

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8767

Port of Belfast. Date of First Survey 6th Mar 1922 Date of Last Survey 20th June 1922 No. of Visits Fifteen  
 No. in Reg. Book on the Iron or Steel Trim 3/8 "DIOGENES" Port belonging to Abraham  
 Built at Belfast By whom Harland & Wolff Ltd. When built 1922  
 Owners Geo Thompson & Co. Ltd. Owners' Address \_\_\_\_\_  
 Yard No. 576 Electric Light Installation fitted by Harland and Wolff, Ltd. When fitted 1922

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*For use in port :- 1. 50 kW Turbo Generator, set (ex admiralty) fitted 10.48 See Log report 117339.*

Two Main Dynamos, each 150 kW, driven by a steam turbine, giving an output of 601 Amps at 220 volts when running at 750 R.P.M. One Emergency Diesel driven dynamo 75 kW, giving an output of 340 Amps at 220 volts running at 1000 R.P.M.

Capacity of 2 Dynamos (Main) 1962 Amperes at 220 Volts, whether continuous or alternating current continuous  
 (Emergency) 341

Where is Dynamo fixed Dynamo Platform Port side of Engine casing Whether single or double wire system is used double

Position of Main Switch Board Dynamo Platform having switches to groups A B C D E F G H I J K L M N O P of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each One Board containing 14 switches in Chart House

One Board containing 22 switches in Port Passage Forward Bridge Deck

One Board containing 8 switches in Star Passage Aft Bridge Deck

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 1225 arranged in the following groups :-

A	Passenger Port	248	lights each of	30 watts	candle power	requiring a total current of	32	Amperes
B	Passenger Starboard	182	lights each of	30 watts	candle power	requiring a total current of	25	Amperes
C	Service	504	lights each of	30 watts 16 C.P.	candle power	requiring a total current of	70	Amperes
D	Emergency	95	lights each of	30 watts	candle power	requiring a total current of	12.5	Amperes
E	Cargo	100	lights each of	16 } 2000 }	candle power	requiring a total current of	50	Amperes
	2 Mast head lights with	2	lamps each of	32	candle power	requiring a total current of	1.2	Amperes
	2 Side lights with	2	lamps each of	32	candle power	requiring a total current of	1.2	Amperes
	12 } 4 } Cargo lights of	16 } 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 Chart House

## DESCRIPTION OF CABLES.

Main cable carrying 400 Amperes, comprised of 37 wires, each 0.103 S.W.G. diameter, 0.6 square inches total sectional area  
 Branch cables carrying 60 Amperes, comprised of 18 wires, each 0.052 S.W.G. diameter, 0.240 square inches total sectional area  
 Branch cables carrying 30 Amperes, comprised of 7 wires, each 0.044 S.W.G. diameter, 0.210 square inches total sectional area  
 Leads to lamps carrying 1.5 Amperes, comprised of 3 wires, each 0.036 S.W.G. diameter, 0.002 square inches total sectional area  
 Cargo light cables carrying \_\_\_\_\_ Amperes, comprised of \_\_\_\_\_ wires, each \_\_\_\_\_ S.W.G. diameter, \_\_\_\_\_ square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables throughout ship are of 2500 megohm class and C.M.A. quality. Insulated with pure rubber and vulcanised rubber and protected by lead covering. Cables exposed to heat or moisture and in Engine and Boiler Rooms are further protected by steel armouring and braiding. Cables from Switchboard to Decks up Engine Casing and Branch wires for Deck lights are protected by lead covering. No joints in main cables, joints in Branch wiring are made in properly constructed joint boxes.

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 Clipped down to bulkhead or beams or run on perforated steel plating and protected by lead covering or lead covering, steel armouring & braiding. In Cargo Hold cables are lead covered and enclosed in galvanised iron troughing.

**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 Covering.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered, served, steel armoured & braided.

What special protection has been provided for the cables near boiler casings Lead covered, served, steel armoured & braided.

What special protection has been provided for the cables in engine room Lead covered, served, steel armoured & braided. Cables from switchboard to Decks up Engine casing, protected by lead covering.

How are cables carried through beams Bushed with lead through bulkheads, &c. In glands where watertight, otherwise lead bushed.

How are cables carried through decks In deck tubes bushed with fibre and cable ducts.

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 covered, served, steel armoured and braided overall.  
Through cargo hold, lead covered cables enclosed in galvanized iron troughing. In bunkers lead covered, served, steel armoured and braided overall.

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 In coal bunkers by strong C.F. covers. In baggage and Special Cargo Rooms by steel guards.

Where are the main switches and fuses for these lights fitted for bunker lights in Boiler Room. for Baggage Room, fuses in Passage Pt. Shelter Deck Amido lamps, switch in Baggage Rm. for Special Cargo, fuses in Passage under Forecastle. Switch in Room.

If in the spaces, how are they specially protected by cast iron covers.

Are any switches or fuses fitted in bunkers No.

Cargo light cables, whether portable or permanently fixed permanently How fixed clipped to beams or bulkheads or to perforated steel plate.

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 Switchboards.

**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.

S. Johnson Electrical Engineers Date 17/22



**COMPASSES.**

Distance between dynamo or electric motors and standard compass 176 ft to nearest dynamo. 26 ft to nearest motor.

Distance between dynamo or electric motors and steering compass 180 ft to nearest dynamo. 36 ft to nearest motor.

The nearest cables to the compasses are as follows:—

A cable carrying	10	Amperes	6	feet from standard compass	14	feet from steering compass
A cable carrying	12	Amperes	16	feet from standard compass	36	feet from steering compass
A cable carrying	140	Amperes	26	feet from standard compass	14	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 standard compass and nil degrees on all course in the case of the steering compass.

Builder's Signature. Date



**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.

Fee: £40-17-6. Applied for 7/7/22. H.P. Southwell. Surveyor to Lloyd's Register of Shipping.

Lloyd's Register

Committee's Minute FRI JUL 14 1922 FRI JUL 21 1922



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

One Board containing 8 switches in Entrance to 3<sup>rd</sup> bl. Smoke Room and General Room. Shelter Deck Aft.

One Board containing 16 switches in 1<sup>st</sup> bl. Pantry on Upper Deck.

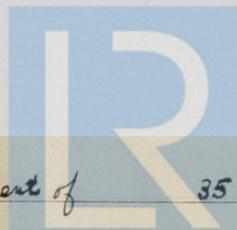
One Board containing 8 switches in 3<sup>rd</sup> bl. Dining Saloon. Upper Deck.

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F Machinery <sup>46</sup> 132 lights. each of <sup>16 c.p.</sup> 30 watts. requiring a total current of 35 Amperes.  
1000 watts.

G. Signals 5 lights each of 32 c.p. 8-60 c.p. 4-2 1/2 c.p.  
6-8 c.p. and 30-30 watts. requiring a total current of 10.5 Amperes.

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