

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6244.

Port of *Copenhagen* Date of First Survey *12th October* Date of Last Survey *7th Nov. 1921* No. of Visits *4*
 No. in Reg. Book *39833* on the ~~Iron or Steel~~ *Sc. ss. Virginia* (yard No. *5*) Port belonging to *Copenhagen*
 Built at *Nakskov* By whom *Nakskov Skibsværft* When built *1921*
 Owners *Det Ostasiatiska Kompagni* Owners' Address *Copenhagen*
 Yard No. *5* Electric Light Installation fitted by *Nakskov Skibsværft* When fitted *1921*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One compound wound dynamo driven by a 2 cyl. auxiliary Diesel engine.

Capacity of Dynamo *95* Amperes at *220* 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* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *under the fore-castle deck, 5 switches for cargo lights, windlass and 1 cargo winch; B: in the galley, 4 switches for cargo lights and 1 cargo winch. The switches for groups C and D are situated on the main switch board.*

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 *9 + 6 cargo lights* arranged in the following groups:—

A	3	cargo	lights each of	6 x 16	candle power requiring a total current of	5	Amperes
B	3	cargo	lights each of	6 x 16	candle power requiring a total current of	5	Amperes
C	5		lights each of	18 - 100	candle power requiring a total current of	3	Amperes
D	4		lights each of	25 - 100	candle power requiring a total current of	2.5	Amperes
E	✓		lights each of	✓	candle power requiring a total current of	✓	Amperes
✓		Must head light with	✓	lamps each of	✓	✓	Amperes
✓		Side light with	✓	lamps each of	✓	✓	Amperes
	6	Cargo lights of		6 x 16	candle power, whether incandescent or are lights	incandescent	

If arc lights, what protection is provided against fire, sparks, &c. *No arc lights.*

Where are the switches controlling the masthead and side lights placed *No mast head or side lights.*

DESCRIPTION OF CABLES.

Main cable carrying	95	Amperes, comprised of	19	wires, each	1.83	S.W.G. diameter,	50	square inches total sectional area
Branch cables carrying	65	Amperes, comprised of	19	wires, each	1.83	S.W.G. diameter,	50	square inches total sectional area
Branch cables carrying	60	Amperes, comprised of	4	wires, each	2.13	S.W.G. diameter,	25	square inches total sectional area
Leads to lamps carrying	3	Amperes, comprised of	1	wires, each	1.38	S.W.G. diameter,	1.5	square inches total sectional area
Cargo light cables carrying	5	Amperes, comprised of	flexible	wires, each	-	S.W.G. diameter,	2.5	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

The copper wires are tinned and insulated with pure and vulcanized india rubber, taped and test covered, then taped and armoured with galvanized steel wire or with 2 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 *Secured by screwed clips and where necessary protected by wood casings or iron tubes.*



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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.
The cables are lead covered and armoured.

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 boilers.*

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. *through watertight glands.*

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

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 *armoured cables protected by wood 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 *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 *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.

AKTIESELSKABET
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COMPASSES.

Distance between dynamo or electric motors and standard compass *30 feet.*

Distance between dynamo or electric motors and steering compass *30*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>2</i>	<i>20</i>	<i>✓</i>	<i>✓</i>
<i>50</i>	<i>✓</i>	<i>14</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 *0* degrees on *all* course in the case of the standard compass and *0* degrees on *all* course in the case of the steering compass.

AKTIESELSKABET
NAKSKOV SKIBSVÆRFT

GENERAL REMARKS. *The Electric Light and Power Installation as above described has been fitted in accordance with the Rule requirements the approved plan and letter 2 dated 25/6 1921. The material used being of good description and the workmanship to our satisfaction. Recommend the vessel to have notation of "ELECTRIC LIGHT" in the Register Book.*

It is submitted that

THE FEE HAS BEEN CHARGED ON THE MACHINERY REPORT.

Committee's Minute *FRI. 2 DEC. 1921*

Elect. Light. 23/11/21 *A. G. [Signature]* *W. [Signature]*
Surveyor to Lloyd's Register of Shipping.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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