

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2417.

Port of KOBE, JAPAN. Date of First Survey 28<sup>th</sup> Apr. Date of Last Survey 29<sup>th</sup> May No. of Visits 6  
 No. in Reg. Book on the ~~Iron~~ Steel S.S. SHANGHAI MARU Port belonging to KOBE  
 Built at KOBE. By whom, Kawasaki Dockyard Co Ltd. When built 1919.  
 Owners The Kawasaki Dockyard Co Ltd. Owners' Address Kobe, Japan.  
 Yard No. 415 Electric Light Installation fitted by The Kawasaki Dockyard Co Ltd. When fitted 1919.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One set of compound dynamo coupled directly to the single cylinder automatic cut-off vertical enclosed engine with forced lubrication.  
 8" dia. 6" stroke 450 R.P.M.

Capacity of Dynamo 170 Amperes at 100 Volts, whether continuous or alternating current Continuous.

Where is Dynamo fixed In the engine room

Position of Main Switch Board in the engine room having switches to groups A, B, C, D, E & F of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 2 in the engine room, 2 on the awning deck, 4 on the bridge deck and 1 on pilot bridge having one main switch on each board.

If cut outs 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes.

Are the cut outs of non-oxidizable metal Yes. and constructed to fuse at an excess of 100 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, porcelain and marble are used.

Total number of lights provided for 147 arranged in the following groups :-

A	103	lights each of	16	candle power requiring a total current of	37.0	Amperes
B	13	lights each of	5	candle power requiring a total current of	2.5	Amperes
C	29	lights each of	32	candle power requiring a total current of	32.5	Amperes
D	2	lights each of	1,500	candle power requiring a total current of	10.0	Amperes
E		lights each of		candle power requiring a total current of		Amperes
	2	Mast head light with 2 lamps each of	32	candle power requiring a total current of	2.24	Amperes
	2	Side light with 2 lamps each of	32	candle power requiring a total current of	2.24	Amperes
	6	Cargo lights of	128 + 1,500	candle power, whether incandescent or are lights	incandescent.	

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

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

## DESCRIPTION OF CABLES.

Main cable carrying 170.0 Amperes, comprised of 250 wires, each No. 20 L.S.G. diameter, 0.2500 square inches total sectional area  
 Branch cables carrying 6.0 Amperes, comprised of 12 wires, each No. 20 L.S.G. diameter, 0.0120 square inches total sectional area  
 Branch cables carrying 3.5 Amperes, comprised of 1 wire, each No. 16 L.S.G. diameter, 0.0032 square inch total sectional area  
 Branch cables carrying 14.0 Amperes, comprised of 12 wires, each No. 20 L.S.G. diameter, 0.0120 square inches total sectional area  
 Branch cables carrying 14.0 Amperes, comprised of 12 wires, each No. 20 L.S.G. diameter, 0.0120 square inches total sectional area  
 Branch cables carrying 25.5 Amperes, comprised of 15 wires, each No. 20 L.S.G. diameter, 0.0150 square inch total sectional area  
 Branch cables carrying 17.0 Amperes, comprised of 14 wires, each No. 20 L.S.G. diameter, 0.0140 square inches total sectional area

Leads to lamps carrying 2.5 Amperes, comprised of 1 wire, each No. 18 L.S.G. diameter, 0.0018 square inches total sectional area

Cargo light cables carrying 5 Amperes, comprised of 234 wires, each No. 38 L.S.G. diameter, 0.0066 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors are doubly insulated with india rubber and vulcanized rubber and Taps.  
 Cables are protected against mechanical injury and chemical action by steel armoring 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 boxes.

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 None

How are the cables led through the ship, and how protected Cables are led unconcealed and without any additional protections beside those on cables themselves.



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

Are they in places always accessible *They are all in accessible places.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Without any additional protections beside those 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 *In some parts where necessary the cables are led through iron pipes.*

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

How are cables carried through decks *Pierced and led through iron 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 *With lead covering and steel armoring on the cables themselves.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *None.*

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 *None.*

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

**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 *two amperemeters fixed on a marble switch board.*

The copper used is guaranteed to have a conductivity of *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* 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.

*S. Tada* Electrical Engineers

Date *7th, 6, 19.*

**COMPASSES.**

Distance between dynamo ~~or electric motors~~ and standard compass *76 feet.*

Distance between dynamo ~~or electric motors~~ and steering compass *68 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying <i>4.0</i> Amperes	<del>6</del> <i>5</i> feet from standard compass	<del>15</del> <i>13</i> feet from steering compass
A cable carrying <i>5.6</i> Amperes	<i>6</i> feet from standard compass	<i>15</i> 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.

*[Signature]* Per *J. Nakajima* Secretary.

Builder's Signature. Date

**GENERAL REMARKS.**

*The installation has been fitted in accordance with the Rule requirements and worked satisfactorily on trial.*

*It is submitted that this vessel is eligible for Electric Light. Reg. 8-7-19.*

*Alexander Watt.*

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

FRI. JUL. 18. 1919



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

FORM FOR NO. 13.