

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3225.

Port of Kobe Date of First Survey Apr. 18th 1921 Date of Last Survey June 7th 1921 No. of Visits 7
 No. in Reg. Book on the ~~Iron~~ Steel S.S. TACHIBANA MARU Port belonging to TOKUYAMA
 Built at Oh, Harima By whom Kobe Steel Works When built 1921
 Owners Teikoku Sekiun Kaisha Owners' Address Kobe
 Yard No. 46 Electric Light Installation fitted by Kobe Steel Works When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 13 K.W. generators, compound wound, direct connected to two single vertical engines.

Capacity of Dynamo 13 K.W. 130 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine room Whether single or double wire system is used double

Position of Main Switch Board Near dynamo having switches to groups ABCDEFGG of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one of 7 sw. in E.R. one of 7 sw. in engine room, two of 5 sw. each in crew space, one of 7 sw. in Saloon passage, one of 4 sw. in bridge

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 206 arranged in the following groups:—

| | | | |
|---|--|--|---------------------|
| A | Engine Boiler space lights each of <u>37 off 200 31 off 16</u> | candle power requiring a total current of | <u>12.2</u> Amperes |
| B | Engine room lights each of <u>76 - 16</u> | candle power requiring a total current of | <u>15.2</u> Amperes |
| C | Fan Motors lights each of <u>1 off 100 watts 15 - 80 "</u> | candle power requiring a total current of | <u>9.0</u> Amperes |
| D | Signal lights each of <u>9 " white magnet 500 watt</u> | candle power requiring a total current of | <u>14.4</u> Amperes |
| E | Bridge & Saloon lights each of <u>58 off 16</u> | candle power requiring a total current of | <u>11.6</u> Amperes |
| G | WIRELESS | | <u>30.0</u> " |
| | 2 Mast head light with 2 lamps each of <u>32</u> | candle power requiring a total current of | Amperes |
| | 2 Side light with 2 lamps each of <u>32</u> | candle power requiring a total current of | Amperes |
| F | 4 Cargo lights of <u>128 cp. each 1000 cp. each</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 in the chart room

DESCRIPTION OF CABLES.

| | |
|------------------------------------|---|
| Main cable carrying | <u>108.8</u> Amperes, comprised of <u>37</u> wires, each <u>16</u> S.W.G. diameter, <u>.1170</u> square inches total sectional area |
| Branch cables carrying | <u>12.2</u> Amperes, comprised of <u>7</u> wires, each <u>20</u> S.W.G. diameter, <u>.0070</u> square inches total sectional area |
| Branch cables carrying | <u>15.2</u> Amperes, comprised of <u>7</u> wires, each <u>19</u> S.W.G. diameter, <u>0.0086</u> square inches total sectional area |
| FAN MOTORS Leads to lamps carrying | <u>9.0</u> Amperes, comprised of <u>7</u> wires, each <u>20</u> S.W.G. diameter, <u>.0070</u> square inches total sectional area |
| Cargo light cables carrying | <u>16.4</u> Amperes, comprised of <u>7</u> wires, each <u>18</u> S.W.G. diameter, <u>.0125</u> square inches total sectional area |

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Rubber, tape, & all wires are lead covered, part in steel tubing & part in wood casings in accommodation spaces.

Joints in cables, how made, insulated, and protected Brass terminals on porcelain bases & in water tight, cast iron junction 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 Lead covered armoured cable led thro beams in bridge space & in gas piping where exposed

| | | | |
|---|---|------------------------------|---------------------|
| F | Cargo lamp lights each of <u>32 cp - 16</u> | requiring a total current of | <u>16.4 amperes</u> |
| G | Radio telegraph | | <u>30.0 amperes</u> |
| E | Branch cable carrying <u>11.6</u> amperes, comprised of <u>7</u> wires, each <u>20</u> S.W.G. diameter, <u>.0070</u> square inches total sectional area | | |
| F | Cargo light cable " <u>16.4</u> " " <u>7</u> " " <u>18</u> " " <u>.0125</u> " | | |
| G | Radio telegraph " <u>30.0</u> " " <u>19</u> " " <u>18</u> " " <u>.0340</u> " | | |



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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 *lead covered + led thro' iron tubing*

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

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

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

How are cables carried through beams *holes in beams with lead bush*, through bulkheads, &c. *W.T. stuffing boxes*

How are cables carried through decks *W.T. stuffing boxes.*

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 *wood moulding + steel tubing*

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 *Plugged in in W.T. Boxes.*

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 main S.W. Panel*

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 *Yes*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *No*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *glass guards made gas tight*

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.

Skanga Electrical Engineers

Date *June 1921*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 336 feet*

Distance between dynamo or electric motors and steering compass *about 48 feet*

The nearest cables to the compasses are as follows:—

| | | | |
|------------------|---------------------|--|--|
| A cable carrying | <i>14.4</i> Amperes | <i>about 8'</i> feet from standard compass | <i>+ about 20</i> feet from steering compass |
| A cable carrying | <i>12.2</i> Amperes | <i>about 40</i> feet from standard compass | <i>about 293</i> 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 *no* degrees on *all* courses in the case of the standard compass and *no* *Kobe Steel Works,* *all* courses in the case of the steering compass.

Harima Ship Yard, Builder's Signature. Date *June 1921*

GENERAL REMARKS.

The installation has been fitted according to Rules and worked satisfactorily during trial trip

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

For all Mr. Bell

Elec Light Bell 13/9/21

H.O. Buchanan

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 27 SEP. 1921

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

