

TUE JUN 12 1923

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3920.

Port of **KOBE**. Date of First Survey **1923 JAN 6TH** Date of Last Survey **1923 APRIL 20TH** No. of Visits **15**.
 No. in Reg. Book on the ~~Iron~~ Steel **S/S RHINE MARU** Port belonging to **KOBE**.
 Built at **KOBE** By whom **Kawasaki Dockyard Co Ltd** When built **1923**.
 Owners **Messrs Kawasaki Dockyard Co Ltd** Owners' Address **Kobe**.
 Yard No. **481** Electric Light Installation fitted by **Messrs Kawasaki Dockyard Co Ltd** When fitted **1923**.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets of Compound dynamo, directly connected to the single cylinder automatic cut off vertical enclosed engine, with forced lubrication 8" dia, 6" stroke, 450 R.P.M. and steam pressure 120 ^{4 1/2} lbs.

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 and D** of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each **4 sets in the engine room, 1 set in the boiler room, 10 sets on the awning deck, 1 set on the bridge deck and 1 set on the 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 **233** arranged in the following groups:—

A	14	lights each of	5	candle power requiring a total current of	2.54	Amperes
B	152	lights each of	16	candle power requiring a total current of	36.10	Amperes
C	61	lights each of	32	candle power requiring a total current of	58.10	Amperes
D	4	lights each of	100	candle power requiring a total current of	6.00	Amperes
E	2	lights each of	1,500	candle power requiring a total current of	10.00	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 1,500	candle power, whether incandescent or arc lights	incandescent	

If arc 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	170.00 Amperes, comprised of	2500 wires, each	no. 30	S.W.G. diameter,	0.3000	square inches total sectional area
Branch cables carrying	17.30	30	no. 20	"	0.030	" " " " " "
Branch cables carrying	38.20 Amperes, comprised of	30 wires, each	no. 20	S.W.G. diameter,	0.030	square inches total sectional area
"	33.68	19	no. 20	"	0.019	" " " " " "
Branch cables carrying	33.68 Amperes, comprised of	19 wires, each	no. 20	S.W.G. diameter,	0.019	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 joint are made throughout and protected with water tight cast iron 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 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 same parts where necessary the cables are led through iron pipe*

How are cables carried through beams *pierced through and wood lined through bulkheads, &c. pierced through and provided with water tight gland.*

How are cables carried through decks *pierced and led through iron pipe.*

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

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

Is the installation supplied with a voltmeter *yes one volt meter*, and with an amperemeter *yes two ammeters*, fixed on a marble switch board

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 *29th 3. 23.*

COMPASSES.

Distance between dynamo or electric motors and standard compass

Dynamo to standard compass 110 feet
motor " " " 115 "
Dynamo to steering compass 165 "
motor " " " 160 "

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

Cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>2.4</i>	<i>4</i>	<i>244</i>	<i>244</i>
<i>11.0</i>	<i>12</i>	<i>244</i>	<i>244</i>
<i>4.</i>	<i>240</i>	<i>7</i>	<i>7</i>

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.

Builder's Signature.

Kawasaki Dockyard Co., Ltd.

Date

29th 3. 23.

Per

Secretary.

GENERAL REMARKS.

This Installation has been fitted in accordance with the requirements of the Rules and worked satisfactorily on trial.

ELEC. LIGHT FEE ¥240

it is submitted that this vessel is eligible for THE RECORD. Elec. light.

APPROVED FOR
Apr. 20th 1923

REC'D
Apr. 25th 1923

A. Watt.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 29 JUN 1923*



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