

TUE. APR. 20. 1915

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1601

Port of Osaka Date of First Survey 7 Aug 1914 Date of Last Survey Feb 22 1915 No. of Visits 12
 No. in on the ~~Iron~~ Steel Twin S.S. "Harbin Maru" Port belonging to Osaka
 Reg. Book 20 Sup Built at Osaka By whom The Kawasaki Dockyard Co. Ltd. When built 1915
 Owners Messrs The Osaka Shosen Kaisha Owners' Address Osaka
 Yard No. 371 Electric Light Installation fitted by Messrs The Kawasaki Dockyard Co. Ltd. When fitted 1915

DESCRIPTION OF DYNAMO, ENGINE, ETC.

The generating set consist of two single cylinder automatic cut-off vertical enclosed engine, each capable of working with 30 k.w. open multipolar type compound wound dynamo.
 Capacity of Dynamo 30 k.w. 300 Amperes at 100 Volts, whether continuous or alternating current continuous current.
 Where is Dynamo fixed engine room, star board. Whether single or double wire system is used double wire system
 Position of Main Switch Board dynamo room. having switches to groups 8 switches of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each distribution box with switches:
2 on navigation bridge; 4 on bridge deck; 5 on shelter deck; 6 on upper deck;
2 on hold deck.
 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 421 arranged in the following groups:—

A	A	43	lights each of	16 (1-50 c.p.)	candle power requiring a total current of	14	Amperes
B	B	80	lights each of	16	candle power requiring a total current of	37	Amperes
C	C	85	lights each of	16	candle power requiring a total current of	50	Amperes
D	D	38	lights each of	16 (1-50 c.p.)	candle power requiring a total current of	26	Amperes
E	E	57	lights each of	16	candle power requiring a total current of	28	Amperes
F	F	57	lights each of	16	candle power requiring a total current of	27	Amperes
G	G	61	lights each of	16	candle power requiring a total current of	36	Amperes
	2 Mast head light with	1 lamp each of	32	candle power requiring a total current of	2.4	Amperes	
	2 Side light with	1 lamp each of	32	candle power requiring a total current of	2.4	Amperes	
	4 Cargo lights of	200	candle power, whether incandescent or arc lights	incandescent lights.			

If arc lights, what protection is provided against fire, sparks, &c. none.

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

DESCRIPTION OF CABLES.

Main cable carrying 250 Amperes, comprised of 250 wires, each # 30 L.S.G. diameter, 0.302³² square inches total sectional area
 Branch cables carrying 50 Amperes, comprised of 50 wires, each # 20 L.S.G. diameter, 0.0505 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 1.8 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 cables, lead covered rubber insulated cables, or cotton braided rubber insulated cables are used.

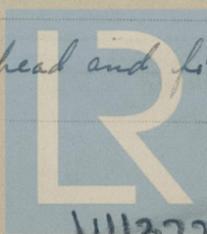
Joints in cables, how made, insulated, and protected

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



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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 fitted on porcelain sheets.

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

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

The installation is two supplied with a voltmeter and two amperemeter, fixed on main switch board.

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 tightening with glass cover and rubber.

How are the lamps specially protected in places liable to the accumulation of vapour or gas tightening with glass cover and rubber.

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. Saku Electrical Engineers Date 12/3/1915

COMPASSES.

Distance between dynamo or electric motors and standard compass 152 ft from main dynamo and 96 ft from motor-generator.

Distance between dynamo or electric motors and steering compass 160 ft from main dynamo and 122 ft from motor-generator.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>15</u>	Amperes	<u>64</u>	feet from standard compass	<u>142</u>	feet from steering compass
A cable carrying	<u>5</u>	Amperes	<u>62</u>	feet from standard compass,	<u>145</u>	feet from steering compass
A cable carrying	<u>8</u>	Amperes	<u>130</u>	feet from standard compass	<u>43</u>	feet from steering compass

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 COMPANY, LTD.

J. Saku Business Manager Builder's Signature. Date

GENERAL REMARKS. The installation has been well fitted in accordance with the Rules requirements & worked satisfactorily on trial

It is submitted that this vessel is eligible for
THE RECORD Elec. Light. JWD APR 21/15 A. L. Jones
 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute **FRI. APR. 23, 1915**



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