

TUE. 12 JUN. 1917

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 15373.

Port of West Hartlepool Date of First Survey 5<sup>th</sup> Jan Date of Last Survey 17<sup>th</sup> May No. of Visits 30  
 No. in on the Iron or Steel S/S "Saxon" Port belonging to London  
 Reg. Book 663 Built at Whitby By whom J. Turnbull & Son When built 1881  
 Owners Entente S.S. Co. Ltd. (Ropold Ralford (London) Ltd. Agents) Owners' Address  
 Yard No. Electric Light Installation fitted by The Sunderland Forge & Eng. Co. Ltd. When fitted 1917.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Combined Plant consisting of vertical open type engine 7x5. 350 revs. per min. 100 lbs Steam coupled to compound wound multipolar dynamo.

Capacity of Dynamo 90 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Lower Platform, Starboard Side, Eng. Room Whether single or double wire system is used Double.

Position of Main Switch Board close to dynamo. having switches to groups four of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each In Wheelhouse with 7 switches controlling Navigation Lights, Morse Light, Compasses & Telegraph.

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 cessel 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 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.

Total number of lights provided for 100. arranged in the following groups:—

A <u>Nav. &amp; For'd</u> = 42 lights each of <u>16</u> candle power requiring a total current of <u>23.6</u> Amperes
B <u>Saloon &amp; Officers</u> = 23 lights each of <u>16</u> candle power requiring a total current of <u>12.9</u> Amperes
C <u>Engrs &amp; Eng. Rm</u> = 35 lights each of <u>16</u> candle power requiring a total current of <u>19.6</u> Amperes
D <u>Wireless</u> — lights each of <u>—</u> candle power requiring a total current of <u>25</u> Amperes
E lights each of candle power requiring a total current of Amperes
<u>2</u> Mast head light with <u>1</u> lamps each of <u>32</u> candle power requiring a total current of <u>2.24</u> Amperes
<u>2</u> Side light with <u>1</u> lamps each of <u>32</u> candle power requiring a total current of <u>2.24</u> Amperes
<u>Four</u> Cargo lights of <u>6 - 16</u> candle power, whether incandescent or arc lights <u>incandescent</u>

If arc lights, what protection is provided against fire, sparks, &c. None

Where are the switches controlling the masthead and side lights placed Wheelhouse.

## DESCRIPTION OF CABLES.

Main cable carrying <u>90</u> Amperes, comprised of <u>19</u> wires, each <u>14</u> S.W.G. diameter, <u>.034</u> square inches total sectional area
Branch cables carrying <u>23.6</u> Amperes, comprised of <u>7</u> wires, each <u>18</u> S.W.G. diameter, <u>.0125</u> square inches total sectional area
Branch cables carrying <u>19.6</u> Amperes, comprised of <u>7</u> wires, each <u>20</u> S.W.G. diameter, <u>.007</u> square inches total sectional area
Leads to lamps carrying <u>3</u> Amperes, comprised of <u>1</u> wires, each <u>18</u> S.W.G. diameter, <u>.0018</u> square inches total sectional area
Cargo light cables carrying <u>5</u> Amperes, comprised of <u>7</u> wires, each <u>21½</u> S.W.G. diameter, <u>.0049</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Mains Pure & Vulc. I. R. Taped & Vulcanized - then Braided & Compounded.

Accommodation ditto - then lead covered.

Machinery Spaces etc ditto then Lead covered & Armoured.

Joints in cables, how made, insulated, and protected None.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances Are all joints inaccessible 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 V.I.R. Cable run in Iron Pipe.



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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 Iron Pipe

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

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 No or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes.

If so, how are they protected By Iron 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 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 S' 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.

P. PRO THE SUNDERLAND FORCE & ENGINEERING CO., LTD.

Electrical Engineers

Date June 7<sup>th</sup> 1917

COMPASSES.

Distance between dynamo or electric motors and standard compass Director about 65 Feet

Distance between dynamo or electric motors and steering compass about 60 Feet.

The nearest cables to the compasses are as follows:—

A cable carrying	23.6	Ampères	about 18	feet from standard compass	about 16	feet from steering compass
A cable carrying	.56	Ampères	led into	feet from standard compass	about 8	feet from steering compass
A cable carrying	.56	Ampères	about 8	feet from standard compass	led into	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power

The maximum deviation due to electric currents, etc., was found to be \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the standard compass and \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS.

The Electric Lighting Installation on board this vessel has been carried out as detailed above, & appears to meet the requirements of the Society's Rules.

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

J.W.D. 17/6/17

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

Committee's Minute



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