

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 89142

PORT LIVERPOOL Date of First Survey Nov 9th Date of Last Survey Dec 19th No. of Visits 5
 Material Steel Name of Ship "S.S. Shell Mer. IV." Port belonging to London
 By whom J. J. Abdele + Mitchell + Co. Ltd. When built 1921
 Owners' Address _____
 Electric Light Installation fitted by Campbell + Joherwood Ltd. When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Vertical, single cylinder type engine direct coupled to Compound wound, 4 pole, protected dynamo, 3 Kw. 100 Volts, 400 Revs; both mounted on Cast Iron baseplate.

Dynamo 30 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Dynamo fixed Starting platform Whether single or double wire system is used Double
 Main Switch Board Close to dynamo having switches to groups five of lights, &c., as below
 auxiliary switch boards and numbers of switches on each one Bridge, one of five, in Engine Rm., one of two remaining circuits.

fitted on main switch board to the cables of main circuit Yes and on each auxiliary switch board to the cables of auxiliary Yes and at each position where a cable is branched or reduced in size Yes and to each lamp circuit Yes

Wires on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits Yes

Wires of non-oxidizable metal Yes and constructed to fuse at an excess of 50% per cent over the normal current

fuses fitted in easily accessible positions Yes Are the fuses of standard dimensions Yes If wire fuses are used

Appropriate instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit Yes

Wires and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Number of lights provided for 33 arranged in the following groups:—

4	lights each of	16	candle power requiring a total current of	2.4	Amperes
5	lights each of	32	candle power requiring a total current of	5.0	Amperes
7	lights each of	16	candle power requiring a total current of	4.2	Amperes
7	lights each of	16	candle power requiring a total current of	4.2	Amperes
10	lights each of	16	candle power requiring a total current of	5	Amperes
1	masthead light with	32	candle power requiring a total current of	1	Amperes
1	working light	32	candle power requiring a total current of	1	Amperes
1	side light with	32	candle power requiring a total current of	2	Amperes

Two Cargo lights of each 5 of 16 c.p. candle power, whether incandescent or are lights Incandescent
 What protection is provided against fire, sparks, &c. No arc lights.

Location of switches controlling the masthead and side lights placed on Bridge.

DESCRIPTION OF CABLES.

Carrying	20.8	Amperes, comprised of	7	wires, each	.044	S.W.G. diameter,	.0100	square inches total sectional area
Carrying	5	Amperes, comprised of	7	wires, each	.029	S.W.G. diameter,	.0045	square inches total sectional area
Carrying	4.2	Amperes, comprised of	3	wires, each	.036	S.W.G. diameter,	.0030	square inches total sectional area
Carrying	1	Amperes, comprised of	3	wires, each	.029	S.W.G. diameter,	.0020	square inches total sectional area
Cables carrying	2.5	Amperes, comprised of	11	wires, each	.0148	S.W.G. diameter,	.0015	square inches total sectional area

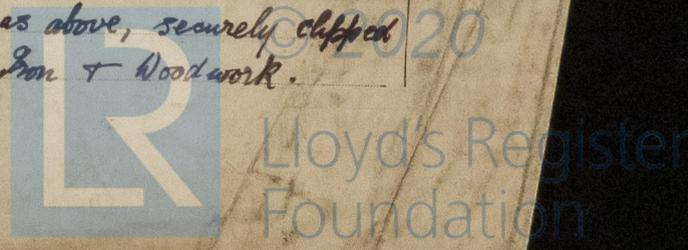
DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires, Tinned, insulated with pure V.I.R.; taped, compounded, lead covered, Galv. wire and braided.

How made, insulated, and protected No joints.

Are all joints in accessible locations of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances No joints
 Are all joints in accessible locations none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage No
 Are all joints in or branches from the cable leading from dynamo to main switch board No

How cables led through the ship, and how protected Lead covered in Rooms; elsewhere as above, securely clipped up to the Iron + Woodwork.



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 *Steel Galv. wire armoring and braided*

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

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

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

How are cables carried through beams *Holes bushed with lead* through bulkheads, &c. *Watertight Glands*

How are cables carried through decks *None*

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 *Strong leads and insulate Terminals*

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 *Main 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*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *Gas tight, Well glass strongly guarded fittings*

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° Fahren 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.

CAMPBELL & ISHERWOOD, LTD

J. J. Stambury

Electrical Engineers

Date *21/12/21.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *approx: 15 yds*

Distance between dynamo or electric motors and steering compass _____

The nearest cables to the compasses are as follows:—

A cable carrying	5	Amperes	10	feet from standard compass	_____	feet from steering compass
A cable carrying	3	Amperes	5	feet from standard compass	_____	feet from steering compass
A cable carrying	1	Amperes	3	feet from standard compass	_____	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 *Certain* course in the case of the standard compass and *Nil* degrees on *Certain* course in the case of the steering compass.

J. J. Abdela & Michell Ltd.

By Campbell & Isherwood Ltd.

Builder's Signature.

Date *21/12/21.*

GENERAL REMARKS.

This installation has been efficiently fitted on board & eligible for record of Electric Light.

Elec. Light

21/12/21.

Fee £5.0.0.

23 DEC 1921

A. J. Barnett

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

LIVERPOOL 23 DE 1921

Electric Light

[Signature]



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