

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5462

Port of PLYMOUTH Date of First Survey 4 Dec^r 1912 Date of Last Survey 20 Dec^r 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 Son 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 Son Ltd When fitted Dec 1912

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Direct coupled engine dynamo Engine single cylinder 3 1/4 dia^m 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
on main deck
 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 Orange 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.

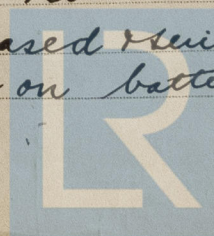
Main cable carrying 60 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .06 square inches total sectional area
 Branch cables carrying 45 Amperes, comprised of 19 wires, each 17 S.W.G. diameter, .04593 square inches total sectional area
 Branch cables carrying Amperes, comprised of 7 wires, each 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^y 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	Amperes	feet from standard compass	feet from steering compass
<u>6</u>	<u>✓</u>	<u>6</u>	<u>6</u>
<u>30</u>	<u>✓</u>	<u>8</u>	<u>8</u>
<u>7</u>	<u>✓</u>	<u>8</u>	<u>8</u>

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.

For PHILIP & SON, LIMITED.

G. Nowell Philip

Builder's Signature.

Date 30 Jan^y 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.

ARL

JUR

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

Committee's Minute

CRIPPER 7-10-13



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.