

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3197.

Port of Kobe Date of First Survey 21-12-1920 Date of Last Survey 24-2-21 No. of Visits 8  
 No. in Reg. Book on the Steel S/S. "KOYU MARU" Port belonging to Nishinomiya  
 Built at Kobe By whom Mitsubishi Zosen Kaisha Ltd. When built 1921  
 Owners Hiroumi Shoji Kaisha Owners' Address Osaka  
 Yard No. 92 Electric Light Installation fitted by Mitsubishi Zosen Kaisha (Kobe) wks. When fitted 1921

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

One set of 12 K.W compound wound dynamo direct coupled to single cylinder vertical type double acting engine, 5" x 7", 100 LBS/0", 550 R.P.M.

Capacity of Dynamo 120 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Starboard side in the engine room

Position of Main Switch Board As above having switches to groups 9 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Forecastle (1 of 8 switches), Saloon pantry (2 of 12 & 4 S.), Chart room (1 of 8 S.), Mess room (4 of 3, 4, 10, 10 S.) Engine room (1 of 10 S.) Radio office (1 of 4 S.) Foremast root (1 of 8 S.) main mast root (1 of 8 S.) poop (1 of 4 S.)

If cut outs 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes

Are the cut outs of non-oxidizable metal Yes and constructed to fuse at an excess of 100 per cent over the normal current

Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

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

|   |    |   |  |                 |
|---|----|---|--|-----------------|
| A | 20 | lights each of 16 & 32                  | candle power requiring a total current of        | 4.61 Amperes    |
| B | 37 | lights each of 16, 24, 32 & 375         | candle power requiring a total current of        | 13.58 Amperes   |
| C | 40 | lights each of 16, 24 & 32              | candle power requiring a total current of        | 11.70 Amperes   |
| D | 66 | " " " " 16, & 375                       | " " " " " " "                                    | 18.80 "         |
| E | 6  | lights each of 16 & 24                  | candle power requiring a total current of        | 1.62 Amperes    |
| F | 6  | " " " 50 & 24                           | " " " " " " "                                    | 3.60 "          |
| G | 31 | lights each of 16 & 375                 | candle power requiring a total current of        | 10.50 Amperes   |
| H | 2  | Mast head light with 2 lamps each of 32 | candle power requiring a total current of        | 2.24 Amperes    |
|   | 2  | Side light with 2 lamps each of 32      | candle power requiring a total current of        | 2.24 Amperes    |
| I | 44 | Cargo lights of 50 & 625                | candle power, whether incandescent or are lights | incandescent L. |

If are 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 120 Amperes, comprised of 37 wires, each 0.072 L.S.G. diameter, 0.14780 square inches total sectional area  
 Branch cables carrying 60 Amperes, comprised of 19 wires, each 0.064 L.S.G. diameter, 0.06000 square inches total sectional area  
 Branch cables carrying 20 Amperes, comprised of 7 wires, each 0.064 L.S.G. diameter, 0.02214 square inches total sectional area  
 Leads to lamps carrying 1 Amperes, comprised of 1 wires, each 0.064 L.S.G. diameter, 0.00322 square inches total sectional area  
 Cargo light cables carrying 10 Amperes, comprised of 163 wires, each 0.0076 L.S.G. diameter, square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors are doubly insulated with india rubber and vulcanized rubber together with braiding. Cable 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, resin only having been used as a flux 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 Cable 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 Yes

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Galvanized iron pipes.

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, lead lined through bulkheads, &c. water-tight grand

How are cables carried through decks Water-tight 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 steel armoured together with 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 cut outs for these lights fitted

If in the spaces, how are they specially protected

Are any switches or cut outs 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

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, cut outs, 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 installation is supplied with a voltmeter and an amperemeter, fixed

The copper used is guaranteed to have a conductivity of 98 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile after 24 hours' immersion in seawater.

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.

I. Minagawa Electrical Engineers Date May 20th, 1921.  
 KOBE WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 50 ft to Radio motor generator

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

|                  |            |         |          |                            |                            |
|------------------|------------|---------|----------|----------------------------|----------------------------|
| A cable carrying | <u>0.2</u> | Amperes | <u>1</u> | feet from standard compass | 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

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 Haranishi Builder's Signature. Date May 20th, 1921

**GENERAL REMARKS.** The Installation has been fitted in accordance with the requirements of the Rules but has not yet been tried under running conditions owing to the vessel being laid up meanwhile

A Watt  
 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute FRI. JAN 20 1922 FRI. 22 JUN 1923

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 11.



See Nov 1921