

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 40546

Port of Glasgow. Date of First Survey 8.10.20 Date of Last Survey 8.11.20 No. of Visits 4
 No. in on the Iron or Steel S. S. Inveramption. Port belonging to London
 Reg. Book 49622 Built at Govan By whom Messrs Harland & Wolff Ltd. When built 1920.
 Owners The British Mexican Petroleum Co. Owners' Address
 Yard No. 6259 Electric Light Installation fitted by Messrs Harland & Wolff Limited. When fitted 1920.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 2.5 KW "Sunderland Forge" Dynamo 450 R.P.M. direct coupled to a vertical enclosed steam engine

Capacity of Dynamo 25 Amperes at 100 Volts, whether continuous or alternating current continuous.
 Where is Dynamo fixed Engine Room Whether single or double wire system is used double
 Position of Main Switch Board Engine Room having switches to groups A, B & C of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each none

If fuses are fitted on main switch board to the cables of main circuit Yes. and on each auxiliary Fuse 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. tinned Copper 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 38 arranged in the following groups:—

A <u>Cargo</u>	<u>6</u> lights each of <u>16</u>	candle power requiring a total current of <u>3.3</u>	Amperes
B <u>Navigation</u>	<u>20</u> lights each of <u>5-32CP 6-16CP 2-5CP</u>	candle power requiring a total current of <u>12.9</u>	Amperes
C <u>Engine Room</u>	<u>12</u> lights each of <u>2-30W 1-32CP 9-16CP</u>	candle power requiring a total current of <u>6.7</u>	Amperes
D	lights each of	candle power requiring a total current of	Amperes
E	lights each of	candle power requiring a total current of	Amperes
1	Mast head light with 1 lamps each of <u>32</u>	candle power requiring a total current of <u>1.1</u>	Amperes
2	Side light with 1 lamps each of	candle power requiring a total current of <u>2.2</u>	Amperes
2	64. Cargo lights of <u>16</u>	candle power, whether incandescent or are 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 Captain's Room & Bridge.

DESCRIPTION OF CABLES.

Main cable carrying <u>22.9</u> Amperes, comprised of <u>19</u> wires, each <u>20</u> S.W.G. diameter, <u>.019</u> square inches total sectional area
Branch cables carrying <u>12.9</u> Amperes, comprised of <u>3</u> wires, each <u>18</u> S.W.G. diameter, <u>.00532</u> square inches total sectional area
Branch cables carrying <u>8.1</u> Amperes, comprised of <u>3</u> wires, each <u>20</u> S.W.G. diameter, <u>.003</u> square inches total sectional area
Leads to lamps carrying <u>3.3</u> Amperes, comprised of <u>1</u> wires, each <u>14</u> S.W.G. diameter, <u>.00246</u> square inches total sectional area
Cargo light cables carrying <u>3.3</u> Amperes, comprised of <u>3</u> wires, each <u>20</u> S.W.G. diameter, <u>.003</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cable of 2500 megohm grade classed C.M.A.
Insulated with pure vulcanized rubber protected with lead covering in accommodation. Cables in Engine Room protected with steel armouring & braiding.
 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 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 Lead covered exposed in accommodation slipped to bulkheads and armoured & braided in Engine Room lead covered cable run in galvanized steel tubing where exposed to moisture.

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 in galvanized steel tubing

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Armoured & braided exposed

What special protection has been provided for the cables near boiler casings Lead covered in galvanized steel tubing

What special protection has been provided for the cables in engine room Armoured & braided exposed

How are cables carried through beams Beams Bushed with lead. through bulkheads, &c. tubing carried through bulkhead with backnut, washer & grommet.

How are cables carried through decks In bushed galvanized iron 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 Permanent to socket How fixed Lead covered cable run in galvanized steel tubing to socket

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 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 Gas tight fittings

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 2500 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.

FOR HARTLINE & WOLFE LTD. John Dickinson Electrical Engineers Date Nov. 13th 1920.

COMPASSES.

Distance between dynamo or electric motors and standard compass

Distance between dynamo or electric motors and steering compass 80 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>.2</u>	—	<u>3</u>	—
<u>1.1</u>	—	<u>14</u>	—
<u>8.1</u>	—	<u>4</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 nil degrees on all the course in the case of the standard compass and nil degrees on all the course in the case of the steering compass.

FOR HARTLINE & WOLFE LTD. John Dickinson Builder's Signature. Date

GENERAL REMARKS.

This installation has been fitted on board under special survey. Tested under full working conditions found satisfactory.

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

Recd 26/11/20

J. Stanley Rankin
Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 23 NOV 1920

Elec. Lights



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

J.C. 22/11/20

60,817.—Transfer.