

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2045

Port of Kobe Date of First Survey 26 May Date of Last Survey 26 June 1917 No. of Visits 12
 No. in Reg. Book on the Iron or Steel Twin Screw S. "War Soldier" Port belonging to
 Built at Kobe By whom The Kawasaki Dry Dock Co Ltd When built 1917-6
 Owners Messrs Furness, Withy & Co Ltd Owners' Address London & Liverpool
 Yard No. 389 Electric Light Installation fitted by The Kawasaki Dry Dock Co Ltd When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets of D.C. compound dynamo coupled directly to the single cylinder automatic cut-off vertical enclosed engine with forced lubrication. 18" dia. 6" stroke 450 revolution per minute.

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

Where is Dynamo fixed Thrust recess in the engine room Whether single or double wire system is used Double

Position of Main Switch Board Thrust recess in engine room having switches to groups A, B, C, D, E & F of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 2 in the engine room, 2 in the boiler room, 4 on the bridge deck, 1 on the pilot bridge, 1 on the fore main and 1 on the after main having 1 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 20 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 236 lamps arranged in the following groups:—

A	96	lights each of	5, 16 & 32	candle power requiring a total current of	33	Amperes
B	1 arc & 16	lights each of	1200 & 32	candle power requiring a total current of	23	Amperes
C	1 arc & 12	lights each of	1200 & 32	candle power requiring a total current of	19	Amperes
D	35	lights each of	32 & 16	candle power requiring a total current of	15	Amperes
E	7 fan motors and 75	lights each of	16	candle power requiring a total current of	45	Amperes
F	One 9.5 H.P. motor for refrigerating machine			requiring a total current of	30	Amperes
	2 Mast head lights 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

2 arc & 7 incandescent Cargo lights of 1200 & 128 candle power, whether incandescent or arc lights incandescent & arc lights

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	170 amperes, comprised of	37	wires, each	14	S.W.G. diameter,	.182	square inches total sectional area
Main cable carrying	33 Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cable carrying	23 Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cables carrying	19 Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cables carrying	15 Amperes, comprised of	7	wires, each	18	S.W.G. diameter,	.0125	square inches total sectional area
Branch cables carrying	45 Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cables carrying	80 Amperes, comprised of	60	wires, each	20	S.W.G. diameter,	.061	square inches total sectional area
Leads to lamps carrying	.5 Amperes, comprised of	1	wires, each	18	S.W.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	4.5 Amperes, comprised of	283	wires, each	38	S.W.G. diameter,	.00850	square inches total sectional area

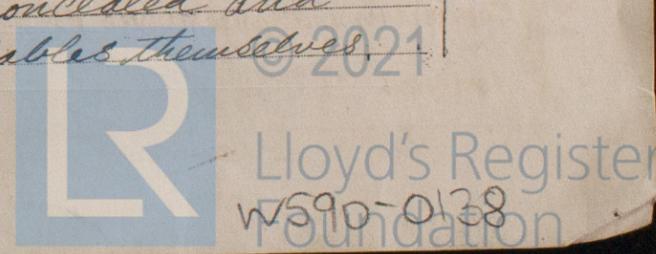
DESCRIPTION OF INSULATION, PROTECTION, ETC.

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, 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 protection 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 pipe.*

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

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 armoring 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 fuses for these lights fitted

If in the spaces, how are they specially protected

Are any switches or fuses fitted in bunkers

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *In the water tight 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

Is the installation supplied with a voltmeter *Yes* and with an amperemeter *Yes, 2 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 *9/7/17*

COMPASSES.

Distance between dynamo or electric motors and standard compass *Dynamo - standard compass 136 ft. Motor - standard compass 128 ft.*

Distance between dynamo or electric motors and steering compass *Dynamo - steering compass 124 ft. Motor - steering compass 116 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>5.6</i> Amperes	<i>5</i> feet from standard compass	<i>8</i> feet from steering compass
A cable carrying	<i>18.5</i> Amperes	<i>16</i> feet from standard compass	<i>12</i> feet from steering compass
A cable carrying	Amperes	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.

per K. Nakajima Builder's Signature. Date

GENERAL REMARKS.

Secretary.

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

It is submitted that this vessel is eligible to THE RECORD. Elec. light.

Arthur L. Jones
Surveyor to Lloyd's Register of Shipping.

JD 27/8/17

Committee's Minute TUE. AUG. 28 1917.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

