

FRI. 18 MAR. 1921

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3069.

Port of KOBE Date of First Survey Nov. 18th 1920 Date of Last Survey Dec 18th 1920 No. of Visits 6.
 No. in Reg. Book on the Iron or Steel S/S MACASSAR MARU Port belonging to
 Built at KOBE By whom Mitsui-Bishi Zosen Kaisha When built 1920
 Owners Nanyo Yusen Kaisha Ltd. Owners' Address
 Yard No. 85 Electric Light Installation fitted by MITSUBISHI ZOSEN KAISHA When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

ONE set of 15 KW. Compound wound dynamo direct coupled to single cylinder vertical type double acting engine, stroke 7" diameter 5" working pressure 100 L.B. per sq. 550 R.P.M.

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

Where is Dynamo fixed Starboard side in the engine room Whether single or double wire system is used Double

Position of Main Switch Board Engine room having switches to groups A to J. (TEN) of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Forecastle deck (1 of 10 switches), chart room (1 of 8 s.),

bridge deck port (1 of 10 s.), bridge deck starboard (2 of 10 & 4 s.), saloon pantry (2 of 10 s.) upper deck port (2 of 10 s.)
upper deck starboard (3 of 10, 10 and 4 s.), Poop (1 of 8 s.),
engine room (1 of 10 s.), Foremast (1 of 6 s.), main mast root (1 of 6 s.), Radio (1 of 4 s.).

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

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

A	15	lights each of	16 & 32	candle power requiring a total current of	3.40	Amperes
B	19	" " "	16, 24 & 32	" " " " " "	4.80	"
C	17	lights each of	16, 24 & 32	candle power requiring a total current of	4.80	Amperes
D	15	electric fan each of	60	watt	9.00	"
E	5	lights each of	16 & 24	candle power requiring a total current of	2.40	Amperes
F	53	" " "	16, 24, 32 & 375	" " " " " "	22.50	"
G	38	lights each of	16, 24, & 32	candle power requiring a total current of	10.40	Amperes

E H 52 lights each of 16 & 375 candle power requiring a total current of 16.00 Amperes

I { 2 Mast head light with 2 lamps each of 32 candle power requiring a total current of 2.24 Amperes
 1 Stern light with 1 lamp each of 32 " " " " " " 1.12
 2 Side light with 2 lamps each of 32 candle power requiring a total current of 2.24 Amperes

J 36 Cargo lights of 50 and 375 candle power, whether incandescent or arc lights Incandescent lamps.

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

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

DESCRIPTION OF CABLES.

Main cable carrying 150 Amperes, comprised of 37 wires, each 0.072 S.W.G. diameter, 0.14780 square inches total sectional area

Branch cables carrying 60 Amperes, comprised of 19 wires, each 0.064 S.W.G. diameter, 0.06000 square inches total sectional area

" " " 20 " " " 7 " " 0.064 " " 0.02214 " " " "

Branch cables carrying 7 Amperes, comprised of 7 wires, each 0.036 S.W.G. diameter, 0.00701 square inches total sectional area

Leads to lamps carrying 1 Amperes, comprised of 1 wires, each 0.064 S.W.G. diameter, 0.00322 square inches total sectional area

Cargo light cables carrying 10 Amperes, comprised of 162 wires, each 0.0076 S.W.G. diameter, square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors are doubly insulated with india rubber and vulcanized rubber and tape.

Cables are protected against mechanical injury and chemical action by steel armoured or lead covering according to requirements.

Joints in cables, how made, insulated, and protected Mechanical joint are made throughout the branch cables and protected with water-tight 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 Cables are led unconcealed and without any additional protection beside that on the cables themselves.

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

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

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Galvanized iron pipes and water-tight iron joint boxes*

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 *as above.*

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

How are cables carried through beams *Pierced through and lead lined* through bulkheads, &c. *water-tight glands.*

How are cables carried through decks *water-tight galvanized iron deck tubes.*

Are any cables run through coal bunkers *Yes* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes*

If so, how are they protected *Galvanized iron steel armored also iron 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

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*, 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.

S. Minagawa Electrical Engineers Date *JAN 10 1921*
Kobe Works, Mitsubishi Zosen Kaisha, Ltd.

COMPASSES.

Distance between dynamo or electric motors and standard compass *100 ft for Radio motor generator and 145 ft for dynamo.*

Distance between dynamo or electric motors and steering compass *100 ft for " " " 155 ft " "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>0.2</i>		<i>1</i>	<i>1</i>

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.

Mototeru Harawishii Builder's Signature. Date *Jan. 10th 1921*
Kobe Works, Mitsubishi Zosen Kaisha, Ltd.

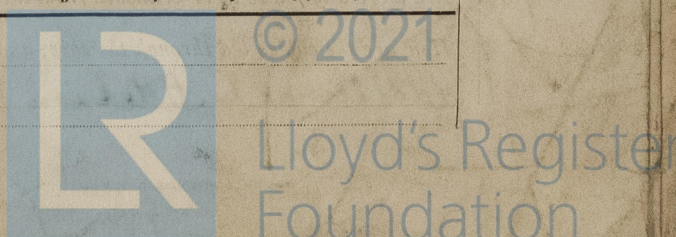
GENERAL REMARKS.

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

It is suggested that this vessel be entered in THE RECORD. E. Lee Light
Feb 29th 1921

A Watt
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *WED 30 MAR. 1921* *FRI AUG. 26 1921*



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.