

REPORT ON ELECTRIC LIGHTING INSTALLATION. *No. 248.*

Port of *Malmö* Date of First Survey *30th Dec. 20* Date of Last Survey *11th Jan. 21* No. of Visits *5*
No. in Reg. Book *77433* on the ~~Iron or~~ Steel *Ship "Atlantic"* Port belonging to *Copenhagen*
Built at *Handskrona* By whom *A. B. Øresundsvarvet* When built *1921-1mo*
Owners *A/S Det Oversøiske Kompagni* Owners' Address *Copenhagen*
Yard No. *18* Electric Light Installation fitted by *Nic. Schultz* *Helsingør* When fitted *1921*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

De Laval's turbine. Compound wound dynamo

Capacity of Dynamo 270 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 wire

Position of Main Switch Board Engine room having switches to groups 13 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each A (workshop) 6 groups, B (pantry) 5 groups, C (pantry) 5 groups, D (crew spaces aft) 4 groups, E (engine & boiler room) 3 gr, F (chart house) 5 gr.

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 yes

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

Total number of lights provided for 186 arranged in the following groups :-

A 46 (+24 cargo lights)	lights each of 16-25	candle power requiring a total current of 18	Amperes
B 46 (+12 " ")	lights each of 16-25	candle power requiring a total current of 15	Amperes
C 17 (+24 " ")	lights each of 16-25	candle power requiring a total current of 11	Amperes
D 33	lights each of 16	candle power requiring a total current of 8	Amperes
E 34	lights each of 25	candle power requiring a total current of 9	Amperes
{ 2 Mast head light with 2 Stern light 2 Side light with	1 lamps each of 25	candle power requiring a total current of	} 1.5 Amperes
	" " 25		
	lamps each of 25	candle power requiring a total current of	
(10 x 6) = 60	Cargo lights as above of 25	candle power, whether incandescent or arc lights	incandescent

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.

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Main cable carrying	270	Amperes, comprised of	61	wires, each	2.25 ^{mm} S.W.G. diameter,	240 ^{mm} square inches total sectional area
Branch cables carrying	18-11	Amperes, comprised of	7	wires, each	1.05 ^{mm} S.W.G. diameter,	6 ^{mm} square inches total sectional area
Branch cables carrying	9-8	Amperes, comprised of	7	wires, each	0.85 ^{mm} S.W.G. diameter,	4 ^{mm} square inches total sectional area
Leads to lamps carrying	1.1	Amperes, comprised of	7	wires, each	0.52 ^{mm} S.W.G. diameter,	1.5 ^{mm} square inches total sectional area
Cargo light cables carrying	3	Amperes, comprised of	7	wires, each	0.52 ^{mm} S.W.G. diameter,	1.5 ^{mm} square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

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

Joints in cables, how made, insulated, and protected water tight iron 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. Secured by clips, protected by iron pipes, steel casings or U bars.

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 and steel wire armouring protected by iron pipes where required.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *lead & steel wire armouring.*

What special protection has been provided for the cables near boiler casings " " " " "

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

How are cables carried through beams *Cables fitted under beams in iron casings through bulkheads, &c. water tight glands.*

How are cables carried through decks *galvanized 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 *no*.

If so, how are they protected *by iron casings or L bars*

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 *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 *700* 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.

Nic. Selmer Electrical Engineers Date *7/1 1921*

COMPASSES.

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

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.

AKTIEBOLAGET ÖRESUNDSVARVET

Nic. Selmer Builder's Signature. Date *7/1 1921.*

GENERAL REMARKS.

This electric lighting installation is in my opinion in accordance with the requirements of the Rules, workmanship and materials being good, and it is recommended that the 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

Fees Rn. 175/-

Recd 12/2/21

Qujergensen Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.