

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2550

Port of Mohe Date of First Survey 2nd May Date of Last Survey 23rd June 1919 No. of Visits 8
 No. in Reg. Book on the Iron or Steel I.S.S. "Amazon Maru" Port belonging to Osaka
 Built at Osaka By whom The Osaka Iron Works Ltd When built 1919
 Owners M. Osaka Shosen Kaisha Owners' Address Osaka
 Yard No. 882 Electric Light Installation fitted by The Osaka Iron Works Ltd When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

D.C. Compound wound open type dynamo
Single cylinder high speed, enclosed self lubricating non condensing type
 Capacity of Dynamo 20 H.P. 200 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed In Eng. Rm. Bottom platform
 Position of Main Switch Board in engine room having switches to groups A, B, C, D, E, F of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each

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 Yes
 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 30 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 277 arranged in the following groups:—

A	Mach. space	67 lights each of	16	candle power requiring a total current of	35.57	Amperes
B	Mt. Dr. house	38 lights each of	16	candle power requiring a total current of	20.14	Amperes
C	Tr'dk. house	35 lights each of	16	candle power requiring a total current of	18.55	Amperes
D	Upper bridge	20 lights each of	16	candle power requiring a total current of	10.60	Amperes
E	Lower bridge	11 lights each of	16	candle power requiring a total current of	5.89	Amperes
	Crew's quarters	43	16	candle power requiring a total current of	22.79	Amperes
	Mast head light with	2 lamps each of	32	candle power requiring a total current of	2.12	Amperes
	Side light with	2 lamps each of	32	candle power requiring a total current of	2.12	Amperes

not Cargo lights of 4 clusters each 50 candle power, whether incandescent or are lights Incandescent

If are lights, what protection is provided against fire, sparks, &c. Two are lamps protected by glass globe, requiring a total of 25.5 + 8 amperes.

Where are the switches controlling the masthead and side lights placed in chart room

DESCRIPTION OF CABLES.

Main cable carrying	100	Amperes, comprised of	—	wires, each	18 #/80	L.S.G. diameter,	.1005312	square inches total sectional area
Branch cables carrying	35.5	Amperes, comprised of	—	wires, each	18 #/30	L.S.G. diameter,	.0376992	square inches total sectional area
Branch cables carrying	20.14	Amperes, comprised of	—	wires, each	18 #/19	L.S.G. diameter,	.0238762	square inches total sectional area
Branch cables carrying	18.55	Amperes, comprised of	—	wires, each	18 #/19	L.S.G. diameter,	.0238762	square inches total sectional area
Leads to lamps carrying	10.60	Amperes, comprised of	—	wires, each	18 #/19	L.S.G. diameter,	.0238762	square inches total sectional area
Leads to lamps carrying	5.89	Amperes, comprised of	—	wires, each	18 #/19	L.S.G. diameter,	.0238762	square inches total sectional area
Cargo light cables carrying	22.79	Amperes, comprised of	—	wires, each	18 #/19	L.S.G. diameter,	.0238762	square inches total sectional area
Cargo light cables carrying	2.12	Amperes, comprised of	—	wires, each	18 #/19	L.S.G. diameter,	.0238762	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Engine + Boiler space + Cargo hold using armoured wire or through galvanised w. i. pipes. Lower quarters by lead covered wire protected by wooden covers.

Joints in cables, how made, insulated, and protected Porcelain box or cast iron box.

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 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 stated



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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? *Gal. iron piping*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Armoured wire*

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

What special protection has been provided for the cables in engine room *Armoured wire + galvanized iron piping*

How are cables carried through beams *Lead sheet covering* through bulkheads, &c. *Gland nut packed with rubber*

How are cables carried through decks *thru. g. i. pipe with flange fixed to deck*

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

If so, how are they protected *Armoured wire + gal. iron pipe*

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 cut outs for these lights fitted

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers *No.*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *By plug to socket.*

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 an amperemeter, fixed

The copper used is guaranteed to have a conductivity of *99* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *500* 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.

Y. Hirata. Electrical Engineers Date

COMPASSES.

Distance between dynamo or electric motors and standard compass *About 96 ft*

Distance between dynamo or electric motors and steering compass *106 "*

The nearest cables to the compasses are as follows:—

Cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>2.21</i>	<i>9</i>	<i>8</i>	<i>8</i>
<i>0.53</i>	<i>7</i>	<i>6</i>	<i>6</i>
<i>1.06</i>	<i>20</i>	<i>19</i>	<i>19</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.

L. G. Gumbata Builder's Signature. Date

GENERAL REMARKS.

The installation has been satisfactorily fitted + the Rules complied with. A satisfactory test under working conditions was made. It is submitted that this vessel is eligible for THE RECORD Elec. light. *A. L. Jones* *Y. Jo. assist.* Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute