

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4985

Port of *Nobe* Date of First Survey *Aug 1st* Date of Last Survey *26 Aug 1925* No. of Visits *6*
 No. in Reg. Book on the ~~Iron~~ Steel *SS "TSUKUSHI MARU"* Port belonging to *SHIMONOSEKI*
 Built at *Osaka* By whom *Osaka Iron Works Ltd* When built *1925*
 Owners *Kaizima Shogyo Kabushiki Kaisha* Owners' Address *2 Karadosho Shimonozeeki*
 Yard No. *1074* Electric Light Installation fitted by *Osaka Iron Works Ltd* When fitted *1925*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

7 K.W. Open type high speed single vertical engine, direct connected to compound dynamo

Capacity of Dynamo *70* ✓ Amperes at *100* ✓ Volts, whether continuous or alternating current *continuous* ✓

Where is Dynamo fixed *Starboard lower engine room* Whether single or double wire system is used *double* ✓

Position of Main Switch Board *near 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 *Eng Room 5 sw. Mess Room, 3 sw. Pastry 1 sw. Crew Space 1 sw.*

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 *102* arranged in the following groups:—

A	FORWARD	28	lights each of	<i>16 + 32</i>	candle power requiring a total current of	<i>6.4</i>	Amperes
B	AFT	18	lights each of	<i>16</i>	candle power requiring a total current of	<i>3.6</i>	Amperes
C	CREW SPACE	13	lights each of	<i>16</i>	candle power requiring a total current of	<i>2.6</i>	Amperes
D	ENG. AIR ROOM	27	lights each of	<i>16 + 32</i>	candle power requiring a total current of	<i>6.6</i>	Amperes
E	NAVIGATION	6	lights each of	<i>10 + 16</i>	candle power requiring a total current of	<i>1.7</i>	Amperes
	2 Mast head light with	1	lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes
	2 Side light with	1	lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes
	6 Cargo lights of		<i>4 lamps, each 16</i>	candle power, whether incandescent or arc lights	<i>Incandescent</i>		

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

Where are the switches controlling the masthead and side lights placed *Upper Bridge, passage way.*

DESCRIPTION OF CABLES.

Main cable carrying	<i>70</i>	Amperes, comprised of	<i>60</i>	wires, each	<i>19</i>	S.W.G. diameter,	<i>.0754</i>	square inches total sectional area
Branch cables carrying	<i>6.6</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>21</i>	S.W.G. diameter,	<i>.0056</i>	square inches total sectional area
Branch cables carrying	<i>1.0</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>16</i>	S.W.G. diameter,	<i>.0032</i>	square inches total sectional area
Leads to lamps carrying	<i>1.0</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>16</i>	S.W.G. diameter,	<i>.0032</i>	square inches total sectional area
Cargo light cables carrying	<i>2.6</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>21</i>	S.W.G. diameter,	<i>.0056</i>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

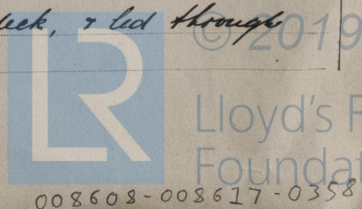
Rubber insulation lead covered in wood casing, in all accommodation spaces
Rubber insulated lead covered and ^{wire} armoured in engine & boiler rooms
& cargo spaces

Joints in cables, how made, insulated, and protected *Porcelain & Cast Iron junction boxes with water tight covers*

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 *clipped to underside of deck, & led through W.T. stuffing boxes in bulkheads*



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 & armoured & part in galvanized wrought iron pipe*

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

What special protection has been provided for the cables near boiler casings *armoured wire kept well clear of the casings*

What special protection has been provided for the cables in engine room *armoured wire on wood base*

How are cables carried through beams *holes in beams lead lined* through bulkheads, &c. *gland with rubber packing*

How are cables carried through decks *iron pipe with flange bolted to deck & made water tight*

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 wire clipped to under side of deck & to beams & rigid flange*

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 *Plugged in 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*, fixed *in 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.

Osaka Iron Works Ltd

Electrical Engineers

Date *26th Aug. 1925*

COMPASSES.

Distance between dynamo or electric motors and standard compass *16'0" from wireless motor*

Distance between dynamo or electric motors and steering compass *14'0" " " "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
2	4	4	
1.0	8	6	
5.7	12	10	

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 *nil* degrees on *all* courses in the case of the standard compass and *nil* degrees on *all* courses in the case of the steering compass.



Signature. Date *8 Sept 1925*

GENERAL REMARKS.

The wiring of this vessel is as stated in this report, and in accordance with the Rules, the installation has been tested under full working conditions & found satisfactory. This case is eligible in my opinion for the Record "Electric Light" in Register Book.

Examiner's Report
1/16/25
Committee's Minute

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

FRI. 30 OCT 1925

H.D. Buchanan
Surveyor to Lloyd's Register of Shipping.



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Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.