

WED. JAN. 21. 1914

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 33322

Port of Glasgow Date of First Survey 18/9/1913 Date of Last Survey 4/11/1913 No. of Visits 13
 No. in Reg. Book 381 on the Iron or Steel S/S "Inawadi" Port belonging to Bombay
 Built at Troon By whom Alia S. B. Co. Ltd. When built 1913
 Owners Bombay S. B. Co. Ltd. Owners' Address Bombay
 Yard No. 281 Electric Light Installation fitted by Rich. Watson & Co. Ltd. When fitted Oct. 1913

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 compound wound dynamo coupled direct to a 6 1/2 x 6 Vertical Engine
 Capacity of Dynamo 90 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Bottom platform of Engine room Whether single or double wire system is used Double
 Position of Main Switch Board Convenient to dynamo having switches to groups 6 circuits of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each 1 in Engine Room with 6 switches and 1 in Wheelhouse with 5 switches

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, Porcelain & Slate

Total number of lights provided for 138 arranged in the following groups:—

A	<u>3</u> lights each of <u>10</u>	<u>16</u> candle power requiring a total current of <u>6.9</u> Amperes
B	<u>13</u> lights each of <u>16</u>	<u>16</u> candle power requiring a total current of <u>4.8</u> Amperes
C	<u>28</u> lights each of <u>16</u>	<u>16</u> candle power requiring a total current of <u>14.7</u> Amperes
D	<u>20</u> lights each of <u>16</u>	<u>16</u> candle power requiring a total current of <u>12</u> Amperes
E	<u>23</u> lights each of <u>16</u>	<u>16</u> candle power requiring a total current of <u>13.8</u> Amperes

2 Mast head light with 2 lamps each of 32 candle power requiring a total current of 2.4 Amperes

2 Side light with 2 lamps each of 32 candle power requiring a total current of 2.4 Amperes

6 Cargo lights of 6 lights each = 36 @ 16 candle power, whether incandescent or arc lights Incandescent

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed In Wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying 90 Amperes, comprised of 37 wires, each 14 S.W.G. diameter, .09106 square inches total sectional area

Branch cables carrying 12 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area

Branch cables carrying 14 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .01406 square inches total sectional area

Leads to lamps carrying 1.8 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00181 square inches total sectional area

Cargo light cables carrying 3.1 Amperes, comprised of 110 wires, each 38 S.W.G. diameter, .003135 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

In accommodation the cable is V.I.R. laid in wood casing. In Engine room & storeroom they are V.I.R. protected by G.I. wires and in exposed places V.I.R. run in G.I. gas tube

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 Cables are run through beams etc; in wood casing or gas tube or with armouring to suit location

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 Galv. Iron Gas tube

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat G.I. tube or armouring

What special protection has been provided for the cables near boiler casings Armouring over V. I. R.

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

How are cables carried through beams Five Funnels through bulkheads, &c. Brass H. I. Glands.

How are cables carried through decks In Galv. Iron deck tube standing 13" above deck

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 Run in Galv. Iron Gas tube

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 They are enclosed in C.I. case with hinged covers.

Where are the main switches and fuses for these lights fitted In Forecastle

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 Switchboard

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.,

Electrical Engineers

Date 15/1/14.

COMPASSES.

D. Dundas Director

Distance between dynamo or electric motors and standard compass 64 ft.

Distance between dynamo or electric motors and steering compass 58 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>.6</u>	<u>6</u>	<u>3</u>	<u>3</u>
<u>1.8</u>	<u>10</u>	<u>4</u>	<u>4</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

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 any course in the case of the standard compass and No degrees on any course in the case of the steering compass.

AILSA SHIPBUILDING CO., Limited,

Builder's Signature. Date 16th January 1914.

GENERAL REMARKS.

Plus installation has been fitted on board under special survey & fitted under full working conditions & found satisfactory

It is submitted that this vessel is eligible for

THE RECORD. Elec. light.

Committee's Minute

GLASGOW 20 JAN 1914

Elec. Light.

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

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.