

REPORT ON ELECTRIC LIGHTING INSTALLATION.

Received at London Office on 18 AUG 1909

No. 27910

Port of Glasgow Date of First Survey May 26th 1909 Date of Last Survey July 2nd 1909 No. of Visits 10

No. in Reg. Book 5 in Supp. on the Iron or Steel S/S "Dunedin" Port belonging to Messrs Charles Connell & Co

Built at Scotstoun, Glasgow By whom Messrs Charles Connell & Co When built 1909

Owners: Messrs The Dunedin S/S Co Ltd Owners' Address: Constitution Street, Leith,

Yard No. 324 Electric Light Installation fitted by A. G. Robertson & Co When fitted 1909

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound of multipolar type coupled direct to a vertical engine having cylinder 6 1/2" dia" x 6" stroke at 300 revs
Capacity of Dynamo 100 Amperes at 65 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 none

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-oxidisable metal yes and constructed to fuse at an excess of 90 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 80 arranged in the following groups:—

A For Cargo	10	lights each of	32	candle power requiring a total current of	18	Amperes
B aft	10	lights each of	"	candle power requiring a total current of	18	Amperes
C Saloon	19	lights each of	16	candle power requiring a total current of	23	Amperes
Bridge	4	" " "	32	" " "		
D Engineers	19	lights each of	16	candle power requiring a total current of	14	Amperes
E Engine Rm	18	lights each of	"	candle power requiring a total current of	16	Amperes
Two Mast head lights with	1	lamp each of	32	candle power requiring a total current of	included in (C) Amperes	
Two Side light with	1	lamp each of	"	candle power requiring a total current of	" " " Amperes	
4 Cargo lights of			160	candle power, whether incandescent or arc lights	incandescent	

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 Room

DESCRIPTION OF CABLES.

Main cable carrying	100	Amperes, comprised of	19	wires, each	14	L.S.G. diameter, .0956 square inches total sectional area
Branch cables carrying	23	Amperes, comprised of	4	wires, each	16	L.S.G. diameter, .0335 square inches total sectional area
Branch cables carrying	16	Amperes, comprised of	4	wires, each	14	L.S.G. diameter, .0142 square inches total sectional area
Leads to lamps carrying	.86	Amperes, comprised of	1	wires, each	18	L.S.G. diameter, .00181 square inches total sectional area
Cargo light cables carrying	8.5	Amperes, comprised of	119	wires, each	38	L.S.G. diameter, .00404 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure india rubber, then vulcanising india rubber, india rubber coated tape the whole vulcanised together; Lead covered in accommodation & lead lined & armoured these places.
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 bunks, 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 Under bridge deck along angle iron bar & for aft thro' lower decks along I girder. Lead covered & armoured.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

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

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead, Served & Armoured*

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

What special protection has been provided for the cables near boiler casings *Lead, Served & Armoured*

What special protection has been provided for the cables in engine room *Lead, Served & Armoured*

How are cables carried through beams *in fibre or Lead Bushes through bulkheads, &c. in Lead Bushes.*

How are cables carried through decks *in Galv'd iron pipes bushed with Lead*

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, Served & 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 & dynamic screw*

How are the returns from the lamps connected to the hull *By 3/8" 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 fitted 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 *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. G. Robertson & Co. Electrical Engineers Date *2nd August 09*

COMPASSES.

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

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

The nearest cables to the compasses are as follows:—

A cable carrying	<i>23</i>	Amperes	<i>16</i>	feet from standard compass	<i>16</i>	feet from steering compass
A cable carrying	<i>1.8</i>	Amperes	<i>5</i>	feet from standard compass	<i>5</i>	feet from steering compass
A cable carrying	<i>.86</i>	Amperes	<i>into</i>	16 standard compass	<i>> 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 *nil* degrees on *every* course in the case of the standard compass and *nil* degrees on *every* course in the case of the steering compass.

CHARLES CONNELL & CO., Limited. Builder's Signature. Date *9th Augth 1909*

GENERAL REMARKS. *This installation has been fitted on board under special survey & the workmanship & material are of good quality & tested to the full working load & found satisfactory.*

It is submitted the notation of Mr W. Gordon Muirhead be assigned to this vessel.

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

Committee's Minute *GLASGOW 17 AUG. 1909*
Electric Light.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



E.H.