

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2206

Port of Kobe Date of First Survey 29 Decem Date of Last Survey 8 Feb'y '18 No. of Visits 8
 No. in Reg. Book on the Iron or Steel S. S. Tofuku Maru Port belonging to Kobe
 Built at Kobe By whom The Kawasaki Dryd Co Ltd When built 1918
 Owners The Kawasaki Dryd Co Ltd Owners' Address
 Yard No. 407 Electric Light Installation fitted by The Kawasaki Dryd Co Ltd When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

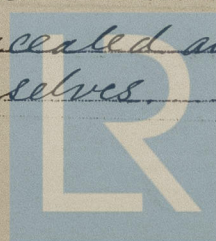
Two sets of compound dynamo coupled directly to the single cylinder automatic cutoff vertical enclosed engine with forced lubrication.
8" dia. 6" stroke 450 r.p.m.
 Capacity of Dynamo 170 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed in the engine room 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 1 in the engine room, 1 in the boiler room,
4 on the shelter deck, 1 on the lower bridge and 1 on the after main
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 & marble are used
 Total number of lights provided for 164 lamps arranged in the following groups:—
 A 73 lights each of 16, 32 & 5 candle power requiring a total current of 27.0 Amperes
 B 1 arc & 12 lights each of 1200 & 32 candle power requiring a total current of 18.5 Amperes
 C 1 arc & 8 lights each of 1200 & 32 candle power requiring a total current of 14.0 Amperes
 D 27 lights each of 16 & 32 candle power requiring a total current of 15.5 Amperes
 E 3 arc motors & 42 lights each of 16 candle power requiring a total current of 24.5 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
2 arc & 5 incandescent Cargo lights of 1200 & 128 candle power, whether incandescent or arc lights incandescent and arc light
 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, .1820 square inches total sectional area
 Branch cables carrying 27 Amperes, comprised of 7 wires, each 19 S.W.G. diameter, .0086 square inches total sectional area
 Branch cables carrying 18.5 Amperes, comprised of 7 wires, each 19 S.W.G. diameter, .0086 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, .0080 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 & 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 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 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 a wood lined through bulkheads, &c. Pierced 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 *without any additional protection on 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

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 the main 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.

J. Tade

Electrical Engineers

Date *6th 3.18.*

COMPASSES.

Distance between dynamo or electric motors and standard compass	<i>Dynamo to standard compass</i>	<i>115 ft.</i>
	<i>Motor</i>	<i>110 ft.</i>
Distance between dynamo or electric motors and steering compass	<i>Dynamo, steering</i>	<i>105 ft.</i>
	<i>Motor</i>	<i>100 ft.</i>

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying	Amperes	feet from standard compass	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.

Kawasaki Dockyard Co., Ltd.

Per *M. K. K. K.* Secretary.

Builder's Signature. Date

GENERAL REMARKS.

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

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

J.W.D. 2/5/18.

Arthur L. Jones

Surveyor to Lloyd's Register of Shipping.

Committee's Minute.



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