

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 36875

Port of Glasgow Date of First Survey 4/12/16 Date of Last Survey 15-5-17 No. of Visits 36
 No. in Reg. Book 335 on the Iron & Steel S.S. Westminster Port belonging to
 Built at Glasgow By whom W. Henderson & Co. (492) When built 1917
 Owners Federal Steam Navigation Co. Owners' Address
 Yard No. 492 Electric Light Installation fitted by Boothroyd When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Dynamos - by Clarke Chapman - Multipolar Comp. Wound.
Engines Vertical Open type - Single Cylinder
 Capacity of Dynamo Each 145.5 Amperes at 110 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 Seven of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each None Fitted.

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 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 376 arranged in the following groups:—

Group	Number of lights	Each of	Candle power	Requiring a total current of	Amperes
A	<u>90</u>	<u>16</u>	<u>16</u>	<u>4.5</u>	<u>Amperes</u>
B	<u>53</u>	<u>16</u>	<u>16</u>	<u>2.7</u>	<u>Amperes</u>
C	<u>60</u>	<u>16</u>	<u>16</u>	<u>3.0</u>	<u>Amperes</u>
D	<u>65</u>	<u>16</u>	<u>16</u>	<u>3.3</u>	<u>Amperes</u>
E	<u>50</u>	<u>16</u>	<u>16</u>	<u>2.5</u>	<u>Amperes</u>
2	Mast head light with <u>1</u> lamps each of <u>32</u>	<u>32</u>	<u>32</u>	<u>2.2</u>	<u>Amperes</u>
2	Side light with <u>1</u> lamps each of <u>32</u>	<u>32</u>	<u>32</u>	<u>2.2</u>	<u>Amperes</u>

10 Clusters Cargo lights of each 5-16 candle power, whether incandescent or arc lights Both
4 arc lamps of 6 1/2 amps each Special Globes & Metal Trays
 If arc lights, what protection is provided against fire, sparks, &c.

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

DESCRIPTION OF CABLES.

Main cable carrying 145.5 Amperes, comprised of 37 wires, each 15 S.W.G. diameter, .15 square inches total sectional area
 Branch cables carrying 45 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .035 square inches total sectional area
 Branch cables carrying 33 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Leads to lamps carrying 1/2 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 30 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area

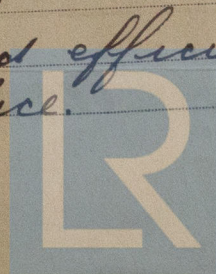
DESCRIPTION OF INSULATION, PROTECTION, ETC.

V.I.R. Taped, Lead covered & armoured cables
Armouring of galv. steel wire of standard sizes.
 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
 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 & Armoured and efficiently clipped to the surface.



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 and Armoured, or in tubing where necessary*

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

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

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

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

How are cables carried through decks *Watertight 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 covered & Armoured*

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 Watertight Connectors*

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.

H. T. BOOTHROYD, LIMITED.
J. Whitehead.

Electrical Engineers

Date *16 May 1914*

COMPASSES.

Distance between dynamo or electric motors and standard compass

About 125 feet

Distance between dynamo or electric motors and steering compass

About 115 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	In Instrument	feet from standard compass	In Instrument	feet from steering compass
<i>1/2</i>					
A cable carrying	<i>7</i>	Amperes	<i>15</i>	feet from standard compass	<i>10</i> feet from steering compass
A cable carrying	<i>12</i>	Amperes	<i>25</i>	feet from standard compass	<i>15</i> feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power

The maximum deviation due to electric currents, etc., was found to be _____ degrees on _____ course in the case of the standard compass and _____ degrees on _____ course in the case of the steering compass.

DAVID & WILLIAM HENDERSON & CO., LIMITED.

W. H. Lea

Builder's Signature.

Date *17/5/14*

GENERAL REMARKS.

This installation has been well fitted on board, & when tested under working conditions, found satisfactory

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

Wm. H. Copeman. & A. McKend.

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

Committee's Minute *GLASGOW 2 MAY 1914*
Elec Light



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

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