

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 32001.

Port of Glasgow Date of First Survey 8.10.11 Date of Last Survey 31.10.12 No. of Visits 7
 No. in Reg. Book 51's "Dunachton" Port belonging to Leith
 Built at Scotstoun, Glasgow By whom Messrs Charles Connell & Co When built 1912
 Owners Messrs The Dunedin Steamship Co Owners' Address 41 Constitution Street, Leith
 Yard No. 348 Electric Light Installation fitted by A. J. Robertson & Co When fitted 1912

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Dynamo Compound wound multipolar type Coupled direct to a vertical engine having cylinder $6\frac{1}{2}$ " dia. by 6" stroke at 300 revs
 Capacity of Dynamo 72 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Engine room starting platform Whether single or double wire system is used Single 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

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 wire 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 92 arranged in the following groups:—

A Saloon Bridge 24 lights each of	16	candle power requiring a total current of	19.2	Amperes
B Forward cargo lights each of	32	candle power requiring a total current of	12	Amperes
C Aft cargo 10 lights each of	32	candle power requiring a total current of	12	Amperes
D Engine room 23 lights each of	16	candle power requiring a total current of	13.8	Amperes
E Engine room 21 lights each of	16	candle power requiring a total current of	12.6	Amperes
Two Mast head lights with 1 lamp each of	32	candle power requiring a total current of	included in A	Amperes
Two Side lights with 1 lamp each of	32	candle power requiring a total current of	"	Amperes
Four Cargo lights of	5-32	candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. No Arc's

Where are the switches controlling the masthead and side lights placed Chart room

DESCRIPTION OF CABLES.

Main cable carrying 72 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .0956 square inches total sectional area
 Branch cables carrying 19.2 Amperes, comprised of 4 wires, each 16 L.S.G. diameter, .0225 square inches total sectional area
 Branch cables carrying 12 Amperes, comprised of 4 wires, each 18 L.S.G. diameter, .0127 square inches total sectional area
 Leads to lamps carrying .6 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .00181 square inches total sectional area
 Cargo light cables carrying 6 Amperes, comprised of 119 wires, each 38 L.S.G. diameter, .00407 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure india rubber run vulcanising indian rubber, indian rubber coated tape the whole vulcanised together, Lead covered in accommodation, Lead lined & armoured elsewhere
 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 no 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 joints

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 Under Bridge deck thro' beams & forward & aft thro' twin decks thro' beams, Lead covered lined & armoured

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes except in cargo spaces*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead covered & armoured in Galv iron pipe*

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 *Lead covered & armoured*

What special protection has been provided for the cables in engine room *Lead covered & armoured*

How are cables carried through beams *in fibre or lead bushes* through bulkheads, &c. *W. T. Glenda*

How are cables carried through decks *in Galv iron pipes*

Are any cables run through coal bunkers *no* 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 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 *no*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *---*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *By large brass stud & nut to base plate*

How are the returns from the lamps connected to the hull *By 3/8" (Finned) brass screw*

Are all the joints with the hull in accessible positions *yes*

The installation is *also* supplied with a voltmeter and *with* an amperemeter, fixed *on 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 *95* 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.

A. J. Robertson & Co

Electrical Engineers

Date *12th Nov 1912*

COMPASSES.

Distance between dynamo or electric motors and standard compass *105 Feet*

Distance between dynamo or electric motors and steering compass *105 Feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>19.2</i>	Amperes	<i>16</i>	feet from standard compass	<i>7</i>	feet from steering compass
A cable carrying	<i>1.2</i>	Amperes	<i>6</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying	<i>.6</i>	Amperes	<i>into</i>	feet from standard compass	<i>9 into</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 *1/2* degrees on *every* course in the case of the standard compass and *1/2* degrees on *every* course in the case of the steering compass.

For CHARLES CONNELL & CO., Limited.

William A. Connell Director

Builder's Signature. Date *18th Nov 1912*

GENERAL REMARKS.

This installation has been fitted on board under special survey & tested under full working conditions & found satisfactory.

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

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

Committee's Minute

GLASGOW 19 NOV. 1912

Elec. Light.



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.