

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6185

Port of PLYMOUTH Date of First Survey 31 May Date of Last Survey 4 July No. of Visits Six
 No. in on the ~~Iron~~ Steel Se Sr "Nassa" Port belonging to London
 Reg. Book Built at HM Dockyard - Devonport By whom Devonport Dockyard When built 1922-7
 Owners Anglo Saxon Petroleum Co Owners' Address St Helen's Court, Great St Helens, London E.C. 3
 Yard No. 3 Electric Light Installation fitted by Devonport Dockyard, Electrical Engineers When fitted 1922-7

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Makers - The Sunderland Forge and Engineering Co. Ltd
 Main Dynamo 12 1/2 Kw, 100 Volt, 320 RPM. Auxiliary Dynamo 4 1/2 Kw, 100 Volt, 400 RPM.
 Capacity of Dynamo 125 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed In recess above Engine Room Whether single or double wire system is used Double
 Position of Main Switch Board De. D. alongside dynamo having switches to groups A, B, C. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each one feed being for Marconi's Set

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 — 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 type only Cartridges of the Particular Size can be inserted in clips
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 206 arranged in the following groups:—

A	<u>48</u>	lights each of <u>35.12</u> — <u>16</u>	candle power requiring a total current of <u>13</u>	Amperes
B	<u>54</u>	lights each of <u>55.4</u> — <u>16</u>	candle power requiring a total current of <u>9</u>	Amperes
C	<u>33</u>	lights each of <u>93.4</u> — <u>16</u>	candle power requiring a total current of <u>12</u>	Amperes
D		lights each of <u>5.1</u> — <u>32</u>	candle power requiring a total current of <u>—</u>	Amperes
	<u>also 38</u>	lights <u>for portable connections deck and Suez Canal lights</u>	candle power requiring a total current of <u>23</u>	Amperes
	<u>2</u>	Mast head lights with <u>1 lamp</u> each of <u>32</u>	candle power requiring a total current of <u>2.5</u>	Amperes
	<u>2</u>	Side lights with <u>1 lamp</u> each of <u>32</u>	candle power requiring a total current of <u>2.5</u>	Amperes
	<u>4</u>	Cargo lights of <u>96</u>	candle power, whether incandescent or arc lights <u>Incandescent</u>	

} Included above

If arc lights, what protection is provided against fire, sparks, &c. —
 Where are the switches controlling the masthead and side lights placed In wheelhouse

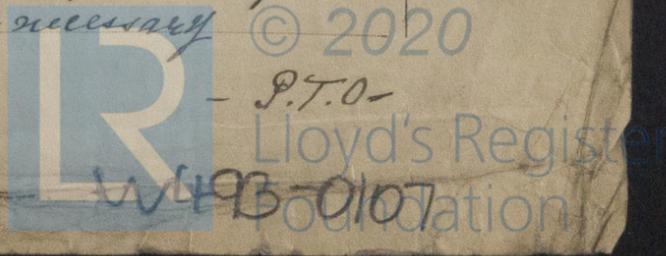
DESCRIPTION OF CABLES.

Main cables carrying <u>from dynamo 125</u> Amperes, comprised of <u>37</u> wires, each <u>.072</u> inches S.W.G. diameter, <u>0.15</u> square inches total sectional area
Branch cables carrying <u>45</u> Amperes, comprised of <u>19</u> wires, each <u>.052</u> inches S.W.G. diameter, <u>0.04</u> square inches total sectional area
Branch cables carrying <u>30</u> Amperes, comprised of <u>19</u> wires, each <u>.064</u> inches S.W.G. diameter, <u>0.06</u> square inches total sectional area
Branch cables carrying <u>16</u> Amperes, comprised of <u>7</u> wires, each <u>.029</u> inches S.W.G. diameter, <u>0.0095</u> square inches total sectional area
Leads to lamps carrying <u>15</u> Amperes, comprised of <u>7</u> wires, each <u>.064</u> inches S.W.G. diameter, <u>0.0225</u> square inches total sectional area
Leads to lamps carrying <u>5</u> Amperes, comprised of <u>1</u> wire, each <u>.17</u> inches S.W.G. diameter, <u>0.00246</u> square inches total sectional area
Cargo light cables carrying <u>—</u> Amperes, comprised of <u>—</u> wires, each <u>—</u> inches S.W.G. diameter, <u>—</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main Cables (outgoing from switchboard) Association Cables, 600 megohm grade insulated with vulcanised india rubber, lead covered and armoured with galvanised steel wires
 Branch Cables (from Dis. boxes) Insulated with vulcanised india rubber and lead covered
 Joints in cables, how made, insulated, and protected Only joints are those made in special junction boxes, lamp fittings, and switches.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances yes 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 yes
 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 Secured to bulkheads and decks by means of brass clips or saddles - protected by conduit tubing where necessary



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
Cables are run in Conduit tubing

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *✓*

What special protection has been provided for the cables near boiler casings *Cables run in conduit*

What special protection has been provided for the cables in engine room *Protected by conduit or plating where necessary*

How are cables carried through beams *Through bushed holes* through bulkheads, &c. *through bushed holes or watertight glands*

How are cables carried through decks *Through watertight 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 *—*

If so, how are they protected *By Conduit tubing*

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 *at Switch 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 *Yes*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *No*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *Special gas tight fittings. Shining through hole in bulkhead*

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.

J.H. Kingston Electrical Engineers Date *13 July '22*

COMPASSES.

Distance between dynamo ~~on electric motors~~ and standard compass *208 feet*

Distance between dynamo ~~on electric motors~~ and steering compass *(for) 208 feet*

" " " " " " *(for) 52 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>.64</i>	Ampere	<i>(No Standard Compass light) 15 ins</i>	from standard compass	<i>50 ins</i>	from steering compass
A cable carrying	<i>.2</i>	Ampere	<i>50 ins</i>	from standard compass	<i>40 ins</i>	from steering compass
A cable carrying	<i>✓</i>	Ampere	<i>✓</i>	feet from standard compass	<i>✓</i>	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 *nil* degrees on *course* in the case of the standard compass and *nil* degrees on *course* in the case of the steering compass.

Fee *£16-0-0* Applied for *23/7/22* *S.D. Dunge-Mourish* Builder's Signature. Date *20th July 1922*

GENERAL REMARKS.

The Electric Light installation in this vessel was specially surveyed in course of fitting up on board is in accordance with Secretary's Letters and in general conformity with the Rules. Materials used and the workmanship are good & efficient. Trial of 6 hours at full load was carried out satisfactorily.

It is submitted that this vessel is eligible for THE RECORD. Elec. light. *Jas. C. Lard* Surveyor to Lloyd's Register of Shipping.

2m.11.10.—Transfer.

Committee's Minute FRI. JUL 28 1922 FRI. 12 JAN. 1923 FRI. 20 JAN. 1923 TUE MAR 16 1923



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.