

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5019

Port of Glasgow Date of First Survey 1st Feb 1897 Date of Last Survey 1st Feb 1897 No. of Visits 1
 No. in Reg. Book on the Iron or Steel S. S. Hakata Maru Port belonging to Tokio
 Built at Glasgow By whom J & W Henderson & Co When built 1897
 Owners Nippon Yusen Kaisha Owners Address Tokio Japan
 Yard No. 395 Electric Light Installation fitted by W. E. Martin & Co When fitted 1897

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Compound wound dynamos coupled direct & 2 Compound Bellis Vertical Engines.

Capacity of Dynamo 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 Engine room having switches to groups A B C D E F G H of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine room top port & Starboard side Saloon Entrance, Forecastle Cabroom, Second 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 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 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 41 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>39</u> Amperes
D	<u>23</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
	<u>a</u> Mast head light with <u>D. F</u> lamps each of <u>32</u> candle power requiring a total current of <u>24</u> Amperes
	<u>8</u> Side light with <u>D. F</u> lamps each of <u>32</u> candle power requiring a total current of <u>44</u> Amperes
	<u>H</u> = Projector for Suez Canal <u>60</u> candle power, whether incandescent or arc lights <u>incandescent</u>
	<u>6</u> Cargo lights of <u>200</u>

If arc lights, what protection is provided against fire, sparks, &c. An arc light fitted with Lantern for navigation of Suez Canal. Also Search light Projector

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

DESCRIPTION OF CABLES.

2 Main cable carrying 313 Amperes, comprised of 37 wires, each 12 L.S.G. diameter, .314 square inches total sectional area
 Branch cables carrying 59 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .0612 square inches total sectional area
 Branch cables carrying 24 Amperes, comprised of 19 wires, each 18 L.S.G. diameter, .0344 square inches total sectional area
 Leads to lamps carrying 1 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .00322 square inches total sectional area
 Cargo light cables carrying 12 Amperes, comprised of 4 wires, each 18 L.S.G. diameter, .0124 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 for service Compound

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

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 none

How are the cables led through the ship, and how protected Vulcanised iron pipes in Cargo spaces. Armoured cables in twin decks & to forecabin.

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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *yes* 15019. *ef*

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

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *none near heat*

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

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

How are cables carried through beams *Holes are bushed with teak wood through bulkheads, &c. Stamps in Water tight bulkheads*

How are cables carried through decks *In tube bushed with hard 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 pipes and armour sheathed wire to lamps*

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 covers*

Where are the main switches and cut outs for these lights fitted *Port alleyway main deck Engine Room*

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 *Fixed connections*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Double wire system*

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 *no*

Are any switches, cut outs, 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 *no*

The installation is *—* supplied with a voltmeter and *two* amperemeter, fixed on *Switchboard*

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 *3rd March 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:—

Cable	Amperes	feet from standard compass	feet from steering compass
A cable carrying <i>about 60</i>	<i>about 40</i>	<i>about 30</i>	
A cable carrying <i>"</i>	<i>50</i>	<i>40</i>	
A cable carrying <i>"</i>	<i>60</i>	<i>50</i>	

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 *any* course in the case of the standard compass and *nil* degrees on *any* course in the case of the steering compass.

David M. Henderson & Co Builder's Signature

Date *8th March 1897*

GENERAL REMARKS.

This installation has in my opinion been satisfactorily carried out and the case is submitted for the favourable consideration of the Committee.

C. J. Schromeyer.

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

Committee's Minute

This installation appears to be fitted in accordance with the Rules

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.