

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41501

Port of Glasgow Date of First Survey 20. 11. 1920 Date of Last Survey 12 Nov. 1921 No. of Visits 9
 No. in on the Iron or Steel 5.5. "DAKARIAN" Port belonging to Liverpool
 Reg. Book 13494 Built at Meadowside By whom Messrs. D.W. Henderson When built 1921
 Owners J. Leyland & Co. Ltd. Owners' Address
 Yard No. 505 Electric Light Installation fitted by Messrs. Harland & Wolff. (Govan) When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 11.4 k.W. W. H. Allen & Co. Ltd. dynamo direct coupled to an 8" dia x 4" Stk "Allen" engine running at 250 R.P.M. with steam pressure of 100 lbs. per sq inch.
 Capacity of Dynamo 114 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed Engine Room Starboard Whether single or double wire system is used Double
 Position of Main Switch Board Engine Room Starboard having switches to groups A. B. C. D & E of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each none

If fuses are fitted on main switch board to the cables of main circuit Yes and on each auxiliary FUSE 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 tinned Copper 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 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 1-6LT. MORSE LANTN arranged in the following groups:—

ANAVIGATION	56	lights each of	5-16.C.P. 5-32.C.P. 7-8.C.P.	candle power requiring a total current of	23.54	Amperes
BENGINE & ACCOMM.	62	lights each of	6-5.C.P. 23-20.W. 4-10-30.W.	candle power requiring a total current of	21.15	Amperes
CWIRELESS		lights each of	4-16.C.P. 3-8.C.P. 10-20.W.	candle power requiring a total current of	15.0	Amperes
DCARGO	30	lights each of	4-5-30.W. 5-12.FANS 4-1-24.FAN.	candle power requiring a total current of	16.8	Amperes
EENGINE & BR RM.	37	lights each of	16.C.P.	candle power requiring a total current of	20.72	Amperes
2. Mast head light with	1	lamp each of	32.C.P.	candle power requiring a total current of	2.2	Amperes
2. Side light with	1	lamp each of	32.C.P.	candle power requiring a total current of	2.2	Amperes
5-6LT. Cargo lights of			16.C.P.	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 Wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying	97.21	Amperes, comprised of	19	wires, each	.083	S.W.G. diameter,	.1	square inches total sectional area
Branch cables carrying	21.15	Amperes, comprised of	7	wires, each	.064	S.W.G. diameter,	.0225	square inches total sectional area
Branch cables carrying	15.0	Amperes, comprised of	7	wires, each	.044	S.W.G. diameter,	.01	square inches total sectional area
Leads to lamps carrying	2.1	Amperes, comprised of	1	wires, each	.044	S.W.G. diameter,	.0015	square inches total sectional area
Cargo light cables carrying	3.36	Amperes, comprised of	3	wires, each	.036	S.W.G. diameter,	.003	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cable of 600 Meg. grade classed to C.M.A. insulated with pure and vulcanized rubber protected by lead covering in Accommodation. Cables in Engine Room & where exposed to mechanical injury protected with steel armouring

Joints in cables, how made, insulated, and protected

none

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 —

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 cables clipped to bulkhead in Accommodation. Armoured cables in Engine Room & Tween decks. Cables run in galvanized steel tubing where exposed to moisture.

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 *Armoured, and h. c. cable in galvanized steel tubing*

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

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

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

How are cables carried through beams *Beams bushed with lead* through bulkheads, &c. *in glands if W.T.*

How are cables carried through decks *In bushed galvanized iron deck tubes*

Are any cables run through coal bunkers *no* or cargo spaces *Yes.* or spaces which may be used for carrying cargo, stores, or baggage *Yes.*

If so, how are they protected *Armoured exposed and run in bosom of girder*

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 *—*

Cargo light cables, whether portable or permanently fixed *Permanent to Socket* How fixed *Turn armoured cable clipped to bulkhead where permanent.*

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 *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.

John Dickinson, Electrical Engineers Date *Nov 10th 1921.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *120 ft*

Distance between dynamo or electric motors and steering compass *119 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>10.0</i>	<i>6</i>	<i>6</i>	<i>15.75</i>
<i>1.06</i>	<i>5</i>	<i>5</i>	<i>15.15</i>
<i>1.1</i>	<i>6</i>	<i>6</i>	<i>15.01</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 the* course in the case of the standard compass and *Nil* degrees on *all the* course in the case of the steering compass.

John Dickinson, Builder's Signature. Date

GENERAL REMARKS.

The generators of this installation were found unsatisfactory. W. H. Allen representative being in attendance for ten days & finally the vessel sailed & the generators were still unsatisfactory. When vessel returns to a home port the generators will be replaced & generators re-tested. FEE 18-10-0. J. J. Rankin. Surveyor to Lloyd's Register of Shipping.

Record of 8 battery light to be deferred until this is done. Committee's Minute - GLASGOW 25 NOV 1921

Deferred

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.