

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1228.

Port of **NAGASAKI.**

Date of First Survey *11th March* Date of Last Survey *19th March 1919* No. of Visits *5*
 No. in Reg. Book on the *Iron or Steel* s. s. *"Madras Maru"* Port belonging to *Osaka*
 Built at *Nagasaki* By whom *Mitsubishi Zosen Kaisha* When built *1919*
 Owners *Osaka Shosen Kaisha* Owners' Address *Osaka*
 Yard No. *285* 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 *100* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *On starboard 'tween deck in engine room.*

Position of Main Switch Board *On bulkhead aft of dynamo having switches to groups 31 to 61*

Positions of auxiliary switch boards and numbers of switches on each *Two forward and two aft on Bridge deck; two forward and two amidships on Upper deck; and three 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:—

				arranged in the following groups:—	
A	Bridge deck Circuit	lights each of <i>5. 6. 38. 12.</i>	—	candle power requiring a total current of	21.8 Amperes
B	Forward	lights each of <i>2. — 9. 19. 1.</i>	—	candle power requiring a total current of	28.2 Amperes
C	apt	lights each of <i>2 — 20. 19. 1.</i>	—	candle power requiring a total current of	30.4 Amperes
D	Engine room	lights each of <i>— — 56. —</i>	—	candle power requiring a total current of	18.9 Amperes
E		lights each of		candle power requiring a total current of	1.12 Amperes
	Two Mast head light with <i>one double</i> lamps each of <i>32</i>			candle power requiring a total current of	1.12 Amperes
	Two Side light with <i>ds.</i> lamps each of <i>32</i>			candle power requiring a total current of	1.12 Amperes
	One Morse code signal lamp with 6 lamps each of 6			candle power, whether incandescent or arc lights	0.47
	Two Cargo lights of <i>(4 x 32 cp) = 128</i>				Incandescent.

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.

Main cable carrying	100	Amperes, comprised of	37	wires, each	15	L.S.G. diameter,	.1544	square inches total sectional area
Branch cables carrying	30.4	Amperes, comprised of	19	wires, each	18	L.S.G. diameter,	.0350	square inches total sectional area
Branch cables carrying	18.9	Amperes, comprised of	7	wires, each	16	L.S.G. diameter,	.0229	square inches total sectional area
Leads to lamps carrying	56	Amperes, comprised of	1	wires, each	18	L.S.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	4.48	Amperes, comprised of	168	wires, each	38	L.S.G. diameter,	.003	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires & 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 wire.

Points in cables, how made, insulated, and protected *In brass pieces fitted on porcelain bases in submain board and distributing board in bulk 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, except one in extension box in cast iron cover in cargo space.*

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 armoured, 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. *Water tight packing glands.*

How are cables carried through decks *Through 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 *✓*

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 *Yes.*

If so, how are the lamp fittings and cable terminals specially protected *By strong cast iron cover.*

Where are the main switches and cut outs for these lights fitted *On bridge 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 _____ 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.

Damark
GENERAL MANAGER.

Electrical Engineers

Date *12th April 1919.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *60 feet from dynamo*

Distance between dynamo or electric motors and steering compass *72 feet 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>10</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.

Damark
GENERAL MANAGER.

Builder's Signature.

Date *12th April 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.

W.D.
21/5/19.

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

Committee's Minute

WED. JUN. 11. 1919

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.