

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2906

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Port of Kobe Date of First Survey Feb. 2<sup>nd</sup> 1920 Date of Last Survey June 14<sup>th</sup> 1920 No. of Visits 15  
 No. in Reg. Book on the Iron Steel Single Ser. 51<sup>st</sup> EASTERN LEADER Port belonging to Osaka  
 Built at Osaka By whom Fujinagata Dockyard Co. When built 1920  
 Owners U.S. Shipping Board Emergency Fleet Owners Address Fujinagata Dockyard Co. When fitted 1920  
 Yard No. 37 Electric Light Installation fitted by Fujinagata Dockyard Co.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Each generator compound wound with 4 poles for 15 K.W. + with 6 poles for 12 K.W. + is direct coupled to a vertical high speed simple engine

Capacity of Dynamo 1-15 K.W. 136 Amperes at 110 Volts, whether continuous or alternating current Continuous  
 1-12 K.W. 120

Where is Dynamo fixed Engine Room starting platform Whether single or double wire system is used Double

Position of Main Switch Board 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 Engine Room 1 for forward circuit, 11 for midship circuit, 6 for engine + boiler room circuit, 1 for navigation + Bridge circuit.

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 none 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-oxidisable metal yes and constructed to fuse at an excess of 50 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 173 arranged in the following groups :-

A Forward Circuit	13 lights each of	16	candle power requiring a total current of	2.6	Amperes
B Amidship	80 lights each of	75 at 16 C.P.			
C Engine Room	33 lights each of	32 at 16 C.P. 1 at 100	candle power requiring a total current of	7 + 9.9	Amperes
D Navigation	15 lights each of	16	candle power requiring a total current of	1.6 + 7.6	Amperes
E Cargo lamp	32 lights each of	24 at 32 C.P. 8 at 500 WATTS	candle power requiring a total current of	3.0	Amperes
F Wireless circuit	Circuit only				
2 Mast head light with	2 lamps each of	16	candle power requiring a total current of	22.8 + 22.8	Amperes
2 Side light with	2 lamps each of	16	candle power requiring a total current of	.8	Amperes
4 Cargo lights of	6 at 32		candle power, whether incandescent or arc lights	.8	Amperes

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

Where are the switches controlling the masthead and side lights placed In Chart Room

## DESCRIPTION OF CABLES.

Main cable carrying	136 Amperes, comprised of	3 parallel	7 wires, each	16	S.W.G. diameter,	.066	square inches total sectional area
Branch cables carrying	76 Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cables carrying	16+26 Amperes, comprised of	7	wires, each	18	S.W.G. diameter,	.0125	square inches total sectional area
Leads to lamps carrying	7+99 Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Cargo light cables carrying	22.6 Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber of best quality lead covered + armoured.

Joints in cables, how made, insulated, and protected used Joint + Distribution boxes with fuses for lamps are

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 No

How are the cables led through the ship, and how protected Holds + engine room armoured, Saloon + berths lead covered.

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 and armoured.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered + armoured.

What special protection has been provided for the cables near boiler casings Lead covered + armoured.

What special protection has been provided for the cables in engine room Lead covered + armoured.

How are cables carried through beams with fiber tube through bulkheads, &c. Water tight gland.

How are cables carried through decks with deck tube

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

If so, how are they protected Lead covered + armoured

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 no

Where are the main switches and fuses for these lights fitted no

If in the spaces, how are they specially protected no

Are any switches or fuses fitted in bunkers no

Cargo light cables, whether portable or permanently fixed Portable How fixed no

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel no

How are the returns from the lamps connected to the hull no

Are all the joints with the hull in accessible positions no

Is the installation supplied with a voltmeter yes and with an amperemeter yes 2, fixed 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.

G. Furukawa. Electrical Engineers Date July 10th 1920

COMPASSES.

Distance between dynamo or electric motors and standard compass 80'

Distance between dynamo or electric motors and steering compass 70'

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
1	13	15	15
0.2	5	15	15
2.5	81	15	15

Have the compasses been adjusted with and without the electric installation at work at full power yes

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.

Fujinagata Builder's Signature Date July 10th 1920

GENERAL REMARKS.

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

It is submitted that this vessel is eligible for Full Record. Elec Lt.

R. M. 21/8/20 H. Lawson. Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. AUG. 31 1920

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.