

## 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 on the Iron or Steel Steamer "HAVANA MARU" Port belonging to Osaka  
 Reg. Book Built at Osaka Iron Works, Immoshima By whom Osaka Iron Works, Immoshima When built 1920  
 Owners Osaka Shosen Kaisha Owners' Address Osaka  
 Yard No. 936 Electric Light Installation fitted by Osaka Iron Works, Immoshima 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 aft 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 3 200 Watt nitrogen lamp candle power requiring a total current of 16.584. Amperes

B Officers rooms 92 lights each of 16 C.P. TUNGSTEN candle power requiring a total current of 19.872. Amperes

C Wireless telegraph. lights each of - candle power requiring a total current of 35. Amperes

D Fan motors lights each of - candle power requiring a total current of 5. Amperes

E Rice pounder. lights each of - candle power requiring a total current of 8.7. Amperes

Mast head light with 2 lamps each of 32. candle power requiring a total current of 2.2 Amperes

Side light with 2 lamps each of 32. candle power requiring a total current of 2.2. 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 150. Amperes, comprised of 100. wires, each 20. S.W.G. diameter, 0.1018 square inches total sectional area

Branch cables carrying 16.584 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, 0.007125 square inches total sectional area

Branch cables carrying 19.872 Amperes, comprised of 35 wires, each 20. S.W.G. diameter, 0.03525 square inches total sectional area

Leads to lamps carrying 0.216 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, 0.001809 square inches total sectional area

Cargo light cables carrying 20.5 Amperes, comprised of 26 wires, each 20. S.W.G. diameter, 0.01323 square inches total sectional area

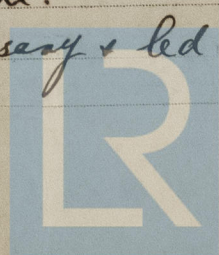
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

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*  
*160 feet*

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

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

OSAKA IRON WORKS, LTD.

*K. Miyamoto*

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.*

*Rem 9/8/20*

*J. G. Fry*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. AUG. 13 1920



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