

MON. 22 JAN. 1923

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3781

Port of Kobe Date of First Survey 27-10-22 Date of Last Survey 2-12-22 No. of Visits 8
 No. in on the Iron Steel S/S. "MONTREAL MARU" Port belonging to Kobe
 Reg. Book Built at Kobe By whom Kawasaki Dockyard Co., Ltd. When built 1922
 Owners Kawasaki Dockyard Co., Ltd. Owners' Address Kobe
 Yard No. 482 Electric Light Installation fitted by Kawasaki Dockyard Co., Ltd. When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC.

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

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

Where is Dynamo fixed In the engine room. Whether single or double wire system is used double.

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

Positions of auxiliary switch boards and numbers of switches on each 3 in engine room, 1 in boiler room, 2 on upper deck, 8 on awning deck, 1 on bridge deck and 1 on navigation bridge having one main switch on each board.

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

Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 100 per cent over the normal current

Are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases Yes, porcelain and marble are used.

Total number of lights provided for 228 arranged in the following groups:—

A	14	lights each of	5	candle power requiring a total current of	2.45	Amperes
B	151	lights each of	16	candle power requiring a total current of	36.24	Amperes
C	61	lights each of	32	candle power requiring a total current of	68.32	Amperes
D	2	lights each of	1500	candle power requiring a total current of	10.00	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
14	Cargo lights of	128 and 1500	candle power, whether incandescent or are lights	incandescent		

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

Where are the switches controlling the masthead and side lights placed

DESCRIPTION OF CABLES.

Main cable carrying 170.00 Amperes, comprised of 2500 wires, each No. 30 S.W.G. diameter, 0.3000 square inches total sectional area
 Branch " " 10.80 " " 7 " " No. 20 " " " 0.0070 " " " " "
 Branch cables carrying 31.88 Amperes, comprised of 19 wires, each No. 20 S.W.G. diameter, 0.0190 square inches total sectional area
 " " 42.45 " " 19 " " No. 20 " " " 0.0190 " " " " "
 Branch cables carrying 31.88 Amperes, comprised of 19 wires, each No. 20 S.W.G. diameter, 0.0190 square inches total sectional area
 Leads to lamps carrying 0.5 Amperes, comprised of 1 wires, each No. 18 S.W.G. diameter, 0.0018 square inches total sectional area
 Cargo light cables carrying 5.0 Amperes, comprised of 234 wires, each No. 38 S.W.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 tape. Cables are protected against mechanical injury and chemical action by steel armouring 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, and the flux used not containing acids or other corrosive substances 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 the 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 a wood lined through bulkheads, &c. Ringed through and 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 armouring 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 fuses for these lights fitted ✓
 If in the spaces, how are they specially protected ✓
 Are any switches or fuses fitted in bunkers *None* ✓
 Cargo light cables, whether portable or permanently fixed *Portable* How fixed *on a marble switchboard* ✓
 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 fuses fitted in positions not liable to the accumulation of petroleum vapour or gas
 Are any switches, fuses, 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 copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.
 Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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 *5th 12. 22.*

COMPASSES.

Distance between dynamo or electric motors and standard compass	<i>dynamo and standard compass</i>	<i>112 feet.</i>
	<i>motor</i>	<i>108 feet.</i>
Distance between dynamo or electric motors and steering compass	<i>dynamo " steering "</i>	<i>170 feet.</i>
	<i>motor " " "</i>	<i>163 feet.</i>

The nearest cables to the compasses are as follows:—

A cable carrying	<i>5.60</i>	Ampères	<i>9</i>	feet from standard compass	<i>264</i>	feet from steering compass
A cable carrying	<i>8.31</i>	Ampères	<i>240</i>	feet from standard compass	<i>22</i>	feet from steering compass
A cable carrying		Ampères		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.

Kawasaki Dockyard Co., Ltd.

Builder's Signature. Date *14th Dec. 1922.*

GENERAL REMARKS.

Per. *J. Ota Kane* Secretary.

This Installation has been fitted in accordance with the Rules and worked satisfactorily on trial. It is submitted that this vessel is eligible for

ELEC LIGHTS FEE ¥ 240⁰⁰ appo for Dec 2nd 1922.
Dec. 1/123 2884

THE RECORD. Elec. Light
A. Watt *24/1/23*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 FRI. 26 JAN. 1923
 TUE. 10 APR. 1923
 FRI. NOV. 16 1923
 TUES. 23 DEC 1924



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.