

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6979.

Port of Belfast Date of First Survey 14th March Date of Last Survey 12th Aug 1911 No. of Visits 16
 No. in Reg. Book on the Iron or Steel 7.8.8. Sgta Port belonging to Glasgow
 Built at Belfast By whom Wothman Clark & Co Ltd When built 1911
 Owners British India Steamer Co Ltd Owners' Address London
 Yard. No. 307 Electric Light Installation fitted by The Sunderland Ship & Eng. Co Ltd When fitted 1911

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Combined plants consisting of Single Cylinder Open Type Engines each direct coupled to Compound wound dynamo.
 Capacity of Dynamo 380 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed in Thrust recess Whether single or double wire system is used Double
 Position of Main Switch Board Near dynamos having switches to groups Six of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each None fitted.

If cut outs 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 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 Tin and constructed to fuse at an excess of 100% 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 451 arranged in the following groups:—

Group	Description	Quantity	Wattage/Amperage	Notes
A	Forward	50 lights each of 16	30 Amperes	candle power requiring a total current of 30 Amperes
B	After	98 lights each of 16	58.8 Amperes	candle power requiring a total current of 58.8 Amperes
C	Engine room	78 lights each of 16	44.8 Amperes	candle power requiring a total current of 44.8 Amperes
D	Fans	40 lights each of -	22.8 Amperes	candle power requiring a total current of 22.8 Amperes
E	Accom.	160 lights each of 16	9.8 Amperes	candle power requiring a total current of 9.8 Amperes
F	Navigation	27 lamps each of 16	16.3 Amperes	candle power requiring a total current of 16.3 Amperes
	Mast head light with 1 lamps each of 32	32	2.4 Amperes	candle power requiring a total current of 2.4 Amperes
	Side light with 1 lamps each of 32	32	2.4 Amperes	candle power requiring a total current of 2.4 Amperes
	Cargo lights of 8 lights of 16	16	Incandescent	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 Chartroom.

DESCRIPTION OF CABLES.

Current Carrying Capacity	Wires	L.S.G. Diameter	Total Sectional Area
Main cable carrying <u>380</u> Amperes, comprised of <u>61</u> wires, each <u>13</u>	<u>61</u>	<u>.4</u>	<u>.4</u> square inches total sectional area
Branch cables carrying <u>98</u> Amperes, comprised of <u>19</u> wires, each <u>14</u>	<u>19</u>	<u>.095</u>	<u>.095</u> square inches total sectional area
Branch cables carrying <u>22</u> Amperes, comprised of <u>7</u> wires, each <u>16</u>	<u>7</u>	<u>.022</u>	<u>.022</u> square inches total sectional area
Leads to lamps carrying <u>.6</u> Amperes, comprised of <u>7</u> wires, each <u>23</u>	<u>7</u>	<u>.003</u>	<u>.003</u> square inches total sectional area
Cargo light cables carrying <u>4.8</u> Amperes, comprised of <u>130</u> wires, each <u>30</u>	<u>130</u>	<u>.005</u>	<u>.005</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wire insulated with pure and vulcanised india rubber taped and braided.

Joints in cables, how made, insulated, and protected None used.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux - 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 holds, lead covered armoured and braided wire used.



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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 armoured and braided cables used. ✓

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat L.C.A. & Braided cables used. ✓

What special protection has been provided for the cables near boiler casings Lead covered armoured and Braided cables used. ✓

What special protection has been provided for the cables in engine room Lead covered armoured and braided cables used. ✓

How are cables carried through beams Holes bushed with fibre ✓ through bulkheads, &c. Watertight glands used ✓

How are cables carried through decks Watertight Deck tubes used. ✓

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 ✓
Lead covered armoured and Braided cables used. ✓

If so, how are they protected

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 With cast iron covers. ✓
in Engine room.

Where are the main switches and cut outs for these lights fitted

If in the spaces, how are they specially protected -

Are any switches or cut outs 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 -

The installation is supplied with 2 a voltmeter and 2 ✓ an amperemeter fixed on Switchboard. ✓

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 copper used is guaranteed to have a conductivity of 100 ✓ per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 600 ✓ 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.

THE NETHERLANDS FORCE & ENGINEERING Co., LTD

Electrical Engineers

Date 15th. August, 1911.

COMPASSES.

Distance between dynamo or electric motors and standard compass 150 feet.

Distance between dynamo or electric motors and steering compass 150 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>16.3</u>	Amperes	<u>12</u>	feet from standard compass	<u>12</u>	feet from steering compass
A cable carrying	<u>.6</u>	Amperes	<u>on</u>	feet from standard compass	<u>on</u>	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 nil ✓ degrees on all ✓ course in the case of the standard compass and nil ✓ degrees on all ✓ course in the case of the steering compass.

THE WORKMAN, CLARK & CO., LIMITED.

W. Prichard

SECRETARY

Builder's Signature.

Date

21 Aug 1911

GENERAL REMARKS.

The installation has been well fitted, and ran well on trial.

It is submitted that this vessel is eligible for THE RECORD, Etec. light.

A. J. Thomas

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

Committee's Minute



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REPORT FORM No. 13-20134

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.