

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4119

Received at London Office

Port of Dundee Date of First Survey 24th Nov Date of Last Survey 22nd Dec No. of Visits 4
 No. in Reg. Book 272 on the ~~Iron~~ Steel S.S. ELECTRA Port belonging to London
 Built at Glasgow By whom R. Napier & Sons When built 1885-1
 Owners Eastern Telegraph Co. Lim Owners Address London
 Yacht No. Electric Light Installation fitted by Messrs W.C. Martin & Co When fitted 1905

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound two pole dynamo driven direct by single cyl engine speed No 1 = 250 Rev
 No 2 = 310 Rev per Min; Dynamo engines overhauled & dynamo armatures and field magnets re-wound.
 Capacity of Dynamo No 1 - 185 Amperes at 65 Volts, whether continuous or alternating current
 No 2 - 75 Amperes at 65 Volts, whether continuous or alternating current Continuous
 Where ~~the~~ dynamo fixed in engine room

Position of Main Switch Board twain deck aft end engine casing having switches to groups A-B-C-D-E-F-G-H of lights, &c., as below
 Positions of auxiliary fuse switch boards and numbers of fuses on each A Engineers cabin 4; B Test Room 4; C Test room 6;
D Saloon companion 4; E 2nd Electricians room 4; F Engine Room 4; G near test room 4; H Propeller
on main switch board. All auxiliary fuse boxes are watertight and of cast iron or gun metal

If cut outs are fitted on main switch board to the cables of main circuit yes and on each auxiliary switch boards to the cables of auxiliary
 circuits yes and at each position where a cable is 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 yes and constructed to fuse at an excess of 50 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 241 arranged in the following groups:-

Group	Description	Lights	Each of	Candle Power	Requiring a total current of	Amperes
A	Main deck	lights each of	40	16	40	Amperes
B	Forward	lights each of	20	"	20	Amperes
C	Forward (night)	lights each of	41	"	41	Amperes
D	aft	lights each of	36	"	36	Amperes
E	aft (night)	lights each of	47	"	47	Amperes
F	Engine Room	lights each of	28	"	28	Amperes
G	Cable lights	lights each of	29	"	29	Amperes
	Most head light with	lamps each of			29	Amperes
	Side light with	lamps each of				Amperes

Cargo lights of 3 lamps of 16 ipi each candle power, whether incandescent or arc lights incandescent
 If arc lights, what protection is provided against fire, sparks, &c. yes

Where are the switches controlling the masthead and side lights placed no mast head or side lights

DESCRIPTION OF CABLES.

Description	Amperes	Wires	L.S.G. diameter	Total sectional area
Main cable carrying <u>No 1 - 185</u> Amperes, comprised of <u>37</u> wires, each <u>14</u> L.S.G. diameter, <u>.186</u> square inches total sectional area	185	37	14	.186
Branch cables carrying <u>(E) 47</u> Amperes, comprised of <u>19</u> wires, each <u>17</u> L.S.G. diameter, <u>.0467</u> square inches total sectional area	47	19	17	.0467
Branch cables carrying <u>14</u> Amperes, comprised of <u>7</u> wires, each <u>16</u> L.S.G. diameter, <u>.0225</u> square inches total sectional area	14	7	16	.0225
Leads to lamps carrying <u>3</u> Amperes, comprised of <u>3</u> wires, each <u>20</u> L.S.G. diameter, <u>.0031</u> square inches total sectional area	3	3	20	.0031
Cargo light cables carrying <u>3</u> Amperes, comprised of <u>3</u> wires, each <u>20</u> L.S.G. diameter, <u>.0031</u> square inches total sectional area	3	3	20	.0031

DESCRIPTION OF INSULATION, PROTECTION, ETC.

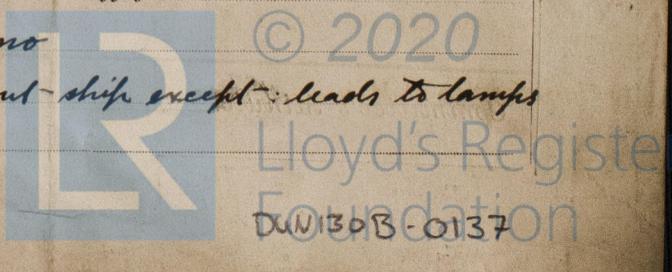
Pure india-rubber, vulcanized rubber, rubber coated tape, the whole vulcanized together and either armoured or sheathed with lead.

Joints in cables, how made, insulated, and protected All joints made at brass terminals.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux yes Are all joints in accessible positions, none being made in bunks, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage yes

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 Armoured cables throughout ship except leads to lamps in state rooms and cabins which are lead covered.



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 sheathed*

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

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

What special protection has been provided for the cables in engine room *armoured and a few in iron tubes*

How are cables carried through beams *drilled holes* through bulkheads, &c. *W.T glands*

How are cables carried through decks *iron pipes*

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

If so, how are they protected

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coats, or baggage *no*

If so, how are the lamp fittings and cable terminals specially protected

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 *double wired*

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 *now* supplied with a voltmeter and *two* an amperemeter *fixed* *main switch board*.

The copper used is guaranteed to have a conductivity of *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *2500* 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.

W.C. Martin & Co Electrical Engineers

Date *24th Jan 1906*

COMPASSES.

Distance between dynamo or electric motors and standard compass *80 ft*

Distance between dynamo or electric motors and steering compass *75 ft*

The nearest cables to the compasses are as follows:— *all double wired*

A cable carrying	<i>3</i>	Amperes	<i>3</i>	feet from standard compass	<i>4</i>	feet from steering compass
A cable carrying		Amperes		feet from standard compass		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 course in the case of the standard compass and *nil* degrees on course in the case of the steering compass.

W.M. Builder's Signature Date

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules the materials and workmanship are sound and good and render the vessel eligible in my opinion to have the notation of "Electric Light" in the Register Book

Wm Morrison
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

11.1.06