

Rpt. 13.

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# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4469.

Port of Kobe Date of First Survey 31.5.24 Date of Last Survey 27-7-24 No. of Visits 10  
 No. in XXXXXXX S/S "AKAGISAN MARU" Port belonging to Kobe  
 Reg. Book 38045 Built at Tama Uno. By whom M.B.K. Ship Building Dept. When built 1924  
 Owners Mitsui Bussan Kaisha Ltd. Owners' Address  
 Yard No. 63 Electric Light Installation fitted by M.B.K. Ship Building Dept. When fitted 1924

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

THREE-50<sup>KW</sup> Compound Wound Continuous current dynamos, direct coupled to three Auxiliary Diesel Engines. Each dynamo is as follows:-

each  
 Capacity of Dynamo 236 ✓ Amperes at 220 ✓ Volts, whether continuous or alternating current Continuous ✓  
 Where is Dynamo fixed All three in Engine Room Whether single or double wire system is used Double ✓  
 Position of Main Switch Board in Engine Room having switches to groups A.B.C.D.E & F of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each 1 in the engine room, 1 on the upper deck 2 on the bridge deck, 2 on the lower bridge, having 1 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 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 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 yes

Total number of lights provided for 126 arranged in the following groups :-

A	21	lights each of	16	candle power requiring a total current of	2.1	Amperes
B	24	lights each of	16	candle power requiring a total current of	2.4	Amperes
C	31	lights each of	16	candle power requiring a total current of	3.1	Amperes
D	35	lights each of	16	candle power requiring a total current of	3.5	Amperes
E	5	lights each of	32	candle power requiring a total current of	1.0	Amperes
F	10	lights each of	100	candle power requiring a total current of	5.0	Amperes
	12	Mast head light with 1 lamp each of	32	candle power requiring a total current of	0.4	Amperes
	2	Side light with 1 lamp each of	32	candle power requiring a total current of	0.4	Amperes
	1	Stern light with 1 lamp	32	candle power requiring a total current of	0.4	Amperes
	10	Cargo lights of	100	candle power whether incandescent or arc lights	incandescent.	

17.9  
184  
201.9

If arc lights, what protection is provided against fire, sparks, &c. Steering gear requiring a total current of 56 amperes  
Windlass requiring a total current of 184 amperes.

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

## DESCRIPTION OF CABLES.

Main cable carrying	250	Amperes, comprised of	250	wires, each	20	S.W.G. diameter,	0.25	square inches total sectional area
Branch cables carrying	up to 5	Amperes, comprised of	15	wires, each	20	S.W.G. diameter,	0.015	square inches total sectional area
Branch cables carrying	up to 3	Amperes, comprised of	7	wires, each	20	S.W.G. diameter,	0.007	square inches total sectional area
Leads to lamps carrying	0.5	Amperes, comprised of	1	wires, each	17	S.W.G. diameter,	0.0026	square inches total sectional area
To Steering gear	56	-do-	150	wires, each	20	S.W.G. diameter,	0.519	-do-
Cargo light cables carrying	0.5	Amperes, comprised of	108	wires, each	36	S.W.G. diameter,	0.005	square inches total sectional area
To windlass	184	-do-	250	"	20	S.W.G. diameter,	0.665	-do-

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

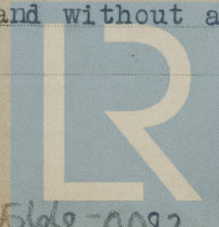
All conductors are insulated with rubber and cotton tape and covered with lead,  
 Some cables are also steel armoured as protection against mechanical injury and chemical action according to the requirements.

Joints in cables, how made, insulated, and protected mechanical joints are made throughout and protected in 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 all joints are accessible

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 besides that on the cables themselves



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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 cables are in iron pipes

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat no special protection

What special protection has been provided for the cables near boiler casings Donkey Steel armoured

What special protection has been provided for the cables in engine room Steel armoured

How are cables carried through beams pierced through and wood lined through bulkheads, &c. pierced through and fitted with W.T. glands.

How are cables carried through decks Protected in 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.

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 -

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 -

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 (Two) and with an amperemeter yes (one for each Generator) fixed on the 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 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.

*J. Tayui*

Electrical Engineers

Date 10<sup>th</sup> July 1924

COMPASSES.

Distance between dynamo or electric motors and standard compass

30 ft. from motor (1/4 H.P.)

Distance between dynamo or electric motors and steering compass

7 ft. from motor (15 H.P.)

The nearest cables to the compasses are as follows:—

A cable carrying	<u>0.1</u>	Amperes	<u>5 to 6</u>	feet from standard compass	<u>5 to 6</u>	feet from steering compass
A cable carrying		Amperes		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 yes.

The maximum deviation due to electric currents, etc., was found to be \_\_\_\_\_ degrees on \_\_\_\_\_ standard compass and \_\_\_\_\_ degrees on \_\_\_\_\_

course in the case of the \_\_\_\_\_  
PER. PRO. MITSUI BUSSAN KAISHA, LTD.

Builder's Signature.

Date

SUB-MANAGER.

GENERAL REMARKS.

*This Installation has been installed according to Rules  
and tried under working conditions with satisfactory results  
It is submitted that  
this vessel is eligible for  
THE RECORD. Elec. Light.*

*Installation for 510°*

*A.D. Buchanan for A. Watt & Self.*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 26 SEP 1924