

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2784

Port of Yokohama Date of First Survey 6-1-21 Date of Last Survey 24-2-24 No. of Visits 10  
 No. in on the ~~Iron~~ or Steel S. S. Manshu Maru Port belonging to Dairen  
 Reg. Book Built at Kanagawa By whom Uchida S.B. & Co When built 1921  
 Owners Dairen Steamship Co Owners' Address  
 Yard No. 102 Electric Light Installation fitted by Uchida S.B. & Co When fitted 1921

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

1- 15 K.W. Generator direct connected to reciprocating Engine

Capacity of Dynamo 150 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Eng. room platform Whether single or double wire system is used double  
 Position of Main Switch Board near Dynamo having switches to groups A. B. C. D of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Forecastle (1 of 2, 1 of 19), Amidships (1 of 16, 1 of 15, 1 of 23, 1 of 25), Eng. & B.R. (1 of 36, 1 of 22) Poop (1 of 7).

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

Total number of lights provided for 164 arranged in the following groups:—

A	22	lights each of	32	candle power requiring a total current of	9.6	Amperes
B	32	lights each of	32	candle power requiring a total current of	36.4	Amperes
C	54	lights each of	32	candle power requiring a total current of	24.6	Amperes
D	14	lights each of	32	candle power requiring a total current of	8.4	Amperes
E		lights each of		candle power requiring a total current of		Amperes
2	Mast head light with	2	lamps each of	50	candle power requiring a total current of	1.25
2	Side light with	2	lamps each of	50	candle power requiring a total current of	1.25
5	Cargo lights of		125	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 Chart Room.

## DESCRIPTION OF CABLES.

Main cable carrying 101.6 Amperes, comprised of 37 wires, each 11 S.W.G. diameter, .117 square inches total sectional area  
 Branch cables carrying 80 Amperes, comprised of 19 wires, each 18 S.W.G. diameter, .084 square inches total sectional area  
 Branch cables carrying 17.2 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .0221 square inches total sectional area  
 Leads to lamps carrying 4 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 1.6 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Rubber covered insulated tape & painted

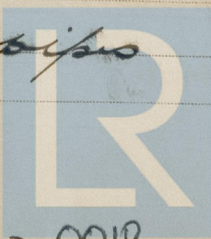
Joints in cables, how made, insulated, and protected

Joint Blocks in Boxes lead & armoured cable.

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 covered & piped



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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 Armoured cables and pipes

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Armoured cable

What special protection has been provided for the cables near boiler casings Armoured cable & pipe

What special protection has been provided for the cables in engine room A.C. & pipes

How are cables carried through beams pipes through bulkheads, &c. A.C. & pipes

How are cables carried through decks pipes

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 A.C. & 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 x

Where are the main switches and fuses for these lights fitted x

If in the spaces, how are they specially protected x

Are any switches or fuses fitted in bunkers x

Cargo light cables, whether portable or permanently fixed Portable How fixed

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 splitboard

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.

COMPASSES.

Distance between dynamo or electric motors and standard compass 160 feet

Distance between dynamo or electric motors and steering compass 160 "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
3.5	10	12	
65	10	15	
65	10	15	

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 every course in the case of the standard compass and nil degrees on every course in the case of the steering compass.

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules Requirements tested under working conditions and found in order and the vessel is eligible in my opinion to have record of Electric Light in the Register Book

It is suggested that this vessel is eligible for THE RECORD. Elec Light Recd 29/4/21

L. F. Archbold  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. MAY. 23 1921

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.