

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27245

Received at London Office

Name of Ship **SUNDERLAND** Date of First Survey **15 May** Date of Last Survey **23 May 18** No. of Visits **2**
 Material **on the Iron or Steel** "War Visor"
 Port belonging to **London**
 Built at **SUNDERLAND** By whom **S.P. Austin & Sons Ltd** When built **1918**
 No. **295** Electric Light Installation fitted by **The Sunderland Forge & Eng. Co. Ltd.** When fitted **1918**

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Combined Plant consisting of single cylinder, vertical, open type engine 7x5
 revs. 100 lbs steam coupled to compound wound multipolar dynamo. Both by S.F.E. Coy.
 Capacity of Dynamo **100** Amperes at **100** Volts, whether continuous or alternating current **continuous**
 Is Dynamo fixed **Eng. Room. Bolted to side of main** Whether single or double wire system is used **double**
 Position of Main Switch Board **close to dynamo** having switches to groups **five** of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each **in Chart Room with 8 switches controlling**
navigation lights - Morse light - compasses & telegraph.

Are fuses 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**
 Are fuses fitted 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 **No** 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**

Number of lights provided for	Arranged in the following groups :-	Amperes
60	lights each of 29, 20, MF 20, 16, 20, 8 candle power requiring a total current of	22.6
24	lights each of 16 cp candle power requiring a total current of	13.4
24	lights each of do candle power requiring a total current of	13.4
12	lights each of 2, 20, MF 5 @ 16 cp, 2 @ 8 cp, 3 @ 2 1/2 cp candle power requiring a total current of	4.0
1	Mast head light with 1 lamps each of 2 1/2 candle power requiring a total current of	25.0
1	Side light with 1 lamps each of 8 candle power requiring a total current of	1
4	Cargo lights of six 16 cp candle power, whether incandescent or arc lights	56

lights, what protection is provided against fire, sparks, &c. **none fitted**

Are the switches controlling the masthead and side lights placed **in Chart Room.**

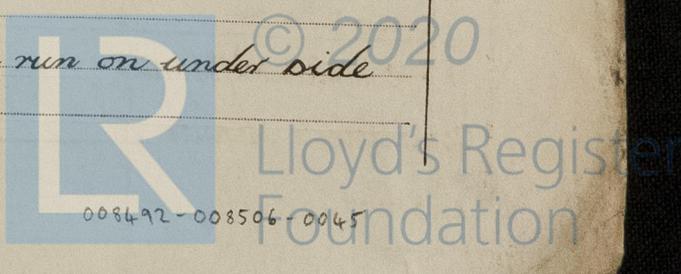
DESCRIPTION OF CABLES.

Cable carrying	Amperes	Wires	S.W.G. diameter	square inches total sectional area
100	19	14	.094	
22.6	7	16	.022	
13.4	7	20	.007	
2.5	7	25	.0022	
3.5	7	2 1/2	.0049	

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires & Mch. Spaces **Pure & Vulk. I.R. taped & vulcanized - then Armoured & Braided**
 Accommodation **DITTO** **Lead Covered**
 How cables, how made, insulated, and protected **None**

Are 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 **Armoured & Braided. Cable run on under side**
of deck - clipped to Beams.



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 Lead Covered
or V.P.R. run in Iron 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 DITTO.

What special protection has been provided for the cables in engine room DITTO.

How are cables carried through beams holes bushed with fibre. through bulkheads, &c. W.T. glands.

How are cables carried through decks W.T. 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 & 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 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 Main 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 —

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 600 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.

THE SUNDERLAND FORGE & ENGINE WORKS LTD.

Electrical Engineers

Date June 1st 1918.

COMPASSES.

Distance between dynamo or electric motors and standard compass about 68 feet

Distance between dynamo or electric motors and steering compass " 59 "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>4.0</u>	Amperes	<u>14</u>	feet from standard compass	<u>8</u>	feet from steering compass
A cable carrying	<u>.56</u>	Amperes	<u>led into</u>	feet from standard compass	<u>7</u>	feet from steering compass
A cable carrying	<u>.56</u>	Amperes	<u>7</u>	feet from standard compass	<u>led into</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 any course in the case of the standard compass and no degrees on any course in the case of the steering compass.

FOR THE PAINTERS & SHIPBUILDERS LIMITED.

Builder's Signature. Date

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.

JWD
11/6/18.

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

Committee's Minute

THE SUPERVISORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 9.12.—Transfer.



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WRITTEN.