

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6078

Port of *Alger* Date of First Survey *Aug 30th 1915* Date of Last Survey *Nov 27th* No. of Visits *15*
 No. in Reg. Book *on the Motor Steamer S.S. Dufferin* Port belonging to *Glasgow*
 Built at *Alger* By whom *Workman Clark & Co. Ltd* When built *1905*
 Owners *Austrasian S. N. Co. Ltd* Owners' Address *London*
 Yard No. *225* Electric Light Installation fitted by *Wm. Harvie & Coy. Ltd* When fitted *1915*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 sets of single cylinder double acting vertical engines, direct coupled to compound multipolar dynamos

Capacity of Dynamo *90* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Dynamos & engines fixed in platform recess off Engine Room*

Position of Main Switch Board *Near dynamos* having switches to groups of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Forecastle 4, 1st Class Pantry 12, 1st class entrance 12, Port alleyway 6, Starboard Alleyway 6, 2nd Class Pantry 9, Chart Room 6, Engine room 8, Smoke room 8, Holds 5.*

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

Are the cut outs of non-oxidizable metal *Yes* 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 *244* arranged in the following groups:—

A	<i>32</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>19</i>	Amperes
B	<i>64</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>40</i>	Amperes
C	<i>65</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>40</i>	Amperes
D	<i>36</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>21</i>	Amperes
E	<i>34</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>21</i>	Amperes
F	<i>2</i>	Mast head light with <i>2</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2.4</i>	Amperes
	<i>2</i>	Side light with <i>2</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>2.4</i>	Amperes
	<i>2</i>	Cargo lights of each of <i>8-16</i>		candle power, whether incandescent or are lights	<i>incandescent</i>	

If are lights, what protection is provided against fire, sparks, &c. *✓*

Where are the switches controlling the masthead and side lights placed *Chart Room*

DESCRIPTION OF CABLES.

Main cable carrying *90* Amperes, comprised of *19* wires, each *14* L.S.G. diameter, *.094* square inches total sectional area
 Branch cables carrying *40* Amperes, comprised of *19* wires, each *14* L.S.G. diameter, *.094* square inches total sectional area
 Branch cables carrying *21* Amperes, comprised of *7* wires, each *16* L.S.G. diameter, *.022* square inches total sectional area
 Leads to lamps carrying *3* Amperes, comprised of *7* wires, each *23* L.S.G. diameter, *.0032* square inches total sectional area
 Cargo light cables carrying *4.8* Amperes, comprised of *113* wires, each *36* L.S.G. diameter, *.005* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure & Vulcanised indiarubber, india rubber coated tape, lead cover, and gal. iron wire armouring.

Joints in cables, how made, insulated, and protected *No joints in ship, loop in system adopted throughout*

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 *Wiring on the Concentric system with outer uninsulated. All wires & cables clipped up with brass or gal. iron saddles.*



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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*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Unwound wiring*

What special protection has been provided for the cables near boiler casings *Lead Covered & armoured*

What special protection has been provided for the cables in engine room *Lead Covered & armoured*

How are cables carried through beams *thru lead or wood bushes* through bulkheads, &c. *brass watertight glands*

How are cables carried through decks *gal. iron tubes flanged to deck & made watertight*

Are any cables run through coal bunkers *No* or cargo spaces *yes* or spaces which may be used for carrying cargo, stores, or baggage *yes*

If so, how are they protected *Lead covered, clipped up, except in holds where they are l.c. & armoured.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *in holds*

If so, how are the lamp fittings and cable terminals specially protected *Fittings of heavy cast iron, with c.i. hinged covers*

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

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

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 installation is supplied with a voltmeter and *with* an amperemeter, fixed *on Main Switchboard*

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 *1250 to 1500* 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.

WILLIAM HARVEY & CO. LIMITED

Wm & Binnie

Electrical Engineers

Date *6th Dec. 1905*

COMPASSES.

Distance between dynamo or electric motors and standard compass *125 ft*

Distance between dynamo or electric motors and steering compass *125 ft*

The nearest cables to the compasses are as follows:—

A cable carrying <i>6</i> Amperes	<i>at</i> feet from standard compass	<i>at</i> feet from steering compass
A cable carrying <i>12</i> Amperes	feet from standard compass	feet from steering compass
A cable carrying <i>12</i> 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 *every* course in the case of the standard compass and *Nil* degrees on *every* course in the case of the steering compass.

PRO WORKMAN, CLARK & CO., LIMITED.

Pro Workman

SECRETARY.

Builder's Signature.

Date *11-4-06*

GENERAL REMARKS.

This installation appears to be efficient, and has been fitted in accordance with the Rules.

R. F. D. Sweeney

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

Committee's Minute

It is submitted that the Record Elec. Light be noted in the Reg. Book.

Lloyd's Register Foundation

17.4.06

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.