

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27514

Port of SUNDERLAND Date of First Survey 2 May Date of Last Survey 9 May 1919 No. of Visits 9 May 1919  
 No. in Reg. Book on the Iron or Steel Ship Polo Port belonging to Hull  
 Built at Sunderland By whom Messrs Swan Hunter and Wigham When built 1919  
 Owners Ellerman's Wilson Line Owners' Address Hull  
 Yard No. 1111 Electric Light Installation fitted by J. L. Lalmecadeus When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 8x6" Open Vertical Single Cylinder "Kaiser" Engine  
Coupled Direct to 1-13/16 W. Open Dynamo comprising Wound for 110 Volts  
 Capacity of Dynamo 63 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed In Engine Room Whether single or double wire system is used Double  
 Position of Main Switch Board In Dynamo having switches to groups A, B, C & D of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each 1-9 way DP Fusebox fixed in Chaw House 1-3 way DP Fusebox fixed in Pantry 1-4 way DP Fusebox fixed in Turbine 1-3 way DP Fusebox fixed in Foreman's Cabin 1-4 way DP Fusebox fixed in Engine Room 1-3 way DP Fusebox fixed in Engine Room  
 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  
 Total number of lights provided for 99 arranged in the following groups:—  
 A 42 lights each of 16 candle power requiring a total current of 23.6 Amperes  
 B 6.9 lights each of 16 candle power requiring a total current of 16.9 Amperes  
 C Incandescent lights each of candle power requiring a total current of Amperes  
 D 32 lights each of 16 candle power requiring a total current of 18 Amperes  
 E lights each of candle power requiring a total current of Amperes  
2 Mast head light with 1 lamps each of 32 candle power requiring a total current of 2.24 Amperes  
2 Side light with 1 lamps each of 32 candle power requiring a total current of 2.24 Amperes  
5 Cargo lights of 6x16 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 In Chaw Room

## DESCRIPTION OF CABLES.

Main cable carrying 63 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .06 square inches total sectional area  
 Branch cables carrying 16.9 Amperes, comprised of 4 wires, each 14 S.W.G. diameter, .014 square inches total sectional area  
 Branch cables carrying 18 Amperes, comprised of 4 wires, each 14 S.W.G. diameter, .014 square inches total sectional area  
 Leads to lamps carrying 56 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 3.36 Amperes, comprised of 3 wires, each 20 S.W.G. diameter, .003 square inches total sectional area

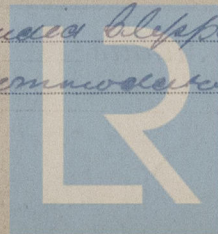
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

All conductors are formed of No. 6 copper braided insulated with pure Para Rubber Vulcanized India Rubber Tapes & Braided overall  
 Joints in cables, how made, insulated, and protected None. Looping in system carried out.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances None 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 None

How are the cables led through the ship, and how protected In Engine Room. Directly under blipped up to bulkheads etc. In Cargo Spaces & Lk. in Iron Pipe. In Accommodation Lk. Covered blipped up.





**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 U.S.C. in Iron Pipes

Armoured & Braided

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 "

How are cables carried through beams Pushed with Fibre through bulkheads, &c. Stuffing Glands

How are cables carried through decks in Iron & Lead Tubes Flanged & made Watertight

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 In Iron Pipes

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 W. L. Plug & Socket 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 "

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 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.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass Approx 84 ft

Distance between dynamo or electric motors and steering compass " 81 ft

The nearest cables to the compasses are as follows:—

Cable	Carrying	Amperes	Feet from standard compass	Feet from steering compass
A cable carrying	56	Amperes	Inside	Inside
A cable carrying	Approx 10	Amperes	Approx 12	Approx 10
A cable carrying	16.9	Amperes	14	12

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 all course in the case of the standard compass and nil degrees on all course in the case of the steering compass.

**GENERAL REMARKS.**

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

It is submitted that this vessel is eligible for THE RECORD Elec. light.

JWD 2/6/19.

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

Committee's Minute



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