

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 63455

Port of Liverpool-on-Tyne Date of First Survey 29<sup>th</sup> Aug Date of Last Survey 23<sup>rd</sup> Dec 1912 No. of Visits 5  
 No. in on the Steel S.S. "COMBE" Port belonging to LONDON  
 Reg. Book Built at Liverpool-on-Tyne By whom Wood, Skinner & Co. Ltd When built 1912  
 Owners Stephenson Clarke & Co. Owners' Address LONDON  
 Yard No. 170 Electric Light Installation fitted by Bartholomew Electrical Eng. When fitted 1912  
Stationing: C. & A., North Shields

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

"Castle" Dynamo by J. N. Holmes & Co.  
 Engine "Robery & Co."  
 Capacity of Dynamo 70 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed lower part Eng. Room Whether single or double wire system is used double  
 Position of Main Switch Board alongside dynamo having switches to groups 4 main sets of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each an average of two lights to each switch. Each branch board fixed as near as possible to respective lights  
 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 25 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, porcelain & slate  
 Total number of lights provided for 102 arranged in the following groups:—  

A	<u>14</u> lights each of <u>16cp.</u>	candle power requiring a total current of <u>10.64</u> Amperes
B	<u>22</u> lights each of <u>16</u>	candle power requiring a total current of <u>15.68</u> Amperes
C	<u>40</u> lights each of <u>16</u>	candle power requiring a total current of <u>26.88</u> Amperes
D	<u>11</u> lights each of <u>16</u>	candle power requiring a total current of <u>6.16</u> Amperes
E	lights each of	candle power requiring a total current of
1	Mast head light with <u>22</u> lamps each of <u>32</u>	candle power requiring a total current of <u>1.12</u> Amperes
2	Side light with <u>2</u> lamps each of <u>32</u>	candle power requiring a total current of <u>2.24</u> Amperes
	<u>86</u> lights Cargo lights of <u>16cp.</u> for <u>40</u>	candle power, whether incandescent or are lights <u>incandescent</u>

 If arc lights, what protection is provided against fire, sparks, &c. No arcs.

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

## DESCRIPTION OF CABLES.

Main cable carrying <u>59.26</u> Amperes, comprised of <u>19</u> wires, each <u>14</u> L.S.G. diameter, <u>0.944</u> square inches total sectional area
Branch cables carrying <u>10.64</u> Amperes, comprised of <u>4</u> wires, each <u>14</u> L.S.G. diameter, <u>0.1254</u> square inches total sectional area
Branch cables carrying <u>15.68</u> Amperes, comprised of <u>4</u> wires, each <u>14</u> L.S.G. diameter, <u>0.1886</u> square inches total sectional area
Branch cables carrying <u>26.88</u> Amperes, comprised of <u>4</u> wires, each <u>14</u> L.S.G. diameter, <u>0.3122</u> square inches total sectional area
Leads to lamps carrying <u>1.12</u> Amperes, comprised of <u>1</u> wires, each <u>14</u> L.S.G. diameter, <u>0.01810</u> square inches total sectional area
Cargo light cables carrying <u>1.12</u> Amperes, comprised of <u>1</u> wires, each <u>14</u> L.S.G. diameter, <u>0.01810</u> square inches total sectional area

NOTE: Included in above.

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

(A) Pure vulcanized India Rubber insulated, & taped & braided  
 (B) Lead covered. (C) Lead covered & armoured with galvanized iron wires  
 Main:—Class B in sec. Gal. steel tubes; Accorn:—Class B  
 Engine Room:—Class C  
 Joints in cables, how made, insulated, and protected No joints

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 —  
 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 screwed Galva steel tubes



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 *Lead cover & armoured; sea galv'd steel tubes*

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 *insulating ferrules.* through bulkheads, &c. *brass watertight gland stuffing boxes*

How are cables carried through decks *sea galv'd steel 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 \_\_\_\_\_

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 *permanently* How fixed *in sea gal. steel tubes*

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 \_\_\_\_\_

The installation is *no* supplied with a voltmeter and *with* an amperemeter, fixed *main 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 *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *1600* 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 THE NORTHERN ELECTRICAL ENGINEERING

*G. H. Elder*  
Secretary

Electrical Engineers

Date *Jan'y 31st 1913.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *133 feet.*

Distance between dynamo or electric motors and steering compass *128 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying	Ampères	<i>150</i>	feet from standard compass	feet from steering compass
A cable carrying	Ampères		feet from standard compass	feet from steering compass
A cable carrying	Ampères		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 *nil* course in the case of the standard compass and *nil* degrees on *nil* course in the case of the steering compass.

WOOD, SKINNER & CO., LIMITED.

Builder's Signature.

Date *31st Jan'y 1913.*

GENERAL REMARKS.

*This Installation has been efficiently fitted on board & tried under steam and the vessel is eligible in my opinion to have the record of Electric Light made in the Register Book.*

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

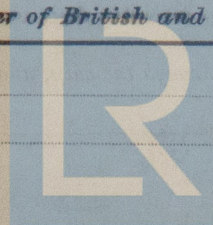
*J. W. D.*

*11/2/13.*

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



Lloyd's Register Foundation