

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1737

Port of Kobe Date of First Survey Dec 6 Date of Last Survey Dec 30 1915 No. of Visits 6  
 No. in Reg. Book on the Iron or Steel S.S. "Tensho Maru" Port belonging to Ushio  
 Built at Osaka By whom The Osaka Iron Works When built 1915  
 Owners Messrs The Nippon Yusen Kaisha Owners' Address \_\_\_\_\_  
 Yard No. 863 Electric Light Installation fitted by The Osaka Iron Works When fitted 1915

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound six pole continuous current open type dynamo.  
 Vertical single cylinder engine directly coupled to the dynamo.

Capacity of Dynamo 55 Amperes at 110 Volts, whether continuous or alternating current Continuous Current.

Where is Dynamo fixed on starboard side in engine room. Whether single or double wire system is used double wire system.

Position of Main Switch Board on starboard side in engine room having switches to groups \_\_\_\_\_ of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one in crew space in forecabin with 2 switches, one in chart room on upper bridge with 1 switch, one in saloon pantry on bridge deck with 4 switches, one in Mess room on bridge deck aft with 3 switches, one in engine room with 5 switches, in boiler room with 1 switch, and on inside of poop front with one switch.

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 yes.

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 about 20 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 no.

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes.

Total number of lights provided for Signal and living quarters arranged in the following groups :-

A	77 lights each of	16 candle power requiring a total current of	39.3 Amperes
B	5 lights each of	10 candle power requiring a total current of	1.6 Amperes
C	lights each of	candle power requiring a total current of	Amperes
D	lights each of	candle power requiring a total current of	Amperes
E	lights each of	candle power requiring a total current of	Amperes
	4 Mast head light with <u>one</u> lamp each of	32 candle power requiring a total current of	4.1 Amperes
	2 Side light with <u>one</u> lamp each of	10 candle power requiring a total current of	0.6 Amperes
	4 Cargo lights of 5 lamps each, each 16 candle power, whether incandescent or arc lights		<u>Incandescent</u>

If arc lights, what protection is provided against fire, sparks, &c. \_\_\_\_\_

Where are the switches controlling the masthead and side lights placed Chart room on upper bridge.

## DESCRIPTION OF CABLES.

Main cable carrying 45.6 Amperes, comprised of 60 wires, each # 20 S.W.G. diameter, 1.06110 square inches total sectional area  
 Branch cables carrying 19.5 Amperes, comprised of 7 wires, each # 16 S.W.G. diameter, 1.02250 square inches total sectional area  
 Branch cables carrying 12.5 Amperes, comprised of 7 wires, each # 18 S.W.G. diameter, 1.01266 square inches total sectional area  
 Leads to lamps carrying 5.3 Amperes, comprised of 7 wires, each # 20 S.W.G. diameter, 1.00712 square inches total sectional area  
 Cargo light cables carrying 10.4 Amperes, comprised of 7 wires, each # 18 S.W.G. diameter, 1.01266 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

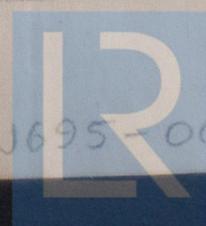
Insulated by using lead cable.

Joints in cables, how made, insulated, and protected Cables are jointed in joint boxes made of porcelain and protected by wooden boxes where necessary.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances no. 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 accessible

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 By brass band fixed on wooden board and protected by wooden box or iron pipe where necessary and elsewhere by using lead cable.



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**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 By iron pipe.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat By wooden box.

What special protection has been provided for the cables near boiler casings By armoured wire.

What special protection has been provided for the cables in engine room By iron pipe.

How are cables carried through beams Holes bushed with lead sheet. through bulkheads, &c. through water tight metal flange.

How are cables carried through decks through brass or iron socket.

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 wooden box or by using the cable winding with galvanized wire.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage Yes, but not in coal bunker.

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

Where are the main switches and fuses for these lights fitted on Starboard side bunker wall in Engin room.

If in the spaces, how are they specially protected They are protected with higher insulating materials.

Are any switches or fuses fitted in bunkers No.

Cargo light cables, whether portable or permanently fixed portable. How fixed \_\_\_\_\_

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 \_\_\_\_\_, and with an amperemeter \_\_\_\_\_, fixed Main 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.

Ginsburg Jemuda Electrical Engineers Date 28<sup>th</sup> Dec. 1915

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 105 ft

Distance between dynamo or electric motors and steering compass \_\_\_\_\_

The nearest cables to the compasses are as follows:—

A cable carrying	<u>5.7</u> Amperes	<u>7</u> feet from standard compass	_____ feet from steering compass
A cable carrying	_____ Amperes	_____ feet from standard compass	_____ 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 0 degrees on \_\_\_\_\_ course in the case of the standard compass and \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the steering compass.

T. Yamaguchi Builder's Signature. Date 28/12/15

**GENERAL REMARKS.**

The installation has been well fitted & worked satisfactorily on trial.

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

Committee's Minute TUE. 7-MAR. 1916

Im. 8.12.—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.