

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 53304

Port of *Newcastle-on-Tyne* Date of First Survey *June 25* 1907 Date of Last Survey *26 July* No. of Visits *6*
 No. in Reg. Book on the Iron or Steel *3 Thebinga* Port belonging to *London*
 Built at *Row Walker* By whom *Messrs Armstrong Whitworth* When built *1907*
 Owners *Buchanall Bros.* Owners' Address *London*
 Yard No. *795* Electric Light Installation fitted by *Messrs Clarke Chapman & Co Ltd* When fitted *1907*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

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

Capacity of Dynamo *120* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Engine room Bottom platform Starb.* Whether single or double wire system is used *Double wire*

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 + groups 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 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* 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 + ambrin*

Total number of lights provided for *166* arranged in the following groups:—

A	<i>15</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>9</i>	Amperes
B	<i>33</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>19.8</i>	Amperes
C	<i>55</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>35</i>	Amperes
D	<i>37</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>40.2</i>	Amperes
E	<i>26</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>15.6</i>	Amperes
<i>2</i>	<i>Mast head light with 1 lamps each of</i>	<i>32</i>		candle power requiring a total current of	<i>2.4</i>	Amperes
<i>2</i>	<i>Side light with 1 lamps each of</i>	<i>32</i>		candle power requiring a total current of	<i>2.4</i>	Amperes
<i>10</i>	<i>Cargo lights of each</i>	<i>8-16</i>		candle power, whether incandescent or arc lights	<i>incandescent</i>	

If are lights, what protection is provided against fire, sparks, &c. *None fitted*

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

DESCRIPTION OF CABLES.

Main cable carrying *120* Amperes, comprised of *37* wires, each *16* L.S.G. diameter, *.1168* square inches total sectional area

Branch cables carrying *19.8* Amperes, comprised of *7* wires, each *16* L.S.G. diameter, *.0221* square inches total sectional area

Branch cables carrying *9* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.0124* 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 *4.8* Amperes, comprised of *176* wires, each *38* L.S.G. diameter, *.00507* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber taped & braided, lead covered overall & where exposed steel armoured over the lead covering

Joints in cables, how made, insulated, and protected *No joints except mechanical ones*

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 and steel armoured clipped to underside of deck with strong clips.*



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.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead covered & armoured*

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 watertight glands*

How are cables carried through decks *in galvanized iron watertight deck tubes*

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

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 *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 _____

Cargo light cables, whether portable or permanently fixed *portable* How fixed *in C.I. watertight 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 *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 CLARKE, CHAPMAN & Co. LTD.

Robert scope

Electrical Engineers

Date *July 9/1907*

COMPASSES.

Distance between dynamo or electric motors and standard ^{Director} compass *110 feet*

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

The nearest cables to the compasses are as follows:—

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

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

For **SIR W. G. ARMSTRONG, WHITWORTH & Co. Limited**

R. S. Dainton

Builder's Signature.

Date *15th July 1907*

GENERAL REMARKS.

This installation has been examined & as far as could be seen found satisfactory

J. J. Findlay

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

Committee's Minute _____

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



Lloyd's Register Foundation

1.8.07

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 1. 1-3m34.