Survey **Aug 16** Date of Last Survey **Oct 25** No. of Visits **12**  
 No. in on the Iron or Steel **Pajala** Port belonging to **STOCKHOLM**  
 Reg. Book No. **90262** Built at **Gothenburg** By whom **A/B Götaverken** When built **1924**  
 Owners **Trafik A/B Grängesberg-Oxelösund** Owners' Address **Stockholm**  
 Yard No. **M/S 362** Electric Light Installation fitted by **Luth & Roséns Elektriska A/Bol.** When fitted **1924**

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Converter from 220 volts continuous, to 110 volts continuous current. This converter is delivered by Thomas Thrige, Odense, Danmark. *This motor generator is driven from the main dynamo, 3 in number, each of 50 kw. 220 volts, 228 amperes.*

Capacity of Dynamo **125** 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 **8** of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each **one (A) of 6 gr. in the after-accommodation, one (B) of 6 gr. on stern-mast, one (C) of 8 gr. in the officers-accommodation and one (D) of 8 gr. in the saloon-accommodation, one (E) of 4 gr. in the chartroom, one (F) of 4 gr. on deck midships, one (G) of 6 gr. on fore-mast, one (H) of 2 gr. in fore-castle, one (I) of 12 gr. in the engine-room.**

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 **yes**

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

Total number of lights provided for **253** arranged in the following groups:—

<b>A</b>	<b>32</b>	lights each of <b>16-25</b>	candle power requiring a total current of <b>8</b>	<b>Amperes</b>
<b>B</b>	<b>22</b>	lights each of <b>25-1000</b>	<b>15</b>	<b>Amperes</b>
<b>C</b>	<b>44</b>	lights each of <b>16-25</b>	<b>11</b>	<b>Amperes</b>
<b>D</b>	<b>32</b>	lights each of <b>"</b>	<b>6</b>	<b>Amperes</b>
<b>E</b>	<b>4</b>	lights each of <b>32</b>	<b>4</b>	<b>Amperes</b>
<b>F</b>	<b>16</b>	lights each of <b>25-1000</b>	<b>7.5</b>	<b>Amperes</b>
<b>G</b>	<b>22</b>	lights each of <b>"</b>	<b>5.5</b>	<b>Amperes</b>
<b>H</b>	<b>13</b>	lights each of <b>16-25</b>	<b>3</b>	<b>Amperes</b>
<b>I</b>	<b>68</b>	lights each of <b>16-100</b>	<b>19</b>	<b>Amperes</b>
<b>2</b>	Mast head light with <b>1</b> lamps each of <b>32</b>	candle power requiring a total current of <b>2</b>	<b>2</b>	<b>Amperes</b>
<b>2</b>	Side light with <b>1</b> lamps each of <b>32</b>	candle power requiring a total current of <b>2</b>	<b>2</b>	<b>Amperes</b>
<b>10</b>	Cargo lights of <b>125</b>	candle power, whether incandescent or arc lights <b>incandescent</b>	<b>5</b>	<b>Amperes</b>
<b>5</b>	" " " " <b>1000</b>		<b>5</b>	<b>Amperes</b>

If 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 **79** Amperes, comprised of **19** wires, each **2,17 mm** S.W.G. diameter, **70 mm<sup>2</sup>** square inches total sectional area  
 Branch cables carrying **15** Amperes, comprised of **7** wires, each **1,35 "** S.W.G. diameter, **10 "** square inches total sectional area  
 Branch cables carrying **10** Amperes, comprised of **7** wires, each **1,05 "** S.W.G. diameter, **6 "** square inches total sectional area  
 Leads to lamps carrying **2** Amperes, comprised of **7** wires, each **0,52 "** S.W.G. diameter, **1,5 "** square inches total sectional area  
 Cargo light cables carrying **4,5** Amperes, comprised of **7** wires, each **0,67 "** S.W.G. diameter, **2,5 "** square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

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

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 by 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 **- -**

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

How are cables carried through beams **armouring as above ✓** through bulkheads, &c. **by watertight boxes ✓**

How are cables carried through decks **through ironpipes ✓**

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 ironpipes 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 **kilometer 15° Celsius** ~~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. **1000**

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.

**LUTH & ROSENG ELEKTRISKA AKTIEBOLAGET** Electrical Engineers Date **22/10 1924.**

**COMPASSES.** *Herman Duss* *Bror Christeman*

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:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying	Amperes	feet from standard compass	feet from steering compass

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.

**AKTIEBOLAGET GÖTAVERKEN** Builder's Signature. Date **31<sup>st</sup> Oct. 1924.**

**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**

*[Signature]* Surveyor to Lloyd's Register of Shipping.

*Fee: Kr. 618.80 Applied for 31<sup>st</sup> Oct. 1924 Paid 24/11/24 6/11/24*

**FRI. 7 NOV 1924**

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

