

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4880.

Port of Copenhagen Date of First Survey 15th October Date of Last Survey 28th Decr. 1915 No. of Visits 18.
 No. in on the Iron or Steel Twin Sc. 4 Mast. Sc. "Chile" Port belonging to Copenhagen.
 Reg. Book Built at Copenhagen By whom Akt. Burmeister & Wain When built 1915.
 Owners Akt. Det Østasiatiska Kompagni Owners' Address Copenhagen
 Card No. 303 Electric Light Installation fitted by Akt. Burmeister & Wain When fitted 1915.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound dynamo driven by a shunt motor taking current from one of 3 compound dynamos, each driven by an auxiliary Diesel oil engine.
 Capacity of Dynamo 150 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 system
 Position of Main Switch Board In the engine room having switches to groups 8 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each One in chart room with 4 switches, - 2 in passengers alleyways, one with 6 switches and one without do. - 2 amidships, - one with 6 switches and one without do. - one in deck house ft without switches, and one in engine room with 8 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 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 tools used.
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes.

Total number of lights provided for 205 arranged in the following groups:—
17 lights each of 16-25 x 32 candle power requiring a total current of 10 Amperes
35 lights each of 10-16 x 25 candle power requiring a total current of 18 Amperes
40 lights each of 10-16 x 25 candle power requiring a total current of 20 Amperes
15 lights each of 10 x 16 candle power requiring a total current of 7 Amperes
53 lights each of 16-50 x 100 candle power requiring a total current of 35 Amperes
4 cargo lights with 3 arc lamps 2 Mast head light with 1 lamp each of 32 candle power requiring a total current of 2 Amperes
2 Side light with 1 lamp each of 32 candle power requiring a total current of 2 Amperes
1 search light 7 Cargo lights of 100 candle power, whether incandescent or arc lights incandescent.
6 — " — of 6 amperes enclosed arc lamps.
 arc lights, what protection is provided against fire, sparks, &c. The arc lamps are entirely enclosed with glass globes and lamps provided with wire guarded lanterns.
 Where are the switches controlling the masthead and side lights placed In chart room.

DESCRIPTION OF CABLES.

Cable Description	Amperes	Wires	Each Wire	S.W.G. diameter	Area	Total sectional area
Main cable carrying	125	19	2.17	2.17	70	square inches
Branch cables carrying	35	7	2.13	2.13	25	square inches
Branch cables carrying	30	7	1.35	1.35	10	square inches
Cables to lamps carrying	7-20	7	1.05	1.05	6	square inches
Cargo light cables carrying	6	flexible		2.5	2.5	square inches

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with pure and vulcanized india rubber, taped and lead covered.
Insulated with pure and vulcanized india rubber, taped and lead covered, and armoured with galvanized wire as per Rules.
Insulated with pure and vulcanized india rubber, taped and lead covered, and armoured with 2 layers of steel tape as per Rules.
 Joints in cables, how made, insulated, and protected In watertight junction boxes with screwed connections.

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 iron tubes or iron screens.



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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 *Wire armoured cables used.*

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

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

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

How are cables carried through beams *Cables wire armoured.* through bulkheads, &c. *If watertight, screwed glands used.*

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

Are any cables run through coal bunkers *none* or cargo spaces *yes* or spaces which may be used for carrying cargo, stores, or baggage *yes*

If so, how are they protected *Wire armoured cables used and where necessary protected by iron screens or tubes.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *Yes in cargo and baggage rooms.*

If so, how are the lamp fittings and cable terminals specially protected *Lamps wire guarded, cable terminals protected by screwed metal covers.*

Where are the main switches and fuses for these lights fitted *Switches fitted where not exposed to damage, the fuses fitted outside these spaces.*

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 *Double wire system used.*

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 *yes.*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *No special pump room.*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *In engine room protected by glass globes.*

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
BURMEISTER & WAINSKIN- OG SKIBSBYGGERI.
Arthur Severin

Electrical Engineers

Date *22nd January 1916.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 94 feet.*

Distance between dynamo or electric motors and steering compass *— " 100 — "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	to lamps in the	feet from standard compass	and in the	feet from steering compass
<i>0.5</i>	<i>✓</i>	<i>to lamps in the</i>	<i>feet from standard compass</i>	<i>and in the</i>	<i>feet from steering compass</i>
<i>6</i>	<i>✓</i>	<i>6</i>	<i>feet from standard compass</i>	<i>12</i>	<i>feet from steering compass</i>
<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>feet from standard compass</i>	<i>✓</i>	<i>feet from steering compass</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
BURMEISTER & WAINSKIN- OG SKIBSBYGGERI.
Arthur Severin

Builder's Signature.

Date *22nd January 1916.*

GENERAL REMARKS.

The whole electric lighting installation above described, and the electric power installation are in accordance with the Rules, the approved plans and London letters E dated 7 Novbr. 1914 & 9 Decr. 1915.

The workmanship and material are of good description in every respect.

Recommend the vessel to have notation of "Electric light" in the Register Book.

this vessel is eligible for
THE RECORD Elec. light.

AWD
1916.

A. O. Schubert. Hühnsdorf.
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

FRI. FEB. 4—1916