

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5462

Port of PLYMOUTH Date of First Survey 4 Dec 1912 Date of Last Survey 20 Dec 12 No. of Visits 3  
 No. in on the ~~Iron~~ Steel Screw Lug "Arany" Port belonging to Para  
 Reg. Book Built at Dartmouth By whom Philip Row Ltd When built 1912  
 Owners The Amazon Steam Nav. Co Ltd (1911) Owners' Address Fenchurch St London  
 Yard No. 409 Electric Light Installation fitted by Philip Row Ltd When fitted Dec 1912

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Direct coupled engine Dynamo Engine single cylinder  $3\frac{1}{4}$  dia<sup>m</sup> 4" stroke  
 Coupled to multipole protected type dynamo running 450 Revs per minute.  
 Capacity of Dynamo 44 Amperes at 65 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Engine Room Whether single or double wire system is used Double wire  
 Position of Main Switch Board Engine Room having switches to groups A to D of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Double pole fuse single pole switch  
distributing box in Captain's cabin for navigation lights and double  
pole fuse distributing box in Engineer's Cabin for light in fore-castle compartments  
 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  
 Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 25 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 24 arranged in the following groups:—  
 A Engine Room 6 lights each of 16 candle power requiring a total current of 6 Amperes  
 B Captain's Cabin 2 lights each of 16 candle power requiring a total current of 2 Amperes  
 C Ship 7 lights each of 16 candle power requiring a total current of 7 Amperes  
 D Bluster 5 lights each of 16 candle power requiring a total current of 5 Amperes  
 E ✓ lights each of ✓ candle power requiring a total current of ✓ Amperes  
 2 Mast head lights with 1 lamp each of 16 candle power requiring a total current of 2 Amperes  
 2 Side lights with 1 lamp each of 16 candle power requiring a total current of 2 Amperes  
 Search range light of 16" Projector candle power, whether incandescent or arc lights 30 "

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed in Captain's Cabin (Steering House)

## DESCRIPTION OF CABLES.

Main cable carrying 60 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .06 square inches total sectional area  
 Branch cables carrying 45 Amperes, comprised of 19 wires, each 17 S.W.G. diameter, .04593 square inches total sectional area  
 Branch cables carrying Amperes, comprised of 7 wires, each 19 S.W.G. diameter, .00869 square inches total sectional area  
 Leads to lamps carrying 2.9 Amperes, comprised of 3 wires, each 20 S.W.G. diameter, .00299 square inches total sectional area  
 Cargo light cables carrying 7 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .0070 square inches total sectional area

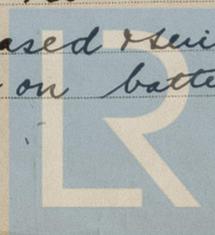
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure India Rubber, then special India Rubber separator  
 Vulcanizing India rubber, rubber coated tape & whole  
 vulcanized together, then taped & lead covered.  
 Joints in cables, how made, insulated, and protected No joints. Ends of all cables sweated  
 to socket connection.

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 all cables lead cased & suitably clipped  
to under side of deck or deck beams or on battens as found  
necessary



**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 cased cable

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

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

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

How are cables carried through beams Wood bushed holes through bulkheads, &c. wood bushed holes

How are cables carried through decks Wood bushed holes

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

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 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 In Engine Room on switchboard

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 switchboard in Engine Room

**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.

G. Nowell Philip Electrical Engineers Date 30 Jan<sup>y</sup> 1913

**COMPASSES.**

Distance between dynamo or electric motors and standard compass

Distance between dynamo or electric motors and steering compass 35 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>6</u>	Amperes	<input checked="" type="checkbox"/>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>30</u>	Amperes	<input checked="" type="checkbox"/>	feet from standard compass	<u>8</u>	feet from steering compass
A cable carrying	<u>7</u>	Amperes	<input checked="" type="checkbox"/>	feet from standard compass	<u>8</u>	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power

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.

G. Nowell Philip Builder's Signature. Date 30 Jan<sup>y</sup> 1913

**GENERAL REMARKS.**

The Electric Light Installation of this vessel has been fitted out under Special Survey and tried under steam at working pressure with Satisfactory results

It is submitted that this vessel is eligible for THE RECORD Elec. light. J.W.D. 31/1/13

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

Committee's Minute

CRIPPER 7 1913



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