

# REPORT ON ELECTRIC LIGHTING INSTALLATION, No. 1143

Port of **NAGASAKI.** Date of First Survey *9<sup>th</sup> Aug.* Date of Last Survey *11<sup>th</sup> Sept.* No. of Visits *6*  
 No. in Reg. Book on the Iron or Steel *s.s. "Toyo Maru No. 2"* Port belonging to *Nagasaki*  
 Built at *Nagasaki* By whom *Matous Iron Works* When built *1917*  
 Owners *S. Sawayama* Owners' Address *Nagasaki*  
 Yard No. *57* Electric Light Installation fitted by *G. Ishii* When fitted *1917*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One set of a shunt continuous current dynamo on the same bed plate with a vertical engine ✓  
 Capacity of Dynamo *70* Amperes at *100* Volts, whether continuous or alternating current *Continuous* ✓  
 Where is Dynamo fixed *On starboard side of engine room platform*  
 Position of Main Switch Board *On bulkhead aft of dynamo* having switches to groups *19 to 31* of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each *Two in fore part & two in after part of Bridge deck, two in fore part of Upper deck, and three in engine room.*  
 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 *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 *Yes*  
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases  
 Total number of lights provided for *4 Circuits* arranged in the following groups:—  

A Bridge deck Circuit	lights each of	<i>8</i>	<i>16</i>	<i>7</i>	candle power requiring a total current of	<i>10.26</i>	Amperes
B Fore "	lights each of	<i>2</i>	<i>5</i>	<i>13</i>	candle power requiring a total current of	<i>16.3</i>	Amperes
C After "	lights each of	<i>8</i>	<i>7</i>	<i>10</i>	candle power requiring a total current of	<i>11.4</i>	Amperes
D Engine room "	lights each of		<i>19</i>		candle power requiring a total current of	<i>39.9</i>	Amperes
E	lights each of				candle power requiring a total current of		Amperes
<i>Two</i> Mast head light with <i>one double</i> filament lamps each of			<i>32</i>		candle power requiring a total current of	<i>1.12</i>	Amperes
<i>Two</i> Side light with <i>ds.</i> lamps each of			<i>32</i>		candle power requiring a total current of	<i>1.12</i>	Amperes
<i>Six</i> Cargo lights of		<i>4</i>	<i>32</i>		candle power, whether incandescent or arc lights	<i>Incandescent</i>	

 If are lights, what protection is provided against fire, sparks, &c. ✓  
 Where are the switches controlling the masthead and side lights placed *In chart room on navigating bridge*

## DESCRIPTION OF CABLES.

*70 see above*  
 Main cable carrying *100* Amperes, comprised of *37* wires, each *15* L.S.G. diameter, *.1524* square inches total sectional area ✓  
 Branch cables carrying *16.3* Amperes, comprised of *1* wires, each *10* L.S.G. diameter, *.0741* square inches total sectional area ✓  
 Branch cables carrying *10.26* Amperes, comprised of *1* wires, each *12* L.S.G. diameter, *.0741* square inches total sectional area ✓  
 Leads to lamps carrying *.56* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.0078* square inches total sectional area ✓  
 Cargo light cables carrying *4.48* Amperes, comprised of *168* wires, each *38* L.S.G. diameter, *.005* square inches total sectional area ✓

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires and cables are composed of tinned copper insulated with pure india rubber, vulcanizing india rubber coated tape, and the whole vulcanized together.  
 Joints in cables, how made, insulated, and protected *Joints in cable are made in brass pieces fitted on porcelain bases distributing board in hard wood case, or extension box of porcelain base, and some joints in cast iron box soldered and insulated with pure rubber or rubber coated tape.*  
 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 *With the double wire distribution system, and cable are protected by lead cover.*



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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 Iron casings

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

What special protection has been provided for the cables near boiler casings Iron casings

What special protection has been provided for the cables in engine room Iron casings

How are cables carried through beams In iron casings through bulkheads, &c. Watertight packing gland.

How are cables carried through decks Iron deck tubes.

Are any cables run through coal bunkers Yes or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes.

If so, how are they protected Iron casings

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

If so, how are the lamp fittings and cable terminals specially protected By strong cast iron cover.

Where are the main switches and cut outs for these lights fitted On bridge deck passage.

If in the spaces, how are they specially protected In hard wood case

Are any switches or cut outs fitted in bunkers No.

Cargo light cables, whether portable or permanently fixed Portable How fixed With fibre fork connector

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

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 on switch board

The copper used is guaranteed to have a conductivity of 99.5 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. Ishii Electrical Engineers Date 20<sup>th</sup> Sept. 1917

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 72 ft. from dynamo

Distance between dynamo or electric motors and steering compass 62 .. .. .

The nearest cables to the compasses are as follows:—

A cable carrying <u>2.5</u> Amperes	<u>10</u> feet from standard compass	<u>12</u> feet from steering compass
A cable carrying <input checked="" type="checkbox"/> Amperes	<input checked="" type="checkbox"/> feet from standard compass	<input checked="" type="checkbox"/> feet from steering compass
A cable carrying <input checked="" type="checkbox"/> Amperes	<input checked="" type="checkbox"/> feet from standard compass	<input checked="" type="checkbox"/> 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 nil degrees on any course in the case of the standard compass and nil degrees on any course in the case of the steering compass.

For Matsuo Iron works & Dockyard, K. Osaka Builder's Signature. Date 20<sup>th</sup> September 1917.

**GENERAL REMARKS.**

This Electric Installation has been fitted in accordance with the Rules, tested, and found satisfactory.

It is submitted that this vessel is eligible for THE RECORD. Elec. light.

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

Committee's Minuta FRI. 16 NOV. 1917

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM NO. 13.

