

WED, APR 15 1896

Received at London Office

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REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 14333

Port of *Glasgow* Date of First Survey *S. S. Okinawa Maru* Date of Last Survey *10th April* No. of Visits *Tokio*
 No. in Reg. Book *on the Japan Steel* Port belonging to *Tokio*
 Built at *Keuprew* By whom *Lobnitz & Co Ltd* When built *1896*
 Owners *The Imperial Japanese Government* Owners Address
 Yard No. *435* Electric Light Installation fitted by *W. E. Martin & Co* When fitted *1896*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two dynamos compound wound with drum armatures coupled direct to 2 compound engines. Cylinders 6" and 9", 6" Stroke
 Capacity of Dynamo each 140 Amperes at 65 Volts, whether continuous or alternating current *continuous*
 Where is Dynamo fixed *Engine room. Port side under main deck.*
 Position of Main Switch Board *Near Dynamos* having switches to groups *A B C D E F* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *Saloon Amidships Engine Room Forecastle, cable tanks.*

If cut outs are fitted on main switch board to the cables of main circuit *yes* and on each auxiliary switch boards to the cables of auxiliary circuits *yes* 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 *yes* 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* 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 *—*

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

Total number of lights provided for *204* arranged in the following groups:—

A	Saloon 50 lights each of 16	candle power requiring a total current of 47	Amperes
B	Forecastle 48 lights each of 16	candle power requiring a total current of 45	Amperes
C	Cable Tanks 20 lights each of 16	candle power requiring a total current of 19	Amperes
D	Amidships 54 lights each of 16	candle power requiring a total current of 50	Amperes
E	Engine Room 32 lights each of 16	candle power requiring a total current of 30	Amperes
F	Search light. one are light	—	—
	one Mast head light with one lamp each of 50	candle power requiring a total current of 3	Amperes
	each Side light with one lamp each of 50	candle power requiring a total current of 6	Amperes

Four Cargo lights of 4 incandescent lamps each 50 candle power, whether incandescent or arc lights *and one are light 15 amperes.*
 If arc lights, what protection is provided against fire, sparks, &c. *enclosed in a square lantern.*

Where are the switches controlling the masthead and side lights placed *in wheelhouse on bridge*

DESCRIPTION OF CABLES.

Main cable carrying	188 Amperes, comprised of 37 wires, each 14	L.S.G. diameter, .186	square inches total sectional area
4 Branch cables carrying	59, 60, each 47, 45 Amperes, comprised of 19 wires, each 16	L.S.G. diameter, .0611	square inches total sectional area
2 Branch cables carrying	30, 19 Amperes, comprised of 19 wires, each 16	L.S.G. diameter, .0225	square inches total sectional area
Leads to lamps carrying	3 Amperes, comprised of one wire, each 16	L.S.G. diameter, .0032	square inches total sectional area
Cargo light cables carrying	12 Amperes, comprised of 7 wires, each 18	L.S.G. diameter, .0127	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure & vulcanized India Rubber taped and vulcanized together and braided with yarn & compounded.

Joints in cables, how made, insulated, and protected *no joints*

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 bunker, 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 *in strong wooden casings and over tubes.*

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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 *in iron tubes*

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

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

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

How are cables carried through beams *holes lined with teak ferrules* through bulkheads, &c. *Glands*

How are cables carried through decks *Deck tubes*

Are any cables run through coal bunkers *no* or cargo spaces *None* or spaces which may be used for carrying cargo, stores, or baggage *yes*

If so, how are they protected *in 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 cut outs for these lights fitted *—*

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 *Fork connections*

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 *—*

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 *Two* *an amperemeter, fixed on* *Switch board*

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 *1,000* 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.

W. C. Martin & Co. Electrical Engineers

Date *10th April 1896*

COMPASSES.

Distance between dynamo or electric motors and standard compass *104 feet*

Distance between dynamo or electric motors and steering compass *94 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>60</i>	<i>10</i>	<i>10</i>	
<i>45</i>	<i>22</i>	<i>12</i>	
<i>19</i>	<i>22</i>	<i>12</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 *Nil* course in the case of the standard compass and *Nil* degrees on *Nil* course in the case of the steering compass.

LOBNITZ & Co., LIMITED.

Builder's Signature

Date *14 April 1896*

Director,

GENERAL REMARKS.

This vessel has been fitted with the above described electric installation on the double wire system and is in my opinion satisfactory.

C. D. Stromeyer.

Surveyor to Lloyd's Register of British and Foreign Shipping

Committee's Minute

This installation appears to be in accordance with the Rules.

Lloyd's Register
Foundation

THIS MARGIN

THE SURVEYORS ARE REQUESTED