

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 9021

Port of Belfast Date of First Survey Oct 30<sup>th</sup> Date of Last Survey Dec 14<sup>th</sup> No. of Visits 10  
 No. in Reg. Book Y.S.S. Port Brisbane on the Iron Steel Port Brisbane Part belonging to London  
 Built at Belfast By whom Workman Clark & Co Ltd When built 1923  
 Owners Commonwealth Dominion Line Ltd. Owners' Address London  
 Yard No. H62 Electric Light Installation fitted by Sunderland Forge When fitted 1923

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

2-26 K.W. Compound Wound multipolar dynamos direct coupled to Open type Steam Engines with governors on crank shaft.

Capacity of Dynamo 260 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed In Main Engine Room Whether single or double wire system is used double  
 Position of Main Switch Board In Main Engine Room having switches to groups 10 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each One in Wheelhouse - 11 switches.  
Two in Engine Room - 12 switches each.  
 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 409 arranged in the following groups:—

A Navig. & Salon	81 lights each of	16 & 3-32	candle power requiring a total current of	27.0	Amperes
F Wireless				30.0	
B Engrs. & Crew	123 lights each of	16 & 4-32	candle power requiring a total current of	40.5	Amperes
G Lathe Motor				42.0	
C Cargo Ford.	45 lights each of	16	candle power requiring a total current of	24.75	Amperes
H Vent. Fan				40.0	
D Cargo All	40 lights each of	16	candle power requiring a total current of	22.0	Amperes
I Vent. Fan				40.0	
E Engine & Boiler Rms.	117 lights each of	16	candle power requiring a total current of	45.14	Amperes
J Vent. Fan				40.0	
2 Mast head light with	1 lamps each of	32	candle power requiring a total current of each	1.2	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of each	1.2	Amperes
18		each 5 lights @ 16			
4	Cargo lights of	" 2000	candle power, whether incandescent or arc lights		Incandescent.

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

Where are the switches controlling the masthead and side lights placed In Wheelhouse.

**DESCRIPTION OF CABLES.**

Main cable carrying 260 Amperes, comprised of 61 wires, each .093 S.W.G. diameter, .4 square inches total sectional area  
 Branch cables carrying 40 Amperes, comprised of 19 wires, each .064 S.W.G. diameter, .06 square inches total sectional area  
 Branch cables carrying 30 Amperes, comprised of 7 wires, each .064 S.W.G. diameter, .02 square inches total sectional area  
 Leads to lamps carrying 0.9 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, .002 square inches total sectional area  
 Cargo light cables carrying 3 Amperes, comprised of 72 wires, each .0076 S.W.G. diameter, .003 square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

Tinned copper conductors insulated with pure & vulcanized india-rubber, taped, braided, & the whole vulcanized together & finished. In Accommodation: Lead Covered & braided  
In Machinery spaces: Lead Covered, Armoured, & Braided.

Joints in cables, how made, insulated, and protected None fitted.

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 Main cables, lead covered, armoured & braided, run along Upper Deck & enclosed in Wood casing.



W33-0085

**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 & Braided

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 Lead Covered Armoured & Braided

What special protection has been provided for the cables in engine room Lead Covered Armoured & Braided

How are cables carried through beams Holes bushed with fibre through bulkheads, &c. Water-tight Packing Glands

How are cables carried through decks In Deck Tubes made W.T.

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

If so, how are they protected —

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

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 W.T. Connection 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 —

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.

Thos. Thompson Electrical Engineers Date 20 DEC '23

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 120 ft.

Distance between dynamo or electric motors and steering compass 116 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>6</u>	Amperes	<u>8</u>	feet from standard compass	<u>4</u>	feet from steering compass
A cable carrying	<u>2</u>	Amperes	<u>2</u>	feet from standard compass	<u>2</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 to degrees on all course in the case of the standard compass and to degrees on all course in the case of the steering compass.

W. H. ... Builder's Signature. Date The 1st/23

**GENERAL REMARKS.**

This installation is well fitted & ran satisfactorily on trial under full load.

See page 1 of Int. Mch.

Blacklight  
W. H. ...  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

