

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2142

Port of Mohe Date of First Survey 4th Oct Date of Last Survey 19th Nov. No. of Visits 7
 No. in Reg. Book on the Iron or Steel S.S. "Kohso Maru" Port belonging to Osaka
 Built at Osaka By whom The Osaka Iron Works, Ltd When built 1917
 Owners The Osaka Shosen Kaisha Owners' Address Osaka
 Yard No. 902 Electric Light Installation fitted by The Osaka Iron Works, Ltd When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Direct Current Compound wound dynamo, direct coupled to High speed single vertical cylinder open type engine.
 Capacity of Dynamo 6 KW 60 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed In engine room Whether single or double wire system is used Double
 Position of Main Switch Board Eng Rm, star side having switches to groups A, B, C, D, E of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Engine Rm, 5 switches. Men room 3 switches. Saloon, 6 switches. Crew space, 2 switches. Chart room, 8 switches

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 No 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 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 Yes
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 127 Langsten lamps arranged in the following groups:—

A	<u>24</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>10.5</u>	Amperes
B	<u>12</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>6.36</u>	Amperes
C	<u>29</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>14.7</u>	Amperes
D	<u>9</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>4.77</u>	Amperes
E	<u>12</u>	lights each of	<u>10, 16 + 32</u>	candle power requiring a total current of	<u>5.7</u>	Amperes
		Mast head light with	<u>2</u> lamps each of <u>32</u>	candle power requiring a total current of	<u>2.1</u>	Amperes
		Side light with	<u>2</u> lamps each of <u>32</u>	candle power requiring a total current of	<u>2.1</u>	Amperes
		<u>8</u> Cargo lights of <u>5</u> clustered of <u>16</u>		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 In chart room

DESCRIPTION OF CABLES.

Main cable carrying 60 Amperes, comprised of 60 wires, each 20 S.W.G. diameter, 0.0601 square inches total sectional area
 Branch cables carrying 12.5 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, 0.01269 square inches total sectional area
 Branch cables carrying 14.7 Amperes, comprised of 9 wires, each 18 S.W.G. diameter, 0.01629 square inches total sectional area
 Leads to lamps carrying 1.06 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, 0.001809 square inches total sectional area
 Cargo light cables carrying 22 Amperes, comprised of 13 wires, each 18 S.W.G. diameter, 0.02713 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Through cabin by lead covered wire, & through machinery & cargo spaces by armoured wire or lead covered wire carried thro. galvanized iron piping.
 Joints in cables, how made, insulated, and protected porcelain or cast iron boxes
 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 As above

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *No*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Carried through galvanized iron pipes.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Armoured or carried in q. i. pipes*

What special protection has been provided for the cables near boiler casings *do do*

What special protection has been provided for the cables in engine room *do do*

How are cables carried through beams *Lead sheet covers* through bulkheads, &c. *W. T. glands with rubber*

How are cables carried through decks *Through q. i. pipes flanged to the deck*

Are any cables run through coal bunkers *No* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes*

If so, how are they protected *Armoured wire or carried through q. i. pipes*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *No*

If so, how are the lamp fittings and cable terminals specially protected *✓*

Where are the main switches and fuses for these lights fitted *✓*

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 *To socket by plug at end of cluster wire.*

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 *In Eng. Rm.*

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.

Builders & Electrical Engineers Date *20th Jan 1918*

COMPASSES.

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

Distance between dynamo or electric motors and steering compass *115 ft*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>5.3</i>			

Have the compasses been adjusted with and without the electric installation at work at full power

The maximum deviation due to electric currents, etc., was found to be _____ degrees on _____ course in the case of the standard compass and _____ degrees on _____ course in the case of the steering compass.

G. Yemuda Manager, *Osaka Iron Works Ltd.* Builder's Signature. Date *20th Jan 1918*

GENERAL REMARKS.

This installation has been fitted in accordance with the requirements of the Rules & worked satisfactorily on trial.

It is submitted that this vessel is eligible for THE RECORD. Elec. light.

J.W.D. 2/4/18

Arthur Jones

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

