

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 12644

Port of **NAGASAKI** Date of First Survey *20<sup>th</sup> Octr.* Date of Last Survey *3<sup>rd</sup> Nov. 1919* No. of Visits *5*  
 No. in Reg. Book on the Iron or Steel *s. s. "Murosan Maru"* Port belonging to *Tokio*  
 Built at *Nagasaki* By whom *Mitsubishi Zosen Kaisha* When built *1919*  
 Owners *Nippon Yusen Kaisha* Owners' Address *Tokio*  
 Yard No. *279* Electric Light Installation fitted by *Mitsubishi Zosen Kaisha* When fitted *1919*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*One set of a compound continuous current dynamo on the same bedplate with a vertical engine.*

Capacity of Dynamo *120* 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 *29 to 90* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Two in forecabin, six in midship deck house, one in after part of upper deck, and four 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 *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 *4 Circuits* arranged in the following groups:—

| Group | Description   | Lights         | Watts | Candle Power | Current (Amperes) |
|-------|---|----------------|-------|--------------|-------------------|
| A     | Fore circuit  | 16             | 22    | 1            | 17.6              |
| B     | Midship   | 4, 6, 6, 9, 11 | —     | —            | 23.4              |
| C     | Aft   | 2, 2, 24       | —     | —            | 4.2               |
| D     | Engine room   | 53             | —     | —            | 11.1              |
| E     | Mast head light with <i>one double</i> filament lamps each of <i>32</i> | 2              | 32    | —            | 1.12              |
|       | One stern light " " " " " " " " " " " "                                 | 1              | 32    | —            | 1.12              |
|       | Two Side light with <i>do</i> lamps each of <i>32</i>                   | 2              | 32    | —            | 1.12              |
|       | One Morse code signal lamp with <i>6</i> lamps each of <i>6</i>         | 1              | —     | —            | 0.47              |
|       | Ten Cargo lights of <i>4 x 32</i>                                       | 10             | —     | —            | —                 |
|       | Two " " " " " " " " " " " "   | 2              | —     | —            | —                 |

If arc lights, what protection is provided against fire, sparks, &c. *Incandescent*

Where are the switches controlling the masthead and side lights placed *In chart room on navigating bridge*

## DESCRIPTION OF CABLES.

| Category                    | Amperes | Wires | Diameter (L.S.G.) | Total sectional area (square inches) |
|-----------------------------|---------|-------|-------------------|--------------------------------------|
| Main cable carrying         | 120     | 27    | 0.1544            | 0.1544                               |
| Branch cables carrying      | 23.4    | 19    | 0.0350            | 0.0350                               |
| Branch cables carrying      | 4.2     | 7     | 0.0126            | 0.0126                               |
| Leads to lamps carrying     | 0.21    | 1     | 0.0018            | 0.0018                               |
| Cargo light cables carrying | 1.68    | 168   | 0.0032            | 0.0032                               |

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Wires & 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.*

Joints in cables, how made, insulated, and protected *Joints in cable are made in brass pieces fitted on porcelain bases in submain board and distributing board in tank case or extension box of porcelain base and some joints in cast iron box are 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 cables are protected 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 pipe 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 wires, or galvanized iron pipes.

How are cables carried through beams Through lead bushes through bulkheads, &c. Water tight packing gland.

How are cables carried through decks 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

If so, how are they protected By galvanized iron wires, 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 W. T. 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 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 ZOSHEN KAISHA, LTD.**

*V. Shima*  
GENERAL MANAGER.

Electrical Engineers

Date 4-12-1919.

COMPASSES.

Distance between dynamo or electric motors and standard compass 108 feet from dynamo.

Distance between dynamo or electric motors and steering compass 120 feet from dynamo.

The nearest cables to the compasses are as follows:—

|                                     |                                     |                                     |
|-------------------------------------|-------------------------------------|-------------------------------------|
| A cable carrying <u>5.6</u> Amperes | <u>7</u> feet from standard compass | <u>9</u> feet from steering compass |
| A cable carrying _____ Amperes      | _____ feet from standard compass    | _____ feet from steering compass    |
| A cable carrying _____ Amperes      | _____ feet from standard compass    | _____ 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.

**NAGASAKI WORKS, MITSUBISHI ZOSHEN KAISHA, LTD.**

*V. Shima*  
GENERAL MANAGER.

Builder's Signature.

Date 4-12-1919.

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 2/2/20

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

Committee's Minute

TUE. APR. 13 1920



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM NO. 11