

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3369.

Port of *Copenhagen* Date of First Survey *8th May* Date of Last Survey *27th May* No. of Visits *5*
 No. in *114* on the *Iron or Steel* *St. Petersburg* Port belonging to *Libau*
 Reg. Book *114 in Libau* Built at *Copenhagen* By whom *A. L. Hjøbenharns Flydedock og Rebsværk* When built *1911*
 Owners *Russian East Asiatic Steamship Co.* Owners' Address _____
 Yard No. *89* Electric Light Installation fitted by *Christensen og Hansen, Copenhagen* When fitted *May 1911*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Single cylinder engine coupled to continuous current, compound wound dynamo. ✓

Capacity of Dynamo *84.8* ✓ Amperes at *112* ✓ 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 *6* ✓ of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *one in chart room with 6 switches* ✓

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 _____ 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 *yes* ✓

Are the cut outs of non-oxidizable metal *Silver* ✓ and constructed to fuse at an excess of *50%* ✓ per cent over the normal current

Are all cut outs fitted in easily accessible positions *yes* ✓ Are the fuses of standard dimensions *yes, Edison type* ✓ 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* ✓

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

Total number of lights provided for *125* arranged in the following groups:—

A Fore part	$\frac{9}{4}$ lights each of	$\frac{16}{10}$ candle power requiring a total current of	5 Amperes
B Amidships	$\frac{26}{4}$ lights each of	$\frac{16}{10}$ candle power requiring a total current of	12½ Amperes
C Deck house amidsh.	$\frac{4}{8}$ lights each of	$\frac{25}{10}$ candle power requiring a total current of	9 Amperes
D After part	$\frac{20}{10}$ lights each of	$\frac{16}{10}$ candle power requiring a total current of	11 Amperes
E Engine room	14 lights each of	16 candle power requiring a total current of	6 Amperes
2 Mast head lights with	1 lamp each of	25 candle power requiring a total current of	1.3 Amperes
2 Side lights with	1 lamp each of	25 candle power requiring a total current of	1.3 Amperes
2 Cargo lights of 5 lamps of 16 candle power, 2 arc light		candle power, whether incandescent or arc lights.	15 Amperes

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed *in chart room* ✓

DESCRIPTION OF CABLES.

Main cable carrying	12½ Amperes, comprised of	7 wires, each	17 L.S.G. diameter, .01267	square inches total sectional area
Branch cables carrying	9 Amperes, comprised of	7 wires, each	18 L.S.G. diameter, .01267	square inches total sectional area
Branch cables carrying	10 Amperes, comprised of	7 wires, each	18 L.S.G. diameter, .01724	square inches total sectional area
Leads to lamps carrying	.5 Amperes, comprised of	1 wires, each	17 L.S.G. diameter, .00246	square inches total sectional area
Cargo light cables carrying	2.5 Amperes, comprised of	19 wires, each	36 L.S.G. diameter, .00246	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

The copper wires are tinned, insulated with pure and vulcanized India rubber taped and lead covered, or tinned, insulated with pure and vulcanized India rubber, then taped and braided with galv. iron armouring or wound with steel wire. ✓

Joints in cables, how made, insulated, and protected *soldered and well insulated, or made in junction boxes.* ✓

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

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 covered and iron armoured cables used* ✓
 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 *in iron tubes* ✓ through bulkheads, &c. *brass watertight stuffing boxes* ✓
 How are cables carried through decks *in iron pipes* ✓
 Are any cables run through coal bunkers *no* or cargo spaces *no* or spaces which may be used for carrying cargo, stores, or baggage *yes* ✓
 If so, how are they protected *lead covered and iron armoured cables used* ✓
 Are any lamps fitted in ~~coal bunkers~~ or spaces which may at times be used for cargo, coals, or baggage *in twin deck spaces* ✓
 If so, how are the lamp fittings and cable terminals specially protected *wire guarded lamps with watertight iron covers, cable terminals in watertight iron boxes.* ✓
 Where are the main switches and cut outs for these lights fitted *in after saloon* ✓
 If in the spaces, how are they specially protected ✓
 Are any switches or cut outs fitted in bunkers *no* ✓
 Cargo light cables, whether portable or permanently fixed *portable* ✓ How fixed *plug connections* ✓
 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 supplied with a voltmeter and an amperemeter, fixed

The copper used is guaranteed to have a conductivity of *98* ✓ 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 good order and safe working condition.



G. Christensen Electrical Engineers

Date *26 May 1911*

COMPASSES.

Distance between dynamo or electric motors and standard compass } *64 feet*
 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
<i>9</i>	<i>8</i>	<i>✓</i>	<i>✓</i>
<i>12</i>	<i>14</i>	<i>✓</i>	<i>✓</i>
		<i>✓</i>	<i>✓</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* ✓ courses in the case of the standard compass and _____ degrees on _____ course in the case of the steering compass.

AKTIESELSKABET
 KJØBENHAVNS FLYDEDOK OG SKIBSVÆRFT.

Builder's Signature.

Date *26 May 1911*

GENERAL REMARKS. *The whole electric light installation is as above described; the material and workmanship is good in every respect. — 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. *JWD 29/5/11*

A. Romm

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

Committee's Minute *TUE. 30 MAY 1911* *FRI. 2 JUN 1911*



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REPORT FORM No. 14.