

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 81212.

Port of Liverpool Date of First Survey Mar 13 Date of Last Survey Sept 3 No. of Visits 15  
 No. in Reg. Book 25734 on the Iron or Steel s/s Tolsella in Veraston Port belonging to London  
 Built at West Hartlepool By whom H. Gray & Co. Ltd. When built 1904/10  
 Owners Anglo-Siam Petroleum Co. Ltd. Owners' Address   
 Yard No.  Electric Light Installation fitted by J. W. Jefferson, Ltd. When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Single reciprocating steam engine direct coupled to  
Compound wound D.C. Dynamo.  
 Capacity of Dynamo 50 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Starb side Engine room Whether single or double wire system is used double  
 Position of Main Switch Board Starb side Engine room moving switches to groups Four D.P. of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each (1) Mounted in Wheelhouse for navigation control 5 switches

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 123 arranged in the following groups:—

A	<u>20</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>10</u>	Amperes
B	<u>12</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>6</u>	Amperes
C	<u>17</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>8.5</u>	Amperes
D	<u>30</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>15</u>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
	<u>2</u>	Mast head light with	<u>2</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u> Amperes
	<u>2</u>	Side light with	<u>2</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u> Amperes
	<u>40</u>	Cargo lights of	<u>16</u>	candle power, whether incandescent or arc lights	<u>Incandescent</u>	

If arc lights, what protection is provided against fire, sparks, &c. No arc lights

Where are the switches controlling the masthead and side lights placed Wheel House

## DESCRIPTION OF CABLES.

Main cable carrying	<u>60</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>16</u>	S.W.G. diameter,	<u>.06</u>	square inches total sectional area
Branch cables carrying	<u>22.5</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>16</u>	S.W.G. diameter,	<u>.0225</u>	square inches total sectional area
Branch cables carrying	<u>7</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>2</u>	Amperes, comprised of	<u>3</u>	wires, each	<u>22</u>	S.W.G. diameter,	<u>.002</u>	square inches total sectional area
Cargo light cables carrying	<u>4</u>	Amperes, comprised of	<u>110</u>	wires, each	<u>38</u>	S.W.G. diameter,	<u>.006</u>	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanised india rubber taped & braided lead covered braided  
& armour braided

Joints in cables, how made, insulated, and protected

No joints (all looped in)

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

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 In galvanised steel tube & lead  
armour braided cable



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 *Galvanised tubing*

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

What special protection has been provided for the cables near boiler casings *There are none*

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

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

How are cables carried through decks *Deck pipes of galvanised steel tube*

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 *Galvanised steel tube*

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 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 *There are none*

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 AND ON BEHALF OF **T.W. JEFFERSON LIMITED.**

COMPASSES.

Distance between *dynamo or electric motors and standard compass*

Distance between dynamo or electric motors and steering compass

Electrical Engineers Date

*150 feet*  
*150 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>2</i>	<i>10</i>	<i>8</i>	
A cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying	Amperes	feet from standard compass	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 of this vessel has been fitted under survey and in accordance with the Rules. It has been tried under full working conditions and found satisfactory. It is eligible for record in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD. Elec Light. H. G. Oxford.*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *LIVERPOOL*  
*Electric Light*