

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2544

Port of *Kobe* Date of First Survey *20 Mar.* Date of Last Survey *25 Apr 1919* No. of Visits *7*  
 No. in *1* on the Iron or Steel *L. I. S. Amur Maru* Port belonging to *Osaka*  
 No. Book *1* Built at *Osaka* By whom *The Osaka Iron Works Ltd* When built *1919*  
 Owners *The Osaka Shosen Kaisha* Owners' Address *Osaka*  
 No. *881* Electric Light Installation fitted by *The Osaka Iron Works Ltd.* When fitted *1919*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*Enclosed Self lubricating high speed non condensing single vertical engine D.C. compound wound dynamo.*  
 Capacity of Dynamo *20 KW 200* Amperes at *100* Volts, whether continuous or alternating current *Continuous current*  
 Where is Dynamo fixed *At Engine Room.*  
 Position of Main Switch Board *At the dynamo* having switches to groups *For main circuit branches & main switch and 8 branches wire and wireless circuit*  
 Positions of auxiliary switch boards and numbers of switches on each *one for engine room, one for fire cargo, one for middle deck, one for S.S. & fire men room, one for navigation light, one for after cargo, one for fore officer's room, one for Bracket & ceiling fan.*  
 Cut outs are fitted on main switch board to the cables of main circuit *fitted* and on each auxiliary switch board to the cables of auxiliary circuits *fitted* and at each position where a cable is branched or reduced in size *Branched and reduced* and to each lamp circuit *fitted*.  
 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 *fitted*  
 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:—  

Engine Room 67 lights each of <i>16 C.P.</i>	candle power requiring a total current of <i>35.51</i>	Amperes
Shelter deck aft Cabin 22 lights each of <i>16 C.P.</i>	candle power requiring a total current of <i>20.14</i>	Amperes
Shelter deck fore Cabin 33 lights each of <i>16 C.P.</i>	candle power requiring a total current of <i>18.55</i>	Amperes
Lower Bridge Cabin 11 lights each of <i>16 C.P.</i>	candle power requiring a total current of <i>10.60</i>	Amperes
Upper Bridge 11 lights each of <i>16 C.P.</i>	candle power requiring a total current of <i>5.83</i>	Amperes
Middle deck 43 lights each of <i>16 C.P.</i>	candle power requiring a total current of <i>22.79</i>	Amperes
Mast head light with <i>2</i> lamps each of <i>32 C.P.</i>	candle power requiring a total current of <i>2.12</i>	Amperes
Side light with <i>2</i> lamps each of <i>32 C.P.</i>	candle power requiring a total current of <i>2.12</i>	Amperes

 Cargo lights of *14-4 clustered 14* candle power, whether incandescent or are lights *incandescent*  
 Are lights, what protection is provided against fire, sparks, &c. *Two arc lamps protected by glass globe, key requiring a total of 20.5 + 8 Amperes*  
 Where are the switches controlling the masthead and side lights placed *at bridge*

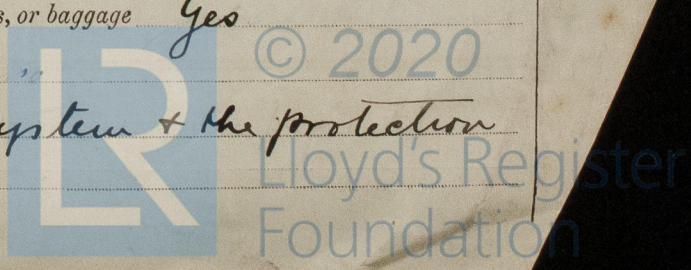
## DESCRIPTION OF CABLES.

Main cable carrying <i>100</i> Amperes, comprised of <i>Lead</i> wires, each <i>18/80</i>	L.S.G. diameter, <i>1.025312</i> square inches total sectional area
Branch cables carrying <i>35.51</i> Amperes, comprised of <i>Lead</i> wires, each <i>18/80</i>	L.S.G. diameter, <i>0.238762</i> square inches total sectional area
Branch cables carrying <i>18.55</i> Amperes, comprised of <i>Lead</i> wires, each <i>18/80</i>	L.S.G. diameter, <i>0.138230</i> square inches total sectional area
Cables to lamps carrying <i>5.83</i> Amperes, comprised of <i>Lead</i> wires, each <i>18/80</i>	L.S.G. diameter, <i>0.238762</i> square inches total sectional area
Cargo light cables carrying <i>2.12</i> Amperes, comprised of <i>Lead</i> wires, each <i>18/80</i>	L.S.G. diameter, <i>0.238762</i> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Engine and boiler space & Casar*  
*Cables covered with rubber sheathing galvanized wire pipe, Officers*  
*room and Crew's quarters leads covered with through wooden covers.*  
 Cables in cables, how made, insulated, and protected  
*Porcelain and Cast iron are used.*  
 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 *yes*  
 How are the cables led through the ship, and how protected *By double wire system & the protection*  
*as described above*

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**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible *1.0*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *by galvanized wire pipe*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *By the use of 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 *By the use of armoured wire galvanized wire pipe*

How are cables carried through beams *Lead sheet to channel* through bulkheads, &c. *by lead sheet with india rubber packing complete*

How are cables carried through decks *Through a galvanized wire pipe 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 *no*

If so, how are they protected *By the use of armoured wire or wire through galvanized wire pipe*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *nothing*

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

Cargo light cables, whether portable or permanently fixed *portable* How fixed *by plug*

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

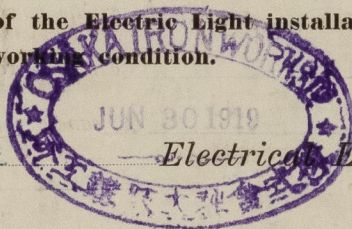
How are the lamps specially protected in places liable to the accumulation of vapour or gas

The installation is supplied with a voltmeter and an amperemeter, fixed

The copper used is guaranteed to have a conductivity of *97* 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. L. Hunt* Electrical Engineers

Date

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *above 9' 6"*

Distance between dynamo or electric motors and steering compass *" 1' 00"*

The nearest cables to the compasses are as follows:—

A cable carrying *9.21* Amperes *above 9'* feet from standard compass *above 8'* feet from steering compass

A cable carrying *0.53* Amperes *" 7'* feet from standard compass *" 6'* feet from steering compass

A cable carrying *1.06* Amperes *" 10'* feet from standard compass *" 19'* feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power *yes*

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.

*Ernesto Yemudas*

Builder's Signature.

Date

**GENERAL REMARKS.**

*The installation has been fitted in accordance with*

*It is submitted that this vessel is eligible for*

*THE RECORD Elec. light* *12/8/19* Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute *FRI. AUG. 29. 1919*

*FRI. MAY. 7 1920*

*TUE. APR. 27 1920*

*FRI. MAY. 14 1920*



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.