

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2838

Port of Kobe Date of First Survey 29-3-20 Date of Last Survey 6-4-20 No. of Visits 5
 No. in Reg. Book on the Iron or Steel Steamer "HAVANA MARU" Port belonging to Osaka
 Built at Osaka Iron Works, Immoshima By whom Osaka Iron Works, Immoshima branch When built 1920
 Owners Osaka Shosen Kaisha Owners' Address Osaka
 Yard No. 936 Electric Light Installation fitted by Osaka Iron Works, Immoshima branch When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 Compound dynamo coupled direct to the single cylinder automatic cut off vertical enclosed engine, cylinder diam 7" x stroke 5".

Capacity of Dynamo 15KW. 150 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed E.R. platform S. side Whether single or double wire system is used double

Position of Main Switch Board On stove bulkhead having switches to groups + 8 circuits of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 for Engine room. 1 for food cargo. 1 for Off cargo. 1 for Officers rooms. 1 for navigation. 1 for wireless telegraph. 1 for rice pounder + 1 for fan motors.

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 100 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 200 arranged in the following groups:—

A Engine room	52 lights each of <u>3 200 Watt nitrogen lamp</u>	16 C.P. candle power requiring a total current of	<u>16.584</u>	Amperes
B Officers rooms	92 lights each of <u>16 C.P. TUNGSTEN</u>	candle power requiring a total current of	<u>19.872</u>	Amperes
C Wireless telegraphy	lights each of <u>-</u>	candle power requiring a total current of	<u>35</u>	Amperes
D Fan motors	lights each of <u>-</u>	candle power requiring a total current of	<u>5</u>	Amperes
E Rice pounder	lights each of <u>-</u>	candle power requiring a total current of	<u>8.7</u>	Amperes
Mast head light with	<u>2</u> lamps each of <u>32</u>	candle power requiring a total current of	<u>2.2</u>	Amperes
Side light with	<u>2</u> lamps each of <u>32</u>	candle power requiring a total current of	<u>2.2</u>	Amperes

1 Stern light 16 C.P. requiring 0.56 amps. Cargo lights of 13 clusters of 4 - 50 C.P. candle power, whether incandescent or arc lights Incandescent

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

Where are the switches controlling the masthead and side lights placed At Bridge deck.

DESCRIPTION OF CABLES.

Main cable carrying	<u>150</u> Amperes, comprised of <u>100</u> wires, each <u>20</u> S.W.G. diameter, <u>0.1018</u> square inches total sectional area
Branch cables carrying	<u>16.584</u> Amperes, comprised of <u>7</u> wires, each <u>20</u> S.W.G. diameter, <u>0.007125</u> square inches total sectional area
Branch cables carrying	<u>19.872</u> Amperes, comprised of <u>35</u> wires, each <u>20</u> S.W.G. diameter, <u>0.03525</u> square inches total sectional area
Leads to lamps carrying	<u>0.216</u> Amperes, comprised of <u>1</u> wires, each <u>18</u> S.W.G. diameter, <u>0.001809</u> square inches total sectional area
Cargo light cables carrying	<u>20.5</u> Amperes, comprised of <u>26</u> wires, each <u>20</u> S.W.G. diameter, <u>0.01323</u> square inches total sectional area

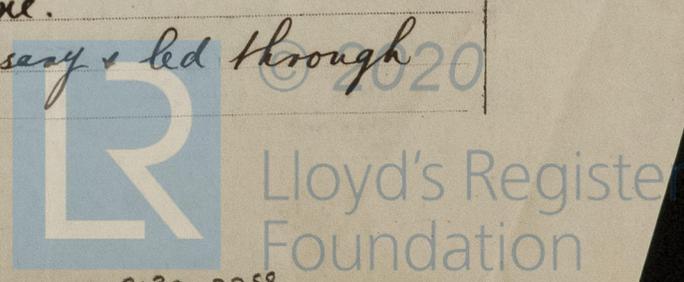
DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors are doubly insulated with india-rubber + vulcanized rubber + tape. Cables are protected against mechanical + chemical injury by steel wire armour or lead covering according to the requirements. Joints in cables, how made, insulated, and protected Mechanical joints made throughout and protected by water-tight 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 None.

How are the cables led through the ship, and how protected Protected where necessary + led through galvanized W.I. pipe.



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 *Without additional protection other than that on the cables themselves*

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

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

What special protection has been provided for the cables in engine room *When necessary galvanized w i piping*

How are cables carried through beams *Pierced & wood lined through bulkheads, &c. Through water tight glands*

How are cables carried through decks *Through w i pipes*

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 their armoured covering & where necessary galvanized w i 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 fuses for these lights fitted *—*

If in the spaces, how are they specially protected *—*

Are any switches or fuses fitted in bunkers *—*

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 *yes* and with an amperemeter *yes*, fixed *On 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.

N. Mitsunori Electrical Engineers

Date *22 April 1920*

COMPASSES.

Distance between dynamo or electric motors and standard compass *95 feet*

Distance between dynamo or electric motors and steering compass *160 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>0.216</i>	Amperes	<i>16</i>	feet from standard compass	feet from steering compass
A cable carrying	<i>0.216</i>	Amperes	<i>7</i>	feet from standard compass	feet from steering compass
A cable carrying	<i>0.216</i>	Amperes	<i>7</i>	feet from standard compass	feet from steering compass

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.

K. Miyamoto

OSAKA IRON WORKS, LTD.

Builder's Signature.

Date *22 April 1920*

GENERAL REMARKS

This Installation has been fitted in accordance with the requirements of the Rules, and worked satisfactorily on trial

It is submitted that this vessel is eligible for THE RECORD. Elee Lt.

RM 9/8/20

J.G. Fry

Surveyor to Lloyd's Register of Shipping.

Im. 16.—Transfer.

Committee's Minute

FRI. AUG. 13 1920



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