

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4710.

Port of Kobe. Date of First Survey 11/6/24 Date of Last Survey 23/12/24 No. of Visits 6
 No. in on the ~~Iron~~ Steel Iron Se. Motor Ship "FUKUO MARU" Port belonging to Kobe
 Reg. Book Built at Harima Dockyard By whom Kobe Steel Works When built 1924
 Owners Kobe Steel Works Owners' Address Kyo-machi Kobe
 Yard No. 93 Electric Light Installation fitted by Kobe Steel Works Harima Dockyard When fitted 1924

DESCRIPTION OF DYNAMO, ENGINE, ETC.

3. Compound wound, direct coupled, to 3 Auxiliary Diesel Engines

Capacity of Dynamo 266 Amperes at 225 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed 1 set on port side in engine room Whether single or double wire system is used Double
 Position of Main Switch Board Engine Room port side having switches to groups five of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each ✓

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 ✓ 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 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 ✓

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 160 arranged in the following groups:—

| | | | |
|--|--------------------------|--|---------------------|
| A | <u>29</u> lights each of | <u>100</u> candle power requiring a total current of | <u>6</u> Amperes |
| B | <u>51</u> lights each of | <u>16</u> candle power requiring a total current of | <u>3.1</u> Amperes |
| C | <u>57</u> lights each of | <u>16</u> candle power requiring a total current of | <u>5.2</u> Amperes |
| D | lights each of | candle power requiring a total current of | Amperes |
| E | lights each of | candle power requiring a total current of | Amperes |
| Mast head light with <u>2</u> lamps each of | | <u>32</u> candle power requiring a total current of | <u>1.09</u> Amperes |
| <u>2</u> Side lights with <u>1</u> lamps each of | | <u>32</u> candle power requiring a total current of | <u>1.09</u> Amperes |
| <u>4</u> Cargo lights of | | <u>1000</u> candle power, whether incandescent or arc lights <u>incandescent</u> | |

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 | <u>266</u> Amperes, comprised of | <u>61</u> wires, each | <u>16</u> S.W.G. diameter, <u>0.1960</u> square inches total sectional area |
| Branch cables carrying | <u>6</u> Amperes, comprised of | <u>4</u> wires, each | <u>20</u> S.W.G. diameter, <u>0.0010</u> square inches total sectional area |
| Branch cables carrying | <u>3.1</u> Amperes, comprised of | <u>1</u> wires, each | <u>16</u> S.W.G. diameter, <u>0.0032</u> square inches total sectional area |
| Leads to lamps carrying | <u>5.2</u> Amperes, comprised of | <u>1</u> wires, each | <u>16</u> S.W.G. diameter, <u>0.0032</u> square inches total sectional area |
| Cargo light cables carrying | <u>12.3</u> Amperes, comprised of | <u>7</u> wires, each | <u>18</u> S.W.G. diameter, <u>0.0104</u> square inches total sectional area |

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered + armoured cable

Joints in cables, how made, insulated, and protected

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 Armoured cable on



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yrs.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture
Lead covered and armoured.

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

What special protection has been provided for the cables near boiler casings *✓*

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

How are cables carried through beams *Bushes* through bulkheads, &c. *glands*

How are cables carried through decks *Deck tubes*

Are any cables run through coal bunkers *No* or cargo spaces *Yrs.* or spaces which may be used for carrying cargo, stores, or baggage *Yrs.*

If so, how are they protected *Lead covered & 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 *Junction Box*

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 *2 Voltmeters*, and with an amperemeter *3 Ammeters*, fixed *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 *250* 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 *about 29 feet from main motor*

Distance between dynamo or electric motors and steering compass *" 16 " " "*

The nearest cables to the compasses are as follows:—

| A cable carrying | Amperes | feet from standard compass | feet from steering compass |
|------------------|-----------------|----------------------------|----------------------------|
| <i>2.73</i> | <i>about 15</i> | <i>"</i> | <i>"</i> |
| 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 *No*

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. Arata Builder's Signature. Date *24 December 1924*

GENERAL REMARKS.

This installation has been fitted on board in accordance with the Rules tried under working conditions and found satisfactory.

See Jan 655-00
It is submitted that this vessel is eligible for THE RECORD. Electric Light
J. McNeillan
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 20 FEB 1925*

TUES. 12 MAY 1925

FRI. 19 JUN 1925



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