

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 35459

Port of Glasgow Date of First Survey 5/7/15 Date of Last Survey 16/9/15 No. of Visits 12
 No. in Reg. Book on the ~~Iron or~~ Steel S/S "Dara" Port belonging to Liverpool
 Built at Port Glasgow By whom Russell & Co. When built 1915
 Owners Bombay Petroleum Co. Ltd. Owners' Address Liverpool
 Yard No. 680 Electric Light Installation fitted by A. S. Robertson & Co. When fitted 1915

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Dynamo Compound wound Multipolar (4 pole) Coupled direct to a vertical engine having single cylinder 11" dia x 9" stroke @ 250 revs
 Capacity of Dynamo 250 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine room middle platform starboard Whether single or double wire system is used Single wire
 Position of Main Switch Board near dynamo having switches to groups A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Top platform Engine room = 12

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
wire double wire

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 wire 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 221 - 8 - 24" fans arranged in the following groups:—

A	lights each of		candle power requiring a total current of	Amperes
B	lights each of		candle power requiring a total current of	Amperes
C	lights each of		candle power requiring a total current of	Amperes
D	lights each of		candle power requiring a total current of	Amperes
E	lights each of		candle power requiring a total current of	Amperes
<u>Two Mast head lights with 1 lamp each of 32 candle power requiring a total current of included in "B" Amperes</u>				
<u>Two Side lights with 1 lamp each of 32 candle power requiring a total current of " " Amperes</u>				
<u>Five Cargo lights of 80 candle power, whether incandescent or arc lights Incandescent</u>				

If arc lights, what protection is provided against fire, sparks, &c. No Arc lights

Where are the switches controlling the masthead and side lights placed In Chart room

DESCRIPTION OF CABLES.

Main cable carrying 250 Amperes, comprised of 61 wires, each 14 S.W.G. diameter, .30070 square inches total sectional area
 Branch cables carrying 21.6 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .0225 square inches total sectional area
 Branch cables carrying 12.6 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0127 square inches total sectional area
 Leads to lamps carrying .6 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00181 square inches total sectional area
 Cargo light cables carrying 3 Amperes, comprised of 119 wires, each 28 S.W.G. diameter, .00322 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

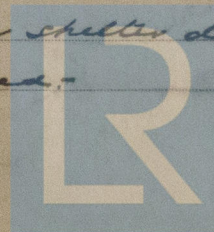
Insulated with pure vulcanizing india-rubber, tapes, the whole vulcanized together; Lead covered throughout accommodation & living rooms, all other parts lead, served & armoured.

Joints in cables, how made, insulated, and protected No joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances No joints 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 No joints

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 Forward & aft under shelter deck through beams, starboard side, lead, served & armoured.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes - except in spaces where cargo may be carried*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead, served and armoured in galvanised iron pipes*
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead, served & armoured*
 What special protection has been provided for the cables near boiler casings *Lead, served & armoured*
 What special protection has been provided for the cables in engine room *Lead, served & armoured*
 How are cables carried through beams *in lead bushes* through bulkheads, &c. *watertight glands*
 How are cables carried through decks *in galvanised iron pipes bushed with fibre*
 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 *Lead, served & armoured*
 Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *none in bunkers*
 If so, how are the lamp fittings and cable terminals specially protected *Heavy cast iron shutters*
 Where are the main switches and fuses for these lights fitted *Engine room, Top platform*
 If in the spaces, how are they specially protected *none in the spaces*
 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 *By large brass stud & locked on dynamo pole piece*
 How are the returns from the lamps connected to the hull *By 3/8" Brass screw*
 Are all the joints with the hull in accessible positions *yes*
 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 2,500 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.

A. J. Robertson & Co

Electrical Engineers

Date *12th Oct 1915*

COMPASSES.

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

Distance between dynamo or electric motors and steering compass *130 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>23.7</i>	<i>16</i>	<i>7 24</i>	<i>7 24</i>
<i>1.2</i>	<i>5</i>	<i>7 5</i>	<i>7 5</i>
<i>.3</i>	<i>into</i>	<i>7 3 amp</i>	<i>7 3 amp</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 *five* degrees on *every* course in the case of the standard compass and *five* degrees on *every* course in the case of the steering compass.

For Russell & Co
S. R. Smith

Builder's Signature.

Date

19th Oct 1915

GENERAL REMARKS.

This installation has been fitted on board under special survey & tested under full working conditions & found satisfactory

It is submitted that this vessel is eligible for

THE RECORD Elec. light.

Sur. 4/11/15

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

Committee's Minute

GLASGOW

Elec. Light

25 NOV. 1915



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

25/10/15