

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 61374

Port of *Newcastle-on-Tyne* Date of First Survey *31st Oct. 1911* Date of Last Survey *17th Nov. 1911* No. of Visits *6*
 No. in Reg. Book *on the Iron or Steel SS. Goldenfels* Port belonging to *Bremen*
 Built at *Low - Walker* By whom *Wigham Richardson & Co.* When built *1911*
 Owners *Hansa S/N Co* Owners' Address *Bremen*
 Yard No. *860* Electric Light Installation fitted by *Clarke Chapman & Co.* When fitted *1911*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One compound double acting enclosed type vertical engine direct coupled to a continuous current compound wound dynamo.

Capacity of Dynamo *120* Amperes at *110* 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 *A. B. C. D. & E.* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *Each light & group of lights provided with switches as required.*

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 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* 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. slate & porcelain.*

Total number of lights provided for *208* arranged in the following groups:—

A	<i>75</i>	lights each of	<i>16.</i>	candle power requiring a total current of	<i>40.9</i>	Amperes
B	<i>64</i>	lights each of	<i>16.</i>	candle power requiring a total current of	<i>34.9</i>	Amperes
C	<i>37</i>	lights each of	<i>16.</i>	candle power requiring a total current of	<i>20.1</i>	Amperes
D	<i>32</i>	lights each of	<i>16.</i>	candle power requiring a total current of	<i>17.4</i>	Amperes
E	<i>1-20" Projector</i>	lights each of	<i>20,000</i>	candle power requiring a total current of	<i>50.</i>	Amperes
	<i>2</i>	Mast head light with	<i>1</i> lamps each of <i>32</i>	candle power requiring a total current of	<i>1.1</i>	Amperes
	<i>2</i>	Side light with	<i>1</i> lamps each of <i>32</i>	candle power requiring a total current of	<i>1.1</i>	Amperes
	<i>20</i>	Cargo lights of	<i>5 - 16 each</i>	candle power, whether incandescent or arc lights	<i>incandescent.</i>	

If arc lights, what protection is provided against fire, sparks, &c. *Totally enclosed in hexagonal clear glass lanterns.*

Where are the switches controlling the masthead and side lights placed *in Wheel House.*

DESCRIPTION OF CABLES.

Main cable carrying *102* Amperes, comprised of *37* wires, each *16* L.S.G. diameter, *.11680* square inches total sectional area
 Branch cables carrying *34* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.03459* square inches total sectional area
 Branch cables carrying *7* Amperes, comprised of *7* wires, each *20* L.S.G. diameter, *.0070* square inches total sectional area
 Leads to lamps carrying *6* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.0018* square inches total sectional area
 Cargo light cables carrying *3* Amperes, comprised of *168* wires, each *38* L.S.G. diameter, *.00502* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

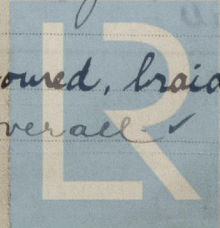
Vulcanized india rubber taped & braided & lead covered overall & where exposed, steel armoured & bitumen compounded.

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

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 *Yes. 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 *Lead covered steel armoured, braided & bitumen compounded, laid in troughs & cemented overall.*



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *no* ✓
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead covered & steel armoured, braided & bitumen compounded.*
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead covered armoured braided*
 What special protection has been provided for the cables near boiler casings *"*
 What special protection has been provided for the cables in engine room *"*
 How are cables carried through beams *in lead bushes* through bulkheads, &c. *in glands.*
 How are cables carried through decks *in galvanized iron deck 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 *yes* ✓
 If so, how are they protected *Lead covered armoured, braided & bitumen compounded* ✓
 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 *to W.T.B. connection boxes.*
 In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Double wire system* ✓
 How are the returns from the lamps connected to the hull *—*
 Are all the joints with the hull in accessible positions *—*
 The installation is *now* ✓ supplied with a voltmeter and *also* ✓ an amperemeter, fixed *on Switchboard.*

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 *100* ✓ per cent. that of pure copper.
 Insulation of cables is guaranteed to have a resistance of not less than *2,000* ✓ 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 Clarke, Chapman & Co. L^{td}.

W. Walker Chairman

Electrical Engineers

Date *December 8th 1911.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *112 ft*

Distance between dynamo or electric motors and steering compass *100 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>.6</i>	<i>12</i>	<i>6</i>	<i>6</i>
<i>.6</i>	<i>6</i>	<i>12</i>	<i>12</i>
<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>

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 *all* ✓ course in the case of the standard compass and *nil* ✓ degrees on *all* ✓ course in the case of the steering compass.

SWAK HUNTER & WIGHAM RICHARDSON, LTD.

W. Walker Chairman

Builder's Signature.

Date *11 December 1911*

GENERAL REMARKS.

This electric light installation has been satisfactorily fitted on board, and the vessel is eligible in my opinion to have the record Electric Light in the Register Book

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

J.W.D. J.P.R.
15/11/11

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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