

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

Es No. 15164

Port of Belfast Date of First Survey 13<sup>th</sup> Jan'y Date of Last Survey 7<sup>th</sup> May No. of Visits  
 No. in on the Iron or Steel Scr. S'm. Kama Kura Maru Port belonging to Tokio  
 Reg. Book Built at Belfast By whom Workman Clark & Co Ltd When built 1897  
 Owners Nippon Yusen Kaisha Owners Address 97 11 Fenchurch Avenue - London  
 Yard No. 134 Electric Light Installation fitted by W. C. Martin & Co - Glasgow When fitted 1897

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Compound wound Dynamos Coupled direct to 2 Compound Bells Vertical Engines

Capacity of Dynamo each 340 Amperes at 65 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In Engine room recess between Thrust blocks

Position of Main Switch Board Mid platform in Engine room having switches to groups A. B. C. D. E. F. G. H. lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine room Port & Starboard Side, Saloon Entrance, Forecastle Lamp room & 2<sup>nd</sup> Cabin Pantry

If cut outs are fitted on main switch board to the cables of main circuit yes and on each auxiliary switch boards 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 of 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 50 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 arranged in the following groups :-

A	<u>41</u> lights each of <u>16</u>	candle power requiring a total current of <u>41</u>	Amperes
B	<u>42</u> lights each of <u>16</u>	candle power requiring a total current of <u>42</u>	Amperes
C	<u>39</u> lights each of <u>16</u>	candle power requiring a total current of <u>31</u>	Amperes
D	<u>26</u> lights each of <u>16</u>	candle power requiring a total current of <u>23</u>	Amperes
E	<u>40</u> lights each of <u>16</u>	candle power requiring a total current of <u>40</u>	Amperes
F	<u>12</u> lights each of <u>50</u>	candle power requiring a total current of <u>36</u>	Amperes
G	<u>8</u> lights each of <u>50</u>	candle power requiring a total current of <u>24</u>	Amperes
H	<u>6</u> lights each of <u>50</u>	candle power requiring a total current of <u>4</u>	Amperes
	<u>16</u> Cargo lights of <u>200</u>	candle power, whether incandescent or are lights <u>Incandescent</u>	

If arc lights, what protection is provided against fire, sparks, &c. An Arc lamp fitted with lantern for navigating Suez Canal, also Search light projector  
 Where are the switches controlling the masthead and side lights placed In Lamp room

## DESCRIPTION OF CABLES.

<u>2</u> Main cable carrying <u>313</u> Amperes, comprised of <u>34</u> wires, each <u>12</u> L.S.G. diameter, <u>.314</u> square inches total sectional area
Branch cables carrying <u>59</u> Amperes, comprised of <u>19</u> wires, each <u>16</u> L.S.G. diameter, <u>.0612</u> square inches total sectional area
Branch cables carrying <u>24</u> Amperes, comprised of <u>19</u> wires, each <u>18</u> L.S.G. diameter, <u>.0344</u> square inches total sectional area
Leads to lamps carrying <u>1</u> Amperes, comprised of <u>1</u> wires, each <u>18</u> L.S.G. diameter, square inches total sectional area
Cargo light cables carrying <u>12</u> Amperes, comprised of <u>154</u> wires, each <u>38</u> L.S.G. diameter, square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure india rubber, Vulcanised india rubber coated Tape, the whole vulcanised together then braided cotton preservative Compound

Joints in cables, how made, insulated, and protected No joints

Are all the joints of cables thoroughly soldered, resin only having been used as a flux None 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 none

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 Galvanized iron pipes thro the Tween Decks to Forecastle & aft to 2<sup>nd</sup> Cabin

**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 pipe  
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat None near undere heat  
 What special protection has been provided for the cables near boiler casings None near Boiler casing  
 What special protection has been provided for the cables in engine room Armour Sheathed wire  
 How are cables carried through beams Holes bushed with Teak through bulkheads, &c. Teak or Glands  
 How are cables carried through decks 2 in Lead Tubes or Iron Tubes bushed with Fibre  
 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 Iron Tubes & Armour Sheathed wire & clamps  
 Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage Yes  
 If so, how are the lamp fittings and cable terminals specially protected Cast Iron Fittings with Cast Covers  
 Where are the main switches and cut outs for these lights fitted Main Deck Port Alleyway  
 If in the spaces, how are they specially protected Cast iron covers  
 Are any switches or cut outs fitted in bunkers No  
 Cargo light cables, whether portable or permanently fixed Portable How fixed By forked Connectors  
 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 with 2 \_\_\_\_\_ amperemeters fixed on Switch-board

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 2000 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.

W. C. Martin & Co Electrical Engineers

Date 2nd June 1897

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 130 ft.  
 Distance between dynamo or electric motors and steering compass 120 ft.  
 The nearest cables to the compasses are as follows:—  
 A cable carrying about 60 Amperes about 40 feet from standard compass about 30 feet from steering compass  
 A cable carrying " Amperes " 50 feet from standard compass " 40 feet from steering compass  
 A cable carrying " Amperes " 60 feet from standard compass " 50 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 nil degrees on every course in the case of the standard compass and nil degrees on every course in the case of the steering compass.

**PRO WORKMAN, CLARK & CO., LIMITED**

Mr. H. Bell Builder's Signature

Date June 17th/97

**GENERAL REMARKS.**

The workmanship and arrangement in connection with the Electric Lighting of this vessel are of good description and when tried at full power found satisfactory

James Morrison A. H. Jones  
 19/6/97 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

This installation appears to be fitted in accordance with the Rule



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN

REPORT FORM NO. 13.