

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 730.

Port of Nagasaki Date of First Survey 10. 2. 11. Date of Last Survey 7. 4. 11. No. of Visits 11.
 No. in 21 m. S. on the Iron or Steel T. S. S. "Canada Maru" Port belonging to Osaka.
 Reg. Book 21 m. S. Built at Nagasaki By whom Mitsui Bishi S. & E. Works When built 1911.
 Owners Osaka Shosen Kaisha Owners' Address Osaka.
 Yard No. 202. Electric Light Installation fitted by Mitsui Bishi S. & E. Works When fitted 1911.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets of a compound wound continuous current dynamo on the same bed plate with a vertical engine.

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

Where is Dynamo fixed on the thrust recess after engine room.

Position of Main Switch Board on the bulk head after dynamo having switches to groups 26 to 96 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Bridge deck:—Two in fore port passage, one in fore starboard passage, one in after passage, upper dk:—Two in fore passage, one in fore port bulk head, Four in port steering, Two in starboard steering, one in after passage, Engine room:—Three in dynamo 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 four circuits arranged in the following groups:—

A Fore circuit	lights each of <u>20-8cp. 10-16cp.</u>	candle power requiring a total current of <u>25.16</u>	Amperes
B Upper dk. circuit	lights each of <u>8-32cp. 1-1200cp.</u>	candle power requiring a total current of <u>57.64</u>	Amperes
C Bridge dk. circuit	lights each of <u>26-8cp. 57-16cp.</u>	candle power requiring a total current of <u>41.92</u>	Amperes
D Engine room	lights each of <u>8-32cp.</u>	candle power requiring a total current of <u>25.76</u>	Amperes
E	lights each of <u>46-16cp.</u>	candle power requiring a total current of <u>2.24</u>	Amperes
Two Mast head light with <u>one double filament</u>	lamps each of <u>32cp.</u>	candle power requiring a total current of <u>2.24</u>	Amperes
Two Side light with <u>one double filament</u>	lamps each of <u>32</u>	candle power requiring a total current of <u>2.24</u>	Amperes

Six Cargo lights of 128 candle power, whether incandescent or arc lights incandescent
Two cargo lights of 1200 candle power are lamp.
 If arc lights, what protection is provided against fire, sparks, &c. protected by double globes

Where are the switches controlling the masthead and side lights placed in wheel house on boat deck

DESCRIPTION OF CABLES.

Main cable carrying <u>100</u> Amperes, comprised of <u>37</u> wires, each <u>16</u> L.S.G. diameter, <u>0.122</u> square inches total sectional area
Branch cables carrying <u>57.64</u> Amperes, comprised of <u>19</u> wires, each <u>15</u> L.S.G. diameter, <u>0.079</u> square inches total sectional area
Branch cables carrying <u>4.48</u> Amperes, comprised of <u>7</u> wires, each <u>20</u> L.S.G. diameter, <u>0.0072</u> square inches total sectional area
Leads to lamps carrying <u>56</u> Amperes, comprised of <u>1</u> wires, each <u>16</u> L.S.G. diameter, <u>0.0032</u> square inches total sectional area
Cargo light cables carrying <u>4.48</u> Amperes, comprised of <u>283</u> wires, each <u>38</u> L.S.G. diameter, <u>0.0079</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires and cables used in the installation of the ship are consisted from the conductors of tinned copper wires, insulated with pure india rubber then vulcanizing india rubber coated tape, and the whole vulcanized together, and then braided or protected with lead cover or galvanized iron wires.

Joints in cables, how made, insulated, and protected joints in cable are made in brass pieces in Submain Boards, distributing boards, Extension boxes, 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 a few in extension boxes in cast iron boxes.

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 box system and cables are protected by lead cover or galvanized iron pipes or galvanized iron wires.

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.* ✓
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *protected by galvanized iron wires.* ✓
 What special protection has been provided for the cables near boiler casings *protected by galvanized iron wires.* ✓
 What special protection has been provided for the cables in engine room *protected by galvanized iron wires.* ✓
 How are cables carried through beams *Through teak ferrules* ✓ through bulkheads, &c. *Carried through galv. iron pipes* ✓
 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 *yes* ✓
 If so, how are they protected *by galvanized iron pipes.* ✓
 Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, stores, 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 the fore bulk head of upper deck port.* ✓
 If in the spaces, how are they specially protected *by water tight cast iron box.* ✓
 Are any switches or cut outs fitted in bunkers *no.* ✓
 Cargo light cables, whether portable or permanently fixed *portable* ✓ How fixed *with fibre fork & 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 amperemeter, fixed on *Switch Board.* ✓

The copper used is guaranteed to have a conductivity of *100* ✓ 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.

C. Samade Electrical Engineers

Date *Apr-17-1911*

COMPASSES.

Distance between dynamo or electric motors and standard compass *90 feet*
 Distance between dynamo or electric motors and steering compass *80 feet*
 The nearest cables to the compasses are as follows:—

A cable carrying	<i>4.48</i>	Amperes	<i>5</i>	feet from standard compass	<i>4</i>	feet from steering compass
A cable carrying	<i>.28</i>	Amperes	<i>1</i>	feet from standard compass	<i>1</i>	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 _____ course in the case of the standard compass and *nil* ✓ degrees on _____ course in the case of the steering compass.

MITSU BISHI DOCKYARD & ENGINE WORKS.

Builder's Signature.

Date *17th April, 1911.*

GENERAL REMARKS.

This 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.

A. C. Heron

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

Committee's Minute

TUE. 18 MAY 1911

REPORT FORM No. 17.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.