

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3257.

Port of Kobe Date of First Survey July 5<sup>th</sup> Date of Last Survey Aug. 5<sup>th</sup> 1921 No. of Visits 6  
 No. in Reg. Book on Iron Steel S/S. "USURI MARU" Port belonging to Habu, Hiroshimaken Japan  
 Built at Habu, Hiroshimaken Japan By whom Osaka Iron Works Immoshima Yd. When built 1921  
 Owners Osaka Iron Works Owners' Address Osaka Japan  
 Yard No. 917 Electric Light Installation fitted by Osaka Iron Works, Immoshima Yd. When fitted 1921

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound 15 K.W. dynamo, coupled direct to the single vertical enclosed engine forced lubrication 7" x 5"

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

Where is Dynamo fixed On starboard side of Engine Room Whether single or double wire system is used Double wire system

Position of Main Switch Board S. side E.R. store Bulkhead 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 One for Officers room, One for Engine Room, One for Fore Cargo lamps, One for after cargo lamps, One for navigation lamps.

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 50 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 150 arranged in the following groups:—

A Officers Room	66 lights each of	16	candle power requiring a total current of	13.2	Amperes
B Engine Room	30 lights each of	16	candle power requiring a total current of	6	Amperes
C Navigation "	13 lights each of	16 + 32	candle power requiring a total current of	6.04	Amperes
D Fore Cargo	5 lights each of	16	candle power requiring a total current of	1	Amperes
E Aft. Cargo	4 lights each of	16	candle power requiring a total current of	.8	Amperes
2 Mast head light with	1 lamps each of	32	candle power requiring a total current of	2.12	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	2.12	Amperes
Stem light	" " "	16	" " " " "	.02	
Cargo lights of 9 clusters for each $\begin{matrix} 1 \times 16 \\ 3 \times 16 \end{matrix}$ candle power, whether incandescent or arc lights <u>Incandescent.</u>					

If arc lights, what protection is provided against fire, sparks, &c. 2 arc lamps are used protected completely requiring a total current of 10 amperes.

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

## DESCRIPTION OF CABLES.

Main cable carrying	150 Amperes, comprised of	2 x 40 wires, each	21	S.W.G. diameter, .06434	square inches total sectional area
Branch cables carrying	13.2 Amperes, comprised of	40 wires, each	21	S.W.G. diameter, .03217	square inches total sectional area
Branch cables carrying	6 Amperes, comprised of	11 wires, each	19	S.W.G. diameter, .01383	square inches total sectional area
Leads to lamps carrying	0.2 Amperes, comprised of	1 wires, each	18	S.W.G. diameter, .00181	square inches total sectional area
Cargo light cables carrying	17.8 Amperes, comprised of	2 x 19 wires, each	20	S.W.G. diameter, .01934 x 2	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 injury and chemical action by steel armouring or lead covering according to the requirements

Joints in cables, how made, insulated, and protected Mechanical joints are made throughout and protected with water tight cast iron boxes and insulated by porcelain or slate bases.

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 Armoured wire and led through galvanized W.I. pipes.



**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 galvanized W.I. pipes

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

What special protection has been provided for the cables near boiler casings as above

What special protection has been provided for the cables in engine room by armoured wire or galvanized W.I. pipe.

How are cables carried through beams sheet lead bushes through bulkheads, &c. by glands with indian rubber packing.

How are cables carried through decks flanged galvanized W.I. pipe

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 by armoured wire or wire through 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 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 yes, and with an amperemeter yes, fixed on the 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 11/15/21

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 95'-0"

Distance between dynamo or electric motors and steering compass 150'-0"

The nearest cables to the compasses are as follows:—

A cable carrying	<u>48</u>	Amperes	<u>16'-0"</u>	feet from standard compass	feet from steering compass
A cable carrying	<u>2.12</u>	Amperes	<u>7'-0"</u>	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

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.

A. Kaiyama Builder's Signature. Date \_\_\_\_\_

**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. Elec Light

Roll Ans.

21/9/21

J. G. Fry  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute JULY 27 1921

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

