

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No 26040

Port of Sunderland Date of First Survey 7 Mar Date of Last Survey 11 Mar '14 No. of Visits 3  
 No. in on the Iron or Steel S.S. Lango Port belonging to Newcastle  
 Reg. Book 256 Built at SUNDERLAND By whom J.P. Austin & Sons When built 1910-4  
 Owners Peter & J. Cold Owners' Address Campbell & Isherwood Ltd. When fitted 1914  
 Yard No. Electric Light Installation fitted by

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

A Campbell & Isherwood four pole compound wound dynamo direct coupled to a Robey engine

Capacity of Dynamo 91 Amperes at 110 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Starboard side of Engine room Whether single or double wire system is used Double  
 Position of Main Switch Board Aft Bulkhead having switches to groups 4 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Chartroom 7, Engine room 5, and a 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-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 85 of 16 CP & 5 of 32 CP arranged in the following groups:—

A	<u>Aft</u>	lights each of <u>24 of 16 &amp; 1 of 32</u>	candle power requiring a total current of <u>14.3</u>	Amperes
B	<u>Midships</u>	lights each of <u>25 of 16 &amp; 4 of 32</u>	candle power requiring a total current of <u>18.15</u>	Amperes
C	<u>Engineers</u>	lights each of <u>36 of 16</u>	candle power requiring a total current of <u>19.8</u>	Amperes
D	<u>✓</u>	lights each of <u>✓</u>	candle power requiring a total current of <u>✓</u>	Amperes
E	<u>✓</u>	lights each of <u>✓</u>	candle power requiring a total current of <u>✓</u>	Amperes
	<u>2 Mast head light with 1 lamp each of 32</u>	candle power requiring a total current of <u>Included in B</u>		Amperes
	<u>2 Side light with 1 lamp each of 32</u>	candle power requiring a total current of <u>"</u>		Amperes
	<u>4 Cargo lights of 6 of 16</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 In Chartroom

## DESCRIPTION OF CABLES.

Main cable carrying 52.25 Amperes, comprised of 19 wires, each 15 S.W.G. diameter, .075 square inches total sectional area  
 Branch cables carrying 19.8 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area  
 Branch cables carrying 18.15 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area  
 Leads to lamps carrying 3.3 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 114 wires, each 38 S.W.G. diameter, .0032 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

In Accommodation - Lead covered. In Holds - Vulcanised in iron pipe. In Engine room - Armoured & braided

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 No

How are the cables led through the ship, and how protected Lead covered secured with brass saddle clips.

Vulcanised in iron pipe secured with G.I. clips. Armoured & braided secured with G.I. clips.



**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 G.I. pipe

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 casings Armoured & Braided

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

How are cables carried through beams Three Ferrules through bulkheads, &c. U.T. Brass glands

How are cables carried through decks Deck pipes flanged to decks

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 See G.I. pipe

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 sockets in C.I. boxes

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 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 & Hemmings

Electrical Engineers

Date March 18 1914

**COMPASSES.**

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

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
55	1	1	
1.1	6	6	
18.15	15	10	

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 nil degrees on every course in the case of the standard compass and nil degrees on nil course in the case of the steering compass. J. L. Ainsley

J. S. Thorne Builder's Signature. Date 23 March 1914

**GENERAL REMARKS.**

This installation is well fitted & ran satisfactorily on trial under full load.

It is submitted that this vessel is eligible for

THE RECORD. Elec. light

JWR

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

Committee's Minute