

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 36641

Port of Glasgow Date of First Survey 30th Sept. 1916 Date of Last Survey 25th Jan. 1917 No. of Visits 39
 No. in Reg. Book 515 Terntleaf Port belonging to C
 Built at Glasgow By whom Napier & Miller (L^{td}) When built 1917
 Owners _____ Owners' Address _____
 Yard No. 200 Electric Light Installation fitted by Boothroyd When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One standard Admiralty 26 1/4 K.W. Generating Set and one 10 K.W. "Boothroyd" dynamo direct coupled to "Hawden" 8"x6" enclosed engine.
 Capacity of Dynamo 250 & 95 Amperes at 10.5 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 5 and 1 spare 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-oxidisable 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 _____ arranged in the following groups:—

A	Engines & Etc.	lights each of	<u>16 @ 50</u> <u>72 @ 16</u>	candle power requiring a total current of	<u>46.5</u>	Amperes
B	Searchlight	lights each of	<u>45 @ 16</u>	candle power requiring a total current of	<u>80</u>	Amperes
C	Midships	lights each of	<u>8 @ 50</u> <u>13 @ 16</u>	candle power requiring a total current of	<u>25</u>	Amperes
D	Navig. Lamps & Etc.	lights each of	<u>8 @ 50</u> <u>1 @ 32</u>	candle power requiring a total current of	<u>20</u>	Amperes
E	Forward	lights each of	<u>20 @ 16</u> <u>16 @ 50</u>	candle power requiring a total current of	<u>36</u>	Amperes
	2 Mast head light with	1 lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
	2 Side light with	1 lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
	6 Cargo lights of	<u>8 lights @ 50</u>	candle power, whether incandescent or arc lights <u>Incandescent</u>			

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

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

DESCRIPTION OF CABLES.

Main cable carrying 250 Amperes, comprised of 37 wires, each .112" S.W.G. diameter, .35 square inches total sectional area
 Branch cables carrying 46.5 Amperes, comprised of 19 wires, each .14 S.W.G. diameter, .094 square inches total sectional area
 Branch cables carrying 80 Amperes, comprised of 19 wires, each .14 S.W.G. diameter, .094 square inches total sectional area
 Leads to lamps carrying 56.2 Amperes, comprised of 1 wires, each .18 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 16 Amperes, comprised of 7 wires, each .18 S.W.G. diameter, .0125 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with pure & V.I. Rubber & taped. Protected with lead covering and armoured where necessary.

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

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 On iron trays & lead covered.



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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 *Tubing*

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

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 *Lat. Steel wire armouring*

How are cables carried through beams *Lead bushes* through bulkheads, &c. *Flange (Water-tight)*

How are cables carried through decks *Water-tight 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 *Tubes or metal Trays*

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 *Water-tight 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 Distributor*

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 *Made Gas tight*

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 *2000* 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. P. J. Whitehead

Electrical Engineers

Date *5 Feb 17*

COMPASSES.

Distance between dynamo or electric motors and standard compass *150 ft*

Distance between dynamo or electric motors and steering compass *also*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	inside of	feet from standard compass	inside of	feet from steering compass
<i>3</i>	<i>3</i>	<i>inside of</i>	<i>feet from standard compass</i>	<i>inside of</i>	<i>feet from steering compass</i>
<i>3</i>	<i>3</i>	<i>feet from standard compass</i>	<i>2</i>	<i>feet from steering compass</i>	
<i>50</i>	<i>33</i>	<i>feet from standard compass</i>	<i>25</i>	<i>feet from steering compass</i>	

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 *Nil* degrees on *—* course in the case of the standard compass and *Nil* degrees on *—* course in the case of the steering compass.

For Napier & Miller Ltd
Joseph Miller Director

Builder's Signature.

Date *8 Feb 1917*

GENERAL REMARKS.

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

Elec. light.

J. W. D. 23/2/17

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

Committee's Minute

GLASGOW

20 FEB. 1917

FRI. SEP. 7 1917.

FRI. NOV. 9 1917.

FRI. 8 FEB. 1918

TUE. 9 APR. 1918

FRI. 7 JUL. 1918



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