

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 64169.

Port of *Liverpool* Date of First Survey *23rd Dec/09* Date of Last Survey *5th March/10* No. of Visits *5*
 No. in Reg. Book *73* on the Iron or Steel *S.S. Highland Laddie* Port belonging to *London*
 Built at *Tramway Shipyard Birkenhead* By whom *Cammell Laird & Co* When built *1910*
 Owners *M. & W. Nelson, Ltd.* Owners' Address *20 Water Street Liverpool.*
 Yard No. *327* Electric Light Installation fitted by *Cammell Laird & Co* When fitted *1910*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Engine of single cylinder open type, running at 300 R.P.M. Maker, *Shanks & Co.* ✓
 Dynamo of compound multipolar type, direct coupled. Maker, *Boothroyd & Co.* ✓
 Capacity of Dynamo *245* Amperes at *110* Volts, whether continuous or alternating current *Continuous* ✓
 Where is Dynamo fixed *Engine Room. Starboard side* ✓ Whether single or double wire system is used *Double* ✓
 Position of Main Switch Board *Beside Dynamo* ✓ having switches to groups *10 in No.* ✓ of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each, *Ordinary section & distribution boards, fitted with master switches for passenger accommodation only.* ✓

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 *Copper fuses* ✓ 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 *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 *446, 1 Morse & 2 in the* arranged in the following groups:—

Group	No. of lights	Each of	Candle power	requiring a total current of	Amperes
A	83	16		44.5	
B	207	16 & 8		112.0	
C	46	16		41.5	
D	32	16		17.5	
E	44	32, 16 & 8		24.0	
	2	1 Electric Hoist		5.10	
	2	Mast head lights with 1 lamp each of 32		2.2	
	2	Side lights with 1 lamp each of 32		2.2	

5 Cargo lights of 6 lights each of 16 candle power, whether incandescent or arc lights *Both kinds fitted*

If arc lights, what protection is provided against fire, sparks, &c. *Lamps are of the enclosed type, with inner globe & outer lantern.* ✓

Where are the switches controlling the masthead and side lights placed *Chart House* ✓

DESCRIPTION OF CABLES.

Main cable carrying *245* Amperes, comprised of *61* wires, each *13* L.S.G. diameter, *.4* ✓ square inches total sectional area
 Branch cables carrying *50* Amperes, comprised of *19* wires, each *16* L.S.G. diameter, *.06* ✓ square inches total sectional area
 Branch cables carrying *32* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.034* ✓ square inches total sectional area
 Leads to lamps carrying *2.2* Amperes, comprised of *1* wires, each *17* L.S.G. diameter, *.0024* ✓ square inches total sectional area
 Cargo light cables carrying *10* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.0124* ✓ square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All cables of *600 Meg. Assoc.* quality, braided finish in ordinary places. In machinery spaces, lead covered and armoured and clipped to ship. ✓

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 *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 wood casing and iron piping* ✓



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. Protected by steel or iron tubing. If in casing lead covered cable is fitted.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat In Galley cable is lead covered & armoured

What special protection has been provided for the cables near boiler casings Run in tubing & armoured

What special protection has been provided for the cables in engine room Mains in heavy teak casing, small cables lead covered

How are cables carried through beams Through fibre bushes through bulkheads, &c. In fibre bushes

How are cables carried through decks In H.T. deck pipes

Are any cables run through coal bunkers No or cargo spaces No or spaces which may be used for carrying cargo, stores, or baggage No

If so, how are they protected —

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 —

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 ✓

How are the returns from the lamps connected to the hull ✓

Are all the joints with the hull in accessible positions ✓

The installation is Yes supplied with a voltmeter and Yes an amperemeter, fixed On Switchboard

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.

For GAMMELL LAIRD AND COMPANY LIMITED

Electrical Engineers

Date 9th May 1910.

COMPASSES.

Distance between dynamo or electric motors and standard compass About 105 ft.

Distance between dynamo or electric motors and steering compass " 100 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>7.5</u>	<u>8</u>	<u>10</u>	<u>✓</u>
<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>

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 — degrees on — course in the case of the standard compass and — degrees on — course in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS. This installation has been fitted under Special Survey. The materials and workmanship are good. On completion it has been examined at work satisfactorily.

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

R.D. Shilston & Richard King
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute LIVERPOOL 10 MAY 1910
Electric Light.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



© 2020

Lloyd's Register Foundation