

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27356

Port of SUNDERLAND. Date of First Survey 8 Oct. Date of Last Survey 15 Oct. 18 No. of Visits 3
 No. in on the Iron or Steel "WAR TANK" Port belonging to Lidon
 Reg. Book Built at SUNDERLAND. By whom SWAN HUNTER & WIGHAM RICHARDSON When built 1918
 Owners Whitby & Co. Ltd. Owners' Address
 Yard No. 1040 Electric Light Installation fitted by SWAN HUNTER & WIGHAM RICHARDSON Ltd When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One steam driven direct coupled electric generating plant 10 K.W. 100 Volts. 360 Revs. Engine & Dynamo by Sunderland Forge Co. Engine open type single cylinder double acting 4" dia x 5" stroke. Dynamo multipolar compound wound.

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

Where is Dynamo fixed Engine Room Stbd Whether single or double wire system is used Double

Position of Main Switch Board Engine Room Stbd having switches to groups 5 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

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 50 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 108 arranged in the following groups:—

A Navigation	9 lights each of 4-32 cp, 5-16 cp	candle power requiring a total current of	<u>7.5</u>	Amperes
B Cabin & Crew	56 lights each of 2-32 cp, 54-16 cp	candle power requiring a total current of	<u>19.5</u>	Amperes
C Engines & Aids	17 lights each of <u>16</u>	candle power requiring a total current of	<u>11.4</u>	Amperes
D Cargo	24 lights each of <u>16</u>	candle power requiring a total current of	<u>14.4</u>	Amperes
E Wireless Telegraphy	lights each of <u></u>	candle power requiring a total current of	<u>15</u>	Amperes
1 Mast head light with	1 lamps each of <u>32</u>	candle power requiring a total current of	<u>1</u>	Amperes
2 Side light with	1 lamps each of <u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
4 Cargo lights of	<u>96</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 Bridge

DESCRIPTION OF CABLES.

Main cable carrying	<u>100</u> Amperes, comprised of	<u>19</u> wires, each <u>14</u>	S.W.G. diameter, <u>.094</u>	square inches total sectional area
Branch cables carrying	<u>19.5</u> Amperes, comprised of	<u>7</u> wires, each <u>14</u>	S.W.G. diameter, <u>.03459</u>	square inches total sectional area
Branch cables carrying	<u>15</u> Amperes, comprised of	<u>7</u> wires, each <u>17</u>	S.W.G. diameter, <u>.01695</u>	square inches total sectional area
Leads to lamps carrying	<u>2</u> Amperes, comprised of	<u>1</u> wires, each <u>18</u>	S.W.G. diameter, <u>.00181</u>	square inches total sectional area
Cargo light cables carrying	<u>3.6</u> Amperes, comprised of	<u>108</u> wires, each <u>38</u>	S.W.G. diameter, <u>.003217</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

600 Meg. Grade, Rubber Insulated, Taped, Vulcanized Armoured & Braided cable. Mains Armoured & Braided clipped direct to steelwork. Cables in accommodation lead covered, clipped to woodwork. Cables in Engine Rooms Boiler Rooms armoured & braided clipped to steelwork. Cables exposed to weather lead covered & armoured clipped to steelwork.

Joints in cables, how made, insulated, and protected

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 Mains run through Midship Accommodation Stbd Passage Feeds to Fore & Poop run along bulwarks



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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 Lead covered and armoured

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 bushed holes through bulkheads, &c. bulkhead glands

How are cables carried through decks deck tubes

Are any cables run through coal bunkers no or cargo spaces no or spaces which may be used for carrying cargo, stores, or baggage no

If so, how are they protected

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

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 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.

Swan Hunter & Wigham Richardson

Electrical Engineers

Date October 16th 1918

COMPASSES.

Distance between dynamo or electric motors and standard compass

65 feet

Distance between dynamo or electric motors and steering compass

62 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>4.5</u>	<u>14</u>	<u>8</u>	<u>8</u>
<u>3</u>	<u>4</u>	<u>4</u>	<u>4</u>
<u>1</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.

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

Builder's Signature.

Date

23rd Oct. 1918.

GENERAL REMARKS.

This installation appears to have been fitted in a satisfactory manner and in accordance with the rules.

It is submitted that this vessel is eligible for THE RECORD. ELEC. LIGHT

W. H. H. H.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute



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