

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6182.

Port of Copenhagen Date of First Survey 4<sup>th</sup> June Date of Last Survey 20<sup>th</sup> July 21 No. of Visits 6  
 on the ~~Iron~~ Steel S.S. "THORS DAL" (YARD No. 19) Port belonging to Christiania  
 No. in Reg. Book 33000 Built at Salborg By whom P. B. Gühr's Maskin og Skibsbyggeri When built 1921  
 Owners Melsson & Melsson Owners' Address Nansen p. Larvik  
 Yard No. 19 Electric Light Installation fitted by P. B. Gühr, Salborg When fitted 1921

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*A compound wound dynamo directly coupled to a vertical single cylinder steam engine.*

Capacity of Dynamo 70 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 A, B, C, D, E, F, H of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each A: Crewspace in poop, 2 switches; B: crewspace in forecabin, 2 switches; C: stairway passage to saloon, 3 switches;

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 - 150 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 111 arranged in the following groups:—

A	8 + 2 cargo lights each of	16	candle power requiring a total current of	3.1	Amperes
B	12 + 2 " lights each of	16	candle power requiring a total current of	3.8	Amperes
C	31 + 9 " lights each of	16-25-32	candle power requiring a total current of	5.2	Amperes
D	ENGINE ROOM - TUNNEL, 13 lights each of	16	candle power requiring a total current of	2.0	Amperes
E	BOILER ROOM, 13 lights each of	16	candle power requiring a total current of	2.0	Amperes
F	COMPASSES - TELEGRAPH 3 " " " "	16	" " " " " " " "	0.5	"
	2 Mast head light with 2 lamps each of	32	candle power requiring a total current of	0.6	Amperes
G	2 Side light with 2 lamps each of	25	candle power requiring a total current of	0.5	Amperes
	1 STERN " " " "	16	" " " " " " " "	0.2	"
	4 Cargo lights of	6 x 16	candle power, whether incandescent or arc lights	<u>incandescent.</u>	
H	EMERGENCY LIGHT 2 " " " "	16	" " " " " " " "		

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 in the chart room

## DESCRIPTION OF CABLES.

Main cable carrying	30 Amperes, comprised of	21 wires, each	1.7 mm S.W.G. diameter,	48 square inches total sectional area
Branch cables carrying	5.2 Amperes, comprised of	7 wires, each	1.35 S.W.G. diameter,	10 square inches total sectional area
Branch cables carrying	0.5 Amperes, comprised of	1 wires, each	1.38 S.W.G. diameter,	1.5 square inches total sectional area
Leads to lamps carrying	0.5 Amperes, comprised of	1 wires, each	1.38 S.W.G. diameter,	1.5 square inches total sectional area
Cargo light cables carrying	1 Amperes, comprised of	48 wires, each	0.2 S.W.G. diameter,	1.5 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*The copper wires are insulated with paper, lead covered and braided or taped and armoured with galvanized steel wire or two layers of steel tape and braided.*

Joints in cables, how made, insulated, and protected No joints in cables.

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 led through galvanized 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 with steel wire, where necessary they are led through galvanized iron tubes.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *No cables near galleys etc.*

What special protection has been provided for the cables near boiler casings *Let through iron tubes.*

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

How are cables carried through beams *armoured cables thro' iron tubes or lead* through bulkheads, &c. *watertight secured 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 *✓*

If so, how are they protected *armoured cables in iron tubes.*

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 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 *2000* 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.

*P. PH. STUHR* MASKIN OG SKIBSBYGGERI  
*P. Ph. Stuhr* Electrical Engineers Date *26/8 21.*

**COMPASSES.**

Distance between ~~dynamo~~ or electric motors and standard compass *@ 12'*

Distance between ~~dynamo~~ or electric motors and steering compass *@ 12'*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>15</i>	Amperes	<i>16</i>	feet from standard compass	<i>12</i>	feet from steering compass
A cable carrying	<i>3</i>	Amperes	<i>11</i>	feet from standard compass	<i>8</i>	feet from steering compass
A cable carrying	<i>0.15</i>	Amperes	<i>to lamp in</i>	feet from standard compass	<i>and to lamp in</i>	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 *0* degrees on *all* courses in the case of the standard compass and *0* degrees on *all* courses in the case of the steering compass.

*P. PH. STUHR* MASKIN OG SKIBSBYGGERI Builder's Signature. Date *26/8 21.*

**GENERAL REMARKS.** *The Electric Lighting Installation as above described is in accordance with the Rules requirements, the apparatus plain and letters & dated 2/12 20, the material and workmanship being of good description. On the trial trip the whole installation was tried under full working power and found to work satisfactorily.*

*Recommend the vessel to have notation of "ELECTRIC LIGHT" in the Register Book.*  
*This vessel is eligible for THE REDUCTION of light toll. 7/9/21.*  
*See No. 180.951*  
*FRI. SEP. 9 1921*

*A. G. J. J. J.* Surveyors to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

