

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7023

of Belfast Date of First Survey 29.9.11 Date of Last Survey 27th Nov. No. of Visits 15
 on the ~~Iron or Steel~~ T.S.S. "Waimana" Port belonging to Southampton.
 Built at Belfast By whom Workman Clark & Co. Ltd When built 1911.
Shaw Savill & Albion Co. Ltd. Owners' Address London.
 No. 309 Electric Light Installation fitted by The Sunderland Forge & Eng: Co. Ltd When fitted 1911.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Multipolar Pallion Dynamos direct coupled to open type Engine by
Workman Clark & Co. Ltd
 Capacity of Dynamo 200 Amperes at 100 Volts, whether continuous or alternating current continuous
 Is Dynamo fixed In recess at entrance to tunnels Whether single or double wire system is used single
 Position of Main Switch Board Close to Dynamos having switches to groups 18 of lights, &c., as below
 of auxiliary switch boards and numbers of switches on each None.

Are switches fitted on main switch board to the cables of main circuit Yes and on each auxiliary switch board to the cables of auxiliary
 and at each position where a cable is branched or reduced in size Yes and to each lamp circuit Yes

Are switches wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Single wire
 of non-oxidizable metal Tinned Copper and constructed to fuse at an excess of 100 per cent over the normal current
 Are 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 switches and cut-outs constructed of incombustible materials and fitted on incombustible bases All on slate & porcelain.

Number of lights provided for 305 arranged in the following groups:—

lights each of	<u>16</u>	candle power requiring a total current of	<u>27.6</u>	Amperes
lights each of	<u>16</u>	candle power requiring a total current of	<u>10.8</u>	Amperes
lights each of	<u>16</u>	candle power requiring a total current of	<u>28.8</u>	Amperes
lights each of	<u>16</u>	candle power requiring a total current of	<u>28.8</u>	Amperes
lights each of	<u>16</u>	candle power requiring a total current of	<u>38.4</u>	Amperes
Mast head light with <u>2</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
Side light with <u>2</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
Cargo lights of	<u>96</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>	

Are arc lamps, what protection is provided against fire, sparks, &c. 4 Arc lamps taking 10 amperes each.

Are arc lamps protected each on a separate circuit from Main Switchboard (outer globes) fitted.

Are the switches controlling the masthead and side lights placed In wheelhouse.

DESCRIPTION OF CABLES.

carrying <u>180</u> Amperes, comprised of	<u>57</u> wires, each	<u>14</u> L.S.G. diameter, <u>.1824</u> square inches total sectional area
carrying <u>27.6</u> Amperes, comprised of	<u>7</u> wires, each	<u>15</u> L.S.G. diameter, <u>.028</u> square inches total sectional area
carrying <u>10.8</u> Amperes, comprised of	<u>7</u> wires, each	<u>18</u> L.S.G. diameter, <u>.0124</u> square inches total sectional area
carrying <u>2.4</u> Amperes, comprised of	<u>1</u> wires, each	<u>16</u> L.S.G. diameter, <u>.0032</u> square inches total sectional area
carrying <u>3.6</u> Amperes, comprised of	<u>168</u> wires, each	<u>38</u> L.S.G. diameter, <u>.0064</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Are cables covered with pure and vulcanising India rubber, taped and the whole vulcanised
rubber, braided & compounded, Fitted in wood casings. Casing in cargo and
space covered with sheet iron. In Engine & Boiler Room Lead Cov: & Arm wires are used.

Are cables, how made, insulated, and protected Soldered, taped with pure rubber and waterproof tape & then
insulated.

Are joints of cables thoroughly soldered, resin only having been used as a flux Yes Are all joints in accessible positions, none being

in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage No joints in cargo
spaces.

Are joints in or branches from the cable leading from dynamo to main switch board No.

Are cables led through the ship, and how protected In wood casing with sheet iron cover in cargo &
bunker spaces.

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible In Tween Decks.

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture There are no cables exposed to weather.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead Covered & Armoured.

What special protection has been provided for the cables near boiler casings ditto

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

How are cables carried through beams Bushed with fibre through bulkheads, &c. Watertight glands

How are cables carried through decks in Galvanised iron pipes

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 in Wood casings with sheet iron cover.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage yes in Coal Bunker.

If so, how are the lamp fittings and cable terminals specially protected with cast iron covers.

Where are the main switches and cut outs for these lights fitted in Engineers Port Passage.

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 by large brass shoe.

How are the returns from the lamps connected to the hull by 3/8" Brass screw.

Are all the joints with the hull in accessible positions Yes

The installation is supplied with 2 voltmeters and two ammeters. 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 2,500 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 Sunderland Forge & Eng: Co. Ltd. Electrical Engineers Date 4 Nov 1911

COMPASSES.

Distance between dynamo or electric motors and standard compass 200 feet.

Distance between dynamo or electric motors and steering compass 196 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>27.6</u>	Amperes	<u>50</u>	feet from standard compass	<u>25</u>	feet from steering compass
A cable carrying	<u>10</u>	Amperes	<u>12</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>2</u>	Amperes	<u>12</u>	feet from standard compass	<u>6</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 all course in the case of the standard compass and nil degrees on all course in the case of the steering compass.

W. Workman, Clark & Co. Limited SECRETARY Builder's Signature. Date

GENERAL REMARKS.

The installation has been well fitted, and proved satisfactory on trial

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

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

