

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2411

Port of *Kobe* Date of First Survey *28 Feb* Date of Last Survey *22 Nov. 1918* No. of Visits *10*
 No. in Reg. Book on the *Lower* Steel *S. S. "Hofuku Maru"* Port belonging to *Kobe*
 Built at *Kobe* By whom *The Kawasaki Dry Dock Co. Ltd.* When built *1918*
 Owners *The Kawasaki Dry Dock Co. Ltd.* Owners' Address *Kobe*
 Yard No. *423* Electric Light Installation fitted by *The Kawasaki Dry Dock Co. Ltd.* When fitted *1918*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets of compound dynamo coupled directly to the single cylinder automatic cut-off vertical enclosed engine with natural lubrication.
5" dia. 6" stroke 450 r/m.

Capacity of Dynamo *150* 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 & C* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *1 in engine room, 1 in boiler room, 4 on shelter deck, 1 on lower bridge and 1 on the after main, 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 & marble are used.*

Total number of lights provided for *164 lamps* arranged in the following groups:—

A	<i>116</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>52.00</i>	Amperes
B	<i>13</i>	lights each of	<i>5</i>	candle power requiring a total current of	<i>2.50</i>	Amperes
C	<i>33</i>	lights each of	<i>32</i>	candle power requiring a total current of	<i>36.00</i>	Amperes
D	<i>2</i>	lights each of	<i>1,200</i>	candle power requiring a total current of	<i>9.00</i>	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

5 incandescent and 2 arc Cargo lights of *128 + 1,200* candle power, whether incandescent or arc lights *incandescent and arc light*

If arc lights, what protection is provided against fire, sparks, &c. *Adequate fuses are inserted and arc is protected with inner and outer globes.*

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

DESCRIPTION OF CABLES.

Main cable carrying	<i>150</i> Amperes, comprised of	<i>1,636</i> wires, each	<i>No. 30</i> L.S.G. diameter,	<i>0.1970</i> square inches total sectional area
Branch cables carrying	<i>27.0</i> Amperes, comprised of	<i>75</i> wires, each	<i>No. 30</i> L.S.G.	<i>0.0090</i> square inches total sectional area
Branch cables carrying	<i>12.5</i> Amperes, comprised of	<i>75</i> wires, each	<i>No. 30</i> L.S.G. diameter,	<i>0.0090</i> square inches total sectional area
Branch cables carrying	<i>14.0</i> Amperes, comprised of	<i>234</i> wires, each	<i>No. 38</i> L.S.G.	<i>0.0066</i> square inches total sectional area
Branch cables carrying	<i>15.5</i> Amperes, comprised of	<i>201</i> wires, each	<i>No. 38</i> L.S.G. diameter,	<i>0.0057</i> square inches total sectional area
Branch cables carrying	<i>24.5</i> Amperes, comprised of	<i>14</i> wires, each	<i>No. 20</i> L.S.G.	<i>0.0140</i> square inches total sectional area
Leads to lamps carrying	<i>0.5</i> Amperes, comprised of	<i>1</i> wires, each	<i>No. 18</i> L.S.G. diameter,	<i>0.0018</i> square inches total sectional area
Cargo light cables carrying	<i>4.5</i> Amperes, comprised of	<i>283</i> wires, each	<i>No. 38</i> L.S.G. diameter,	<i>0.0080</i> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors are doubly insulated with india rubber and vulcanized rubber and tape. 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 cast iron 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 those on cables themselves.*

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 protection 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. provided with U.T. 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 armouring on the cables*
 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 the U.T. cast iron boxes*
 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 switchboard*

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.

[Signature] Electrical Engineers Date

COMPASSES.

Distance between dynamo or electric motors and standard compass *Dynamo to standard compass 115 feet*
 Distance between dynamo or electric motors and steering compass *Motor 110 feet*
Dynamo " steering " 105 feet
Motor " " " 100 feet

The nearest cables to the compasses are as follows:—

Cable	Amperes	Feet from standard compass	Feet from steering compass
A cable carrying <i>5.6</i>	<i>6</i>	<i>15</i>	<i>15</i>
A cable carrying <i>13.5</i>	<i>17</i>	<i>13</i>	<i>13</i>
A cable carrying			

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] Builder's Signature. Date
 Per *[Signature]* Secretary.

GENERAL REMARKS.

The installation has been fitted under Special Survey in accordance with the Rules & was Red satisfactorily on trial

It is submitted that this vessel is eligible for THE RECORD Blue light
A. L. Jones Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute *TUE 11 MAR. 1919* *7/3/19*