

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2330

Port of *Copenhagen* Date of First Survey *11 April* Date of Last Survey *13 June* No. of Visits *6*
 No. in on the *Iron or Steel* *S. S. Tranquebar* Port belonging to *Copenhagen*
 Reg. Book *90 in Splend* Built at *Copenhagen* By whom *Akt. Burmeister & Wains Maskin & Reibyggen* When built *1906*
 Owners *Det Ostasiatiske Kompagni* Owners' Address *Copenhagen*
 Yard No. *249* Electric Light Installation fitted by *Akt. Burmeister & Wains Maskin & Reibyggen* When fitted *1906*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 single cylinder steam engine and direct coupled dynamo, compound wound

Capacity of Dynamo *140* Amperes at *65* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *in engine room*

Position of Main Switch Board *in engine room near dynamo* having switches to groups *4* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *✓*

If cut outs 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 *✓* 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits

Are the cut outs of non-oxidizable metal *yes* and constructed to fuse at an excess of *100* per cent over the normal current

Are all cut outs 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 *no wire fuses used, fuses not used for the lamp circuits*

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *yes*

Total number of lights provided for *92 incandescent lamps, 2 arc lamps, 1 projector* arranged in the following groups:—

A	<i>13</i> lights each of <i>25, 16 & 10</i>	candle power requiring a total current of	<i>11</i> Amperes
B	<i>30</i> lights each of <i>- - -</i>	candle power requiring a total current of	<i>24</i> Amperes
C	<i>25</i> lights each of <i>16 - 10</i> <i>2 arc lamps</i> <i>10</i>	candle power requiring a total current of	<i>40</i> Amperes
D	<i>1</i> light each of <i>Projector</i>	candle power requiring a total current of	<i>35</i> Amperes
E, F, G, H, I, K	<i>each of 4</i> lights each of <i>16</i>	candle power requiring a total current of	<i>20</i> Amperes
<i>2</i>	Mast head light with <i>1</i> lamp each of <i>32</i>	candle power requiring a total current of	<i>3.2</i> Amperes
<i>2</i>	Side light with <i>1</i> lamp each of <i>32</i>	candle power requiring a total current of	<i>3.2</i> Amperes
<i>4</i>	Cargo lights of <i>100</i>	candle power, whether incandescent or arc lights <i>incandescent</i>	

If arc lights, what protection is provided against fire, sparks, &c. *lanterns with iron plate and wire guard in the bottom*

Where are the switches controlling the masthead and side lights placed *in the chart room, one for each light*

DESCRIPTION OF CABLES.

Main cable carrying	<i>130</i> Amperes, comprised of <i>37</i> wires, each <i>15</i> L.S.G. diameter,	<i>.150</i> square inches total sectional area
Branch cables carrying	<i>11</i> Amperes, comprised of <i>7</i> wires, each <i>1.35 mm</i> L.S.G. diameter,	<i>.0155</i> square inches total sectional area
	<i>24</i> Amperes, comprised of <i>19</i> wires, each <i>1.7 mm</i> L.S.G. diameter,	<i>.025</i> square inches total sectional area
Branch cables carrying	<i>40</i> Amperes, comprised of <i>19</i> wires, each <i>1.29 mm</i> L.S.G. diameter,	<i>.0448</i> square inches total sectional area
	<i>35</i> Amperes, comprised of <i>1</i> wire, each <i>14</i> L.S.G. diameter,	<i>.0385</i> square inches total sectional area
Leads to lamps carrying	<i>5</i> Amperes, comprised of <i>1</i> wire, each <i>14</i> L.S.G. diameter,	<i>.005</i> square inches total sectional area
Cargo light cables carrying	<i>5</i> Amperes, comprised of <i>flexible</i> wires, each <i>✓</i> L.S.G. diameter,	<i>.005</i> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

1) Tinned copper wire insulated with pure and vulcanized India rubber taped and lead covered

2) taped and braided with galv. iron wires

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

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *✓* 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 or, when necessary, protected by iron tubes.*

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture

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

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 *in iron tubes or protected by their lead or iron covering*

through bulkheads, &c. *brass watertight screwed glands.*

How are cables carried through decks *in 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 *lead and iron covered cables used*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *yes 2 connection boxes in h: 2 hold*

If so, how are the lamp fittings and cable terminals specially protected *Strong watertight wire guarded lamps.*

Where are the main switches and cut outs for these lights fitted *in pantry*

If in the spaces, how are they specially protected *none*

Are any switches or cut outs 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 *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 *✓*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, cut outs, 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 installation is *to 800 lbs* supplied with a voltmeter *✓* and

an amperemeter, fixed *to 150 Amps.* *on main switch board*

See letter Cpu 17.7.06.

The copper used is guaranteed to have a conductivity of *100* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile after 24 hours' immersion in seawater.

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~~ *in* good order and safe working condition.

BURMEISTER & WAIN MASKIN- OG SKIBSBYGGERI.

Muldahl.

Electrical Engineers

Date *9th July 1906*

COMPASSES.

Distance between dynamo or electric motors and standard compass *75 feet*

Distance between dynamo or electric motors and steering compass *81 "*

The nearest cables to the compasses are as follows:—

A cable carrying <i>35</i> Amperes	<i>6</i> feet from standard compass	<i>8</i> feet from steering compass
A cable carrying <i>11</i> Amperes	<i>6</i> feet from standard compass	<i>8</i> feet from steering compass
A cable carrying <i>3</i> Amperes	<i>5</i> feet from standard compass	<i>5</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 *AKTIESELSKABET* degrees on *all* courses in the case of the steering compass.

BURMEISTER & WAIN MASKIN- OG SKIBSBYGGERI.

Muldahl.

Builder's Signature.

Date *9th July 1906*

GENERAL REMARKS. *The whole electric light installation is as above described, the material and workmanship is good and complete.*

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

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

This installation appears to be fitted in accordance with the Rules

JYM 19/7/06

Date *9th July 1906*

Supplement to *Electric Lighting Installation* Report No. _____
 on the Steam Ship *S. S. Tranquebar (Yard No 249) of Copenhagen*

COMPASSES.

Distance between dynamo or electric motors and standard compass *75 ft.*
 Distance between dynamo or electric motors and steering compass *81 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>35</i> Amperes	<i>6</i> feet from standard compass	<i>8</i> feet from steering compass
A cable carrying	<i>11</i> Amperes	<i>6</i> feet from standard compass	<i>8</i> feet from steering compass
A cable carrying	<i>3</i> Amperes	<i>5</i> feet from standard compass	<i>5</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 *no* degrees on *any* course in the case of the standard compass and *no* degrees on *any* course in the case of the steering compass.

AKTIESELSKABET

BURMEISTER & WAINSKA - OG SKIBSBYGGERI.

Melby.

Builder's Signature.

Date

*9th July 1906**J. R. Rona*
Surveyor to Lloyd's Register