

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 23086

Port of *Hull* Date of First Survey *Oct 24th* Date of Last Survey *Nov 1st 1910* No. of Visits *6*
 No. in *19* on the *Iron* Steel *Sc. K. Eileen Duncan* Port belonging to
 Reg. Book *19* Built at *Selby* By whom *Messrs Cochrane Sons* When built *1910*
 Owners *J. Duncan Sons & Co. Ltd* Owners' Address *Liverpool*
 Yard No. *1471* Electric Light Installation fitted by *Messrs Campbell Isherwood* When fitted *1910*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Campbell Isherwoods four pole compound wound dynamo, coupled direct to a Robey engine.

Capacity of Dynamo *35* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Starboard side of E. Room* Whether single or double wire system is used *double*

Position of Main Switch Board *near dynamo* having switches to groups *3 (A.B.C.)* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *In wheelhouse, and engine room, and a switch in convenient position to each light*

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 *75* 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 *63* arranged in the following groups:—

A *Engine room* lights each of *1 off 32 c.p. 16 off 16* candle power requiring a total current of *9* Amperes

B *Cargo* lights each of *32* candle power requiring a total current of *12* Amperes

C *Mastheads* lights each of *5 off 32 11 off 16* candle power requiring a total current of *10.5* 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

3 Mast head light with *1* lamps each of *32* candle power requiring a total current of *included in C* Amperes

2 Side light with *1* lamps each of *32* candle power requiring a total current of " " " Amperes

4 Cargo lights of *3 of 32* candle power, whether incandescent or arc lights *incandescent*

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

Where are the switches controlling the masthead and side lights placed *Wheelhouse*

DESCRIPTION OF CABLES.

Main cable carrying *31.5* Amperes, comprised of *19* wires, each *18* L.S.G. diameter, *.034* square inches total sectional area

Branch cables carrying *12* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.0125* square inches total sectional area

Branch cables carrying *10.5* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.0125* square inches total sectional area

Leads to lamps carrying *1.5* 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 *1* wires, each *16* L.S.G. diameter, *.0032* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered and armoured, in Eng. room, fish room, bunkers. In cabins vulcanised in wood casings

where exposed, in galvanised iron pipes

Joints in cables, how made, insulated, and protected *soldered, insulated with vulcanised rubber, and protected with special preventative tape.*

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 *Clipped up under beams, deck, Lead covered, armoured in E.R., wood cased in Cabins, & iron pipes where exposed.*

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 *Galvanised iron piping*

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

What special protection has been provided for the cables near boiler casings *Lead covered and armoured*

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

How are cables carried through beams *bushes where unarmoured* through bulkheads, &c. *water tight fitting*

How are cables carried through decks *Galvanised Iron deck pipes*

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 and 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 *C.I. Water tight fitting guards*

Where are the main switches and cut outs for these lights fitted *in wheelhouse*

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 *permanently* How fixed *Special pipe bracket*

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 *now* supplied with a voltmeter and *also* an amperemeter, fixed *on main switch board*

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 *Lead covered & armoured 2500. Vulcanised 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.

Campbell & Isherwood Ltd Electrical Engineers Date *12th Nov. 1910*

COMPASSES.

Distance between dynamo ~~or electric motors~~ and standard compass *43 feet*

Distance between dynamo ~~or electric motors~~ and steering compass *38 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>.5</i>	<i>1</i>	<i>1</i>	<i>1</i>
<i>5</i>	<i>8</i>	<i>3</i>	<i>3</i>
<i>12</i>	<i>20</i>	<i>15</i>	<i>15</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* courses in the case of the standard compass and *Nil* degrees on *all* courses in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS.

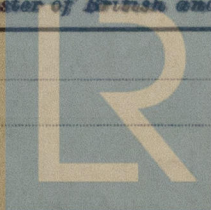
This vessel has been fitted with an Electric Lighting Installation as above, this has been tested found satisfactory and is now respectfully submitted for notation in Register Book. James Barclay.

It is submitted that this vessel is eligible for THE RECORD Elec. light. *JWD 18/11/10*

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