

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2915.

Port of Kobe Date of First Survey 15th June Date of Last Survey 30th June No. of Visits 5  
 No. in Reg. Book on the Iron or Steel S. Scr. Steamer "TOBA" Port belonging to Rotterdam  
 Built at Harima By whom Harima Dockyard When built June 1920  
 Owners Rotterdam Lloyd Owners' Address Rotterdam  
 Yard No. 43 Electric Light Installation fitted by Harima Dockyard When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One direct current open type compound dynamo directly coupled with special high speed single engine.

Capacity of Dynamo 15 K.W. 136 Amperes at 110 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Starboard in Engine Room Whether single or double wire system is used Double Wire System

Position of Main Switch Board Side by the dynamo having switches to groups Seven Circuits of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Have no auxiliary switch board, but on the same dynamo panel, have six switches each for Engine + Boiler Engineers + Crew, Saloon + Store, Cargo lamp, Signal lamp + Wireless

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

Total number of lights provided for 242 arranged in the following groups:—

A	Jungsten lamp	176	lights each of	16 (20 WATTS)	candle power requiring a total current of	32.00	Amperes
B	"	55	lights each of	32 (40 WATTS)	candle power requiring a total current of	20.00	Amperes
C	"	1	lights each of	50 (60 " )	candle power requiring a total current of	0.54	Amperes
D	Carbon lamp	5	lights each of	32 (112 " )	candle power requiring a total current of	5.10	Amperes
E	Nitria lamp	3	lights each of	1000 (500 " )	" " " "	2.10	Amperes
	Fan motor	5	sets " "	600 (200 " )	candle power requiring a total current of	5.44	Amperes
	2 Mast head light with + 1 stern light	2	lamps each of	32 (112 " )	candle power requiring a total current of	2.74	Amperes
	2 Side light with	3	lamps each of	32 (112 " )	candle power requiring a total current of	2.04	Amperes
	13 Cargo lights of	128			candle power, whether incandescent or arc lights <u>incandescent</u>	3.06	Amperes

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 136 Amperes, comprised of 37 wires, each #16 S.W.G. diameter, 0.118 square inches total sectional area

Branch cables carrying 14.7 Amperes, comprised of 7 wires, each #18 S.W.G. diameter, 0.0125 square inches total sectional area

Branch cables carrying 15.6 Amperes, comprised of 7 wires, each #18 S.W.G. diameter, 0.0125 square inches total sectional area

Branch cables carrying 11.8 Amperes, comprised of 7 wires, each #18 S.W.G. diameter, 0.0125 square inches total sectional area

Branch cables carrying 5.1 Amperes, comprised of 7 wires, each #20 S.W.G. diameter, 0.007 square inches total sectional area

Cargo light cables carrying 280 Amperes, comprised of 2x11 wires, each #16 S.W.G. diameter, 2x0.0354 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

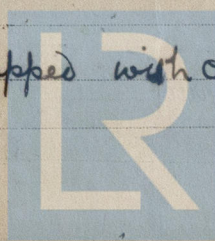
Well insulated armoured wires are used in hold and bunkers, also in the Engine + Boiler room except under gratings where steel tubes are used to lead the wires.

Joints in cables, how made, insulated, and protected Cable are all jointed in the joint boxes made of iron

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 Armoured wires are cramped with clip on steel plate which is screwed to the beams



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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 Lead covered wires are used in such places as exposed to weather or moisture.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat armoured wires are used.

What special protection has been provided for the cables near boiler casings Steel pipe is used

What special protection has been provided for the cables in engine room armoured wires are used or protected by steel tubes

How are cables carried through beams Pierced & clipped with lead washers in holes.

How are cables carried through decks Deck tubes are to be used

Are any cables run through coal bunkers no or cargo spaces yes or spaces which may be used for carrying cargo, stores, or baggage yes

If so, how are they protected armoured wires

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage no

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 no

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, and with an amperemeter yes, fixed yes

**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. Kaung

Electrical Engineers

Date

**COMPASSES.**

Distance between dynamo or electric motors and standard compass about 145 feet.

Distance between dynamo or electric motors and steering compass about 206 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>11.8</u>	Amperes	<u>about 14</u>	feet from standard compass	feet from steering compass
A cable carrying	<u>6.4</u>	Amperes	<u>" 30</u>	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.

THE TEIKOKU STEAMSHIP CO., LTD.

Builder's Signature.

Date

**GENERAL REMARKS.**

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

J. G. Luff

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRIDAY, 18 1920



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