

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2913

Port of Kobe Date of First Survey 5th May 1920 Date of Last Survey 24th May 1920 No. of Visits 5
 No. in Reg. Book on the Iron or Steel 5/5 "HAVRE MARU" Port belonging to Osaka
 Built at Osaka Iron Works, Imposhima branch By whom Osaka Iron Works, Imposhima branch When built 1920
 Owners Osaka Shosen Kaisha Ltd. Owners' Address Osaka
 Yard No. 937 Electric Light Installation fitted by Osaka Iron Works, Imposhima branch When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound dynamo coupled direct to the single cylinder automatic cut off vertical enclosed engine, cylinder diam. 7" x stroke 5"

Capacity of Dynamo 15 K.W. 150 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed E. R. platform S. side Whether single or double wire system is used Double

Position of Main Switch Board On store bulkhead having switches to groups 4 circuits of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 for Engine Room, 1 for Officers Room, 1 for Ford Cargo, 1 for aft. Cargo, 1 for Navigation, 1 for wireless telegraph, 1 for Rice pounder + 1 for fan motor.

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 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 206 arranged in the following groups :-

A Engine Room	53 lights each of ^{3-200 Watt Nitrogen lamps} 50 Tungsten 16 C.P.	candle power requiring a total current of	16.8	Amperes
B Officers Room	92 lights each of Tungsten 16 C.P.	candle power requiring a total current of	19.872	Amperes
C Wireless telegraphy	lights each of	candle power requiring a total current of	48	Amperes
D Fan Motors	lights each of	candle power requiring a total current of	5	Amperes
E Rice pounder	lights each of	candle power requiring a total current of	8.7	Amperes
Mast head light with	2 lamps each of 32	candle power requiring a total current of	2.2	Amperes
Side light with	2 lamps each of 32	candle power requiring a total current of	2.2	Amperes

1 Stern light 16 C.P. requiring 0.56 amper. Cargo lights of 13 clusters of 4 = 50 C.P. candle power, whether incandescent or arc lights Incandescent

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

Where are the switches controlling the masthead and side lights placed At Bridge Deck

DESCRIPTION OF CABLES.

Main cable carrying	150 Amperes, comprised of 100 wires, each	20 S.W.G. diameter, 0.1018	square inches total sectional area
Branch cables carrying	16.8 Amperes, comprised of 7 wires, each	20 S.W.G. diameter, 0.007125	square inches total sectional area
Branch cables carrying	19.827 Amperes, comprised of 35 wires, each	20 S.W.G. diameter, 0.03255	square inches total sectional area
Leads to lamps carrying	0.216 Amperes, comprised of 1 wires, each	18 S.W.G. diameter, 0.001809	square inches total sectional area
Cargo light cables carrying	40.5 Amperes, comprised of 26 wires, each	20 S.W.G. diameter, 0.01323	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors are doubly insulated with india-rubber + vulcanized rubber + tape.

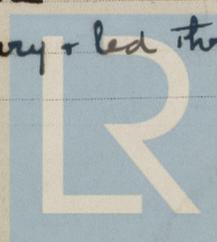
Cables are protected against mechanical + chemical injury by steel wire armour or lead covering according to the requirements.

Joints in cables, how made, insulated, and protected Mechanical joints made throughout and protected by water-tight cast iron 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 None

How are the cables led through the ship, and how protected Protected where necessary + led through galvanized W. I. pipe.



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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 galvanized wrought iron pipe

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

What special protection has been provided for the cables near boiler casings by the use of armoured wire

What special protection has been provided for the cables in engine room by the use of armoured wire or galv. W. I. pipe as cover

How are cables carried through beams Lead sheet covered through bulkheads, &c. by gland nut with india rubber packing complete

How are cables carried through decks through a galv. W. I. pipe with flanges which fixed to decks

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 the use of armoured wire or wired through galvanized W. I. pipe

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 No

Where are the main switches and fuses for these lights fitted No

If in the spaces, how are they specially protected No

Are any switches or fuses fitted in bunkers No

Cargo light cables, whether portable or permanently fixed portable How fixed no

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 no

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 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.

N. Mitsunori Electrical Engineers Date July 10th 1920

COMPASSES.

Distance between dynamo or electric motors and standard compass 95 feet

Distance between dynamo or electric motors and steering compass 160 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>48</u>	Amperes	<u>16</u>	feet from standard compass	feet from steering compass
A cable carrying	<u>0.216</u>	Amperes	<u>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.

OSAKA IRON WORKS, LTD., R. Tashima Builder's Signature Date July 10th 1920

GENERAL REMARKS.

This installation has been fitted in accordance with the requirements of the Rules and worked satisfactorily on trial.

Elec Lt
Roll
2018/40

J. J. Gray
Surveyor to Lloyd's Register of Shipping.

Committee's Minute. TUE. AUG. 24 1920

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 18.—Transfer.



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