

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1634

Port of *Robe* Date of First Survey *Jan. 14* Date of Last Survey *May 12/15* No. of Visits *14*  
 No. in Reg. Book *34 Sup* on the *hull* or Steel *Y. I. I. "Toyohashi Maru"* Port belonging to *Tokio*  
 Built at *Robe* By whom *Messrs The Kawasaki Dry Dock Co. Ltd.* When built *1915*  
 Owners *Messrs The Nippon Yusen Kaisha* Owners' Address *Tokio*  
 Yard No. *372* Electric Light Installation fitted by *Messrs The Kawasaki Dry Dock Co. Ltd.* When fitted *1915*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

The generating set consist of a single cylinder double acting engine, capable of working with 15 K.W. open multipolar type compound wound dynamo.

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

Where is Dynamo fixed *after part of engine room* Whether single or double wire system is used *double wire system.*

Position of Main Switch Board *after part of engine room* having switches to groups *9* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Distribution boxes with a switch:*

*1 on pilot bridge; 2 on bridge deck; 2 on upper deck; 3 in engine & boiler room.*

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.*

Total number of lights provided for *192.* arranged in the following groups:—

A	84 lights each of	16	candle power requiring a total current of	42	Amperes
B	15 lights each of	16	candle power requiring a total current of	7	Amperes
C	39 lights each of	5, 16, 32.	candle power requiring a total current of	12.2	Amperes
D	39 lights each of	16	candle power requiring a total current of	8	Amperes
E	15 lights each of	16	candle power requiring a total current of	6.5	Amperes
	2 Mast head light with 1 lamps each of (double filaments).	32	candle power requiring a total current of	2.4	Amperes
	2 Side light with 1 lamps each of (double filaments).	32	candle power requiring a total current of	2.4	Amperes
	12 Cargo lights of 200		candle power, whether incandescent or arc lights	incandescent.	

If arc lights, what protection is provided against fire, sparks, &c. *2—7.5 amperes arc lights & 1—search light were supplied. Both of them are enclosed type and supplied with regulator.*

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

## DESCRIPTION OF CABLES.

Main cable carrying *150* Amperes, comprised of *150* wires, each *#20* L.S.G. diameter, *0.152* square inches total sectional area  
 Branch cables carrying *42* Amperes, comprised of *50* wires, each *#20* L.S.G. diameter, *0.051* square inches total sectional area  
 Branch cables carrying *8* Amperes, comprised of *7* wires, each *#20* L.S.G. diameter, *0.007* square inches total sectional area  
 Leads to lamps carrying *0.6* Amperes, comprised of *1* wires, each *#18* L.S.G. diameter, *0.0018* square inches total sectional area  
 Cargo light cables carrying *8* Amperes, comprised of *283* wires, each *#38* L.S.G. diameter, *0.008* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Armoured rubber insulated wire, lead covered rubber insulated wire, or cotton braided rubber insulated wire are used.*

Joints in cables, how made, insulated, and protected

*Joints in cables are made on small marble plates in water proof junction 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 bunks, 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 *They led along deck or bulkhead and fixed with brass bands, if necessary on iron plates.*



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 galvanized steel armoured wires are used.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Avoided as possible

What special protection has been provided for the cables near boiler casings galvanized steel armoured wires are used.

What special protection has been provided for the cables in engine room galvanized steel armoured wires are used.

How are cables carried through beams Through lead tubes. through bulkheads, &c. through lead glands.

How are cables carried through decks Through water tight glands.

Are any cables run through coal bunkers no. or cargo spaces no. or spaces which may be used for carrying cargo, stores, or baggage yes.

If so, how are they protected galvanized steel armoured wires are used.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage with iron cover or brass guard.

If so, how are the lamp fittings and cable terminals specially protected cariculate or porcelain insulation are used.

Where are the main switches and cut outs for these lights fitted in distribution boxes out side of these space.

If in the spaces, how are they specially protected none.

Are any switches or cut outs fitted in bunkers none.

Cargo light cables, whether portable or permanently fixed portable How fixed by socket in cargo light boxes.

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel none.

How are the returns from the lamps connected to the hull none.

Are all the joints with the hull in accessible positions none. switch board.

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

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 yes.

Are any switches, cut outs, or joints of cables fitted in the pump room or companion lighting with rubber packing.

How are the lamps specially protected in places liable to the accumulation of vapour or gas none.

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 1000. 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.

J. Saka

Electrical Engineers

Date May 1915

COMPASSES.

Distance between dynamo or electric motors and standard compass 140 feet from main dynamo & 120 feet from motor generator.

Distance between dynamo or electric motors and steering compass 180 feet from main dynamo & 150 feet from motor generator.

The nearest cables to the compasses are as follows:—

Cable	Amperes	feet from standard compass	feet from steering compass
A cable carrying <u>12.2</u>	<u>25</u>	<u>230</u>	<u>feet from steering compass</u>
A cable carrying <u>40</u>	<u>30</u>	<u>176</u>	<u>feet from steering compass</u>
A cable carrying <u>14</u>	<u>130</u>	<u>20</u>	<u>feet from steering compass</u>

Have the compasses been adjusted with and without the electric installation at work at full power no

The maximum deviation due to electric currents, etc., was found to be no degrees on no course in the case of the standard compass and no degrees on no course in the case of the steering compass.

Kawasaki Dockyard Co., Ltd.

Builder's Signature.

Date

GENERAL REMARKS.

The installation is well fitted & worked satisfactorily on trial.

It is submitted that this vessel is eligible for

THE RECORD. Elec. light.

28/6/15

A. L. Jones

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

Committee's Minute TUE. JUN. 29 1915