

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 25823

Port of Sunderland Date of First Survey Aug 16 Date of Last Survey Aug 25 No. of Visits 4
 No. in Reg. Book on the Iron or Steel D. S. Shirley Port belonging to London
 Built at Sunderland By whom Sunderland S B Boy Ltd When built 1913
 Owners Shoulder Middleton & Co Ltd Owners' Address London
 Yard No. 276 Electric Light Installation fitted by Clarke Chapman & Co Ltd When fitted 1913

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

Total number of lights provided for 109 - 16 CP. arranged in the following groups :-

A	42	lights each of	16	candle power requiring a total current of	23.6	Amperes
B	24	lights each of	16	candle power requiring a total current of	13.4	Amperes
C	23	lights each of	16	candle power requiring a total current of	12.8	Amperes
D	20	lights each of	16	candle power requiring a total current of	11.2	Amperes
E		lights each of		candle power requiring a total current of		Amperes
2	Mast head light with	1 lamp each of	32	candle power requiring a total current of	1.1	Amperes
2	Side light with	1 lamp each of	32	candle power requiring a total current of	1.1	Amperes
5	Cargo lights of		5 - 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 120 Amperes, comprised of 37 wires, each 16 S.W.G. diameter, .11680 square inches total sectional area
 Branch cables carrying 23.6 Amperes, comprised of 7 wires, each 17 S.W.G. diameter, .01695 square inches total sectional area
 Branch cables carrying 12.8 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .00700 square inches total sectional area
 Leads to lamps carrying .56 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00781 square inches total sectional area
 Cargo light cables carrying 2.8 Amperes, comprised of 168 wires, each 30 S.W.G. diameter, .00502 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized india rubber taped & braided & lead covered where exposed steel armored cable.
 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 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, 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 & steel armored cables run through tunnel decks & clipped to underside of deck with string galvanised iron 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 *Lead lined & steel lined*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead lined & steel lined*

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 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 *Lead lined & steel lined*

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 WTC 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 *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 *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.

For Clarke, Chapman & Co. Ltd. Electrical Engineers Date *Sep 3rd 1913*

COMPASSES.

Distance between dynamo or electric motors and standard compass *102 ft*

Distance between dynamo or electric motors and steering compass *96 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>.56</i>	<i>6</i>	<i>12</i>	<i>12</i>
<i>.56</i>	<i>12</i>	<i>6</i>	<i>6</i>
<i>---</i>	<i>---</i>	<i>---</i>	<i>---</i>

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.

Chas. J. Dewlay Builder's Signature Date *Sep 5th 1913*

GENERAL REMARKS.

This installation has been examined & found in good working order & as far as could be seen it complies with the R. requirements

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

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

