

TUE APR. 17 1923

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. Bookon the ~~Iron~~ Steel*Ship "SONJA"*Port belonging to *Helsingborg*

80802.

Built at *Växholm*, completed at *Helsingborg*By whom *A.B. Vaxholmsvarvet & Helsingborgs Verk AB*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 shutwounded 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 amidship, 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 | <i>38</i> | lights each of | <i>25</i> | candle power requiring a total current of | <i>9.5</i> | Amperes |
| B | <i>28</i> | lights each of | <i>25</i> | candle power requiring a total current of | <i>7</i> | Amperes |
| C | <i>21</i> | lights each of | <i>16</i> | candle power requiring a total current of | <i>3.5</i> | Amperes |
| D | <i>6</i> | lights each of | <i>32</i> | candle power requiring a total current of | <i>1.9</i> | Amperes |
| E | <i>19</i> | lights each of | <i>25</i> | candle power requiring a total current of | <i>4.7</i> | Amperes |
| <i>2</i> | Mast head light with <i>1</i> lamp each of <i>32</i> | | | candle power requiring a total current of | <i>1</i> | Amperes |
| <i>2</i> | Side light with <i>1</i> lamp each of <i>32</i> | | | candle power requiring a total current of | <i>1</i> | Amperes |
| | <i>4 x 5</i> | Cargo lights of <i>16</i> | | candle power, whether incandescent or arc 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 Chart house.*

DESCRIPTION OF CABLES.

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

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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.

Aktiebolaget Hallberg & Co

Electrical Engineers

Date *19/3 1923*

COMPASSES.

Distance between dynamo or electric motors and standard compass

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.

HELSINGBORGSKA WARE AKTIEBOLAG

Builder's Signature.

Date

19 April 1923

GENERAL REMARKS.

The electric installation on board this vessel is in my opinion in accordance with the plan approved of by the Gøttenburg 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

Fre: Kronor 118:30

Committee's Minute

TUE. 24 APR. 1923

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

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.