

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 26839

Port of SUNDERLAND. Date of First Survey 26 Oct. 16 Date of Last Survey 2 Nov. 17 No. of Visits 3  
 No. in on the Iron or Steel "Somme" Port belonging to London  
 Reg. Book 1608 Built at Sunderland By whom Amstein & Son Ltd, S.P. When built 1916  
 Owners Normandy Ship Co Ltd Owners' Address London  
 Yard No. 247 Electric Light Installation fitted by THE NORTHERN ELECTRICAL ENGINEERING AND PLATING CO LTD When fitted 1916  
BOROUGH RD, NORTH SHIELDS.

### DESCRIPTION OF DYNAMO, ENGINE, ETC.

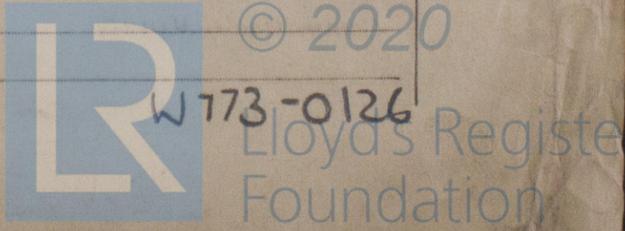
"Castle" Dynamo, Compound wound  
 "Robert" Engine 1 1/2 x 6  
 Capacity of Dynamo 90 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Lower part of Engine Room Whether single or double wire system is used double  
 Position of Main Switch Board alongside Dynamo having switches to groups 4 Main Sws of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each On average of two lights on each branch switch & each branch board fixed as near as possible to each respective light  
 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 25 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, porcelain & slate  
 Total number of lights provided for 104 arranged in the following groups :-  
 A { 21 lights each of 16 candle power requiring a total current of Amperes  
   4 lights each of 32 candle power requiring a total current of Amperes  
 B 36 lights each of 16 candle power requiring a total current of Amperes  
 C 21 lights each of 16 candle power requiring a total current of Amperes  
 D 22 lights each of 16 candle power requiring a total current of Amperes  
 E lights each of candle power requiring a total current of Amperes  
2 Mast head lights with 1 lamps each of 32 candle power requiring a total current of Amperes  
2 Side lights with 1 lamps each of 32 candle power requiring a total current of Amperes  
8 Cargo lights of 6-16 candle power, whether incandescent or arc lights Incandescent  
 If arc lights, what protection is provided against fire, sparks, &c. No Arcs.  
 Where are the switches controlling the masthead and side lights placed Wheel House

### DESCRIPTION OF CABLES.

Main cable carrying 60 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .060 square inches total sectional area  
 Branch cable carrying 16-24 " " " 4 " " 16 " " .022 square inches total sectional area  
 Branch cables carrying 20-10 Amperes, comprised of 4 wires, each 16 S.W.G. diameter, .022 square inches total sectional area  
 Branch cables carrying 12-32 Amperes, comprised of 4 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area  
 Leads to lamps carrying .56 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0075 square inches total sectional area  
 Cargo light cables carrying 11-76 Amperes, comprised of 4 wires, each 20 S.W.G. diameter, .0072 square inches total sectional area

### DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure Rubber, Vulcanized Rubber, Taped & Braided  
Engine Room & Deck:- Lead covered & armoured & in Galv Paper  
Accommodation:- Lead covered.  
 Joints in cables, how made, insulated, and protected No joints  
 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 Iron Pipes.



**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 & Amid Pipes*

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

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

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

How are cables carried through beams *- do -* through bulkheads, &c.

How are cables carried through decks *Iron Pipes ✓*

Are any cables run through coal bunkers *Yes* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *No*

If so, how are they protected *Iron Pipes*

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 *Permanently* How fixed *In Iron Pipes*

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 *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.

*Thomas Harrison* Electrical Engineers Date *Apr. 27 1917*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *100 ft*

Distance between dynamo or electric motors and steering compass *100 ft*

The nearest cables to the compasses are as follows:—

|   |                                       |                                       |
|---|---------------------------------------|---------------------------------------|
| A cable carrying <i>28</i> Amperes <i>8 g.p. lamp for compass light</i> | <i>5-0</i> feet from standard compass | <i>5-0</i> feet from steering compass |
| 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 *Yes*

The maximum deviation due to electric currents, etc., was found to be *Nil* degrees on *all* course in the case of the standard compass and *Nil* degrees on *all* course in the case of the steering compass.

*FOR E. PAULIN & SONS LIMITED.*  
*Managing Director* Builder's Signature. Date *Apr. 27 1917*

**GENERAL REMARKS.**

*The above installation has been fitted in accordance with the requirements, it has been tried under full power with satisfactory results. In my opinion this vessel is eligible for the record of Elec. Light.*

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

*Charles Cooper* Surveyor to Lloyd's Register of British and Foreign Shipping. *-2 MAY 1917*

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



Im. 9. 14. - Transfer.