

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 28188

Port of Sunderland Date of First Survey Oct 5 '21 Date of Last Survey Nov 1 '21 No. of Visits 5  
 No. in Reg. Book 29951 on the Iron or Steel S.S. SANDOWN CASTLE Port belonging to London  
 Built at Sunderland By whom Short Brothers Ltd When built 1921  
 Owners Union Castle Mail S.S. Co. Ltd. Owners' Address 324 Finchurch Street London E.C.3.  
 Yard No. 407 Electric Light Installation fitted by Sunderland Forge & Engineering Co. Ltd When fitted 1921

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One combined plant consisting of single cylinder vertical steam engine with steam 370 revs, coupled to compound wound multipolar dynamo.

Capacity of Dynamo 150 Amperes at 150 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed In engine room Whether single or double wire system is used double

Position of Main Switch Board Close to Dynamo having switches to groups Eight 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 compasses & signal 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 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 263 216% arranged in the following groups:—

| Group | Description                         | Number of Lights | Candle Power | Amperes |
|-------|-------------------------------------|------------------|--------------|---------|
| A     | Saloon & Engine                     | 16               | 12.0         | Amperes |
| B     | Off Accoom                          | 28               | 49.2         | Amperes |
| C     | Large Masthead                      | 48               | 16.8         | Amperes |
| D     | Large Mast                          | 34               | 28.2         | Amperes |
| E     | 42 Mast Lights                      | -                | 32.4         | Amperes |
| F     | Engine Room                         | 31               | -            | Amperes |
| G     | Winches                             | -                | 18.6         | Amperes |
| H     | 2 Mast head lights with 1 lamp each | 32               | 157.8        | Amperes |
| I     | 2 Side lights with 1 lamp each      | 32               | 2.4          | Amperes |
| J     | 15 Cargo lights of 6 - 16           | 16               | 2.4          | Amperes |

If arc lights, what protection is provided against fire, sparks, &c. None fitted

Where are the switches controlling the masthead and side lights placed In chart room

## DESCRIPTION OF CABLES.

Main cable carrying 150 Amperes, comprised of 37 wires, each .072 S.W.G. diameter, .15 square inches total sectional area  
 Branch cables carrying 27 Amperes, comprised of 7 wires, each .044 S.W.G. diameter, .01 square inches total sectional area  
 Branch cables carrying 16.2 Amperes, comprised of 7 wires, each .036 S.W.G. diameter, .007 square inches total sectional area  
 Leads to lamps carrying .6 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, .002 square inches total sectional area  
 Cargo light cables carrying 3.6 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, .002 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main Pure Gut: S.R. Tapes & Sulcanet & run in Iron pipe  
 Accommodation " " " " " " " " " " " "  
 Machinery Spaces " " " " " " " " " " " "  
 Joints in cables, how made, insulated, and protected None 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 None made

How are the cables led through the ship, and how protected Cable run in Iron pipe

**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 & Armoured* ✓  
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Yes* ✓  
 What special protection has been provided for the cables near boiler casings *Yes* ✓  
 What special protection has been provided for the cables in engine room *Yes* ✓  
 How are cables carried through beams *Holes bushed with fibre through bulkheads, &c. W/T. Slantd.* ✓  
 How are cables carried through decks *W/T Deck Joles.* ✓  
 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 *Lead covered & Armoured.* ✓  
 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 *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.  
 p.pro THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers Date 15th December 1921.  
 Director.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *150 feet*  
 Distance between dynamo or electric motors and steering compass *145 feet*  
 The nearest cables to the compasses are as follows:—  
 A cable carrying *12.0* Amperes *10* feet from standard compass *5* feet from steering compass  
 A cable carrying *.6* Amperes *6* feet from standard compass *let into* feet from steering compass  
 A cable carrying *.6* Amperes *let into* feet from standard compass *6* 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 *no* degrees on *any* course in the case of the *standard compass and* *no* degrees on *any* course in the case of the steering compass. *R. Wilson 27/12/21*

FOR SHORT BROTHERS, LTD. Builder's Signature. Date 21st December 1921  
*Ernest Short*

**GENERAL REMARKS.**

*SECRETARY*  
 This electric light installation has been fitted in a satisfactory manner and in accordance with the rules. It is submitted that this vessel is eligible for THE RECORD. The light  
*Fu £ 15* Applied for *31/10/21* Paid *3/10/21*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 719.—Transfer.