

W.F.D. 1 MAR. 1922

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 41745

Port of **GLASGOW** Date of First Survey **24.1.22** Date of Last Survey **13.2.22** No. of Visits **4**
 No. in Reg. Book **38221** on the **Steel** **SS. "LADY ANSTRUTHER"** Port belonging to **GLASGOW**
 Built at **DUBLIN** By whom **DUBLIN SHIPBUILDERS LTD** When built **1922**
 Owners **NOBEL'S EXPLOSIVES LTD** Owners' Address
 Yard No. **19** Electric Light Installation fitted by **MESSRS THE SUNDERLAND FORGE LTD** When fitted **1922**

DESCRIPTION OF DYNAMO, ENGINE, ETC.

TOTAL KW: 4.6

Compound wound 4-Pole dynamo, direct coupled to single stroke 'Open' type engine fitted with governor.

Capacity of Dynamo **45** 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 **Four** of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each **In Engine Room - 6 switches**
In Chart Room - 6 switches.

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

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 **75** arranged in the following groups:—

A Accommodation	28 lights each of 16 cp and 1 at 32	candle power requiring a total current of	11.1	Amperes
B Navigation etc	8 lights each of 16 cp and 4 at 32	candle power requiring a total current of	7.2	Amperes
C Cargo	24 lights each of 16	candle power requiring a total current of	14.4	Amperes
D Engine & Boiler	10 lights each of 16	candle power requiring a total current of	6.0	Amperes
E	lights each of	candle power requiring a total current of		Amperes
2 Mast head light with	1 lamp each of 32	candle power requiring a total current of each	1.2	Amperes
2 Side light with	1 lamp each of 32	candle power requiring a total current of	" 1.2	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.

None fitted

Where are the switches controlling the masthead and side lights placed **In Chart Room**

DESCRIPTION OF CABLES.

Main cable carrying	45 Amperes, comprised of	19 wires, each .052" S.W.G. diameter,	.04 square inches total sectional area
Branch cables carrying	14.4 Amperes, comprised of	7 wires, each .036" S.W.G. diameter,	.007 square inches total sectional area
Branch cables carrying	7.2 Amperes, comprised of	7 wires, each .036" S.W.G. diameter,	.007 square inches total sectional area
Leads to lamps carrying	1.8 Amperes, comprised of	3 wires, each .029" S.W.G. diameter,	.002 square inches total sectional area
Cargo light cables carrying	3.6 Amperes, comprised of	70 wires, each .0076" S.W.G. diameter,	.003 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper conductors insulated with pure and vulcanised india-rubber, taped and the whole vulcanised together and finished:— In accommodation lead covered and braided over-all. In Machinery spaces etc. — Lead covered armoured and braided.

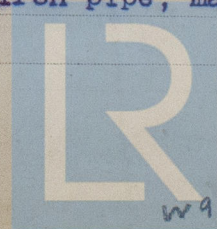
Joints in cables, how made, insulated, and protected

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 **Mains are drawn into Galvanised iron pipe, made watertight, and run along deck from Engine room to Forecastle**



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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 and 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 None near Boiler casing.

What special protection has been provided for the cables in engine room Lead covered, armoured and braided

How are cables carried through beams Holes bushed with fibre through bulkheads, &c. W.T. 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 None

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage None

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

Cargo light cables, whether portable or permanently fixed Portable How fixed In watertight 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 Switch-board

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 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.

R. H. Gough Electrical Engineers Date 16th February, 1922

COMPASSES.

Distance between dynamo or electric motors and standard compass 90 feet

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
7.2	12		
.6	3		

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 any course in the case of the standard compass and Nil degrees on any course in the case of the steering compass.

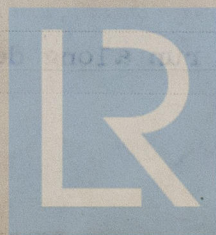
GENERAL REMARKS.

This installation has been fitted on board under special survey. Tested under full working conditions found satisfactory.

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Committee's Minute

Elec. Light



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