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18

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 645

Port of *Trieste* Date of First Survey *15th April* Date of Last Survey *20th July* No. of Visits *18*
 No. in on the *Iron* Steel *S.S. Mongolia* Port belonging to *Vladivostok*
 Reg. Book Built at *Trieste* By whom *Stabilimento Tecnico* When built *1901-6*
 Owners *Chinese Eastern Railway Co.* Owners' Address *Petersburg*
 Yard No. *333* Electric Light Installation fitted by *The Ostrovinich Ship Repair Works* When fitted *1901-6*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two dynamo compound mount, each coupled direct to one compound engine 8 1/4" x 13" x 8" R. 320.

Capacity of Dynamo *210* Amperes at *115* Volts, whether continuous ~~and~~ alternating current *continuous*

Where is Dynamo fixed *in Engine Room at masthead in a recess*

Position of Main Switch Board *near dynamo* having switches to groups *A.B.C.D.E.F.G.* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *15 switch Boards, placed on different parts of the ship, having altogether 69 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 *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 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 *yes* and constructed to fuse at an excess of *20* 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 *yes*

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

Total number of lights provided for *372* arranged in the following groups:—

A *240* ^{*185*} lights each of ^{*10*} *16* candle power requiring a total current of *80.22* Amperes

B *46* lights each of *16* candle power requiring a total current of *23.92* Amperes

C *22* lights each of *16* candle power requiring a total current of *11.44* Amperes

D *36* lights each of *16* candle power requiring a total current of *18.72* Amperes

E *5* *Ventilators* lights each of *3.2 Amp* candle power requiring a total current of *16.00* Amperes

2 *one on each* Mast head light with *2* lamps each of *16* candle power requiring a total current of *2.08* Amperes

2 Side light with *2* lamps each of *16* candle power requiring a total current of *2.08* Amperes

4 Cargo lights of *6 lamp each of 16* candle power, ~~whether~~ incandescent ~~are~~ lights *12.48*

If are lights, what protection is provided against fire, sparks, &c. *F - 5 Ventilators each of 2.6 amp. requiring a total current 13.00*

G - Line for supplying the whole of 210 Amps to the landing stage in Vladivostok

Where are the switches controlling the masthead and side lights placed *in the chart Room.*

DESCRIPTION OF CABLES.

Main cable carrying *210* Amperes, comprised of *32* wires, each *13* L.S.G. diameter, *.259* square inches total sectional area

Branch cables carrying *82.22* Amperes, comprised of *19* wires, each *14* L.S.G. diameter, *.095* square inches total sectional area

Branch cables carrying *22.88* Amperes, comprised of *2* wires, each *14* L.S.G. diameter, *.035* square inches total sectional area

Leads to lamps carrying *10.52* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.0020* square inches total sectional area

Cargo light cables carrying *12.48* Amperes, comprised of *2* wires, each *12* L.S.G. diameter, *.0125* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires carried through metal & steel Bergmann's tubes, where exposed to weather & through teak casing inside.

Joints in cables, how made, insulated, and protected *India rubber tape, India solution, compound tape and varnished with India rubber solution.*

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 *none*

Are there any joints in or branches from the cable leading from dynamo to main switch board *none.*

How are the cables led through the ship, and how protected *in heavy wood casing & close to deck & through iron Bergmann tubes where exposed.*

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 *in teak casing & through metall & steel Bergmann's tubes.*

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

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

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

How are cables carried through beams *teak ferrules* through bulkheads, &c. *glands*

How are cables carried through decks *steel Bergmann's tubes.*

Are any cables run through coal bunkers *no* or cargo spaces *no* or spaces which may be used for carrying cargo, stores, or baggage *no*

If so, how are they protected *—*

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

If so, how are the lamp fittings and cable terminals specially protected *—*

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

If in the spaces, how are they specially protected *—*

Are any switches or cut outs fitted in bunkers *—*

Cargo light cables, whether portable ~~or permanently fixed~~ *portable* How fixed *by bolts on deck & lances*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *double wire system.*

How are the returns from the lamps connected to the hull *—*

Are all the joints with the hull in accessible positions *yes*

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 *also* supplied with *2* voltmeter and *2* amperemeter, fixed *on the switchboard*

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.

Ostereichische Schuckertwerke
i. V. W. Brankjorn Electrical Engineers

Date *22nd July 1901*

COMPASSES.

Distance between dynamo or electric motors and standard compass *41 feet.*

Distance between dynamo or electric motors and steering compass *68 —*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>25.6</i>	<i>18</i>	<i>24</i>	
<i>6.8</i>	<i>8</i>	<i>15</i>	
<i>2.</i>		<i>3</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 *nil* degrees on *any* course in the case of the standard compass *with electric* degrees on *any* course in the case of the steering compass.

Stabilimento tecnico Triestino

Builder's Signature.

Date *22nd July 1901*

GENERAL REMARKS.

The complete electric lighting installation including dynamo & motor has been supplied & fitted by Messrs The Ostereichische Schuckert-Werke in Vienna. The workmanship is of a good description and in accordance with the Rules & in my opinion worthy of the Committee's consideration.

Roddusick

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

Committee's Minute

It is submitted that this installation appears to meet the Rule requirements

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.