

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 780.

Port of *Malmö* Date of First Survey *2<sup>nd</sup> Feb. 1926* Date of Last Survey *1<sup>st</sup> Feb. 1927* No. of Visits *2*  
 Name of Vessel *Gertrud Bratt* Port belonging to *Göteborg*  
 Built at *Malmö* By whom *Hockmms Wk. Verkstads AB* When built *1927*  
 Owners *Angfartings AB Östersjön* Owners' Address *Göteborg*  
 Yard No. *151* Electric Light Installation fitted by *Hockmms Wk. Verkstads AB* When fitted *1927*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Vertical steam engine direct connected to compound wound continuous current generator.*

Capacity of Dynamo *47* Amperes at *110* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Engine room* Whether single or double wire system is used *Double*

Position of Main Switch Board *Engine room* having switches to groups *12* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *A. chart house 5 switches, B. saloon passage 6 switches, C. accommodations amidship 5 switches, D. fore-castle 4 switches, E. accommodations aft 5 switches.*

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 *No*

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

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 *wire fuses not used.*

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

Total number of lights provided for *110* arranged in the following groups:—

A. lantern lights as below	lights each of	<i>32</i>	candle power requiring a total current of	<i>4.5</i>	Amperes
B	lights each of	<i>25</i>	candle power requiring a total current of	<i>6.71</i>	Amperes
C	lights each of	<i>25</i>	candle power requiring a total current of	<i>8.36</i>	Amperes
D	lights each of	<i>25</i>	candle power requiring a total current of	<i>1.87</i>	Amperes
E	lights each of	<i>25</i>	candle power requiring a total current of	<i>3.5</i>	Amperes
<i>29 engine room</i>				<i>13.65</i>	
<i>2 Mast head light with</i>	1 lamp each of	<i>32</i>	candle power requiring a total current of	<i>2.0</i>	Amperes
<i>2 Side light with</i>	1 lamp each of	<i>32</i>	candle power requiring a total current of	<i>2.0</i>	Amperes
<i>8</i>	Cargo lights of 6 lamps each of	<i>32</i>	candle power, whether incandescent or are lights	<i>incandescent.</i>	

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

Where are the switches controlling the masthead and side lights placed *Navigation room entrance.*

## DESCRIPTION OF CABLES.

Main cable carrying	<i>125</i> Amperes, comprised of	<i>7</i> wires, each	S.W.G. diameter,	<i>35</i> square <i>mm</i> total sectional area
Branch cables carrying	<i>40</i> Amperes, comprised of	<i>7</i> wires, each	S.W.G. diameter,	<i>10</i> square <i>mm</i> total sectional area
Branch cables carrying	Amperes, comprised of	wires, each	S.W.G. diameter,	square <i>mm</i> total sectional area
Leads to lamps carrying	<i>24</i> Amperes, comprised of	<i>7</i> wires, each	S.W.G. diameter,	<i>6</i> square <i>mm</i> total sectional area
Cargo light cables carrying	<i>24</i> Amperes, comprised of	<i>7</i> wires, each	S.W.G. diameter,	<i>6</i> square <i>mm</i> total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Vulcanized india rubber, tape, lead armouring and where required tape and steel wire armouring.*

Joints in cables, how made, insulated, and protected *In connection with lead armouring metal joints in porcelain boxes. In connection with steel wire armouring watertight iron or metal joint 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 *Screw clips, protection and armouring as above. Where required iron girders.*





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 *Lead armouring and steel wire armouring*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *No such places*

What special protection has been provided for the cables near boiler casings *Lead armouring & steel wire armouring*

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

How are cables carried through beams *protected by steel wire armouring* through bulkheads, &c. *watertight bolts*

How are cables carried through decks *galvanized iron tubes and armoured cables*

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 *Lead armouring and steel wire armouring*

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 main switch board.

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 *800* 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.

KOCKUMS MEKANISKA VERKSTADS

COMPASSES.

*E. H. T.* Electrical Engineers Date *18th Febr. 1927*

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

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

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>

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 *✓* degrees on *✓* course in the case of the standard compass and *✓* degrees on *✓* course in the case of the steering compass.

KOCKUMS MEKANISKA VERKSTADS

*E. H. T.* Builder's Signature. Date *18th Febr. 1927*

GENERAL REMARKS. *This electric lighting installation is in my opinion in accordance with the requirements of the Rules, workmanship and material being good and it is recommended that a record of "Elec. light" be made in the Register Book in the case of this vessel.*

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

*Fee* *Kr. 91.00. Paid 21/3/27* *21/2/27* *Qujörger* Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 25 FEB 1927*

*Elec. Light*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.