

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3626

Port of \_\_\_\_\_ Date of First Survey 21-12-16 Date of Last Survey 15 Feb 1917 No. of Visits 30  
 No. in Reg. Book \_\_\_\_\_ on the ~~Steel~~ S.S. Boxleaf Port belonging to \_\_\_\_\_  
 Built at Glasgow By whom Barclay Curle & Co When built 1917  
 Owners \_\_\_\_\_ Owners' Address \_\_\_\_\_  
 Yard No. 539 Electric Light Installation fitted by A. Watson & Co When fitted 1917

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Shanks gun type compound engines direct coupled to 2 Siemens compound wound dynamoes.  
 Capacity of Dynamo 510 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Bottom Platform of Engine Room Whether single or double wire system is used double  
 Position of Main Switch Board Convenient to Dynamoes having switches to groups 11 Circuits 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 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, porcelain, slate, &c.

Total number of lights provided for 203 arranged in the following groups:—

A	$\frac{2}{11}$	lights each of	$\frac{2}{32}$	candle power requiring a total current of	<u>23.52</u>	Amperes
B	$\frac{4}{4}$	lights each of	$\frac{2}{32}$	candle power requiring a total current of		Amperes
C.B.	<u>41</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>26.24</u>	Amperes
C.	<u>35</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>22.3</u>	Amperes
D.	<u>26</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>16.5</u>	Amperes
<u>2</u>	<u>Mast head lights with</u>	<u>2</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.5</u>	Amperes
<u>2</u>	<u>Side lights with</u>	<u>2</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.5</u>	Amperes
<u>6</u>	<u>Cargo lights of</u>	<u>128 each</u>		candle power, whether incandescent or arc lights	<u>incandescent</u>	

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 510 Amperes, comprised of 91 wires, each .118 S.W.G. diameter, 1 square inches total sectional area  
 Branch cables carrying 200 Amperes, comprised of 34 wires, each .092 S.W.G. diameter, .250 square inches total sectional area  
 Branch cables carrying 26 Amperes, comprised of 4 wires, each .18 S.W.G. diameter, .0125 square inches total sectional area  
 Leads to lamps carrying 1 to 5 Amperes, comprised of 1 wires, each .14 S.W.G. diameter, .0025 square inches total sectional area  
 Cargo light cables carrying 4.8 Amperes, comprised of 1 wires, each .14 S.W.G. diameter, .0025 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

In accommodation the copper wire is insulated with pure + vulcanizing India Rubber and taped, then vulcanized together + finished with a lead sheathing. In Engine room &c. + exposed places galvanized wire armouring is added.  
 Joints in cables, how made, insulated, and protected To joints except through junction boxes.

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 Generally, cables are clipped direct to bulkheads and underside of decks. The lead covered cables with brass saddles + the armoured cables with galvanized steel saddles.



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 *Nothing further than the galvanized wire armouring.*

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

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

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

How are cables carried through beams *Through lead or fibre ferrules* through bulkheads, &c. *N.T. bulkhead glands.*

How are cables carried through decks *in galvanized iron 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 *armoured with galvanized iron wires*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *Yes.*

If so, how are the lamp fittings and cable terminals specially protected *The fittings are watertight with C.I. covers.*

Where are the main switches and fuses for these lights fitted *in Engineers Quarters.*

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 *—*

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 *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 *They are gas tight 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 2500 megohms per statute mile at 60° Fahrenheit. It 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.

FOR ARCHD. WATSON & CO., LTD.,

Electrical Engineers

Date *13<sup>th</sup> March 1917.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *168 ft.*

Distance between dynamo or electric motors and steering compass *160 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying *5* Amperes *3* feet from standard compass *13* feet from steering compass

A cable carrying *23.52* Amperes *20* feet from standard compass *16* feet from steering compass

A cable carrying *—* Amperes *—* feet from standard compass *—* 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.

FOR BARDLEY, CURLE & CO., LTD.

Builder's Signature.

Date *15<sup>th</sup> Mar 1917*

GENERAL REMARKS.

*This installation has been well fitted on board and when tested under full working conditions was satisfactory.*

*It is submitted that this vessel is eligible for*

THE RECORD Elec. Light.

*AWD 5/4/17*

Surveyor to Lloyd's Register of British and Foreign Shipping

Committee's Minute *GLASGOW 3-APR-1917*

*Elec. Light*

TUE SEP 25 1917 TUE NOV 12 1917

TUE 20 MAY 1918

FRI 11 OCT 1918

FRI 3 JAN 1919

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THE SURVEYORS ARE REQUESTED NOT TO WRITE IN THIS MARGIN.