

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 5649

Port of *Aberdeen* Date of First Survey *Sept 9th* Date of Last Survey *Sept 4th* No. of Visits *12*
 No. in Reg. Book *140* on the ~~Iron or Steel~~ *S.S. "Angeli"* Port belonging to *Aberdeen*
 Built at *Aberdeen* By whom *Hall Russell & Co* When built *1897*
 Owners *J. S. Rennie & Sons* Owners Address *Manichal St - Aberdeen*
 Yard No. *303* Electric Light Installation fitted by *Claid Hamilton & Co* When fitted *1897*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

High Sped inverted vertical engine coupled to compound wound dynamo on same bedplate.

Capacity of Dynamo *200* Amperes at *60* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *in Engine room*

Position of Main Switch Board *in Engine room* having switches to groups *A, B, C, D & E.* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *none*

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 *yes*

If cessel 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, in boxes* 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, on marble or porcelain*

Total number of lights provided for *183* arranged in the following groups:—

A	<i>68</i>	lights each of <i>67¹/₂ C.P. + 1-32 C.P.</i>	candle power requiring a total current of	<i>59</i>	Amperes
B	<i>33</i>	lights each of <i>26 " + 7-32 C.P.</i>	candle power requiring a total current of	<i>34</i>	Amperes
C	<i>38</i>	lights each of <i>4, 8, & 30 C.P. 4-32 C.P.</i>	candle power requiring a total current of	<i>34</i>	Amperes
D	<i>17</i>	lights each of <i>9-16 & 8-32 C.P.</i>	candle power requiring a total current of	<i>21</i>	Amperes
E	<i>27</i>	lights each of <i>16</i>	candle power requiring a total current of	<i>23</i>	Amperes
<i>1</i>	<i>Mast head light with</i>	<i>1</i> lamps each of <i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes
<i>2</i>	<i>Side light with</i>	<i>1</i> lamps each of <i>32</i>	candle power requiring a total current of	<i>4</i>	Amperes

2 Cargo lights of *5 lamps each of 32* candle power, whether incandescent or arc lights *incandescent*

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

Where are the switches controlling the masthead and side lights placed *Plugs fitted in watertight boxes on deck*

DESCRIPTION OF CABLES.

Main cable carrying *171* Amperes, comprised of *37* wires, each *N^o 14* L.S.G. diameter, *1909* square inches total sectional area
 Branch cables carrying *59* Amperes, comprised of *19* wires, each *N^o 16* L.S.G. diameter, *0624* square inches total sectional area
 Branch cables carrying *34* Amperes, comprised of *19* wires, each *N^o 18* L.S.G. diameter, *0349* square inches total sectional area
 Leads to lamps carrying *1* Amperes, comprised of *1* wires, each *N^o 17* L.S.G. diameter, *0024* square inches total sectional area
 Cargo light cables carrying *8* Amperes, comprised of *108* wires, each *N^o 38* L.S.G. diameter, *0032* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

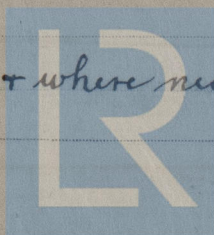
Conductors of tinned copper wires insulated with pure india rubber then vulcanised I. R., I. R. Coated Tape & the whole vulcanised together, then braided tarred flax, & coated with preservative compound.

Joints in cables, how made, insulated, and protected *no joints*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *no joints* 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 *no wires in such places*

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 hard wood casing & where necessary 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 Iron Pipes
What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Hard Wood Casing
What special protection has been provided for the cables near boiler casings Hard Wood Casing
What special protection has been provided for the cables in engine room "
How are cables carried through beams in wooden thimbles through bulkheads, &c. None through bulkheads
How are cables carried through decks in 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, coals, 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
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 efficiently supplied with a voltmeter and also an amperemeter, fixed on switchboard

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 per statute mile after 24 hours' immersion in seawater. all of Silvertown Make

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.

Electrical Engineers Date 27th Oct 1897

COMPASSES.

Alma Maritima?

Distance between dynamo or electric motors and standard compass 80 ft.
Distance between dynamo or electric motors and steering compass 40 "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>59.</u>	Amperes	<u>40</u>	feet from standard compass	<u>45</u>	feet from steering compass
A cable carrying	<u>34</u>	Amperes	<u>110</u>	feet from standard compass	<u>25</u>	feet from steering compass
A cable carrying	<u>✓</u>	Amperes	<u>✓</u>	feet from standard compass	<u>✓</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 no degrees on each course in the case of the standard compass and no degrees on each course in the case of the steering compass.

Hall Russell & Co. Builder's Signature Date

GENERAL REMARKS.

This installation is fitted by us all material & workmanship being of the very best.

Maurice Pitson

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

Committee's Minute

This installation appears to be fitted in accordance with the Rules.

15/11/97

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

50 lbs S.A.H.