

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 Se. 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. *watertight 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. Watertight 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	<i>.5</i>	Amperes	<i>1</i>	feet from standard compass	<i>1</i>	feet from steering compass
A cable carrying	<i>5</i>	Amperes	<i>8</i>	feet from standard compass	<i>3</i>	feet from steering compass
A cable carrying	<i>12</i>	Amperes	<i>20</i>	feet from standard compass	<i>15</i>	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.

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

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