

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 708.

Port of *Nagasaki* Date of First Survey *12. 8. 10* Date of Last Survey *6. 10. 10* No. of Visits *12.*
 No. in on the Iron or Steel *T. S. S. "Mexico Maru"* Port belonging to *Osaka.*
 Reg. Book *21 in S.* Built at *Nagasaki* By whom *Mitsui Bishi D & E Wks* When built *1910.*
 Owners *Osaka Shosen Kaisha* Owners' Address *Osaka.*
 Yard No. *201* Electric Light Installation fitted by *Mitsui Bishi D & E Wks* When fitted *1910.*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets of a Compound wound continuous current dynamo directly coupled to a vertical single engine on the same bed plate.

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 *After bulk head of dynamo room having switches to groups 40 to 96* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Bridge deck: 2 in fore port passage,*

1 in fore star board passage, 1 in after passage; Upper deck: 2 in fore passage

4 in port steering, 2 in star board steering, 1 in after passage; Engine Room: 3 dynamo Rm.

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 except* 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:—

8-50 cp., 2-1200 cp.

A *Fore circuit* 1 lights each of *8 cp., 26-16 cp., 3-32 cp., 1* candle power requiring a total current of *42.2* Amperes

B *Upper deck circuit* 2 lights each of *8 cp., 76-16 cp., 4-32 cp., 1* candle power requiring a total current of *68.6* Amperes

C *Bridge deck* 6 lights each of *8 cp., 64-16 cp., 8-32 cp., 1* candle power requiring a total current of *53.48* Amperes

D *Engine room* 43 lights each of *16* candle power requiring a total current of *24.68* Amperes

E *lights each of* candle power requiring a total current of *Amperes*

Two Mast head light with *one double* filament lamps each of *32* candle power requiring a total current of *2.24* Amperes

Two Side light with *one double* filament lamps each of *32* candle power requiring a total current of *2.24* Amperes

Eight Cargo lights of *6-200 cp., 2-1200* candle power, whether incandescent or arc lights *2 are lights*

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 *100* Amperes, comprised of *37* wires, each *16* L.S.G. diameter, *0.1184* square inches total sectional area

Branch cables carrying *68.6* Amperes, comprised of *19* wires, each *15* L.S.G. diameter, *0.0779* square inches total sectional area

Branch cables carrying *5.6* Amperes, comprised of *7* wires, each *20* L.S.G. diameter, *0.0070* square inches total sectional area

Leads to lamps carrying *0.56* Amperes, comprised of *1* wires, each *16* L.S.G. diameter, *0.0032* square inches total sectional area

Cargo light cables carrying *7* Amperes, comprised of *283* wires, each *38* L.S.G. diameter, *0.0079* 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 vulcanized india rubber, india rubber coated tape and the whole vulcanized together, and then braided or protected with a 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 and 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*

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 pipe 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 galvanized 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, coals, or baggage *yes* ✓ * Cable terminals by cast iron boxes.

If so, how are the lamp fittings and cable terminals specially protected *lamps are protected by strong brass guards and* ✓

Where are the main switches and cut outs for these lights fitted *on engine casing in the 3rd class space* ✓

If in the spaces, how are they specially protected *protected by strong teak wood 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 and 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 *yes* 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.

J. D. Dwyer Electrical Engineers Date *6/10/10*

COMPASSES.

Distance between dynamo or electric motors and standard compass *90 ft*

Distance between dynamo or electric motors and steering compass *80 ft*

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>0.28</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.

M. B. Dockyard & Engine Works. General Manager, Builder's Signature. Date *6th Oct 1910*

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 JWD. 4/11/10.*

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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