

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1289

at of **NAGASAKI**. Date of First Survey *31st March* Date of Last Survey *30th April* No. of Visits *6*
 in on the ~~Iron or Steel~~ *Twin s. s. "Lima Maru"* Port belonging to *Tokio*
 Book Built at *Nagasaki* By whom *Mitsubishi Zosen Kaisha* When built *1920*
 ers *Rippon Zosen Kaisha* Owners' Address *Tokio*
 No. *334* Electric Light Installation fitted by *Nagasaki Works, Mitsubishi Zosen Kaisha* When fitted *1920*.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One set of a compound continuous current dynamo on the same bed plate with a vertical engine.

Capacity of Dynamo *150* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *In thrust recess in engine room.*

Position of Main Switch Board *On bulkhead aft of dynamo* having switches to groups *56/114* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Two in fore part and four in after part of Bridge*
Deck: two in fore part and two in after part of upper deck; and three in engine room.

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.*

Is the vessel 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.*

Number of lights provided for *Five Circuits* arranged in the following groups:—

Group	Lights	Candle power	Current	Amperes
Fore Circuit	lights each of 1 — 15. 26. 2	—	24. 135	Amperes
Midship Circuit	lights each of 5. 6. 94. 9. —	—	24. 315	Amperes
Aft	lights each of 2. —. 21. 34. 2	—	28. 82	Amperes
Engine room	lights each of —. —. 71. —	—	14. 91	Amperes
Navigation lamp	lights each of —. —. —. 5. —	—	5. 6	Amperes
Mast head light with <i>on double</i> lamps each of 32	—	—	2. 24	Amperes
Side light with <i>one lamp</i> lamps each of 32	—	—	2. 24	Amperes
Cargo lights of <i>one Morse code signal lamp with 6 lamps each of 6</i> 4 @ 32	—	—	—	—
Four	—	—	—	—

Are the lights, what protection is provided against fire, sparks, &c. *Yes.*

Are the switches controlling the masthead and side lights placed *In chart room on Navigating Bridge.*

DESCRIPTION OF CABLES.

Cable	Capacity	Wires	Diameter	Area
main cable carrying	150 Amperes	37 wires, each 15	L.S.G. diameter, 0.1544	square inches total sectional area
main cables carrying	28.82 Amperes	7 wires, each 16	L.S.G. diameter, 0.0229	square inches total sectional area
main cables carrying	5.6 Amperes	7 wires, each 20	L.S.G. diameter, 0.0070	square inches total sectional area
to lamps carrying	21 Amperes	1 wires, each 18	L.S.G. diameter, 0.0015	square inches total sectional area
light cables carrying	1.68 Amperes	168 wires, each 38	L.S.G. diameter, 0.005	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

and cables are composed of tinned copper insulated with pure india rubber vulcanizing india rubber tape, and the whole vulcanized together then lead covered, or lead covered and armoured with galvanized iron wire.

in cables, how made, insulated, and protected Joints in cable are made in brass pieces fitted on porcelain bases in main board and distributing board in tank case or extension box of porcelain base and some joints in extension box are soldered and insulated with pure rubber or rubber coated tape.

Are 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.*

Where any joints in or branches from the cable leading from dynamo to main switch board *No.*

Are the cables led through the ship, and how protected *With the double wire distribution system and cables are covered by lead cover, or galvanized iron wire armoring, 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 *Galvanized iron pipes, or galvanized iron wire armouring.*

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

What special protection has been provided for the cables near boiler casings *Galvanized iron wire armouring.*

What special protection has been provided for the cables in engine room *Galvanized iron wire armouring, or galvanized iron pipes.*

How are cables carried through beams *Through lead bushes.* through bulkheads, &c. *Watertight packing glands.*

How are cables carried through decks *Galvanized 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 *By galvanized iron wire armouring, or galvanized iron pipes.*

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 *Fibre fork connector or watertight combined socket switch.*

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 *main switchboard*

The copper used is guaranteed to have a conductivity of *99.6* 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.

NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

[Signature]

GENERAL MANAGER.

Electrical Engineers

Date *15-5-20.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *120 ft. from dynamo, 86 ft. from wireless motor generator*

Distance between dynamo or electric motors and steering compass *150 ft. " " 96 ft. " " " "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>5.6</i>	<i>8</i>	<i>8</i>	<i>8</i>
<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
<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 *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.

NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

[Signature]

GENERAL MANAGER.

Builder's Signature.

Date *15-5-20*

GENERAL REMARKS.

Wireless fitted.

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

This vessel is eligible for THE RECORD. ELEC. LIGHT. *25/6/20* *[Signature]* *as Williams*
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute *TUE. JUN. 29 1920*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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