

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 79828.

Port of Liverpool Date of First Survey July 17 Date of Last Survey Sept 1 July 17 No. of Visits 6  
 No. in Reg. Book on the Iron or Steel Screw tug 'St. Hilary' Port belonging to London  
 Built at Lytham By whom Lytham S.B. & Eng. Co. When built 1919  
 Owners Admiralty Owners' Address ✓  
 Yard No. 577 Electric Light Installation fitted by Messrs J.L. Scott. Ltd. When fitted 1919

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

De Laval 20 B.H.P. steam turbine coupled to 13 K.W. direct current generator, by Greenwood & Batley, Leeds.

Capacity of Dynamo 125 Amperes at 105 Volts, whether continuous ~~or~~ alternating current Yes ✓  
 Where is Dynamo fixed Engine Room Whether single or double wire system is used Yes ✓  
 Position of Main Switch Board Engine Room having switches to groups two ✓ 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 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-oxidisable metal Yes (A.P. std.) ✓ 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. A.P. std. ✓

Total number of lights provided for 92 lamps arranged in the following groups :-

A <u>Engine &amp; boiler room</u>	<u>30 + 16</u> lights each of	<u>167</u> 32	candle power requiring a total current of <u>19.5 + 8.5 = 28</u> Amperes
B <u>Forward</u>	<u>20</u> lights each of	<u>169</u> 32	candle power requiring a total current of <u>4.5</u> Amperes
C <u>Navigation</u>	<u>22</u> lights each of	<u>6, 16 &amp; 32</u>	candle power requiring a total current of <u>5.0</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
<u>2</u>	<u>Mast head light</u> with <u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of <u>2.5</u> Amperes
<u>2</u>	<u>Side light</u> with <u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of <u>2.5</u> Amperes
	<u>16</u> Cargo lights of <u>each, 32</u>		candle power, whether incandescent or arc 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 Chart Room

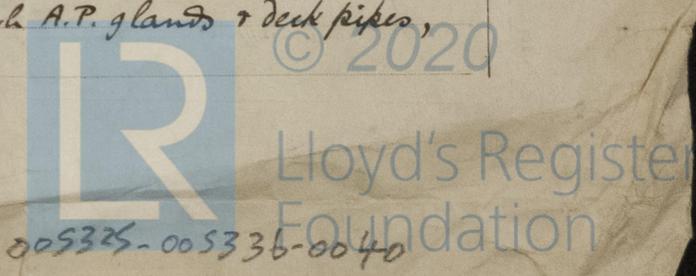
**DESCRIPTION OF CABLES.**

Main cable carrying 113 Amperes, comprised of 19 wires, each 14 ✓ S.W.G. diameter, .094 square inches total sectional area  
 Branch cables carrying 70 Amperes, comprised of 19 wires, each 17 ✓ S.W.G. diameter, .046 square inches total sectional area  
 Branch cables carrying 34 Amperes, comprised of 7 wires, each 18 ✓ S.W.G. diameter, .0125 square inches total sectional area  
 Leads to lamps carrying 9.8 Amperes, comprised of 1 wires, each 17 ✓ S.W.G. diameter, .0025 square inches total sectional area  
 Cargo light cables carrying 20 Amperes, comprised of 3 wires, each 18 ✓ S.W.G. diameter, .0053 square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

All A.P. standard. ✓

Joints in cables, how made, insulated, and protected None ✓  
 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 perforated steel trays, through A.P. glands & deck pipes, cables lead covered throughout. ✓



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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 cable lead covered, A.P. standard. ✓  
 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 ✓  
 What special protection has been provided for the cables in engine room ✓  
 How are cables carried through beams brushed holes ✓ through bulkheads, &c. A.P. bulkhead glands. ✓  
 How are cables carried through decks A.P. deck pipes ✓  
 Are any cables run through coal bunkers Yes or cargo spaces ✓ or spaces which may be used for carrying cargo, stores, or baggage Yes ✓  
 If so, how are they protected double perforated steel trays ✓  
 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~~ permanently fixed to plug box ✓ How fixed flexible from A.P. 394 A. box. ✓  
 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 ✓  
 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 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.

R. H. Taylor

Electrical Engineers

Date Nov 10<sup>th</sup> 1919

COMPASSES.

Distance between dynamo or electric motors and standard compass 93 ft  
 Distance between dynamo or electric motors and steering compass 90 ft  
 The nearest cables to the compasses are as follows:—  

A cable carrying	<u>.2</u>	Amperes	<u>1'</u>	feet from standard compass	<u>1'</u>	feet from steering compass
A cable carrying	<u>.5</u>	Amperes	<u>6'</u>	feet from standard compass	<u>5'</u>	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 Yes  
 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 above electric light installation has been fitted on board the above vessel in an efficient manner, & all tested with satisfactory results.

The vessel is now eligible for record of 'Electric Light fitted.'

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

Blue light 13/11/19

S. Townend.

Surveyor to Lloyd's Register of Shipping.

Im. 4. 16.—Transfer.

Committee's Minute

LIVERPOOL

Electric light WBR



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.