

NOV. 15 1920

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2728

Port of YOKOHAMA Date of First Survey Aug. 25<sup>th</sup> Date of Last Survey SEPT. 24 No. of Visits 8  
 No. in Reg. Book on the Iron or Steel S.S. "MORIOKA-MARU" Port belonging to TOKYO  
 Built at URAGA By whom URAGA DOCK CO LTD When built 9. 1920  
 Owners NIPPON Yusen KAISHA Owners' Address 1. YURAKUCHO, ITCHOME, KOJIMACHI TOKYO  
 Yard No. 149 Electric Light Installation fitted by URAGA DOCK CO LTD When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 12 K.W. Generator, direct connected to single vertical engine

Capacity of Dynamo 120 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Lower Engine Room (Starb) Whether single or double wire system is used Double  
 Position of Main Switch Board Near generator having switches to groups A.B.C.D.D<sup>2</sup>E.E<sup>2</sup> of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Chart Room, 5 sw. Fore 3 sw. Chart Room passage 2 sw.  
Saloon Pantry 3 sw. Bridge deck 8 sw. Engine & Boiler Room, 4 sw. Poop, 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-oxidisable metal Yes and constructed to fuse at an excess of 10 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 206 arranged in the following groups:—

A	FORW <sup>d</sup>	43 lights each of	16 & 32 & 1 at 500 Watts	candle power requiring a total current of	18.2	Amperes
B	AMIDSHIPS BRIDGES	50 lights each of	16, 5, & 32	candle power requiring a total current of	13.8	Amperes
C	" ENG: Accomk	49 lights each of	16	candle power requiring a total current of	9.8	Amperes
D <sup>1</sup>	" ENG & BLR: RMS 50	" " "	16	candle power requiring a total current of	10.0	Amperes
D <sup>2</sup>	AFT.	26 lights each of	16, 32, & 1 at 500 Watts	candle power requiring a total current of	13.2	Amperes
E <sup>1</sup>	FANS IN ACCOM: SPACES	31 OFF				
E	WIRELESS	lights each of	✓ 30	candle power requiring a total current of	60	Amperes
2	Mast head light with	2 lamps each of	32	candle power requiring a total current of	2	Amperes
2	Side light with	2 lamps each of	32	candle power requiring a total current of	2	Amperes
10	Cargo lights of	4 lamps each		candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. No arc lamps fitted, 2 Nitrogen lamp each 500 Watts

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

## DESCRIPTION OF CABLES.

Main cable carrying	120 Amperes, comprised of	110 wires, each	20 S.W.G. diameter,	.1120 square inches total sectional area
Branch cables carrying	40 Amperes, comprised of	30 wires, each	20 S.W.G. diameter,	.0305 square inches total sectional area
Branch cables carrying	24 Amperes, comprised of	15 wires, each	20 S.W.G. diameter,	.0153 square inches total sectional area
Leads to lamps carrying	15 Amperes, comprised of	1 wires, each	18 S.W.G. diameter,	.0018 square inches total sectional area
Cargo light cables carrying	7 Amperes, comprised of	7 wires, each	20 S.W.G. diameter,	.0071 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Rubber tape, lead covered & armoured

Joints in cables, how made, insulated, and protected Brass terminals, porcelain bases, in W.T. C.I. boxes.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances ✓ 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 thro' beams, W.T. stuffing boxes in decks & Bulkheads & sent thro' steel tubing



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Foundation



**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 *Wood casings, Amoured & steel tubing*

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

What special protection has been provided for the cables near boiler casings *Amoured cable in steel tubing*

What special protection has been provided for the cables in engine room *Amoured cable in wood casings, part in steel tubing*

How are cables carried through beams *Holes drilled in beams & insulated through bulkheads, &c. W.T. Stuffing boxes*

How are cables carried through decks *Steel tubing & W.T. Stuffing boxes*

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 *Amoured cable led thro beams & clipped to deck & girders*

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 at mast & bulkhead*

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.

*Waga Dock Co Ltd*

Electrical Engineers

Date *4-10-20*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *Approximately 40 ft from Wailer motor*

Distance between dynamo or electric motors and steering compass *" 30 " " "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>50</i>	<i>12</i>	<i>12</i>	<i>12</i>
<i>4</i>	<i>12</i>	<i>8</i>	<i>8</i>
<i>60</i>	<i>12</i>	<i>8</i>	<i>8</i>

Have the compasses been adjusted with and without the electric installation at work at full power *Yes on all courses*

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 *every* course in the case of the steering compass.

*K. Ushiohku*

Builder's Signature.

Date *6-10-20*

**GENERAL REMARKS.**

*The fitting of the wires throughout this vessel are as stated in this report & appear to be in accordance with the Society's Requirements. Eligible in my opinion to have the notation "ELECTRIC LIGHT" in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD. Eke Light.*

*A.D. Buchanan.*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRID NOV. 26 1920