

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27609

Port of Sunderland Date of First Survey 17 Aug Date of Last Survey 3 Sept 19 No. of Visits 3  
 No. in Reg. Book on the Iron or Steel "COMERIC" Port belonging to Glasgow  
 Built at Sunderland By whom Messrs W<sup>m</sup> Duxford Sons. When built 1919  
 Owners Bank Line Ltd (A. Weir & Co.) Owners' Address ✓  
 Yard No. 537 Electric Light Installation fitted by Messrs The Sunderland Forge Coy. Ltd When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One combined plant - consisting of single cylinder open type vertical engine 7" x 5" 300 r.p.m. 100 lbs steam. coupled to compound wound multipolar dynamo. both by S.F. & Co.  
 Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Engine Rm. Bot<sup>m</sup> platform. Std. side. Whether single or double wire system is used double  
 Position of Main Switch Board close to dynamo having switches to groups five of lights, &c., as ✓  
 Positions of auxiliary switch boards and numbers of switches on each in Chart Room - with eight switches controlling Navigation lights, compasses, telegraphs & Morse lights.

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 100 per cent over the normal current  
 Are all fuses fitted in easily accessible positions Yes Are the fuses of standard dimensions No 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 = 144 @ 16cp. arranged in the following groups :-

A Accom	= 63 lights each of 16 cp.	candle power requiring a total current of 35.3	Amperes
B Cargo	= 30 lights each of "	candle power requiring a total current of 16.8	Amperes
C Navigation	= 23 lights each of "	candle power requiring a total current of 12.9	Amperes
D E.H.R.	= 28 lights each of "	candle power requiring a total current of 15.7	Amperes
E Wireless	= lights each of -	candle power requiring a total current of 25	Amperes
2 Mast head light	with 1 lamps each of 32	candle power requiring a total current of 2.24	Amperes
2 Side light	with 1 lamps each of 32	candle power requiring a total current of 2.24	Amperes
5 Cargo lights	of six light 16cp.	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 in Chart Room.

## DESCRIPTION OF CABLES.

Main cable carrying	<u>100</u> Amperes, comprised of <u>19</u> wires, each <u>14</u> S.W.G. diameter, <u>.094</u> square inches total sectional area
Branch cables carrying	<u>35.3</u> Amperes, comprised of <u>7</u> wires, each <u>16</u> S.W.G. diameter, <u>.022</u> square inches total sectional area
Branch cables carrying	<u>12.9</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>2.5</u> Amperes, comprised of <u>7</u> wires, each <u>25</u> S.W.G. diameter, <u>.0022</u> square inches total sectional area
Cargo light cables carrying	<u>3.5</u> Amperes, comprised of <u>70</u> wires, each <u>36</u> S.W.G. diameter, <u>.0032</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

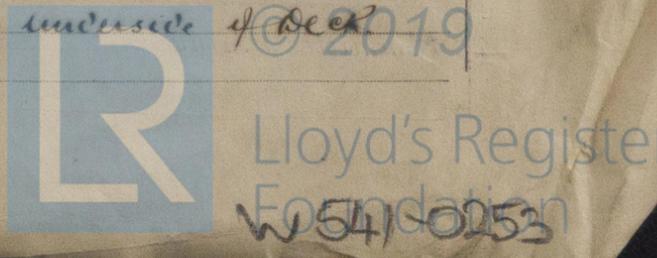
Main Mast Spaces etc. - Pure V.G.R. - taped - vulcanized then Armoured - Braided.  
Cabin Accom. ditto ditto Head Covered.

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 A+B cable clipped to inside of Deck



**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 *A-B cable or V.G.R. run in Iron pipe.*

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

What special protection has been provided for the cables near boiler casings *do. do.*

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

How are cables carried through beams *holes lashed with fibre* through bulkheads, &c. *W. T. glands*

How are cables carried through decks *W. T. 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 *Yes*

If so, how are they protected *Armoured & Braided*

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 *—*

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 \_\_\_\_\_ 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.**

Electrical Engineers

Date *6<sup>th</sup> Sept 1919*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *about 124 feet*

Distance between dynamo or electric motors and steering compass *118 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>12.9</i>	Amperes	<i>12</i>	feet from standard compass	<i>10</i>	feet from steering compass
A cable carrying	<i>.56</i>	Amperes	<i>led into</i>	feet from standard compass	<i>8</i>	feet from steering compass
A cable carrying	<i>.56</i>	Amperes	<i>8</i>	feet from standard compass	<i>led into</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 *AM* course in the case of the standard compass and *nil* degrees on *AM* course in the case of the steering compass.

**WILLIAM DOXIGER & SONS, Limited.** Builder's Signature. Date *9<sup>th</sup> Sept 1919*

**GENERAL REMARKS.**

*This installation appears to have been fitted in a satisfactory manner and in accordance with the rules.*

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

*J.W.D. 16/9/19.*

*W. Stuke*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

ERI. 19 SEP. 1919 TUE. NOV. 4 1919

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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