

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2576

Port of Osaka Date of First Survey 7 July Date of Last Survey 29 July 19 No. of Visits 7
 on the Iron or Steel S.S. "Heinan Maru" Port belonging to Mitsuyahama
 No. in Osaka By whom The Osaka Iron Works, Ltd. When built 1919
 eg. Book Built at Osaka Owners' Address Kobe
 owners The Natsuda Steamship Co. Electric Light Installation fitted by The Osaka Iron Works, Ltd. When fitted 1919
 Card No. 960

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Enclosed self lubricating high speed non condensing single cyl. vertical engine. Direct current compound dynamo
 Capacity of Dynamo 10 KW. 100 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine platform, starboard side Whether single or double wire system is used Double wire
 Position of Main Switch Board at the dynamo 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 Engine Room. Engineer's mess room. Chart room. Pantry. Passage.

If fuses are fitted on main switch board to the cables of main circuit Fitted and on each auxiliary switch board to the cables of auxiliary circuits Fitted and at each position where a cable is branched or reduced in size no and to each lamp circuit fitted
 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 fitted
 Are the fuses of non-oxidisable metal yes and constructed to fuse at an excess of 30 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 111 arranged in the following groups:—

Group	Description	Number of Lights	Wires	Candle Power	Amperes
A	Eng. Room	28	16	14.84	Amperes
B	After Bridge	16	16	8.48	Amperes
C	Fore bridge	25	16	13.25	Amperes
D	Forecastle	10	16	5.30	Amperes
E	After fore cargo	24	16	36.22 (including 2 arc lights)	Amperes
F	Navigators lights	11	16 + 32	7.95	Amperes
	Must head light with	2	32	2.12	Amperes
	Side light with	2	32	2.12	Amperes
	4 clusters of six Cargo lights of	24	16	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. by heavy glass globe
 Where are the switches controlling the masthead and side lights placed At Bridge deck

DESCRIPTION OF CABLES.

Capacity	Wires	Wires	S.W.G. diameter	Square inches total sectional area
Main cable carrying <u>100</u> Amperes, comprised of <u>80</u> wires, each <u>18</u>			<u>.14469</u>	<u>.019895</u>
Branch cables carrying <u>14.84</u> Amperes, comprised of <u>11</u> wires, each <u>18</u>			<u>.012661</u>	<u>.019895</u>
Branch cables carrying <u>8.48</u> Amperes, comprised of <u>7</u> wires, each <u>18</u>			<u>.012661</u>	<u>.012661</u>
Branch cables carrying <u>13.25</u> Amperes, comprised of <u>7</u> wires, each <u>18</u>			<u>.012661</u>	<u>.012661</u>
Leads to lamps carrying <u>5.30</u> Amperes, comprised of <u>7</u> wires, each <u>18</u>			<u>.012661</u>	<u>.012661</u>
Cargo light cables carrying <u>36.22</u> Amperes, comprised of <u>25</u> wires, each <u>18</u>			<u>.045316</u>	<u>.045316</u>

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Covered wire through wooden covers. Engine and boiler space and Cargo space armoured wire or through galvanized wrought iron pipe. Joints in cables, how made, insulated, and protected porcelain box or cast iron box used.

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

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible No

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture By use of galvanized wrought iron pipe

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat By use of armoured wire

What special protection has been provided for the cables near boiler casings ditto

What special protection has been provided for the cables in engine room Armoured wire or galvanized w.t. iron pipes

How are cables carried through beams Lead sheet cover through bulkheads, &c. gland nut packed with rubber

How are cables carried through decks Through galvanized w.t. iron pipe with flanges fixed to deck

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

If so, how are they protected By armoured wire or through galv. w.t. pipes

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

Cargo light cables, whether portable or permanently fixed Portable How fixed By plug to socket

Do 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 at 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 5 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. Hirata Electrical Engineers Date

COMPASSES.

Distance between dynamo or electric motors and standard compass 0.1 above 128 ft

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	<u>0.53</u>	Amperes	<u>71'</u>	feet from standard compass	feet from steering compass
A cable carrying	<u>2.12</u>	Amperes	<u>12'</u>	feet from standard compass	feet from steering compass
A cable carrying	<u>1.06</u>	Amperes	<u>25'</u>	feet from standard compass	feet from steering compass

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

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.

Kahach 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
Rel 14/10/19

A. L. Jones

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 21 1919

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Line 14—Transfer.



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