

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7669

Port of Belfast Date of First Survey April 8, 1916 Date of Last Survey May 22<sup>nd</sup> No. of Visits 13  
 No. in 7. Book on the Iron or Steel H.M.S. Petunia Port belonging to —  
 Built at Belfast By whom Wickman Clark & Coys Ltd When built 1916  
 Owners The Admiralty Owners' Address —  
 Ord No. 367 Electric Light Installation fitted by Sunderland Forge Coys Ltd When fitted 1916

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

2. Direct-coupled generating sets consisting of compound enclosed high speed steam engines coupled to compound-wound, multipolar dynamos.  
 Capacity of Dynamos each 250 Amperes at 105 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed In Engine room Whether single or double wire system is used double wiring  
 Position of Main Switch Board Do Do having switches to groups 7 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each ① Chartroom ② Wireless Telegraph Office  
③ Crew Space For ④ Engine room ⑤ Engine room ⑥ Engine room ⑦ Officers passage aft  
 All standard Admiralty pattern watertight Fuse boxes  
 If cut outs 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits yes  
 Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of 100 per cent over the normal current  
 Are all cut outs fitted in easily accessible positions yes Are the fuses of standard dimensions yes If wire fuses are used Standard Admiralty Type fuses used.  
 Are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit  
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 207 @ 16 1/2 arranged in the following groups :-

A	19	lights each of	16	candle power requiring a total current of	11.4	Amperes
B	130	lights each of	16	candle power requiring a total current of	91.8	Amperes
C	4	lights each of	16	candle power requiring a total current of	12.4	Amperes
D	54	lights each of	16	candle power requiring a total current of	66.4	Amperes
E	2	20" search lights each of	—	candle power requiring a total current of	160.0	Amperes
F	1	Mine Sweep circuit	—		10.0	
G	2	Must head light with 1 lamp each of	16	candle power requiring a total current of	1.2	Amperes
H	2	Side light with 1 lamp each of	(Port) 16 (Star) 32	" " candle power requiring a total current of	1.8	Amperes
I	2	Cargo lights of 8 lamps of	50	candle power, whether incandescent or arc lights	Incandescent	

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 In Chartroom on Bridge.

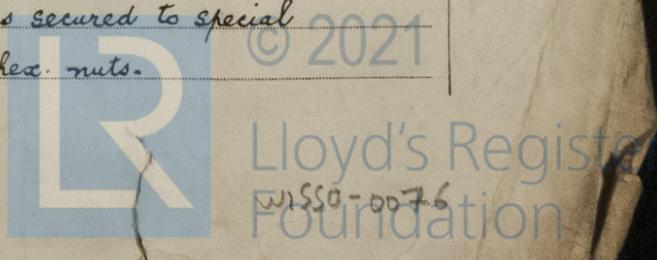
## DESCRIPTION OF CABLES.

Main cable carrying 250 Amperes, comprised of 37 wires, each 13 L.S.G. diameter, 0.25 square inches total sectional area  
 Branch cables carrying 91.8 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, 0.0937 square inches total sectional area  
 Branch cables carrying 66.4 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, 0.0937 square inches total sectional area  
 Leads to lamps carrying 2.4 Amperes, comprised of 1 wires, each 17 L.S.G. diameter, 0.00246 square inches total sectional area  
 Cargo light cables carrying 15 Amperes, comprised of 19 wires, each 22 L.S.G. diameter, 0.01148 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper conductor, insulated with pure and vulcanising India-Rubber, Taped, vulcanised together and lead-covered overall.  
 All to British Admiralty specification & tests and passed by Overseer at maker's works.  
 Joints in cables, how made, insulated, and protected No Joints

Are all the joints of cables thoroughly soldered, resin only having been used as a flux — 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 Lead-covered Admiralty Pattern cables secured to special dished steel cable plates by copper or brass clips and R. H. Brass screws & hex. nuts.



**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

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered

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 Lead Bushings fitted through bulkheads, &c. Watertight Brass Glands.

How are cables carried through decks Through Watertight Deck Tubes

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

If so, how are they protected Lead covered

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage Yes.

If so, how are the lamp fittings and cable terminals specially protected Strong Brass Guard & Glass Globe.

Where are the main switches and cut outs for these lights fitted In Engine Room.

If in the spaces, how are they specially protected —

Are any switches or cut outs fitted in bunkers no.

Cargo light cables, whether portable or permanently fixed Portable. How fixed Attached to Admiralty Pattern Watertight Brass Terminal Boxes

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 —

The installation is Yes supplied with <sup>two</sup> 2 voltmeters and also two an amperemeters fixed in Engine Room.

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas —

Are any switches, cut outs, 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 all Standard Admiralty Pattern Cable tested and passed by per cent. that of pure copper. Admiralty Overseer at makers works.

Insulation of cables is guaranteed to have a resistance of not less than — megohms per statute mile after 24 hours' immersion in seawater.

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.

H. Wright

Electrical Engineers

Date

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 106 feet

Distance between dynamo or electric motors and steering compass 100 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>0.6</u>	Amperes	<u>3</u>	feet from standard compass	<u>3</u>	feet from steering compass
A cable carrying	<u>10.2</u>	Amperes	<u>18</u>	feet from standard compass	<u>10</u>	feet from steering compass
A cable carrying	<u>—</u>	Amperes	<u>—</u>	feet from standard compass	<u>—</u>	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.

P. S. ...

Builder's Signature.

Date 25<sup>th</sup> May 1916

**GENERAL REMARKS.**

This installation has been fitted in accordance with the Admiralty Specifications, and is of good description throughout. It is generally over the Rule requirements except the short length of main cable from dynamo to main switchboard. The approved plans were sent with the report on H.M.S. ...

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REFORM FORM NO. 13. — 9th Ed.

