

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27097

Port of Sunderland Date of First Survey 23 Oct. Date of Last Survey 27 Oct 17 No. of Visits 3
 No. in Reg. Book on the Iron or Steel S.S. "Mendocino" Port belonging to London
 Built at Sunderland By whom Sir J. Laing & Sons, Ltd When built 1917.
 Owners E. H. Bohan (H. G. Moxley) Owners' Address ✓
 Yard No. 668 Electric Light Installation fitted by Messrs. Clarke Chapman & Co. Ltd When fitted 1917.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One single cylinder double acting open type vertical engine direct coupled to a continuous current compound wound dynamo.
 Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed in Engine Room Whether single or double wire system is used Double
 Position of Main Switch Board near Dynamo having switches to groups A, B, C, D, E, F. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Each light & group of lights provided with switches as required

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-oxidisable metal Yes and constructed to fuse at an excess of 50% 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 (screw in cartridge fuse only correct size will fit)

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes slate & porcelain

Total number of lights provided for 119 arranged in the following groups :-

A	27	lights each of	16	candle power requiring a total current of	15.1	Amperes
B	57	lights each of	16	candle power requiring a total current of	29.1	Amperes
C	21	lights each of	16	candle power requiring a total current of	11.7	Amperes
D	3	lights each of	16	candle power requiring a total current of	1.6	Amperes
E	16	lights each of	16	candle power requiring a total current of	8.9	Amperes
2	Wireless Mast head light with	1 lamp each of	32	candle power requiring a total current of	2.2	Amperes
2	Side light with	1 lamp each of	32	candle power requiring a total current of	2.2	Amperes
2	Cargo lights of		6-16	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 100 Amperes, comprised of 27 wires, each 16 S.W.G. diameter, .117 square inches total sectional area
 Branch cables carrying 29.1 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .035 square inches total sectional area
 Branch cables carrying 11.7 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .0070 square inches total sectional area
 Leads to lamps carrying 3.3 Amperes, comprised of 3 wires, each 22 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 3.3 Amperes, comprised of 168 wires, each 38 S.W.G. diameter, .0050 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanised india rubber lipped & braided & lead covered where exposed steel sheathed overall
 Joints in cables, how made, insulated, and protected no joints except mechanical ones.

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 Yes. No
 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 Lead covered & lipped cables run in galvanized iron pipes along side of fore & after gangway.



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 covered & lapped cables in galvanized iron pipes*

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

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 *in lead bushes* through bulkheads, &c. *in WT glands*

How are cables carried through decks *in galvanized iron 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 *no*

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 *to WT. C. connection boxes.*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Double wire system*

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 *in 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 *Yes*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *no, fitted outside pump room*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *special gas tight fittings on pipes*

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 *2500* 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.

For Clarke, Chapman & Co., Ltd.

Electrical Engineers

Date *Nov. 9th 1917*

COMPASSES.

W. W. W. W. W. Director

Distance between dynamo or electric motors and standard compass *224 ft*

Distance between dynamo or electric motors and steering compass *218 "*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>.56</i>	Amperes	<i>12</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying	<i>.56</i>	Amperes	<i>6</i>	feet from standard compass	<i>12</i>	feet from steering compass
A cable carrying	<i>-</i>	Amperes	<i>-</i>	feet from standard compass	<i>-</i>	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 *all* course in the case of the standard compass and *nil* degrees on *all* course in the case of the steering compass.

SIR JAMES LAING & SONS LIMITED, DIRECTOR

Hugh Cairns

Builder's Signature.

Date *Nov 13th 1917*

GENERAL REMARKS.

The installation has been satisfactorily fitted in the vessel. Tested at full load and found good.

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

J.W.D. 24/11/17

Sh. Davis

22.11.17 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

56,717.—Trans/cor.

