

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7906

Port of Belfast Date of First Survey Oct 26 - 18 Date of Last Survey Nov 26 No. of Visits 14
No. in Reg. Book on the Iron or Steel H. M. S. Spruance Port belonging to _____
Built at Belfast By whom Warkman Clark & Co. L^d Year built 1917
Owners The Admiralty Owners' Address _____
Yard No. 402 Electric Light Installation fitted by Sunderland Forge Co. L^d When fitted 1907

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two combined steam driven generating sets each consisting of enclosed high speed steam engine direct coupled to compound wound multipolar dynamo

Capacity of Dynamo 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-wire

Position of Main Switch Board in Engine Room having switches to groups 8 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

1. On Navigating Bridge 16 switches for navigating lights.

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 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 cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for		arranged in the following groups:—	
A	Equal to 24 lights each of 16 candle power requiring a total current of 14.4 Amperes		
B	" 9 " " " " " 58.8 "		
C	" 42 lights each of 16 candle power requiring a total current of 43.2 Amperes		
D	Searchlight Projector " " " " 10.0 "		
E	Radiators lights each of candle power requiring a total current of 48.0 Amperes		
F	Equal to 69 lbs. each of 16 candle power " " " " 41.4 "		
G	Wireless lights each of candle power requiring a total current of 40.0 Amperes		
H	" " " " 40.0 "		
2	Master head lights with 1 lamp each of 16 candle power requiring a total current of 1.2 Amperes		
2	Side lights with 1 lamp each of 32 $\frac{1}{2}$ of 16 candle power requiring a total current of 1.8 Amperes		
-	Cargo lights of - candle power, whether incandescent or arc lights -		

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed Navigating Bridge

DESCRIPTION OF CABLES.

Main cable carrying 250 Amperes, comprised of 37 wires, each 0.112" L.S.G. diameter, 0.350 square inches total sectional area
 Branch cables carrying 40 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, 0.0937 square inches total sectional area
 Branch cables carrying 10 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, 0.01246 square inches total sectional area
 Leads to lamps carrying 3.0 Amperes, comprised of 1 wires, each 17 L.S.G. diameter, 0.0024 square inches total sectional area
 Cargo light cables carrying - Amperes, comprised of - wires, each - L.S.G. diameter, - square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

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Cables insulated with pure and vulcanised india rubber taped and the whole vulcanised together braided and lead covered.

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 cables secured to perforated steel cable plates by brass saddles fastened with brass screws and 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 Lead covered

What special protection has been provided for the cables in engine room Lead covered

How are cables carried through beams Through holes bushed with lead through bulkheads, &c. Through heavy brass W.Y. glands.

How are cables carried through decks Through deck tubes and glands made watertight.

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

If so, how are they protected Lead covered and protected by iron plates where necessary

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 Glass well jars and strong brass guards

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 —

Cargo light cables, whether portable or permanently fixed None How fixed None

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 supplied with 2 voltmeter^s and 2 amperemeter^s 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 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 1000 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 GUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers

Date 23rd Jan. 1918

COMPASSES.

Distance between dynamo or electric motors and standard compass 84 feet

Distance between dynamo or electric motors and steering compass 85

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>15</u>	<u>6</u>	<u>8</u>	<u>8</u>
<u>0.3</u>	<u>3</u>	<u>3</u>	<u>3</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

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.

PRO WORKMAN, CLARK & CO., LIMITED.

Builder's Signature.

Date 25th January 1918

GENERAL REMARKS.

This installation is of good description and has been fitted in accordance with the Rules, and the Admiralty instructions.

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

30/1/18.

R. J. Devenille

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS MARGIN.