

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1172

Port of **NAGASAKI** Date of First Survey *2nd Feby.* Date of Last Survey *7th March, 1918* No. of Visits *11*
 No. in Reg. Book on the Iron or Steel *twin s.s. "Africa Maru"* Port belonging to *Osaka*
 Built at *Nagasaki* By whom *Mitsubishi Zosen Kaisha* When built *1918*
 Owners *Osaka Shosen Kaisha* Owners' Address *Osaka*
 Yard No. *270* Electric Light Installation fitted by *Mitsubishi Zosen Kaisha* When fitted *1918*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets of a compound wound continuous current dynamos on the same bedplate 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 54 to 100* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Two in fore part on boat deck; two in fore part, eight in middle part, & two in aft part on shelter deck; three in middle part & one in aft part on upper deck; 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 *5 Circuits* arranged in the following groups:—

A	Shelter deck	lights each of	6. 6. 6. 57. 12. —	candle power requiring a total current of	46. 41	Amperes		
B	Upper deck	lights each of	— 6. 47. 45. 2. —	candle power requiring a total current of	52. 37	Amperes		
C	Engine room	lights each of	— 4. 27. 87. —	candle power requiring a total current of	46. 0	Amperes		
D	Fore Cargo	lights each of	— — 10 — 1. 24	candle power requiring a total current of	53. 16	Amperes		
E	aft Cargo	lights each of	— — — — 1. 24	candle power requiring a total current of	47. 0	Amperes		
	Two Mast head lights with filament lamps each of	32		candle power requiring a total current of	1. 12	Amperes		
	Two Side lights with <i>do</i> lamps each of	32		candle power requiring a total current of	1. 12	Amperes		
	Two <i>one Morse code signal lamp</i>	6 e 6 cp.			1. 26			
	Two Cargo lights of	1000		candle power, whether incandescent or arc lights	Incandescent			
	Twelve " " "	200		" " "	do.			

If are lights, what protection is provided against fire, sparks, &c. *✓*

Where are the switches controlling the masthead and side lights placed *In wheel house on flying bridge.*

DESCRIPTION OF CABLES.

Main cable carrying *150* Amperes, comprised of *37* wires, each *15* L.S.G. diameter, *0.1544* square inches total sectional area
 Branch cables carrying *54. 94* Amperes, comprised of *19* wires, each *16* L.S.G. diameter, *0.0624* square inches total sectional area
 Branch cables carrying *9. 44* Amperes, comprised of *7* wires, each *20* L.S.G. diameter, *0.0070* square inches total sectional area
 Leads to lamps carrying *56* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *0.0078* 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 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 *Made in brass pieces fitted on porcelain bases in submain boards and distributing boards on tank cases, extension box of porcelain, and some joints 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 *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 *On the double wire distribution system, and cables are protected by lead covers or galvanized 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, or galvanized iron wire armoring.*

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

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

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

How are cables carried through beams *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 *Galvanized iron wire armoring, or 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 cover.*

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

If in the spaces, how are they specially protected *In tank 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 or 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* *an amperemeters fixed on switch board.*

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]

Electrical Engineers

Date *15th March 1918*

COMPASSES.

Distance between dynamo or electric motors and standard compass *124 ft. from dynamo*

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

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>✓</i>	<i>9</i>	<i>7</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]

Builder's Signature.

Date *15th March 1918.*

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.

[Signature]

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

Committee's Minute

TUE. 7-MAY. 1918

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 14.



Lloyd's Register Foundation