

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1419.

Port of NAGASAKI. Date of First Survey 8th Feb. '23 Date of Last Survey 27th Sept. No. of Visits 14.
 No. in Reg. Book on the ~~XXXXXX~~ Steel T.S.S. "HAKUSAN MARU" Port belonging to Tokio. Japan.
 Built at NAGASAKI. By whom Mitsubishi Zosen Kaisha, Ltd. When built 1923.
 Owners Nippon Yusen Kabushiki Kaisha. Owners' Address Tokio. Japan.
 Yard No. 383 Electric Light Installation fitted by Mitsubishi Zosen Kaisha, Ltd., When fitted 1923.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets of Single Reduction Geared Turbine generators 100 kolowatts each.

Capacity of Dynamo 910 Amperes at 110 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed In the dynamo room on the 2nd Dk. Whether single or double wire system is used Double.
 Position of Main Switch Board On the fore B. H. in dynamo room. having switches to groups 7 to 467 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each 5 on boat deck. 1 in emergency switch board room. 13 on prom.dk. 8 on bridge dk. 18 on middle part on up.dk. 2 on fore part of up.dk. 2 on fore part of 2nd dk. 2 on poop dk. 7 on aft part of up.dk. 1 on aft part of 2nd dk. 3 in dynamo room. 1 in boiler room.
 If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits Yes
 Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 50 per cent over the normal current
 Are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases Yes
 Total number of lights provided for Six Circuits arranged in the following groups:—

	lights each of	candle power requiring a total current of	Amperes
A			
B 1st class.	lights each of		153.4
B 2nd & 3rd & Crews.	lights each of		119.06
C Daylight & Machinery	lights each of		106.72
D Cargo lamp.	lights each of		76.8
E Emergency.	lights each of		26.4
F Navigation.	lights each of		5.72
E	lights each of		
Two Mast head light with	lamps each of		2.24
One Stern " (1 double filament)	32		1.12
Two Side light with	lamps each of		2.24
One Morse code single L. with 3 L. each of 16,			0.6
12 Cargo lights of 50 c.p. x 4 (200 c.p.)			
12 " 200 watt,			
If are lights, what protection is provided against fire, sparks, &c.			No.

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

DESCRIPTION OF CABLES.

Main cable carrying 910 Amperes, comprised of 127x2 wires, each 12x2 S.W.G. diameter 1.080x2 square inches total sectional area
 Branch cables carrying 87.5 Amperes, comprised of 37 wires, each 16 S.W.G. diameter 0.119 square inches total sectional area
 Branch cables carrying 5.72 Amperes, comprised of 7 wires, each 20 S.W.G. diameter 0.00715 square inches total sectional area
 Leads to lamps carrying 0.2 Amperes, comprised of 1 wires, each 18 S.W.G. diameter 0.00181 square inches total sectional area
 Cargo light cables carrying 2 Amperes, comprised of 168 wires, each 38 S.W.G. diameter 0.0047 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 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 teak case, or extension box of porcelain base, and some joints in cast iron boxes are soldered and insulated with pure rubber or rubber coated tape.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 armouring 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 armouring.

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

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

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

How are cables carried through beams Through lead bushes. through bulkheads, &c. Through water light 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 Lamps are protected by strong cast iron cover and cables terminals are in cast iron extension box.

Where are the main switches and fuses for these lights fitted In the firemen's entrance on the bridge deck.

If in the spaces, how are they specially protected /

Are any switches or fuses fitted in bunkers No.

Cargo light cables, whether portable or permanently fixed Portable How fixed By watertight combined socket and 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 /

Is the installation supplied with a voltmeter Yes and with an amperemeter Yes, fixed On M. switch board.

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas /

Are any switches, fuses, 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 copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

W. Shikun

GENERAL MANAGER.

Electrical Engineers

Date 18-10-1923.

COMPASSES.

Distance between dynamo or electric motors and standard compass 109 ft. from dynamo & 100 ft. from motor generator.

Distance between dynamo or electric motors and steering compass 111 ft. from dynamo & 105 ft. from motor generator.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>5.72</u>	<u>10</u>	<u>7</u>	<u>/</u>
<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>
<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>

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.

W. Shikun

GENERAL MANAGER.

Builder's Signature.

Date 18-10-1923.

GENERAL REMARKS.

This Electric Light installation has been fitted in accordance with the Rules, tested under full load and found satisfactory.

It is submitted that this vessel is eligible for the Electric Light.

Fee Yen 547:50

Received. 15.10.23. *a.s.w.*

Committee's Minute

FRI. 30 NOV. 1923

a.s. Williamson
Surveyor to Lloyd's Register of Shipping.



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