

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27160

Port of SUNDERLAND. Date of First Survey 8 Feb. Date of Last Survey 15 Feb. No. of Visits 2  
 No. in Reg. Book on the Iron or Steel SS. Hopelem Port belonging to Newcastle  
 Built at Sandwich Sunderland By whom Messrs. Swan Hunter & Wiggin Rickwood Ltd. 1918  
 Owners Hopelem Ltd. Owners' Address Newcastle  
 Yard No. 1041 Electric Light Installation fitted by Campbell & Iskerwood, Ltd. When fitted 1918

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

Campbell & Iskerwood Ltd. 4 pole compound wound Dynamo direct coupled to a Roby Engine  
 Capacity of Dynamo 91 Amperes at 110 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Starboard side Engine room Whether single or double wire system is used double  
 Position of Main Switch Board Stores Bulk Head having switches to groups 4 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Engine room 6, B. Parthouse 8, and a Switch in a convenient position for 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-oxidizable 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 96 of 16 cp 50 of 32 arranged in the following groups:—  
 A Midships lights each of 32 of 16 & 50 of 32 candle power requiring a total current of 23.7 Amperes  
 B Engineers' Raft lights each of 50 of 16 candle power requiring a total current of 27.5 Amperes  
 C Engine room lights each of 14 of 10 cp. candle power requiring a total current of 7.7 Amperes  
 D Marconi lights each of candle power requiring a total current of 15 Amperes  
 E lights each of candle power requiring a total current of Amperes  
 1 Main head light with 1 lamps each of 32 candle power requiring a total current of included A. Amperes  
 2 Side light with 1 lamps each of 32 candle power requiring a total current of " " Amperes  
 4 Cargo lights of 6 of 16 candle power, whether incandescent or arc lights Incandescent

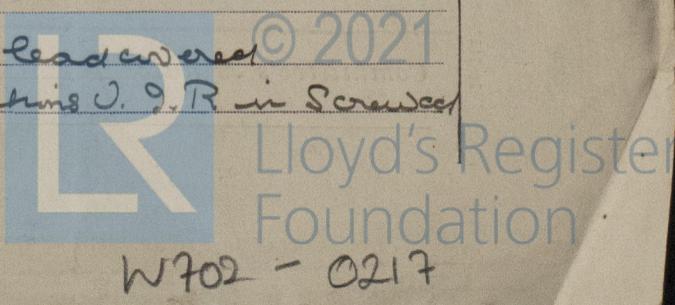
If arc lights, what protection is provided against fire, sparks, &c. \_\_\_\_\_  
 Where are the switches controlling the masthead and side lights placed B. Parthouse

### DESCRIPTION OF CABLES.

Main cable carrying 73.3 Amperes, comprised of 37 wires, each 16 S.W.G. diameter, .117 square inches total sectional area  
 Branch cables carrying 27.5 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area  
 Branch cables carrying 23.1 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area  
 Leads to lamps carrying 1.65 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 3.35 Amperes, comprised of 70 wires, each 36 S.W.G. diameter, .0031 square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Accumulation V. D. R. lead covered Engine room Armoured & Braided holds & exposed positions V. D. R. in Screwed Steel 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 \_\_\_\_\_ 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 \_\_\_\_\_  
 How are the cables led through the ship, and how protected Accumulation V. D. R. lead covered Engine room Armoured & Braided holds & exposed positions V. D. R. in Screwed Steel 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 Screwed Steel Tubing

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

What special protection has been provided for the cables near boiler casings Lead covered Armoured & Braided

What special protection has been provided for the cables in engine room \_\_\_\_\_

How are cables carried through beams Fibre Jerrules through bulkheads, &c. W.P. Leads

How are cables carried through decks Deck Pipes, Flanges & Deck

Are any cables run through coal bunkers \_\_\_\_\_ or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Screwed Steel Tubing

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 Special W.P. Box

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 Main 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 & ISHERWOOD Ltd.**

Per Bushmeade

Electrical Engineers

Date 29th April 1918

**COMPASSES.**

Distance between dynamo or electric motors and standard compass about 100ft.

Distance between dynamo or electric motors and steering compass 100ft.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>.55</u>	<u>1</u>	<u>1</u>	<u>1</u>
<u>1'65"</u>	<u>3</u>	<u>3</u>	<u>3</u>

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 any course in the case of the standard compass and no degrees on any course in the case of the steering compass. ppdwards

FOR

**SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.**

W. M. M. M. M.

Builder's Signature.

Date

18/5/18

**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.

J.W.D. 23/5/18

Sh. Davis. 22 MAY 1918

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

Committee's Minute

