

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 11811.

of Aberdeen Date of First Survey 4. 2. 16 Date of Last Survey 28. 2. 16 No. of Visits 6
 on the Iron or Steel S.S. "BRACONDENE" Port belonging to Aberdeen
 Built at Aberdeen By whom A Hall & Co. Ltd. When built 1916
 No. 510 Electric Light Installation fitted by James Thomson Owners' Address Commercial Road - Aberdeen
 When fitted 1916

DESCRIPTION OF DYNAMO, ENGINE, ETC.

ical open type, double acting single cylinder engine, direct coupled to a semi-closed 4 pole compound wound dynamo.

Capacity of Dynamo 30 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In engine room Whether single or double wire system is used double

Position of Main Switch Board near dynamo having switches to groups — of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each The whole of the branch wiring is run from main switch board by an 8 way distribution board, and 14 branch switches controlling all lights except cabins & wheelhouse, which have local switches.

Fuses 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

Is vessel wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits yes

Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 50 per cent over the normal current

Are all fuses fitted in easily accessible positions yes Are the fuses of standard dimensions No 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 fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 43 arranged in the following groups:—

<u>30</u>	lights each of	<u>50</u>	candle power requiring a total current of	<u>18</u>	Amperes
<u>3</u>	lights each of	<u>32</u>	candle power requiring a total current of	<u>1.2</u>	Amperes
<u>3</u>	lights each of	<u>25</u>	candle power requiring a total current of	<u>.9</u>	Amperes
<u>1</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>.2</u>	Amperes
<u>6</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>3.6</u>	Amperes
<u>1</u>	Mast head light with	<u>1</u> lamps each of <u>16</u>	included in group E candle power requiring a total current of		Amperes
<u>2</u>	Fishing " " " "	<u>2</u> lamps each of <u>16</u>			Amperes
<u>2</u>	Side light with	<u>2</u> lamps each of <u>16</u>			Amperes
<u>1</u>	Stem " " " "	<u>1</u> lamp each of <u>16</u>			
	Cargo lights of		candle power, whether incandescent or arc lights		

Are lights, what protection is provided against fire, sparks, &c. —

Where are the switches controlling the masthead and side lights placed In engine room

DESCRIPTION OF CABLES.

Main cable carrying 23.9 Amperes, comprised of 4 wires, each 16 S.W.G. diameter, .02214 square inches total sectional area
 Branch cables carrying ✓ Amperes, comprised of ✓ wires, each ✓ S.W.G. diameter, ✓ square inches total sectional area
 Branch cables carrying ✓ Amperes, comprised of ✓ wires, each ✓ S.W.G. diameter, ✓ square inches total sectional area
 Leads to lamps carrying 3 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00181 square inches total sectional area
 Cargo light cables carrying — Amperes, comprised of — wires, each — S.W.G. diameter, — square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

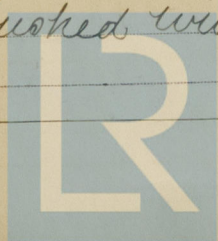
All wires insulated with pure and vulcanized rubber, taped & lead covered & armoured with galvanized iron wire - except in cabins, where wires are lead covered only.

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

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances — 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 none

How are the cables led through the ship, and how protected through holes in beams, bushed with lead and protected by wire armour



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *except in bunkers*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead covered, and armoured*

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

What special protection has been provided for the cables near boiler casings *— 6 — — 6 —*

What special protection has been provided for the cables in engine room *— 6 — — 6 —*

How are cables carried through beams *holes bushed with lead* through bulkheads, & *bushed holes at deck level*

How are cables carried through decks *in strong iron tubes filled in with pitch*

Are any cables run through coal bunkers *yes* 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 & armoured*

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

If so, how are the lamp fittings and cable terminals specially protected *strong wire guards*

Where are the main switches and fuses for these lights fitted *In engine room*

If in the spaces, how are they specially protected *— — — —*

Are any switches or fuses fitted in bunkers *no*

Cargo light cables, whether portable or permanently fixed *permanently fixed* How fixed *to bracket on mast*

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 *— — — —*

Is the installation supplied with a voltmeter *yes*, and with an amperemeter *yes*, fixed *on main switch board*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas *— — — —*

Are any switches, fuses, 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 copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

J. Thomson

Electrical Engineers

Date *3rd March 1916*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 40 feet*

Distance between dynamo or electric motors and steering compass *— 6 — — 6 —*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>2</i>	Ampères	<i>3</i>	feet from standard compass	<i>3</i>	feet from steering compass
A cable carrying	<i>2</i>	Ampères	<i>—</i>	feet from standard compass	<i>3</i>	feet from steering compass
A cable carrying	<i>.2</i>	Ampères	<i>—</i>	feet from standard compass	<i>binacle light</i>	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 *any* course in the case of the standard compass and *Nil* degrees on *any* course in the case of the steering compass.

For ALEXANDER HALL & CO., LTD.

James Ingram

Builder's Signature. Date *3rd March 1916*

GENERAL REMARKS. *The various parts of the installation were examined while being fitted on board. The materials, and workmanship are good, and on completion the lights was tried at full power & found satisfactory.*

It is submitted that this vessel is eligible for THE RECORD Elec. light.

JWD 6/3/16

Ridley Towell

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

Committee's Minute TUE. 7-MAR. 1916



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