

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4187.

Port of Kobe Date of First Survey 5-7-23 Date of Last Survey 7-12-23 No. of Visits 6
 No. in Reg. Book on the ~~Iron or Steel~~ S.S. "KWAYO MARU" Port belonging to Nakanishi
 Built at Habu, Imoshima By whom Osaka Iron Works When built 1923
 Owners Osaka Iron Works Owners' Address _____
 Yard No. 963 Electric Light Installation fitted by Osaka Iron Works When fitted 1923

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Multipole compound wound dynamo driven direct-ly by 13 H.P. single cylinder (6" x 4") steam engine (550 R.P.M.)
 Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed Starb. side of engine room Whether single or double wire system is used double
 Position of Main Switch Board on bunker bulkhead, starb. side having switches to groups 5 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each One for eng. & boiler rooms, one for officers' & crews' quarters, one for cargo lamps, one for navigation lamps, one for motors.
 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 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 130 arranged in the following groups :-
 A Eng. & Boiler Rooms 26 lights each of 16 candle power requiring a total current of 6 Amperes
 B Offi. & Crew Qu. 65 lights each of 16 candle power requiring a total current of 13 Amperes
 C Cargo Space 26 lights each of various candle power requiring a total current of 14.8 Amperes
 D Navigation 13 lights each of 16 & 32 candle power requiring a total current of 6.4 Amperes
 E _____ lights each of _____ candle power requiring a total current of _____ Amperes
2 Mast head light with 1 lamps each of 32 candle power requiring a total current of 2.12 Amperes
2 Side light with 1 lamps each of 32 candle power requiring a total current of 2.12 Amperes
6 cluster & 2 single Cargo lights of each of 64 candle power, whether incandescent or arc lights incandescent
 If arc lights, what protection is provided against fire, sparks, &c. ✓ 44.44

Where are the switches controlling the masthead and side lights placed In chart-room

DESCRIPTION OF CABLES.

Main cable carrying 100 Amperes, comprised of 2 x 40 wires, each 21 S.W.G. diameter, 0.0643 square inches total sectional area
 Branch cables carrying 13 Amperes, comprised of 25 wires, each 21 S.W.G. diameter, 0.0200 square inches total sectional area
 Branch cables carrying 6.4 Amperes, comprised of 11 wires, each 21 S.W.G. diameter, 0.0088 square inches total sectional area
 Leads to lamps carrying 0.2 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, 0.0018 square inches total sectional area
 Cargo light cables carrying 14.8 Amperes, comprised of 25 wires, each 21 S.W.G. diameter, 0.0200 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Officers & crews quarters & cabin:— Lead covered wire through wooden covers.
Eng. & boiler rooms, cargo spaces:— armoured wire, or through galvanized wrought-iron pipes.
 Joints in cables, how made, insulated, and protected Porcelain & anti-rust boxes
 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 Armoured wire, and protected in galvanized W.I. pipes.



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 by use of
Armoured wire

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

What special protection has been provided for the cables in engine room Armoured wire & galvan. W.I. pipes

How are cables carried through beams covered with sheet-lead through bulkheads, &c. W.I. gland.

How are cables carried through decks through galvanised W.I. pipes.

Are any cables run through coal bunkers Yes 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, or wires through galvanised W.I. 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 No

Cargo light cables, whether portable or permanently fixed portable How fixed by plug

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 on 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.

N. Mitsunori. Electrical Engineers

Date 14th Dec. 1923.

COMPASSES.

Distance between dynamo or electric motors and standard compass 90'-0"

Distance between dynamo or electric motors and steering compass 136'-0"

The nearest cables to the compasses are as follows:—

A cable carrying	<u>1.06</u>	Amperes	<u>3'-7"</u>	feet from standard compass	feet from steering compass
A cable carrying	<u>0.2</u>	Amperes	<u>3'-7"</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.

T. Nishimaki

Builder's Signature.

Date 14th Dec. 1923.

GENERAL REMARKS.

This installation has been fitted in accordance with the requirements of the Rules. The materials & workmanship are good, and the installation was found satisfactory when tried under full working conditions. This vessel is eligible in my opinion for the notation "Elec. Light."

Fee £ 150

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

L. H. F. Young
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. FEB 1 1924



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THE SERVICES ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN