

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 847.

Port of **NAGASAKI.** Date of First Survey **27th May** Date of Last Survey **9th Sept., 1913.** No. of Visits **12**
No. in on the ~~Iron or Steel~~ **Triples s.s. "Katori Maru"** Port belonging to **Tokio**
Reg. Book Built at **Nagasaki** By whom **Mitsui Bishi S. S. Works** When built **1913**
Owners **Rippon Yusen Kaisha** Owners' Address **Tokio**
Yard No. **230** Electric Light Installation fitted by **Mitsui Bishi Dockyard Engine Works** When fitted **1913.**

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 thrust recess.**

Position of Main Switch Board **after bulkhead of engine room** having switches to groups **35 to 158** of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each **Boat deck**:- one. **Promenade deck**:- six.

Bridge deck:- five. **Poof deck**:- one. **Upper deck**:- one forward, six amidships, and five aft.

2nd Deck:- one aft and one amidships, **Engine room**:- four. **Boiler room**:- one.

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 cessel 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 **eight circuits** arranged in the following groups:-

		8 c.p. 16 c.p. 25 c.p. 32 c.p. 50 c.p.								
A	Upper deck, fore circuit	lights each of	1.	2.	29.	2.	1.	candle power requiring a total current of	16.61	Amperes
B	" " middle "	lights each of	32.	5.	70.	—	3.	candle power requiring a total current of	43.61	Amperes
C	" " after "	lights each of	2.	53.	36.	—	3.	candle power requiring a total current of	45.61	Amperes
F	Bridge deck	"	32.	5.	86.	—	2.		47.94	"
D	Promenade deck	"	lights each of	22.	9.	129.	4.	—	64.70	Amperes
G	Engine room	"	—	129.	29.	—	—		83.26	"
E	Fore cargo	"	lights each of are 1.	2.	—	7.	24	candle power requiring a total current of	53.96	Amperes
H	after "	"	one are 1.	5	—	5.	24		53.4	"
Two Mast head lights with filament lamps each of						32.		candle power requiring a total current of	2.24	Amperes
Two Side lights with do. lamps each of						32		candle power requiring a total current of	2.24	Amperes
One Morse code flashing		"				6-5 c.p.		"	"	"
Twelve Cargo lights of					200			candle power, whether incandescent or arc lights	Incandescent	
Two		"			12.00			"	are.	

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 chart room 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 **83.26** Amperes, comprised of **19** wires, each **16** L.S.G. diameter, **0.0624** square inches total sectional area

Branch cables carrying **43.61** Amperes, comprised of **19** wires, each **18** L.S.G. diameter, **0.0351** 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 composed of tinned copper insulated with pure india rubber, vulcanizing india rubber coated tape, and the whole vulcanized together, then lead covered, or lead covered and armoured with galvanized iron wires.

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 joints in cast iron boxes 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 **Yes, except 7 in extension boxes in cast iron covers in cargo spaces.**

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 wires, or galvanized iron pipes.**

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 wires.*

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

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

How are cables carried through beams *Through teak ferrules* through bulkheads, &c. *Through water tight packing gland.*

How are cables carried through decks *Through galvanized iron deck tube*

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 *By galvanized iron pipes, or galvanized iron wires.*

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 covers or brass guards.*

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

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

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 _____ supplied with a voltmeter and *two* ~~amperemeters~~ 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 *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.

MITSU BISHI DOCKYARD & ENGINE WORKS.

J. Shiro
General Manager

Electrical Engineers

Date *20th Sept 1913*

COMPASSES.

Distance between dynamo or electric motors and standard compass *140 ft. from main dynamo
105 ft. from Clayton's fire extinguishing & disinfecting apparatus
with 4 H.P. motor*

Distance between dynamo or electric motors and steering compass *118 ft. from main dynamo
75 ft. from 4 H.P. motor for Clayton's apparatus*

The nearest cables to the compasses are as follows:—

Cable	Amperes	Feet from standard compass	Feet from steering compass
A cable carrying <i>144</i>	<i>8</i>	<i>12</i>	<i>12</i>
A cable carrying <i>28</i>	<i>1</i>	<i>1</i>	<i>1</i>
A cable carrying <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 *no* degrees on *any* course in the case of the standard compass and *no* degrees on *any* course in the case of the steering compass.

MITSU BISHI DOCKYARD & ENGINE WORKS.

J. Shiro
General Manager

Builder's Signature.

Date *20th Sept 1913*

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 Minute *11 OCT. 10. 1913*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

