

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 72675.

Port of LIVERPOOL Date of First Survey 7 Oct 14 Date of Last Survey 18 Jan 15 No. of Visits 11
 No. in Reg. Book 1212 on the Iron or Steel Ciudad de Buenos Aires Port belonging to Buenos Aires
 Built at Birkenhead By whom Cammell Lairds & Co Ltd When built 1914
 Owners The Argentine Navigation Co (Nicolas Mihanovich) Owners' Address Buenos Ayres
 Yard No. 801 Electric Light Installation fitted by Cammell Lairds & Co Ltd When fitted 1914

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets each consisting of a Hissons Enclosed two crank compound engine direct coupled to a Boothroyd compound wound Dynamo, cylinders 6 1/2 x 10 1/2 x 5 stroke, steam 16 lbs revs 515 per min. Generator output 273 kwh 110 Volts

Capacity of ^{each} Dynamo 273 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Dynamo Platform Engine Room Whether single or double wire system is used Double

Position of Main Switch Board By Dynamo having switches to groups A to P of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each None Fitted

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 vessel 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 100% 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

Total number of lights provided for 1189 - 20 Watt M/T lamps arranged in the following groups :-

A 88	F 120	L 66	FANS lights each of	16	candle power requiring a total current of	A 16	F 37.1	L 9.8	Amperes
B 68	G 104	M 54	FANS lights each of	16	candle power requiring a total current of	B 13	G 28.8	M 13.5	Amperes
C 104	H 136	N 50	FANS lights each of	16	candle power requiring a total current of	C 33.5	H 25.5	N 14.1	Amperes
D 47	J 62	P 102	FANS lights each of	16	candle power requiring a total current of	D 13	J 16.4	P 18.5	Amperes
E 178	K 60		FANS lights each of	16	candle power requiring a total current of	E 32.4	K 20.8		Amperes
2	Must head lights with	1	lamps each of	16	candle power requiring a total current of		4		Amperes
2	Side lights with	1	lamps each of	16	candle power requiring a total current of		4		Amperes
8	blusters	Cargo lights of	4 lamps,	16	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 In Wheel House

DESCRIPTION OF CABLES.

Main cable carrying 275 Amperes, comprised of 61 wires, each 13 S.W.G. diameter, .4 square inches total sectional area
 Branch cables carrying 40 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .034 square inches total sectional area
 Branch cables carrying 33 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Leads to lamps carrying 1.2 Amperes, comprised of 3 wires, each 22 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 2.3 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of high conductivity copper wire tinned, insulated with pure & Vulcanised India Rubber, taped, braided & compounded

Joints in cables, how made, insulated, and protected Jointless System

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

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 & mouldings generally. Galvanised conduit in exposed portions



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 Galvanised Iron Conduit

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Galvanised conduit

What special protection has been provided for the cables near boiler casings Galvanised conduit

What special protection has been provided for the cables in engine room Galvanised conduit

How are cables carried through beams Fibre bushed holes through bulkheads, &c. through watertight packed glands.

How are cables carried through decks Watertight 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 Yes

If so, how are they protected Galvanised conduit & Watertight lamp fitting

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage In Baggage space

If so, how are the lamp fittings and cable terminals specially protected Galvanised conduit & Watertight fittings

Where are the main switches and fuses for these lights fitted on Deck space above

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 clusters 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 _____

Is the installation supplied with a voltmeter Yes, and with an amperemeter Yes, fixed on Main 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.

CAMMELL LAIRD AND COMPANY LIMITED

J. Warsh Electrical Engineers Date _____

COMPASSES.

MANAGER.

Distance between dynamo or electric motors and standard compass 152 feet

Distance between dynamo or electric motors and steering compass 154 feet

The nearest cables to the compasses are as follows:—

A cable carrying <u>35</u> Amperes <u>15</u> feet from standard compass <u>10</u> feet from steering compass
A cable carrying <u>2</u> Amperes <u>inside</u> feet from standard compass <u>2 inside</u> feet from steering compass
A cable carrying _____ Amperes _____ feet from standard compass _____ 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 5° E degrees on N.W. course in the case of the standard compass and 3° W degrees on N.E. course in the case of the steering compass.

CAMMELL LAIRD AND COMPANY LIMITED

J. Warsh Builder's Signature. Date _____

GENERAL REMARKS.

MANAGER.

The electric light installation has now been fitted in accordance with the rules, and when tried under full working conditions, was found satisfactory in every respect, and is now eligible in my opinion for the notification of electric light to be recorded in the Register Book.

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

J. Warsh

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

Im. 11. 13.—Transfer.

Committee's Minute **LIVERPOOL - 5 FEB 1915**

Electric Light.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.