

MON. 8 APR 1907

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## REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 11909.

Port of Leith Date of First Survey 25<sup>th</sup> Mch Date of Last Survey 26<sup>th</sup> Mch No. of Visits 2  
 No. in on the Iron or Steel SS "Allan" Port belonging to Aarhus  
 Reg. Book Supplement 118 Built at Alloa By whom Mackay Bros When built 1907  
 Owners J. Christensen Owners' Address Aarhus  
 Yard No. Electric Light Installation fitted by Haddon & Co. Glasgow When fitted 1907

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

"Dan" Oil Engine One Compound band Dynamo coupled direct to one  
 Capacity of Dynamo 4.5 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Engine Room Whether single or double wire system is used Double  
 Position of Main Switch Board Alongside dynamo having switches to groups A. B. C. of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Pantry - eight circuits, Engine Room -  
six circuits, Engine Room - four circuits  
 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-oxidisable 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 61 arranged in the following groups:—  
 A 25 lights each of 8 & 16 candle power requiring a total current of 16.5 Amperes  
 B 19 lights each of 8 & 16 candle power requiring a total current of 11.4 Amperes  
 C 16 lights each of 32 candle power requiring a total current of 19.2 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  
 1 Mast head light with 1 D.F. lamp each of 32 candle power requiring a total current of 1.2 Amperes  
 2 Side light with 1 D.F. lamp each of 32 candle power requiring a total current of 2.4 Amperes  
 2 Cargo lights of 4 - 32 candle power, whether incandescent or arc lights included in above  
 If arc lights, what protection is provided against fire, sparks, &c.

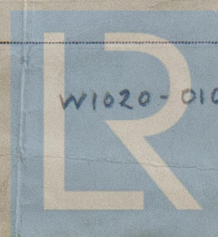
Where are the switches controlling the masthead and side lights placed Chart Room

## DESCRIPTION OF CABLES.

Main cable carrying 42 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .06039 square inches total sectional area  
 Branch cables carrying 10.5 Amperes, comprised of 4 wires, each 18 L.S.G. diameter, .01254 square inches total sectional area  
 Branch cables carrying 11.4 Amperes, comprised of 4 wires, each 18 L.S.G. diameter, .01254 square inches total sectional area  
 Leads to lamps carrying 6 Amperes, comprised of 3 wires, each 20 L.S.G. diameter, .003016 square inches total sectional area  
 Cargo light cables carrying 4.5 Amperes, comprised of 3 wires, each 18 L.S.G. diameter, .005364 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure rubber, vulcanised rubber, tape  
braided & compounded over all  
 Joints in cables, how made, insulated, and protected Soldered & insulated with pure Para rubber  
vulcanised tape & rubber solution  
 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 bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage 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 wood casing.



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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 *Armoured*

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

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

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

How are cables carried through beams *Galvanised fibre tubes* through bulkheads, &c. *Slipping glands*

How are cables carried through decks *Iron pipes flanged to deck*

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

If so, how are they protected *Armoured*

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

If so, how are the lamp fittings and cable terminals specially protected *Cast iron fittings with hinged covers*

Where are the main switches and cut outs for these lights fitted *Engine Room*

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 *Brass sockets & plugs*

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

The installation is supplied with a voltmeter and an amperemeter, fixed *Main Switch B<sup>2</sup>*

**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 copper used is guaranteed to have a conductivity of *99* 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.

*Haddan & Co, Glasgow*

Electrical Engineers

Date *April 3<sup>rd</sup> 1907*

**COMPASSES.**

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

Distance between dynamo or electric motors and steering compass *40 ft*

The nearest cables to the compasses are as follows:—

A cable carrying *10.5* Amperes *15* feet from standard compass *22* feet from steering compass

A cable carrying *19.2* Amperes *35* feet from standard compass *38* 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 *without*

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

*Mackay Brothers*

Builder's Signature.

Date *4<sup>th</sup> April 1907*

**GENERAL REMARKS.**

*The foregoing appears to be a correct description of the wiring of the vessel. The engine & dynamo are to be fitted in holds. Installation now examined under working conditions and appears satisfactory. Master stated there was A J Graham. No deviation of compass but light not used at sea only intended for use in discharging cargo.*

Committee's Minute

*It is submitted that the Record Elec. Light be noted in the Reg. Book.*