

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6055.

Port of Copenhagen Date of First Survey 11th Feb. 1920 Date of Last Survey 30-12-1920 No. of Visits 4
 No. in 68022 on the Iron or Steel S. S. "ORNEBORG" Port belonging to Copenhagen
 Reg. Book 68022 Built at Rotterdam By whom Wilson's Engineering & Shipway Co. When built 1919
 Owners Mrs. Danneberg's Selskabet, Dannebrog Owners' Address Mrs. C. H. Hansen, Toldbodvej 15 Copenhagen
 Yard No. ✓ Electric Light Installation fitted by Mrs. Burmeister & Wain's Maskin- & Selskabet, Copenhagen When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

A compound wound Dynamo, directly coupled to a vertical single cylinder steam engine

Capacity of Dynamo 68 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed In Engine room Whether single or double wire system is used double wire

Position of Main Switch Board In Engine room having switches to groups telegraph room (on bridge of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each A in telegraph room, 3 switches (wireless) B in telegraph room distribution board, 5 switches + 1 spare do to 5 groups of lights &c., C in chart room 7 switches, D in accommodation amid-ship No. side, 3 switches, E in crew space aft. 1 switch, F in engine room, 4 switches + 1 spare do (on 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 Various tools used.

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

Total number of lights provided for 141 arranged in the following groups:—

Group	Description	Number of lights	Each of	Candle power	Requiring a total current of	Amperes
A	crew space forward	8	10	25	2,5	Amperes
B	2 lamps + 1 cargo light	11	10	16	6,6	Amperes
C	navigation lamps	76	10	16	2,0	Amperes
D	40 lamps + 6 cargo lights	21	10	16	5,7	Amperes
E	15 lamps + 1 cargo light	22	10-16-25	3 of 100	8,0	" "
F	2 Mast head light with 1 lamp each	2	32		2,1	Amperes
	2 Side light each with 1 lamp each	2	32		2,1	Amperes

8 Cargo lights of 6 lamps of 25 candle power, whether incandescent or arc lights incandescent
 * 8 plug connections for cargo lights are fitted, but only 4 portable cargo lights are now placed on board
 If arc lights, what protection is provided against fire, sparks, &c. No arc light

Where are the switches controlling the masthead and side lights placed In the chart room (switch board C)

DESCRIPTION OF CABLES.

Description	Amperes	Wires	Each	S.W.G. diameter	mm	Square inches total sectional area
Main cable carrying	68	7	2,52	35	mm	35 square inches
Branch cables carrying	43,8	7	1,7	16	mm	16 square inches
Branch cables carrying	21	7	1,35	10	mm	10 square inches
Leads to lamps carrying	1,5	1	1,38	1,5	mm	1,5 square inches
Cargo light cables carrying	1,6	2 x 24	0,2	2 x 1,51	mm	2 x 1,51 square inches

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Turned and insulated with pure and vulcanized india rubber, taped and lead covered, then taped and armoured with galvanized steel wire or with 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 ✓ 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 ✓

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 in cargo spaces and where necessary protected by galvanized iron tubes.



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 galvanized steel wire, and where necessary led through iron tubes (galvanized)*

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

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

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

How are cables carried through beams *do* through bulkheads, &c. watertight screwed 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 *lead covered, armoured with steel wire and led through 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 - 2 off*, and with an amperemeter *yes - 2 off*, fixed ^{1) on main switch board} (2) in telegraph 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 1200 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
BURMEISTER & WAIN'S MASKIN- OG SKIBSBYGGERI. *EB* Electrical Engineers Date *11th Jan. 21*

COMPASSES.

Distance between dynamo or electric motors and standard compass *60'*

Distance between dynamo or electric motors and steering compass *56'*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>68</i>	Amperes	<i>18</i>	feet from standard compass	<i>14</i>	feet from steering compass
A cable carrying	<i>43.8</i>	Amperes	<i>16</i>	feet from standard compass	<i>12</i>	feet from steering compass
A cable carrying	<i>0.25</i>	Amperes for illumination of	feet from standard compass, and for illumination of 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* course in the case of the standard compass and *0* degrees on *all* course in the case of the steering compass.

AKTIESELSKABET
BURMEISTER & WAIN'S MASKIN- OG SKIBSBYGGERI. Builder's Signature. Date *11th Jan. 21*

GENERAL REMARKS.

The electric lighting installation as above described is in accordance with the requirements of the Rules, the approved plan, London letter E dated 31st December 1920. The workmanship and the material are of good description in every respect, and the whole electric lighting installation has been tested under full working condition and found satisfactory. Recommend the vessel to have notation of "Electric Light" in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. Elec Light Rec 11/20/21 *W. Mauser*
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

