

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 6217.

Port of *Copenhagen* Date of First Survey *13th January* Date of Last Survey *20th Sept. 1921* No. of Visits *17*
 No. in on the *Iron or Steel* *Twin Sc. 3rd St. Sv. JAVA.* Port belonging to *Copenhagen*
 Reg. Book *19838* Built at *Nakskov.* By whom *A/S Nakskov Skibsværft.* When built *1921.*
 Owners *Mts. Det Østasiatiske Kompagni.* Owners' Address *Copenhagen.*
 Yard No. *3.* Electric Light Installation fitted by *A/S Nakskov Skibsværft.* When fitted *1921.*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One compound wound dynamo driven by a shunt wound motor taking current from one of the 3 compound wound dynamos each worked by an auxiliary Diesel Oil engine.

Capacity of Dynamo *180* Amperes at *115* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *in the motor room* Whether single or double wire system is used *double wire.*

Position of Main Switch Board *in the motor room* having switches to groups *A, B, C, D, E, F, G, H.* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *A: Officers' accommodations amidships, 9 groups; B: Chart room, 7 groups; C: Engineers' accommodations 6 groups; E: Accommodations aft, 3 groups; F: Forecastle bulkhead, 9 groups; G: Deck light aft, 8 groups; H: in the forecabin, Search light.*

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 *Edison's tools used.*

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

Total number of lights provided for *202. incl. cargo lights.* arranged in the following groups:—

A	<i>70</i>	lights each of <i>10-16-25</i>	candle power requiring a total current of	<i>31.</i>	Amperes.
B	<i>12</i>	lights each of <i>10-25-32</i>	candle power requiring a total current of	<i>6.</i>	Amperes
C	<i>44</i>	lights each of <i>10-16-25-100</i>	candle power requiring a total current of	<i>20</i>	Amperes
D	<i>53</i>	" " " <i>10-16-25-100</i>	" " " " " " " "	<i>30</i>	"
E	<i>23</i>	lights each of <i>10-16</i>	candle power requiring a total current of	<i>12</i>	Amperes
F	<i>5 cargo lights and 3 1/2 Watts lamps each of 100</i>	" " " " " " " "	" " " " " " " "	<i>22</i>	"
G	<i>4</i>	lights each of " " " "	candle power requiring a total current of	<i>20</i>	Amperes
2	Mast head light with <i>1</i> lamps each of <i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes	
2	Side light with <i>1</i> lamps each of <i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes	
8	Cargo lights of <i>100</i>	candle power, whether incandescent or arc lights <i>incandescent</i>			
6	1/2 Watts lamps each of <i>1000</i>				

If arc lights, what protection is provided against fire, sparks, &c. *No arc light - except the Suez Canal projector, well protected in an iron case.*

Where are the switches controlling the masthead and side lights placed *in the Chart room.*

DESCRIPTION OF CABLES.

Main cable carrying	<i>140</i>	Amperes, comprised of	<i>34</i>	wires, each	<i>2.1</i>	S.W.G. diameter,	<i>128</i>	square inches total sectional area
Branch cables carrying	<i>6-10</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>0.9</i>	S.W.G. diameter,	<i>4.5</i>	square inches total sectional area
" " "	<i>25</i>	" " " " " "	<i>7</i>	" " " "	<i>1.3</i>	" " " "	<i>9.4</i>	" " " "
Branch cables carrying	<i>25-30</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>1.6</i>	S.W.G. diameter,	<i>14.5</i>	square inches total sectional area
Leads to lamps carrying	<i>6</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>1.38</i>	S.W.G. diameter,	<i>1.5</i>	square inches total sectional area
Cargo light cables carrying	<i>6</i>	Amperes, comprised of flexible wires, each	<i>✓</i>	S.W.G. diameter,	<i>2.5</i>	square inches total sectional area		

DESCRIPTION OF INSULATION, PROTECTION, ETC.

The copper wires are tinned and insulated with pine and vulcanized india rubber, taped and lead covered or 2) taped and lead covered and then taped and armoured with galvanized steel wire or with two layers of steel tape and braided.

Joints in cables, how made, insulated, and protected *In watertight junction boxes with screw connections and covers.*

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 *Tinned by screwed clips and where necessary protected by iron casings, iron tubes or strong wood casings.*

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yps.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *The cables are armoured and where necessary protected by iron tubes or casings.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *armoured cables used.*

What special protection has been provided for the cables near boiler casings *No boiler casings.*

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

How are cables carried through beams *armoured cables used* through bulkheads, &c. *the watertight secured glands.*

How are cables carried through decks *through iron tubes.*

Are any cables run through coal bunkers *No* or cargo spaces *Yps.* or spaces which may be used for carrying cargo, stores, or baggage *Yps.*

If so, how are they protected *armoured cables used, where necessary protected by iron casings*

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 bunkers.*

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 *Yps.* and with an amperemeter *Yps.* fixed on the main 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 *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.

Is NAKSKOV SKIBSVERFT

Thomsen

Electrical Engineers

Date *10/Oct. 1921.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 40 feet.*

Distance between dynamo or electric motors and steering compass *about 32 feet.*

The nearest cables to the compasses are as follows:—

Cable	Amperes	Distance from standard compass	Distance from steering compass
A cable carrying <i>0.4</i>	<i>0.4</i>	<i>to the lamp in the</i>	<i>and in the</i>
A cable carrying <i>6</i>	<i>8</i>	<i>feet from standard compass</i>	<i>feet from steering compass</i>
A cable carrying <i>-</i>	<i>-</i>	<i>feet from standard compass</i>	<i>feet from steering compass</i>

Have the compasses been adjusted with and without the electric installation at work at full power *Yps.*

The maximum deviation due to electric currents, etc., was found to be *none* degrees on *all* courses in the case of the standard compass and *none* degrees on *all* courses in the case of the steering compass.

Is NAKSKOV SKIBSVERFT

Thomsen

Builder's Signature.

Date *10/Oct. 1921.*

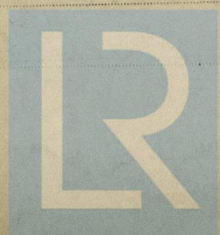
GENERAL REMARKS.

The whole electric lighting installations as above described and the electric power installations are fitted in accordance with the Rules, the approved plans and letters dated the 2nd and 25th February 1921. The workmanship and the material used are of good description throughout and the whole installation has been tested under full working power and found satisfactory. Recommend the vessel to have notation of "ELECTRIC LIGHT" in the Register Book.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 4 NOV. 1921



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.