

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 32137

Port of *Newcastle* Date of First Survey *July 8* Date of Last Survey *Aug 1st* No. of Visits *6*
 No. in Reg. Book on the *Iron or Steel* *S.S. "Dorneo"* Port belonging to *Newcastle*
 Built at *Newcastle* By whom *Messrs Palmers & Co Ltd* When built *1895*
 Owners *Peninsular & Oriental Steam Navigation Co* Owners Address *122 Leadenhall St London E.C.*
 Yard No. *697* Electric Light Installation fitted by *Messrs Siemens Bros & Co Ltd* When fitted *1895*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Consisting of *two sets of Siemens H.B. 12 1/2* ^{each} *Dynamo's* coupled direct to *Langye's vertical single cylinder engine*

Capacity of Dynamo *112* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *In main engine room*

Position of Main Switch Board *Main engine room* having switches to groups *A. B + C* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

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 branched or reduced in size *Yes* and to each lamp circuit

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

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes*

Total number of lights provided for *190* arranged in the following groups:—

A	<i>80</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>50</i>	Amperes
B	<i>80</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>50</i>	Amperes
C	<i>24</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>14</i>	Amperes
D		lights each of		candle power requiring a total current of		Amperes
E		lights each of		candle power requiring a total current of		Amperes
	<i>1</i>	Mast head light with	<i>2</i>	lamps each of	<i>16</i>	candle power requiring a total current of <i>1.5</i> Amperes
	<i>2</i>	Side light with	<i>2</i>	lamps each of	<i>16</i>	candle power requiring a total current of <i>3</i> Amperes
	<i>8</i>	Cargo lights of	<i>40</i>	candle power, whether incandescent or arc lights		<i>Incandescent</i>

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

Where are the switches controlling the masthead and side lights placed *In lamp room for Masthead light Under bridge for side lights*

DESCRIPTION OF CABLES.

Main cable carrying *112* Amperes, comprised of *34* wires, each *No. 16* L.S.G. diameter, *0.119* square inches total sectional area

Branch cables carrying *50* Amperes, comprised of *7* wires, each *No. 12* L.S.G. diameter, *0.059* square inches total sectional area

Branch cables carrying _____ Amperes, comprised of _____ wires, each _____ L.S.G. diameter, _____ square inches total sectional area

Leads to lamps carrying *6* Amperes, comprised of *1* wires, each *No. 18* L.S.G. diameter, _____ square inches total sectional area

Cargo light cables carrying _____ Amperes, comprised of _____ wires, each _____ L.S.G. diameter, _____ square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

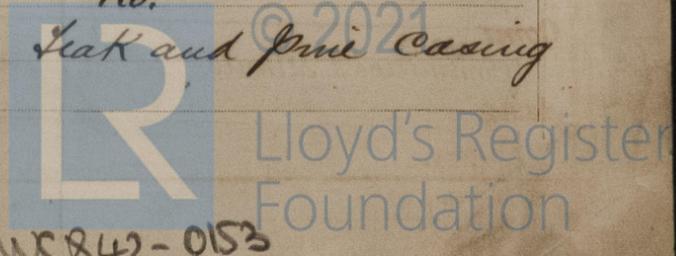
Insulated with *pure and vulcanized India Rubber*, then covered with *India Rubber tape*, braided and compounded

Joints in cables, how made, insulated, and protected *Generally jointless system*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *Yes, where necessary* 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 *They are easy of access*

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 *In well seasoned teak and pine casing and in iron pipes*



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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

As before described

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

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

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

Leak casing.

How are cables carried through beams

Through hard wood backing through bulkheads, &c.

How are cables carried through decks

Through specially designed Deck glands

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, coals, or baggage

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

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 a special gun metal shoe fixed to ship's beam

How are the returns from the lamps connected to the hull

By a 3/8" brass metal threaded screw

Are all the joints with the hull in accessible positions

Yes wherever possible

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 *not* supplied with a voltmeter *and* *not* an amperemeter, fixed

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 *600* megohms 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 that it is at this date in good order and safe working condition.

FOR SIEMENS BROTHERS & CO. LIMITED.

Electrical Engineers

Date *July 27th 1900*

COMPASSES.

Distance between dynamo or electric motors and standard compass

W. Scharina
over 100 feet

Distance between dynamo or electric motors and steering compass

ditto

The nearest cables to the compasses are as follows:—

A cable carrying	<i>20</i>	Amperes	<i>about 30</i>	feet from standard compass	<i>30</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 standard compass and *nil* degrees on course in the case of the steering compass.

Builder's Signature Date

GENERAL REMARKS.

The Installation has been fitted by Messrs Siemens Brothers & Co. Ltd and seen working in a satisfactory manner

G. L. Hindmarsh

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

Committee's Minute



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