

JUL 31 1912

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 31592

Port of Glasgow Date of First Survey 12.4.12 Date of Last Survey 21.6.12 No. of Visits 16
 No. in on the Iron or Steel S.S. ITATINGA Port belonging to Rio de Janeiro
 Reg. Book 493 Built at Troon By whom Atinsa S. B. Co Ltd When built 1912
 Owners Companhia Nacional de Navegacao Owners' Address Rio de Janeiro
 Yard No. 247 Electric Light Installation fitted by Selford Grier & Machay Ltd. When fitted 1912

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Single Cylinder open type engines driven coupled to two four pole compound wound Dynamos
 Capacity of Dynamo 170 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed Starboard Side Engine room Whether single or double wire system is used Double
 Position of Main Switch Board Starboard Side Engine room having switches to groups 10 groups 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 cessel 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 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 on Switchboard
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 271 lights 16 fans 2 arranged in the following groups:-

A Saloon 9 fans	47	lights each of	16	candle power requiring a total current of	28	Amperes
Smokeroom 2 "	17	lights each of	16		9.5	
B Navigation -	7	lights each of	2.16 CP 3-32 CP	candle power requiring a total current of	3	Amperes
Forward -	42 + 1 arc		16		23.5	
C Officers 4 fans	51	lights each of	16	candle power requiring a total current of	27.5	Amperes
Shade Dk 10 "	16 + 1 arc		16		15.5	
D Main Dk 19 "	53	lights each of	16	candle power requiring a total current of	34	Amperes
Engine room	33	lights each of	16		16.5	
E Engine room 2 fans		lights each of	-	candle power requiring a total current of	2	Amperes
Marconie					22.2	
2 Mast head lights with	1	lamps each of	32 CP Dk	candle power requiring a total current of	1	Amperes
2 Side lights with	1	lamps each of	32 CP Dk	candle power requiring a total current of	1	Amperes

4 + 2 arcs Cargo lights of each with 6-16 CP lamp power, whether incandescent or arc lights 4 incandescent 2 arcs
 If arc lights, what protection is provided against fire, sparks, &c. Arcs are enclosed in protected glass globes

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

DESCRIPTION OF CABLES.

Main cable	170	Amperes, comprised of	38	wires, each	18	L.S.G. diameter,	.034	square inches total sectional area
Main cable carrying	28		19		18		.0126	
Branch cables carrying	3	Amperes, comprised of	3	wires, each	20	L.S.G. diameter,	.0030	square inches total sectional area
" "	23.5		19		19		.023	
Branch cables carrying	27.5	Amperes, comprised of	19	wires, each	18	L.S.G. diameter,	.034	square inches total sectional area
" "	15		19		17		.017	
Lead to Lamp carrying	34	Amperes, comprised of	19	wires, each	18	L.S.G. diameter,	.034	square inches total sectional area
Main Cable	16.5		19		16		.022	
Cargo light cables carrying	2	Amperes, comprised of	1	wires, each	16	L.S.G. diameter,	.0032	square inches total sectional area
Main Cable	22.2		1		16		.022	

DESCRIPTION OF INSULATION, PROTECTION, ETC.

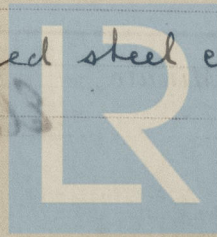
Vulcanized india rubber taped lead covered + Steel armoured for main cables Engine room, Holds etc Vulcanized india rubber taped lead covered in Saloon, Staterooms, Officers etc.

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 joints 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 none

Are there any joints in or branches from the cable leading from dynamo to main switch board none

How are the cables led through the ship, and how protected Clipped up with galvanized steel clips



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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 Twin lead covered & braided

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

What special protection has been provided for the cables near boiler casings lead covered & steel armoured

What special protection has been provided for the cables in engine room lead covered & steel armoured

How are cables carried through beams Steel armoured through bulkheads, &c. Watertight glands

How are cables carried through decks galvanized steel tubes

Are any cables run through coal bunkers none 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 & steel armoured

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage none in bunkers

If so, how are the lamp fittings and cable terminals specially protected Steel armoured cable into heavy cast iron fittings

Where are the main switches and cut outs for these lights fitted steering engine House

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers none

Cargo light cables, whether portable or permanently fixed portable How fixed to Cast Iron Plug Boxes

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 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.

Luford Guir & Mackay Ltd Electrical Engineers Date 28-6-12

COMPASSES.

Distance between dynamo or electric motors and standard compass 95 ft

Distance between dynamo or electric motors and steering compass 90 ft

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
3	8	18	
9.5	14	22	
27.5	19	24	

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

AILS A SHIPBUILDING CO., Limited,

Builder's Signature. Date 23rd July, 1912

GENERAL REMARKS.

This installation has been fitted on board in accordance with the rules, tested under full working conditions, and found satisfactory.

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

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

Committee's Minute

GLASGOW

30 JUL 1912

Elec Light



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