

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 116720

Port of Glasgow Date of First Survey S. S. Moravian Date of Last Survey Aberdeen No. of Visits 1  
 No. in Reg. Book on the Iron or Steel S. S. Moravian Port belonging to Aberdeen  
 Built at Govan By whom Robt Napier & Sons Ltd When built 1899  
 Owners J. Thompson & Co. Owners' Address Aberdeen  
 Yard No. 463 Electric Light Installation fitted by Blair & Hamilton Ltd When fitted 1899

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Electric Plant consists of 2 sets. Each set consisting of High Speed Vertical Engine coupled to and on same Bedplate with a Compound wound Dynamo  
 Capacity of Dynamo 235 Amperes at 60 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Engine Room  
 Position of Main Switch Board Engine Room near to Dynamo having switches to groups A, B, C, D, E, F, G, H, I, J, K, L, M of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each A in 1st class Pantry 13 switches, B in 1st class Pantry 8 switches, C in 2nd class Pantry 10 switches, D in Butcher Shop 5 switches, E in Passage 4 switches, F in 1st class Pantry 8 switches, G in Passage to Officers Quarters 4 switches, H in Engine Room 13 switches, I in Passage to Hospital 2 switches, J in 2nd class Pantry 4 switches, K in 1st class Pantry 4 switches, L in 2nd class Pantry 4 switches, M in 2nd class Pantry 4 switches.  
 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 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 porcelain bases  
 Total number of lights provided for 339 arranged in the following groups:—  

A	25	lights each of	21-16 C.P. & 4-50	candle power requiring a total current of	28	Amperes
F	36	"	36-16 C.P.	"	30	"
B	42	lights each of	33-16 C.P. & 4-50	candle power requiring a total current of	42	Amperes
G	37	"	33-16 C.P. & 4-50	"	38	"
C	49	lights each of	45-16 C.P. & 4-50	candle power requiring a total current of	48	Amperes
H	41	"	41-16 C.P.	"	35	"
D	31	lights each of	27-16 C.P. & 4-50	candle power requiring a total current of	33	Amperes
I	10	"	10-16 C.P.	"	8 1/2	"
E & J each	20	lights each of	20-16 C.P.	candle power requiring a total current of	(each) 17	Amperes
L & M each	14	"	14-16 C.P.	"	(each) 12	"
		Mast head light with	lamps each of	candle power requiring a total current of		Amperes
		Side light with	lamps each of	candle power requiring a total current of		Amperes
	5	Cargo lights of	4-50 C.P.	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 No masthead or sidelights fixed

## DESCRIPTION OF CABLES.

Main cable carrying 235 Amperes, comprised of 61 wires, each Nº 15 L.S.G. diameter, .2557 square inches total sectional area  
 Branch cables carrying 38, 42, 168 Amperes, comprised of 19 wires, each Nº 16 L.S.G. diameter, .0624 square inches total sectional area  
 Branch cables carrying 28, 30, 33, 35 Amperes, comprised of 19 wires, each Nº 18 L.S.G. diameter, .0349 square inches total sectional area  
 Leads to lamps carrying 4 Amperes, comprised of 7 wires, each Nº 22 L.S.G. diameter, .0044 square inches total sectional area  
 Cargo light cables carrying 10 Amperes, comprised of 168 wires, each Nº 38 L.S.G. diameter, .005 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of twisted copper wires insulated with pure india rubber, then vulcanized india rubber, india rubber coated tape and the whole vulcanized together then braided with tarred flax and covered with preservative compound

Joints in cables, how made, insulated, and protected No joints in cables

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 (1) Yes. (2) No

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 cabins, saloons etc. cables are in lead casing in other parts of the ship cables are in iron pipes



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 Enclosed in iron pipes

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

What special protection has been provided for the cables near boiler casings Enclosed in iron pipes

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

How are cables carried through beams In wooden chimbles through bulkheads, &c. In watertight plugs

How are cables carried through decks In flanged watertight tubes

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 yes

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

If so, how are the lamp fittings and cable terminals specially protected Wittings are protected by strong iron guards

Where are the main switches and cut outs for these lights fitted For 2 Lower Deck Butcher shop. Mid Upper Deck 1st Class Pantry. Off Lower Deck 2nd Class Pantry

If in the spaces, how are they specially protected yes

Are any switches or cut outs fitted in bunkers no

Cargo light cables, whether portable or permanently fixed Portable How fixed Socket and Plug connection

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel yes

How are the returns from the lamps connected to the hull yes

Are all the joints with the hull in accessible positions yes

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 yes

Are any switches, cut outs, or joints of cables fitted in the pump room or companion yes

How are the lamps specially protected in places liable to the accumulation of vapour or gas yes

The installation is also supplied with a voltmeter and with 2 an ampere meters fixed on Switchboard in Engine Room

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 600 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.

For CLAUD HAMILTON, LIMITED.

Electrical Engineers

Date 14 April 1899

COMPASSES.

Distance between dynamo or electric motors and standard compass 130 feet

Distance between dynamo or electric motors and steering compass 134 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>28</u>	<u>40</u>	<u>44</u>	<u>44</u>
<u>2</u>	<u>20</u>	<u>20</u>	<u>20</u>
<u>30</u>	<u>50</u>	<u>54</u>	<u>54</u>

Have the compasses been adjusted with and without the electric installation at work at full power

The maximum deviation due to electric currents, etc., was found to be degrees on course in the case of the standard compass and degrees on course in the case of the steering compass.

John Hamilton

Builder's Signature.

Date

GENERAL REMARKS.

The Electric Lighting Installation in this vessel has been fitted in accordance with the Rules, and tried under full working conditions with satisfactory results.

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

Committee's Minute

It is submitted that this installation appears to be in accordance with the Rules.

Lloyd's Register Foundation

22.4.99

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.