

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8049.

Port of Belfast Date of First Survey 17th Aug Date of Last Survey 8th October No. of Visits 8
 No. in on the Iron or Steel P.S. British Beacon Port belonging to London
 Reg. Book Built at Belfast By whom Norwegian Clark & Co. Ltd When built 1918
 Owners The Shipping Controller Owners' Address London
 Yard No. 425 Electric Light Installation fitted by Sunderland Forge & Co. Ltd When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Combined Generating Plants each consisting of open type single cylinder steam engine direct coupled to compound wound multipolar dynamo on combined bedplate.

Capacity of Dynamos each 100 Amperes at 100 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 In engine room having switches to groups five of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

1 Board in Wheelhouse for Navigation Lights - 9 Switches.

1 " In Engine Room - 8 "

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 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

Total number of lights provided for 160 arranged in the following groups:—

A	54	lights each of	16	candle power requiring a total current of	32.4	Amperes		
B	17	lights each of	16	candle power requiring a total current of	10.2	Amperes		
C	21	lights each of	16	candle power requiring a total current of	12.6	Amperes		
D	68	lights each of	16	candle power requiring a total current of	40.8	Amperes		
E	Wireless	lights each of		candle power requiring a total current of	30.0	Amperes		
	1	Mast head light with	1	lamps each of	32	candle power requiring a total current of	1.2	Amperes
	2	Side light with	1	lamps each of	32	candle power requiring a total current of	2.4	Amperes
	24	Cargo lights of	16	candle power, whether incandescent or arc lights	incandescent.			

If arc lights, what protection is provided against fire, sparks, &c. No arc lamps fitted.

Where are the switches controlling the masthead and side lights placed on Bridge.

DESCRIPTION OF CABLES.

Main cable carrying 100 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, 0.09372 square inches total sectional area

Branch cables carrying 32.4 Amperes, comprised of 19 wires, each 18 S.W.G. diameter, 0.03375 square inches total sectional area

Branch cables carrying 10.2 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, 0.0070 square inches total sectional area

Leads to lamps carrying 2.4 Amperes, comprised of 7 wires, each 25 S.W.G. diameter, 0.0021 square inches total sectional area

Cargo light cables carrying 4.8 Amperes, comprised of 114 wires, each 38 S.W.G. diameter, 0.00319 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper conductors insulated with pure and vulcanising indiarubber taped and the whole vulcanised together & finished as follows:— Mains in pipe - braided and compounded overall. In accommodation - lead-covered & braided overall. In engine room etc. - lead-covered armoured and braided overall.

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 ----- 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 and braided cables in accommodation secured with brass saddles. Mains under fore and aft gangway run in screwed galvanised watertight tubing.

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 and braided or run in screwed galvd. watertight iron tubing.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat **lead-covered armoured & braided**

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

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

How are cables carried through beams **through holes bushed with fibre through bulkheads, &c. through brass w.t. glands**

How are cables carried through decks **through deck tubes made watertight.**

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

If so, how are they protected **run in screwed galvanised iron pipe made watertight.**

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 **by glass well jar and strong brass guard.**

Where are the main switches and fuses for these lights fitted **in Engine Room.**

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 **To heavy brass terminals in cast iron boxes on deck.**

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 **in engine room.**

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 **Yes**

Are any switches, fuses, or joints of cables fitted in the pump room or companion **Yes.**

How are the lamps specially protected in places liable to the accumulation of vapour or gas **Lamps fitted outside such spaces with extra heavy bullseye glass to fitting shining through hole in roof of space.**

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.

P. PRO THE SUNDERLAND FORCE & ENGINEERING CO. LTD.

Electrical Engineers

Date **30th. Novr. 1918**

COMPASSES.

Distance between dynamo or electric motors and standard compass **232 feet.**

Distance between dynamo or electric motors and steering compass **230 feet.**

The nearest cables to the compasses are as follows:—

A cable carrying	10.2	Amperes	6	feet from standard compass	6	feet from steering compass
A cable carrying	0.2	Amperes	3	feet from standard compass	3	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.

PRO WORKMAN CLARK & CO. LIMITED

Builder's Signature.

Date **4th Decr. 1918**

GENERAL REMARKS.

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

It is submitted that

this vessel is eligible for

THE RECORD. Elec. light.

Committee's Minute

Surveyor to Lloyd's Register of Shipping.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.