

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 39643

Port of Glasgow Date of First Survey 10/12/19 Date of Last Survey 26/1/20 No. of Visits 3
 No. in Reg. Book 29820 on the ~~Iron~~ Steel S.S. WAR. BRAHMIN. Port belonging to London
 Built at Port Glasgow. By whom Messrs Russell & Co When built 1919.
 Owners The Shipping Controller. Owners' Address London
 Yard No. 420. Electric Light Installation fitted by Messrs Grindley Ross & Co. When fitted 1919.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 10 K.V. Compound Double Generator coupled to vertical open fronted type double acting engine
 Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine Room Whether single or double wire system is used double
 Position of Main Switch Board Engine Room having switches to groups — of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on 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 — and at each position where a cable is branched or reduced in size — 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 142 arranged in the following groups:—

A	Engine Room	39	lights each of	16	candle power requiring a total current of	24	Amperes
B	Saloon	50	lights each of	16	candle power requiring a total current of	10	Amperes
C	Coop & Bath	31	lights each of	16	candle power requiring a total current of	6.2	Amperes
D			lights each of		candle power requiring a total current of		Amperes
E			lights each of		candle power requiring a total current of		Amperes
2	Mast head light with 2 lamps each of			32	candle power requiring a total current of	2.5	Amperes
2	Side light with 2 lamps each of			32	candle power requiring a total current of	2.5	Amperes
	One Morse Lamp.			32	do do	1.28	
	2-6 Lt. Cargo lights of			16	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 Charlton

DESCRIPTION OF CABLES.

Main cable carrying 100 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area
 Branch cables carrying 24 Amperes, comprised of 4 wires, each 14 S.W.G. diameter, .014 square inches total sectional area
 Branch cables carrying 10 Amperes, comprised of 4 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area
 Leads to lamps carrying 3.2 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 3.8 Amperes, comprised of 4 wires, each 20 S.W.G. diameter, .004 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Twine D.S.R. Single wire Armoured and braided cables also single D.S.R. Lead covered cables

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 Securely fixed to beams etc with T.S. screws.



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 D.S.P. cables run in galvanized gas barrel tubing

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Armoured & Braided

What special protection has been provided for the cables near boiler casings Run in Tubing

What special protection has been provided for the cables in engine room Armoured and braided

How are cables carried through beams Bushed Holes through bulkheads, &c. Bulkhead glands

How are cables carried through decks Deck Tubes

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 Armoured & Braided

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage No

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 _____

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 1 Train 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 Yes

Are any switches, fuses, or joints of cables fitted in the pump room or companion No

How are the lamps specially protected in places liable to the accumulation of vapour or gas Gas light fittings

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.

FOR GRINDLAY, ROSS & CO. LTD.

John S. Grindlay Secretary

Electrical Engineers

Date 2nd Feb 1920

COMPASSES.

Distance between dynamo or electric motors and standard compass 108 ft.

Distance between dynamo or electric motors and steering compass 100 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>4.5</u>	Amperes	<u>12</u>	feet from standard compass	<u>12</u>	feet from steering compass
A cable carrying	<u>5.4</u>	Amperes	<u>32</u>	feet from standard compass	<u>38</u>	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 any course in the case of the standard compass and Nil degrees on any course in the case of the steering compass.

LITHGOWS LIMITED.

W. Allan Director & Secretary

Builder's Signature.

Date 4th February 1920

GENERAL REMARKS.

This installation has been fitted on board under special survey. Tested under full working conditions & found satisfactory. Special care having been given to compartments liable to the accumulation of vapour or gas.

It is submitted that this vessel is eligible for

ELEC. LIGHT 1920

J. Stanley Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 14 FEB 1920

Elec. Light

FRI. AUG. 36 1920

FEB. 18 1921



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