

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 12045

Port of *Rotterdam* Date of First Survey *13 Aug* Date of Last Survey *5 Feb* No. of Visits *4*
 No. in Reg. Book on the *Steel* *S/S. RADIX* Port belonging to *London*
 Built at *Gunderland* By whom *W. Douglas-Penn Ltd* When built *1919*
 Owners *Anglo-Persian Petroleum Co* Owners' Address *London*
 Yard No. Electric Light Installation fitted by *Henry Sunderland Page Ltd* When fitted *1921*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Direct coupled steam driven dynamo's compound wound
 Capacity of Dynamo *5 K.W. 45* Amperes at *110* Volts, whether continuous or alternating current *Continuous*
 Where is Dynamo fixed *in 126th Engine Room* Whether single or double wire system is used *Double*
 Position of Main Switch Board *near Dynamo* having switches to groups *Five* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *In chart room with switches controlling foremast, mainmast, port, starboard, stern, compass, & telegraph lights also Morse Lamp*
 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
 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 *234 at 16th* arranged in the following groups :-
 A *hangar in Salon* 60 lights each of *16* candle power requiring a total current of *33.60* Amperes
 B *Forward & Aft Ships* 40 lights each of *"* candle power requiring a total current of *39.20* Amperes
 C *Engineers & Off.* 62 lights each of *"* candle power requiring a total current of *34.72* Amperes
 D *Engine & St. rooms* 42 lights each of *"* candle power requiring a total current of *23.52* Amperes
 E *Wireless* - lights each of - candle power requiring a total current of - Amperes
 2 Mast head lights with 1 lamp each of *32* candle power requiring a total current of *2.24* Amperes
 2 Side lights with 1 lamp each of *32* candle power requiring a total current of *2.24* Amperes
 7 Cargo lights of *6 - 16* 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 *Wheel house*

DESCRIPTION OF CABLES.

Main cable carrying *125* Amperes, comprised of *19* wires, each *.101* S.W.G. diameter, *.15* square inches total sectional area
 Branch cables carrying *34* Amperes, comprised of *7* wires, each *.064* S.W.G. diameter, *.022* square inches total sectional area
 Branch cables carrying *30* Amperes, comprised of *7* wires, each *.044* S.W.G. diameter, *.01* square inches total sectional area
 Leads to lamps carrying *.56* Amperes, comprised of *3* wires, each *.029* S.W.G. diameter, *.002* square inches total sectional area
 Cargo light cables carrying *3.36* Amperes, comprised of *3* wires, each *.029* S.W.G. diameter, *.002* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Mains: - *Pure Shell: IR. tapes & sheathings then lead covered & raw iron steel conduit*
 Machinery Spaces: - *" " " " then " " & armoured*
 Accommodation: - *" " " " then " "*
 Joints in cables, how made, insulated, and protected *home made.*

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 *home made.*
 How are the cables led through the ship, and how protected *Lead covered cables in steel conduit*

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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 *Steel tubes.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Armoured - lead covered*

What special protection has been provided for the cables near boiler casings *Armoured - lead covered*

What special protection has been provided for the cables in engine room

How are cables carried through beams *Tube bushes* through bulkheads, &c. *W.T. 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 *Armoured and lead covered*

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 *House down connection*

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 *airtight glass bowls*

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 FORGE & ENGINEERING CO. LTD.

[Signature] Director, Electrical Engineers Date 1st December 1921

COMPASSES.

Distance between dynamo or electric motors and standard compass *255 feet*

Distance between dynamo or electric motors and steering compass *253 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>8.5</i>	Amperes	<i>8</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying	<i>.56</i>	Amperes	<i>6</i>	feet from standard compass	<i>led into</i>	feet from steering compass
A cable carrying		Amperes	<i>led into</i>	feet from standard compass	<i>6</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 *every* course in the case of the standard compass and *nil* degrees on *every* course in the case of the steering compass.

[Signature] Builder's Signature. Date 6th December 1921

GENERAL REMARKS.

The installation has been fitted in accordance with the Society's Rules, has run satisfactorily during a trial and meets in my opinion the approval of the Committee

It is submitted that this vessel is eligible for
£204.00
 THE RECORD. Elec. Reg. *[Signature]*
 20/12/21 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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