

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2285

Port of  Kobe  Date of First Survey  24 April  Date of Last Survey  10<sup>th</sup> June 1918  No. of Visits  7   
 No. in Reg. Book on the Iron or Steel  S.S. "Raisho Maru"  Port belonging to  Mitsuzushima   
 Built at  Osaka  By whom  The Osaka Iron Works Ltd  When built  1918   
 Owners  Mynr. Katuda Risen Raishu  Owners' Address  Kobe   
 Yard No.  900  Electric Light Installation fitted by  The Osaka Iron Works Ltd  When fitted  1918

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

High Speed, non condensing, single vertical enclosed self lubricating engine   
 Multipolar, compound wound direct driven dynamo.   
 Capacity of Dynamo  15 H.P. 150  Amperes at  100  Volts, whether continuous or alternating current  Continuous   
 Where is Dynamo fixed  Eng. room, bottom platform  Whether single or double wire system is used  Double   
 Position of Main Switch Board  Close to dynamo on bhd.  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 in mess room, one in steward's room, one in chart room, one in carpenter's room & one in engine room.

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  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  185 + 2 arc lamps  arranged in the following groups:—  
 A  Eng. room 59  lights each of  16  candle power requiring a total current of  12  Amperes  
 B  Officer rooms 55  lights each of  16  candle power requiring a total current of  17  Amperes  
 C  Navigation 5  lights each of  16 + 32  candle power requiring a total current of  5  Amperes  
 D  Fore cargo 1 arc lamp + 30  lights each of  1000 + 16  candle power requiring a total current of  21  Amperes  
 E  After cargo 1 arc lamp + 36  lights each of  1000, 16 + 32  candle power requiring a total current of  25  Amperes  
 Must 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  
 Cargo lights of  13-5 clusters 16  candle power, whether incandescent or arc lights  Incandescent   
 If arc lights, what protection is provided against fire, sparks, &c.  Double globe with iron bar guards

Where are the switches controlling the masthead and side lights placed  at bridge deck.

### DESCRIPTION OF CABLES.

Main cable carrying	150	Amperes, comprised of	lead wires, each	100/18#	S.W.G. diameter,	.0181	square inches total sectional area
Branch cables carrying	7.5	Amperes, comprised of	armoured or lead wires, each	11/18#	S.W.G. diameter,	.0199	square inches total sectional area
Branch cables carrying	7.4	Amperes, comprised of	armoured wires, each	7/18#	S.W.G. diameter,	.0127	square inches total sectional area
Branch cables carrying	10	Amperes, comprised of	armoured wires, each	15/18#	S.W.G. diameter,	.027	square inches total sectional area
Leads to lamps carrying	51.2	Amperes, comprised of	lead wires, each	11/18#	S.W.G. diameter,	.0199	square inches total sectional area
Leads to lamps carrying	20.4	Amperes, comprised of	lead wires, each	16#	S.W.G. diameter,	.0322	square inches total sectional area
Cargo light cables carrying	25	Amperes, comprised of	armoured wires, each	15/18#	S.W.G. diameter,	.027	square inches total sectional area
Cargo light cables carrying	12	Amperes, comprised of	armoured wires, each	15/18#	S.W.G. diameter,	.027	square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

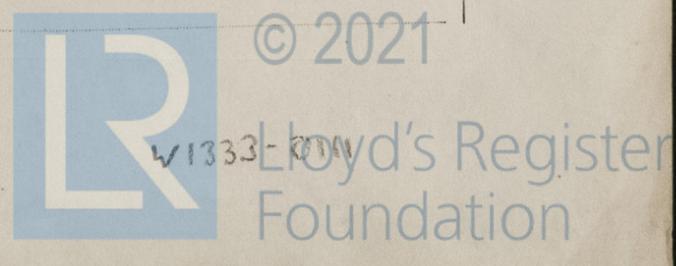
Officer's room lead covered wire through wooden covers Engine + Boiler space and cargo holds armoured wire or through galvanized W.I. pipe

Joints in cables, how made, insulated, and protected  porcelain hot or cast iron top.

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  Through pipes, armoured or lead covered in wood casings.



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 By galvanized W. I. pipes.

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 do

What special protection has been provided for the cables in engine room Armoured wire or galv. W. I. pipes.

How are cables carried through beams Covered with lead sheet through bulkheads, &c. By gland nuts with india rubber packing Complete

How are cables carried through decks through galv. W. I. pipes with flanges 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 ✓

If so, how are they protected By the use of armoured wire or galvanized W. I. pipes as covers.

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 500 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.

Electrical Engineers Date

COMPASSES.

Distance between dynamo or electric motors and standard compass About 120'

Distance between dynamo or electric motors and steering compass About 120'

The nearest cables to the compasses are as follows:—

A cable carrying	<u>0.2</u>	Amperes	<u>about 15</u>	feet from standard compass	<u>about 8'</u>	feet from steering compass
A cable carrying		Amperes		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.

G. Agnew Builder's Signature. Date

GENERAL REMARKS.

The 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

10-10-18 A. L. Jones  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

5c, 118.—Transfer.

