

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 33900.

Port of Glasgow Date of First Survey 13.3.14 Date of Last Survey 22.4.14 No. of Visits 10
 No. in Reg. Book on the Iron or Steel S/S 'Oranian' Port belonging to Liverpool
 Built at Glasgow By whom Napier & Miller Ltd When built 1914
 Owners' Address Johnson & Phillips Ltd When fitted 1914
 Yard No. 195 Electric Light Installation fitted by Johnson & Phillips Ltd

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Manufactured by W. H. Allan & Co. Single Cylinder 8" Dia. x 7" Stroke. High Speed direct coupled to continuous current Compound Wound Dynamo.

Capacity of Dynamo 114 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Engine Room, Starb. Side Whether single or double wire system is used Single

Position of Main Switch Board Engine Room having switches to groups A, B, C, D of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Each Light and groups of lights are provided with switches as required

If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits Yes

Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 50 per cent over the normal current

Are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases Yes Porcelain

Total number of lights provided for 167 arranged in the following groups:—

A Aft.	48	lights each of	16.	candle power requiring a total current of	20	Amperes
B Saloon	48	lights each of	16.	candle power requiring a total current of	20	Amperes
C Cargo.	30.	lights each of	16.	candle power requiring a total current of	15	Amperes
D Engine Room	34	lights each of	16.	candle power requiring a total current of	17	Amperes
E		lights each of		candle power requiring a total current of		Amperes
2 Mast head light with	1	lamps each of	32	candle power requiring a total current of	1.2	Amperes
2 Side light with	1	lamps each of	32	candle power requiring a total current of	1.2	Amperes
5		Cargo lights of 6 Lights each	16	candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. none fitted

Where are the switches controlling the masthead and side lights placed Wheel House, Upper Bridge

DESCRIPTION OF CABLES.

Main cable carrying	75	Amperes, comprised of	19	wires, each	15	S.W.G. diameter,	.045	square inches total sectional area
Branch cables carrying	16	Amperes, comprised of	7	wires, each	14	S.W.G. diameter,	.0140	square inches total sectional area
Branch cables carrying	12	Amperes, comprised of	7	wires, each	18	S.W.G. diameter,	.0125	square inches total sectional area
Leads to lamps carrying	1.5	Amperes, comprised of	1	wires, each	18	S.W.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	3.6	Amperes, comprised of	108	wires, each	36	S.W.G. diameter,	.0032	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized India Rubber. Taped & Braided, where exposed they are Lead Covered & Steel Armoured overall

Joints in cables, how made, insulated, and protected

Mechanical Joints Throughout.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 Yes

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 accommodation, wires are incased in wood casing, & other places clipped to under side of Deck. all Lead Covered & armoured to Mastheads in Galv. Pipes

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 Covered & Armoured*

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 " " "

How are cables carried through beams *Fibre Lead Bushes* through bulkheads, &c. *Water Tight Glands*

How are cables carried through decks *in W.T. Galvanized Tubes*

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 & 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 fuses for these lights fitted *---*

If in the spaces, how are they specially protected *---*

Are any switches or fuses fitted in bunkers *no*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *To C.I. Connection Boxes*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *By Brass Bolt Tapped to Deck*

How are the returns from the lamps connected to the hull *Tap Screws & Washers* *Spliced with washer.*

Are all the joints with the hull in accessible positions *Yes.*

Is the installation supplied with a voltmeter *Yes.* and with an amperemeter *Yes.* fixed *On Switchboard*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, fuses, 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 not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

COMPASSES.

Juan Lihou Electrical Engineers Date *25/4/14*

Distance between dynamo or electric motors and standard compass *128 feet*

Distance between dynamo or electric motors and steering compass *126 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Ampere	feet from standard compass	feet from steering compass
5	10	8	8
5	10	8	8
3	8	6	6

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 *None* degrees on *---* course in the case of the standard compass and *None* degrees on *---* course in the case of the steering compass.

GENERAL REMARKS.

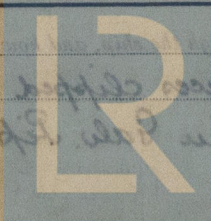
For Napier & Miller Ltd Builder's Signature. Date *11th May 1914*
For J. Miller

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: *Yes*

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

Committee's Minute *GLASGOW* 20 MAY 1914



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19/5/14