

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2745

Port of Yokohama Date of First Survey 15-9-20 Date of Last Survey 29-10-20 No. of Visits 8  
 No. in on the ~~Steel~~ Steel "S.S. TOKUYO MARU" Port belonging to Yokohama  
 Reg. Book Built at Yokohama By whom Osano S.B. Co When built 1920  
 Owners Yoyo Kisen Kaisha Owners' Address Yokohama  
 Yard No. 33 Electric Light Installation fitted by Osano S.B. Co When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Cylinder Steam engine direct coupled to 6 pole D.C. generator of 15 K.W. Capacity

Capacity of Dynamo 150 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Eng Room Bottom platform Whether single or double wire system is used double

Position of Main Switch Board Eng Room near generator having switches to groups ABCDEFG of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each ENG. ROOM 1-10. UPPER DECK 1-8. UPPER DECK AFT 1-10. BRIDGE 1-6.

SHELTER DECK FOR 1-6 SHELTER DECK AFT 1-6

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 no 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 85 per cent over the normal current

Are all fuses fitted in easily accessible positions yes Are the fuses of standard dimensions main only 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 arranged in the following groups:—

A E & B ROOMS	56 lights each of	32	candle power requiring a total current of	28	Amperes
B FORED CIRCUIT	22 lights each of	8 to 32	candle power requiring a total current of	20	Amperes
C MID FORW. CIRCUIT	45 lights each of	8 to 32	candle power requiring a total current of	28	Amperes
D MID AFT CIRCUIT	52 " " "	8 to 32	" " " " " " "	35	"
E AFT CIRCUIT	20 lights each of	8 to 32	candle power requiring a total current of	16.5	Amperes
F NAVIGATION	5 " " "	32	" " " " " " "	6	"
G WIRELESS	— lights each of	—	candle power requiring a total current of	40	Amperes
2 Mast head light with	1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
12 Cargo lights of	2. 1-1000 10. 4-50		candle power, whether incandescent or arc lights	incandescent	
1 SIGNAL LIGHT	6-5 CP				

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	150 Amperes, comprised of	61 wires, each	17 S.W.G. diameter,	.1625 square inches total sectional area
BRANCH CABLES	6 " " " "	7 " " "	20 " " "	.007 " " " " "
Branch cables carrying	29 Amperes, comprised of	19 wires, each	18 S.W.G. diameter,	.034 square inches total sectional area
Branch cables carrying	11.5 Amperes, comprised of	7 wires, each	16 S.W.G. diameter,	.022 square inches total sectional area
" " " "	35 " " " "	19 " " "	18 " " "	.034 " " " " "
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	5 Amperes, comprised of	168 wires, each	38 S.W.G. diameter,	.007 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

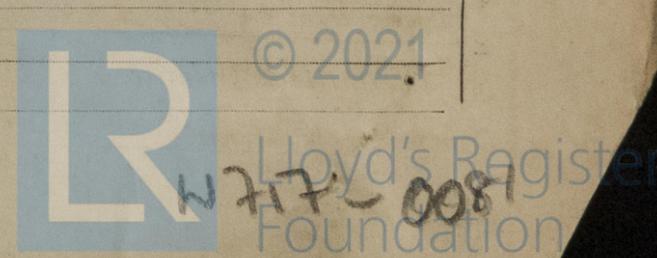
Rubber insulated wire in WT steel tube throughout except in accommodation where lead covered wire is used

Joints in cables, how made, insulated, and protected Copper joint-legs in C.T. 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 in steel tubes



**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible no

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture W.T. steel tube

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat W.T. steel tube

What special protection has been provided for the cables near boiler casings W.T. Steel tube

What special protection has been provided for the cables in engine room W.T. steel tube

How are cables carried through beams in steel tube or lead bushing through bulkheads, &c. W.T. tube

How are cables carried through decks in nutted W.T. connections

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 in steel tube

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 none fitted

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 screw plugs

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 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 yes

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 6.60 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.

Electrical Engineers Date

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 130 ft from dynamo + 85 ft from wireless motor

Distance between dynamo or electric motors and steering compass 140 " " " " 95 " " " "

The nearest cables to the compasses are as follows:—

A cable carrying	10	Amperes	20	feet from standard compass	25	feet from steering compass
A cable carrying	5	Amperes	10	feet from standard compass	10	feet from steering compass
A cable carrying	1/4	Amperes	0	feet from standard compass	0	feet from steering compass

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

William Park Builder's Signature. Date NOV 26 1920

**GENERAL REMARKS.** The installation of this vessel has been fitted in accordance with the Society's Rules. The materials and workmanship are good. The plant tried under working conditions and found satisfactory. Eligible in my opinion for notation in Register Book "ELECTRIC LIGHT"

It is submitted that this vessel is eligible for THE RECORD. Elec Light Roll 23/1/20

Arthur Spring  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

WED. 29 DEC. 1920

FRI. 28 JAN. 1921

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 11. 18. — Transfer.



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