

REPORT ON ELECTRIC LIGHTING INSTALLATION. No 39597

Port of Glasgow Date of First Survey 4/11/19 Date of Last Survey Jan 16. 1920 No. of Visits 5
 No. in Reg. Book S 33200 on the Iron or Steel S.S. Gtaki Port belonging to Plymouth
 Built at Whitinch By whom Messrs Barclay Curle & Co Ltd When built 1919
 Owners The New Zealand S.S. Co. Owners' Address _____
 Yard No. 574 Electric Light Installation fitted by Messrs A Watson & Co Ltd When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2-6 1/2 x 6 Open Type Engines (Robey & Co) direct Coupled to 2-10 K.W. Compound Wound Dynamo (E.C.G.)
1-25 K.W. Combination Generating Set (Troup, Curtis & Co.)
 Capacity of Dynamo 2-100 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Recess, Std. side of Engine Room. Whether single or double wire system is used Double
 Position of Main Switch Board Adjacent to Dynamos having switches to groups 10 Circuits. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each _____

No auxiliary switch boards.

If fuses are fitted on main switch board to the cables of main circuit Yes and on each auxiliary Fuse 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-oxidisable 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 280 arranged in the following groups:—

A	Aft. Crew. <u>7</u> lights each of <u>16 C.P. Carbon.</u>	candle power requiring a total current of <u>13.28</u> Amperes
B	Food Cargo. <u>3</u> lights each of <u>1000 C.P. 1/2 Watt. metallic.</u>	candle power requiring a total current of <u>31.20</u> Amperes
C	Engine & Boiler <u>63</u> lights each of <u>16 C.P. Carbon.</u>	candle power requiring a total current of <u>42.80</u> Amperes
D	Aft. Cargo. <u>3</u> lights each of <u>1000 C.P. 1/2 Watt. metallic.</u>	candle power requiring a total current of <u>31.20</u> Amperes
E	Wireless. <u>27</u> lights each of <u>16 C.P. Carbon.</u>	candle power requiring a total current of <u>30.00</u> Amperes
	<u>2</u> Mast head light with <u>1</u> lamps each of <u>32 C.P.</u>	candle power requiring a total current of <u>2.56</u> Amperes
	<u>2</u> Side light with <u>1</u> lamps each of <u>32 C.P.</u>	candle power requiring a total current of <u>2.56</u> Amperes
	<u>54</u> Cargo lights of <u>1000 C.P. 1/2 Watt. metallic.</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 Wheelhouse.

DESCRIPTION OF CABLES.

Main cable carrying <u>100</u> Amperes, comprised of <u>19</u> wires, each <u>14</u> S.W.G. diameter, <u>.094</u> square inches total sectional area
Branch cables carrying <u>250</u> Amperes, comprised of <u>67</u> wires, each <u>12</u> S.W.G. diameter, <u>.580</u> square inches total sectional area
Branch cables carrying <u>42.80</u> Amperes, comprised of <u>7</u> wires, each <u>18</u> S.W.G. diameter, <u>.0125</u> square inches total sectional area
Leads to lamps carrying <u>60</u> Amperes, comprised of <u>1</u> wires, each <u>18</u> S.W.G. diameter, <u>.0018</u> square inches total sectional area
Cargo light cables carrying <u>24.2</u> Amperes, comprised of <u>7</u> wires, each <u>16</u> S.W.G. diameter, <u>.022</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

In Engine & Boiler Rooms, etc., V.I.R. Cable protected with Galv. Wires & Braiding.
 " Accommodation, V.I.R. Cable protected with lead covering.
 Joints in cables, how made, insulated, and protected no joints.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances _____ 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 _____
 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 Through bunkers in Galv. Iron Pipe; Through Decks, led through beams in Fibre Ferrules protected by Armouring & Braiding. In Accommodation clipped to Bulkheads, beams, etc.



ARCHD. WATSON & Co., LTD.

ELECTRICAL REPORT contd.

T.S.S. "Otaki"

Circuit F. Engineers' Accom. 42 at 16 C.P. Metallic)
 3 at 16 C.P. Carbon) 11.32 amps.
 2 Fans 50 Watt.)

Circuit G. Saloon & Navigation
 4 at 32 C.P. Carbon)
 6 at 8 " ")
 6 at 16 " ")
 44 at 16 " Metal) 21.36 amps.
 4 Fans 50 Watt.

Circuit H. Electrolytic Process 25 amps.



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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 Armouring & Braiding

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Armouring & Braiding

What special protection has been provided for the cables near boiler casings Armouring & Braiding

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

How are cables carried through beams In Fibre Ferrules through bulkheads, &c. in W.T. Packing Glands

How are cables carried through decks In W.T. Deck Tubes stand 13" above the deck level

Are any cables run through coal bunkers Yes or cargo spaces — or spaces which may be used for carrying cargo, stores, or baggage —

If so, how are they protected In Galv. W.T. Pipe

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 — — —

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 Switchboards

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 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.

FOR ARCHD. WATSON & CO., LTD.,

D Dundas
JMB

DIRECTOR

Electrical Engineers

Date 19/2/20

COMPASSES.

Distance between dynamo or electric motors and standard compass 165 feet

Distance between dynamo or electric motors and steering compass 160 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>6</u>	Amperes	<u>2</u>	feet from standard compass	<u>2</u>	feet from steering compass
A cable carrying	<u>7.26</u>	Amperes	<u>6</u>	feet from standard compass	<u>4</u>	feet from steering compass
A cable carrying	<u>—</u>	Amperes	<u>—</u>	feet from standard compass	<u>—</u>	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 any course in the case of the standard compass and Nil degrees on any course in the case of the steering compass.

H. C. C. C.
Builder's Signature.

Date 11th Feb 1920

GENERAL REMARKS.

This installation has been fitted on board under special survey tested under full working conditions and found satisfactory

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

JWD 19/2/20

J. Stanley Rankin
Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 14 FEB 1920**

Elec. Light.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

13.2.20