

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3256

Port of Kobe Date of First Survey 23 June 1921 Date of Last Survey 27 July 1921 No. of Visits 5  
 No. in Reg. Book on the Iron or Steel S/S. "IWATESAN MARU" Port belonging to Kobe  
 Built at TAMA YARD, UNO By whom MITSUI-BUSSAN KAISHA When built 1921  
 Owners MITSUI-BUSSAN KABUSHIKI KAISHA Owners' Address TOKYO  
 Yard No. 34 Electric Light Installation fitted by MITSUI-BUSSAN SHIPPING DEPT. When fitted 1921

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One of 15 KW D. C. Compound wound dynamo coupled directly to the Single Cylinder automatic cut-off vertical enclosed non-condensing Engine with forced lubrication, 7" dia. cyl. 500 P.M. 5" stroke 120 lb/0" working press.

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

Where is Dynamo fixed Starboard in Engine Room Whether single or double wire system is used double wire system

Position of Main Switch Board Starboard in Engine Room having switches to groups 5 (A, B, C, D + E) of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each One in the Engine Room, One in the Boiler Room, One in the After Crew Space on the Upper Deck, Two on the Crowning Deck, One on the Lower Bridge  
 Having one main switch on each board

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 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, porcelain + marble are used.

Total number of lights provided for		arranged in the following groups :-				
A	14	FAN each of	60	WATTS requiring a total current of	8.4 AMPERES	
	45	lights each of	16	candle power requiring a total current of	9.0 " 17.4 Amperes	
B	90	lights each of	16 + 32	candle power requiring a total current of	23.4 Amperes	
C	6	lights each of	96 + 1000	candle power requiring a total current of	6.2 Amperes	
D	6	lights each of	" "	candle power requiring a total current of	6.2 Amperes	
E	1	Wireless Motor-generator (13 KW)		requiring a total current of	45.0 Amperes	
No. 2	2	Mast head light with	2 lamps each of	32	candle power requiring a total current of	2.24 Amperes
No. 1	2	Side light with	2 lamps each of	32	candle power requiring a total current of	2.24 Amperes
	1	Stem " "	" " "	32	" " " " " "	1.12 "
	5	Cargo lights of		96	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 in Chart room

## DESCRIPTION OF CABLES.

Main cable carrying	150 Amperes, comprised of	37 wires, each	16	S.W.G. diameter, 0.18598 square inches total sectional area
Branch cables carrying	45 " " " "	18 " " "	16	" " " " 0.0608 " " " " "
Branch " "	23.4 Amperes, comprised of	18 " " "	17	S.W.G. diameter, 0.0467 square inches total sectional area
Branch " "	6.2 " " " "	18 " " "	18	" " " " 0.0239 " " " " "
Branch cables carrying	6.0 Amperes, comprised of	7 wires, each	17	S.W.G. diameter, 0.0172 square inches total sectional area
" " "	4.6 " " " "	7 " " "	18	" " " " 0.0088 " " " " "
Leads to lamps carrying	0.5 Amperes, comprised of	1 wires, each	17	S.W.G. diameter, 0.0025 square inches total sectional area
Cargo light cables carrying	6.2 Amperes, comprised of	19 wires, each	19	S.W.G. diameter, 0.0239 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors are doubly insulated with india rubber and vulcanized rubber + tape, cables are protected against mechanical injury and chemical action by steel armoring or lead covering according to the requirements

Joints in cables, how made, insulated, and protected Mechanical joints are made throughout and protected with water-tight cast iron boxes and insulated by porcelain or slate bases.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances not soldered 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 (mechanical joints)

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 Cables are led unconcealed and without any additional protection other than on cables themselves.

RETAIN

98 amperes

W471-0106

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

Are they in places always accessible *They are all in accessible places*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Water tight C. I. boxes + steel armour on cables.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *as above*

What special protection has been provided for the cables near boiler casings *where necessary the cables are led through in iron pipe.*

What special protection has been provided for the cables in engine room *as above*

How are cables carried through beams *Pierced through and with lead bushes through bulkheads, &c. Pierced through and provided with water tight glands.*

How are cables carried through decks *Pierced and led through iron pipe.*

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 *Lead covered and steel armoured cables are used.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *None*

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 ✓

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 *None*

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 the 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.

*m. Saeiki* Electrical Engineers Date *July, 29th, 1921*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *dynamo to standard compass 112'. Wireless motor to standard Comp. 104'.*

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	<i>5.6</i>	Ampere	<i>6</i>	feet from standard compass	feet from steering compass
A cable carrying		Ampere		feet from standard compass	feet from steering compass
A cable carrying		Ampere		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. Okubo* Builder's Signature. Date *July, 29th, 1921*

**GENERAL REMARKS.**

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

*It is submitted that this vessel is eligible for THE RECORD.*

*on inquiry*

*fee 275 paid 16/9/21*

*Elec Light Bell 22/9/21*

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

Committee's Minute *TUE. 27 SEP. 1921*

2m.1121. - Francis.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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