

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 449.

Port of Malmö Date of First Survey 5th Dec. 1922 Date of Last Survey 19th March 1923 No. of Visits 5
 No. in Reg. Book 80802 on the ~~Iron~~ Steel Ship "SONJA" Port belonging to Helsingborg
 Built at Växholm, completed at Helsingborg by whom A. B. Vaxholmsvarvet + Helsingborgs Vaxholm When built 1923
 Owners A. B. Transmarin Owners' Address Helsingborg
 Yard No. Helsingborg 44 Electric Light Installation fitted by Aktiebolaget Hallberg & Co, Helsingborg When fitted 1923

DESCRIPTION OF DYNAMO, ENGINE, ETC.

The dynamo is open shaft mounted and direct coupled to de Laval steam turbine.

Capacity of Dynamo 60 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 in the engine room having switches to groups 5 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each one (A) 5 switches in saloon accommodations, one (B) 4 switches in accommodations amidships, one (C) 3 switches in accommodations aft, one (D) 6 switches in chart house, one (E) 4 switches in 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 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 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 112 arranged in the following groups:—

A	<u>38</u>	lights each of	<u>25</u>	candle power requiring a total current of	<u>9.5</u>	Amperes	
B	<u>28</u>	lights each of	<u>25</u>	candle power requiring a total current of	<u>7</u>	Amperes	
C	<u>21</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>3.5</u>	Amperes	
D	<u>6</u>	lights each of	<u>32</u>	candle power requiring a total current of	<u>1.9</u>	Amperes	
E	<u>19</u>	lights each of	<u>25</u>	candle power requiring a total current of	<u>4.7</u>	Amperes	
<u>2</u>	Mast head light with	<u>1</u>	lamp each of	<u>32</u>	candle power requiring a total current of	<u>1</u>	Amperes
<u>2</u>	Side light with	<u>1</u>	lamp each of	<u>32</u>	candle power requiring a total current of	<u>1</u>	Amperes
<u>4 x 5</u>	Cargo lights of		<u>16</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>		

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

Where are the switches controlling the masthead and side lights placed Chart house.

DESCRIPTION OF CABLES.

Main cable carrying	<u>100</u>	Amperes, comprised of	<u>28</u>	wires, each	S.W.G. diameter,	<u>50</u>	<u>sq. in.</u> square inches total sectional area
Branch cables carrying	<u>35</u>	Amperes, comprised of	<u>7</u>	wires, each	S.W.G. diameter,	<u>6</u>	<u>sq. in.</u> square inches total sectional area
Branch cables carrying	<u>10</u>	Amperes, comprised of	<u>1</u>	wires, each	S.W.G. diameter,	<u>1.5</u>	<u>sq. in.</u> square inches total sectional area
Leads to lamps carrying	<u>10</u>	Amperes, comprised of	<u>1</u>	wires, each	S.W.G. diameter,	<u>1.5</u>	<u>sq. in.</u> square inches total sectional area
Cargo light cables carrying	<u>10</u>	Amperes, comprised of	<u>36</u>	wires, each	S.W.G. diameter,	<u>1.5</u>	<u>sq. in.</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber, lead armouring covered with rubber tape and where required steel wire armouring and iron pipes.

Joints in cables, how made, insulated, and protected soldered, insulated with india-rubber, in watertight 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 armouring and iron pipes where required.

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *yes, except in holds when vessel loaded.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *lead and steel wire armouring. Iron pipes where required.*

What special protection has been provided for the cables near gulleys or oil lamps or other sources of heat *do. do.*

What special protection has been provided for the cables near boiler casings *do. do.*

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

How are cables carried through beams *protected by armouring and in holds iron pipes* through bulkheads, &c. *iron pipes and watertight glands*

How are cables carried through decks *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 *iron pipes*

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 *engine room*

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.

Aktiefolaget Hallberg & Co

Electrical Engineers

Date *19/3 1923*

COMPASSES.

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
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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.

HELSINGBORGSKA WAREFABRIK

Builder's Signature.

Date

19 June 1923

GENERAL REMARKS.

The electric installation on board this vessel is in my opinion in accordance with the plan approved of by the Copenhagen Office on the 29th Jan. 1923, and as per rule. Workmanship good. It is recommended that the record of "Elec. light" be made in the Register Book for this vessel.

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

Quirjensman

19/4/23, Surveyor to Lloyd's Register of Shipping.

Free: Kronor 118:30

Committee's Minute

TUE. 24 APR. 1923

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 7, 10.—Transfer.



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