

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 743

Port of *Nagasaki* Date of First Survey *5. 6. 11* Date of Last Survey *19. 8. 11* No. of Visits *20*.  
 No. in Reg. Book *5. 99.* on the Iron or Steel *T.T.S. "Shinyo Maru"* Port belonging to *Tokyo*.  
 Built at *Nagasaki* By whom *Mitsui Bishi S.T.E. Works* When built *1911*.  
 Owners *Togo Kisen Kaisha* Owners' Address *Tokyo*.  
 Yard No. *203* Electric Light Installation fitted by *Mitsui Bishi S.T.E. Works*. When fitted *1911*.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Two sets of a compound wound continuous current dynamo on the same bed plate with a vertical engine.*

Capacity of Dynamo *650* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *on the starboard of main deck above the main engine room*

Position of Main Switch Board *on the bulk head after dynamo having switches to groups 63 to 157* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Prom. dk. one in fore star bd passage, one in middle star bd passage, one in after star bd passage. Shelter dk. Two in fore star bd passage, Two in after star bd passage, Upper dk. One in fore star bd passage, One in middle star bd passage, one in after star bd passage. Engine room - one in dynamo 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 *no*

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 *yes*

Total number of lights provided for *9 circuits* arranged in the following groups:—

	8cp	16cp	25cp	32cp	50cp		
A <i>Prom. dk. circuit</i> lights each of	25	14	57	4		candle power requiring a total current of	40.41 Amperes
A' <i>Saloon &amp; drawing room</i> "	22		74			"	33.54 "
B <i>Smoking &amp; Lounge</i> lights each of	15	13	69			candle power requiring a total current of	27.01 Amperes
B' <i>Shelter dk. circuit</i> "	3	4	84		1	"	35.91 "
C <i>Upper dk. fore circ.</i> lights each of		32	91			candle power requiring a total current of	51.57 Amperes
C' <i>" " 1st "</i> "	12	20	125		2	"	64.31 "
D <i>" " after "</i> lights each of	2	10	50		1	candle power requiring a total current of	26.41 Amperes
D' <i>Engine room circ.</i> "		108	16			"	71.4 "
E <i>Cargo light</i> " lights each of					32	candle power requiring a total current of	56.0 Amperes
<i>Two</i> Mast head light with <i>one double filament</i> lamps each of				32		candle power requiring a total current of	2.24 Amperes
<i>Two</i> Side light with <i>one double filament</i> lamps each of				32		candle power requiring a total current of	2.24 Amperes

*Eight* Cargo lights of *200* candle power, whether incandescent or are lights *incandescent*  
*one* Light of *1200* " *are light*  
 If are lights, what protection is provided against fire, sparks, &c. *protected by double globes.*

Where are the switches controlling the masthead and side lights placed *in wheel house on boat deck.*

## DESCRIPTION OF CABLES.

Main cable carrying *650* Amperes, comprised of *61* wires, each *9* L.S.G. diameter, *1.025* square inches total sectional area  
 Branch cables carrying *71.4* Amperes, comprised of *19* wires, each *14* L.S.G. diameter, *0.0976* square inches total sectional area  
 Branch cables carrying *27* Amperes, comprised of *7* wires, each *15* L.S.G. diameter, *0.029* square inches total sectional area  
 Leads to lamps carrying *56* Amperes, comprised of *1* wires, each *16* L.S.G. diameter, *0.0032* square inches total sectional area  
 Cargo light cables carrying *7* Amperes, comprised of *283* wires, each *38* L.S.G. diameter, *0.00792* square inches total sectional area

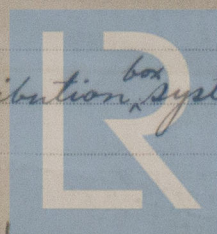
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Wires and cables used in the installation of the ship are consisted from the conductors of tinned copper wires, insulated with pure india rubber then vulcanizing india rubber coated tape, and the whole vulcanized together and then braided cotton, and covered preservative compound or protected with lead cover.*  
*Joints in cables, how made, insulated, and protected joints in cable are made in brass pieces in Submain Boards, distributing boards, extension boxes, and some joint in cast iron box, are soldered and insulated with pure india rubber or india 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 *a few in extension boxes in cast iron box.*

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 cables are protected by lead cover or galvanized iron pipes.*



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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 *protected by galvanized iron pipes.*

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

What special protection has been provided for the cables near boiler casings *protected by galvanized iron pipes.*

What special protection has been provided for the cables in engine room *protected by galvanized iron pipes.*

How are cables carried through beams *through galvanized iron pipes* through bulkheads, &c. *through galv. iron pipes.*

How are cables carried through decks *through galvanized iron deck 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 *by galvanized iron pipes.*

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 *lamps are protected by strong cast iron covers.*

Where are the main switches and cut outs for these lights fitted *on the bulk heads of upper deck.*

If in the spaces, how are they specially protected *protected by water tight cast iron box*

Are any switches or cut outs fitted in bunkers *no*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *with fibre fork, & fibre 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 *yes* supplied with a voltmeter and *yes* an amperemeter, fixed *Main 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 *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.

*[Signature]*

Electrical Engineers

Date *Aug-19-1911*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *218 feet from main dynamo*

Distance between dynamo or electric motors and steering compass *60 feet from 7 K.W. wireless telegraph motor generator.*

The nearest cables to the compasses are as follows:—

Cable	Amperes	feet from standard compass	feet from steering compass
A cable carrying <i>4.48</i>	<i>12</i>	<i>12</i>	
A cable carrying <i>2.8</i>	<i>11</i>	<i>1</i>	
A cable carrying <i>1.500</i>	<i>11</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 *✓* course in the case of the standard compass and *Nil* degrees on *✓* course in the case of the steering compass.

*YOSHU BISHI DOCKYARD & ENGINE WORKS*

Builder's Signature

Date *August, 19th, 1911*

*[Signature]* General Manager

*This Electric Installation*

**GENERAL REMARKS.**

*has been fitted in accordance with the Rules, tested and found satisfactory.*

*A.C. Heron*

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.