

TUE. -1 FEB. 1916

Received at London Office

19

pt. 13.

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1420

Port of Nobe Date of First Survey Oct 4<sup>th</sup> Date of Last Survey Dec 3<sup>rd</sup> No. of Visits 8  
 No. in 1 on the Iron or Steel S. S. "No 10 Ocean Maru" Port belonging to Nishinomura  
 g. Book Uc 21 Built at Nobe By whom K. Kawasaki Dockyard Co. Ltd When built 1915-12  
 Owners T. Hayashi Owners' Address Osaka  
 Card No. 386 Electric Light Installation fitted by K. Kawasaki Dockyard Co. Ltd When fitted 1915-12

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

The generating set consists of an automatic cut off vertical single cylinder enclosed engine, capable of working with 4 K.W. open multipolar type compound wound dynamo.  
 Capacity of Dynamo 4 K.W. 40 Amperes at 100 Volts, whether continuous or alternating current X  
 Where is Dynamo fixed Engine Room. Whether single or double wire system is used X  
 Position of Main Switch Board Engine Room. having switches to groups 2 switches. of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Distribution box with switch:+  
2 on bridge deck; 1 on upper deck; 1 in engine room.

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 100100 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 61 arranged in the following groups:—  
 A 27 lights each of 16 candle power requiring a total current of 13.5 Amperes  
 B 34 lights each of 5 & 16 candle power requiring a total current of 12.1 Amperes  
 C lights each of candle power requiring a total current of Amperes  
 D lights each of candle power requiring a total current of Amperes  
 E lights each of candle power requiring a total current of Amperes  
2 Mast head light with a lamps each of 32 candle power requiring a total current of 2. Amperes  
2 Side light with a lamps each of 32 candle power requiring a total current of 2. Amperes  
3 Cargo lights of 128 candle power, whether incandescent or ~~arc~~ lights

If arc lights, what protection is provided against fire, sparks, &c. No.

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

## DESCRIPTION OF CABLES.

Main cable carrying 40 Amperes, comprised of 30 wires, each #20 S.W.G. diameter, 0.0305 square inches total sectional area  
 Branch cables carrying 13.5 Amperes, comprised of 7 wires, each #20 S.W.G. diameter, 0.0071 square inches total sectional area  
 Branch cables carrying 5 Amperes, comprised of 1 wires, each #16 S.W.G. diameter, 0.0032 square inches total sectional area  
 Leads to lamps carrying 0.5 Amperes, comprised of 1 wires, each #18 S.W.G. diameter, 0.0018 square inches total sectional area  
 Cargo light cables carrying 4 Amperes, comprised of 67 wires, each #38 S.W.G. diameter, 0.00182 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Armoured rubber insulated lead covered wire, lead covered rubber insulated wire, and cotton braided rubber insulated wire are used.

Joints in cables, how made, insulated, and protected Joints in cables are made on small marble plates in water proof junction 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 They led along deck or bulkhead and fixed with brass bands, if necessary on iron plates.



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W1252-0236



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 Galvanized steel armoured lead covered wires are used.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Galvanized steel armoured lead covered wires are used.

What special protection has been provided for the cables near boiler casings Galvanized steel armoured lead covered wires are used.

What special protection has been provided for the cables in engine room Galvanized steel armoured lead covered wires are used.

How are cables carried through beams Through lead tubes. through bulkheads, &c. Through lead tubes.

How are cables carried through decks Through water tight glands.

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

If so, how are they protected Galvanized steel armoured lead covered wires are used.

Are any lamps fitted in ~~coal bunkers~~ or spaces which may at times be used for cargo, coals, or baggage With iron cover or brass guarded.

If so, how are the lamp fittings and cable terminals specially protected Micanite or porcelain insulation is used.

Where are the main switches and fuses for these lights fitted In distribution boxes outside of these spaces.

If in the spaces, how are they specially protected None.

Are any switches or fuses fitted in bunkers None.

Cargo light cables, whether portable or permanently fixed Portable. How fixed By socket in cargo light boxes.

In vessels fitted on the ~~single wire~~ system, how is the dynamo terminal fixed to the hull of vessel None.

How are the returns from the lamps connected to the hull None.

Are all the joints with the hull in accessible positions None.

Is the installation supplied with a voltmeter Yes., and with an amperemeter Yes., fixed on main switchboard.

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 1,000 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.

KAWASAKI DOCKYARD COMPANY, LTD

S. Tada Electrical Engineers

Date 21<sup>st</sup> Decem. 15

COMPASSES.

Distance between dynamo ~~or electric motors~~ and standard compass 37 feet.

Distance between dynamo ~~or electric motors~~ and steering compass 85 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>5</u> Amperes	<u>10</u> feet from standard compass	<u>108</u> feet from steering compass
A cable carrying	<u>12.1</u> Amperes	<u>16</u> feet from standard compass	<u>70</u> feet from steering compass
A cable carrying	<u>4</u> Amperes	<u>60</u> feet from standard compass	<u>65</u> feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power No.

The maximum deviation due to electric currents, etc., was found to be No. degrees on No. course in the case of the standard compass, and No. degrees on No. course in the case of the steering compass.

KAWASAKI DOCKYARD COMPANY, LTD

T. Hara

Secretary

Builder's Signature.

Date 21<sup>st</sup> December 1915

GENERAL REMARKS.

The installation has been well fitted & worked satisfactorily on trial

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

J.W.D.  
12/16

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute