

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 64680

Port of Newcastle Date of First Survey 28th July Date of Last Survey 14th August No. of Visits 8
 No. in on the Iron or Steel S.S. "River Araxes" Port belonging to London
 Reg. Book 290 Built at Middlesbrough By whom R. Cragg & Sons Ltd. When built 1907
 Owners American Levant Line Ltd. Owners' Address
 Yard No. Electric Light Installation fitted by Sunderland Forge & Eng. Co. Ltd. When fitted 1913

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Multipolar Compound wound dynamo coupled direct to vertical open type engine.

Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Starboard side bottom of E.R. Whether single or double wire system is used Double
 Position of Main Switch Board Close to plant having switches to groups Four of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each One in Wheelhouse controlling 2 mastheads,
2 side lights, 2 telegraphs, 2 compasses and 1 morse light.

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 cessel 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 No 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 116 arranged in the following groups:—

A	10	lights each of	16	candle power requiring a total current of	5.6	Amperes
B	46	lights each of	16	candle power requiring a total current of	25.76	Amperes
C	30	lights each of	16	candle power requiring a total current of	16.80	Amperes
D	30	lights each of	16	candle power requiring a total current of	16.80	Amperes
E		lights each of		candle power requiring a total current of		Amperes
	2	Mast head light with	2 lamps each of 32 D.F.	candle power requiring a total current of	2.24	Amperes
	2	Side light with	2 lamps each of 32 D.F.	candle power requiring a total current of	2.24	Amperes
	5	Cargo lights of	6 x 16	candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. There are none.

Where are the switches controlling the masthead and side lights placed in Wheelhouse.

DESCRIPTION OF CABLES.

Main cable carrying 64.96 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .060 square inches total sectional area
 Branch cables carrying 25.76 Amperes, comprised of 7 wires, each 17 S.W.G. diameter, .017 square inches total sectional area
 Branch cables carrying 16.80 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007 square inches total sectional area
 Leads to lamps carrying 2.24 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 5.86 Amperes, comprised of 1 wires, each 16 S.W.G. diameter, .0032 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

In berths etc., Lead covered.

In engine room, etc., Armoured and braided.

Mains and masts V.I.R. in iron pipe.

Joints in cables, how made, insulated, and protected

There are none.

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 ✓

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 V.I.R. in iron pipe.



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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 V.I.R. in iron pipe

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

What special protection has been provided for the cables near boiler casings Armoured and braided.

What special protection has been provided for the cables in engine room Armoured and braided.

How are cables carried through beams holes Bushed fibre through bulkheads, &c. W.T. Gland.

How are cables carried through decks W.T. Iron deck tubes.

Are any cables run through coal bunkers Yes or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected V.I.R. in iron pipe.

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 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

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 500 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.

P. P. THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers

Date 16/8/13.

COMPASSES.

Distance between dynamo or electric motors and standard compass about 96 ft.

Distance between dynamo or electric motors and steering compass about 90 ft.

The nearest cables to the compasses are as follows:—

Cable Carrying	Amperes	Distance from Standard Compass	Distance from Steering Compass
A cable carrying <u>2.24</u>	<u>about 5</u> Amperes	<u>led into</u> feet from standard compass	<u>led into</u> feet from steering compass
A cable carrying <u>2.24</u>	<u>led into</u> Amperes	<u>about 4</u> feet from standard compass	<u>about 4</u> feet from steering compass
A cable carrying <u>4.48</u>	<u>about 6</u> Amperes	<u>about 7</u> feet from standard compass	<u>about 7</u> 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 nil degrees on every course in the case of the standard compass and nil degrees on every course in the case of the steering compass.

Builder's Signature. Date 30th August 1913

GENERAL REMARKS.

The above installation has been fitted in a satisfactory manner and in accordance with the Rules

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

J.W.D. 3/9/13.

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

Committee's Minute