

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No 26974

Port of Sunderland Date of First Survey 30 Apr. Date of Last Survey 3 May 17 No. of Visits 3  
 No. in Reg. Book on the Iron or Steel S.S. "Llanover" Port belonging to LONDON  
 Built at Sunderland By whom W. Pickersgill & Sons Ltd When built 1917  
 Owners The Llanover Steamship Co. Owners' Address \_\_\_\_\_  
 Yard No. 193 Electric Light Installation fitted by Campbell & Isherwood Ltd. When fitted 1917

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

Campbell & Isherwood compound wound Dynamo direct coupled to an open type engine  
 Capacity of Dynamo 125 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Steering Great Platform Whether single or double wire system is used Double  
 Position of Main Switch Board Star Bulkhead having switches to groups 4 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Engine Room 6, Chart House 2 and switch in a convenient position to each light.

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 75 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 102 of 16 cp. & 6 of 32 arranged in the following groups :-  
 A Saloon Navigation lights each of 12 of 16 cp. & 5 of 32 candle power requiring a total current of 28.2 Amperes  
 B Engineers lights each of 22 of 16 cp. candle power requiring a total current of 16.5 Amperes  
 C Engine Room lights each of 25 of 16 cp. & 1 of 32 candle power requiring a total current of 14.8 Amperes  
 D Cargo lights each of 30 of 16 cp. candle power requiring a total current of 16.5 Amperes  
 E Marconi lights each of \_\_\_\_\_ candle power requiring a total current of 15 Amperes  
2 Mast head light with 1 lamps each of 32 candle power requiring a total current of Included in A. Amperes  
2 Side light with 1 lamps each of 32 candle power requiring a total current of Included in A. Amperes  
5 Cargo lights of 6 of 16 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 Chart House

### DESCRIPTION OF CABLES.

Main cable carrying 76 Amperes, comprised of 34 wires, each 16 S.W.G. diameter, .114 square inches total sectional area  
 Branch cables carrying 28 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0925 square inches total sectional area  
 Branch cables carrying 16.5 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007 square inches total sectional area  
 Leads to lamps carrying 16.5 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 2.75 Amperes, comprised of 70 wires, each 36 S.W.G. diameter, .003 square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Accommodation lead covered over vulcanized rubber & taped. Engine Room N. 2. B. Armoured & Braided Exposed places N. 2. B. in sc. tubing.

Joints in cables, how made, insulated, and protected none made

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 Accommodation lead covered over vulcanized rubber & taped. Engine Room N. 2. B. Armoured & Braided. Exposed places N. 2. B. in sc. tubing.

**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 See Dra. tubes

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

What special protection has been provided for the cables near boiler casing Armoured & Braided

What special protection has been provided for the cables in engine room Armoured & Braided

How are cables carried through beams filon terminals through bulkheads, &c. Clas ds

How are cables carried through decks Deck tubes flanged to Deck

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 & Braided

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 portable How fixed Special W.T. connections

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 yes.

Is the installation supplied with a voltmeter yes. and with an amperemeter yes., fixed on board

**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 1000 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.

Campbell & Shewood & Co. Electrical Engineers Date 16th June 1917

**COMPASSES.**

Distance between dynamo or electric motors and standard compass about 285 yds.

Distance between dynamo or electric motors and steering compass about 200 yds.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>.55</u>	Amperes	<u>1</u>	feet from standard compass	<u>1</u>	feet from steering compass
A cable carrying	<u>1.65</u>	Amperes	<u>3</u>	feet from standard compass	<u>3</u>	feet from steering compass
A cable carrying	<u>10</u>	Amperes	<u>9</u>	feet from standard compass	<u>9</u>	feet from steering compass

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 no degrees on wey course in the case of the standard compass and no degrees on every course in the case of the steering compass.

**FORWICKERSOLL & SONS LTD**  
W. J.ickersoll

Builder's Signature. Date June 20th, 1917.

**GENERAL REMARKS.**

The installation has been satisfactorily fitted in the vessel, tested at full load and found good.

It is submitted that this vessel is eligible for THE RECORD. Elec. light. W.D. 6/7/17

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



Im. 9.14.—Transfer.