

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 35102

Port of Glasgow Date of First Survey 16/2/15 Date of Last Survey 6/5/15 No. of Visits 11
 No. in Reg. Book on the ~~Iron~~ Steel S.S. "Gartza" Port belonging to G
 Built at Whiteinch By whom Messrs Barclay Curle & Co When built
 Owners Ruman Steam Nav. Co Owners' Address
 Yard No. 512 Electric Light Installation fitted by Messrs A. Watson & Co. Ltd. When fitted 1915.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 combined ship lighting plants comprising compound engines and compound wound dynamos. Also 1 combined single cylinder engine and compound wound dynamo.
 Capacity of Dynamo 2 off each 382 } Amperes at 110 Volts, whether continuous or alternating current continuous.
1 off 246

Where is Dynamo fixed Bottom platform of Engine room Whether single or double wire system is used double.

Position of Main Switch Board Convenient to dynamos having switches to groups 14 circuits of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine room with 8 switches and Wheelhouse with 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 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. slate or porcelain.

Total number of lights provided for 681 arranged in the following groups:—

Group	Description	Number of Lights	Candle Power	Amperes
A	<u>95</u> lights each of <u>2 Carbon</u>	<u>32</u>	<u>11.8</u>	<u>Amperes</u>
B	<u>24 METAL</u> lights each of <u>2 Carbon</u>	<u>32</u>	<u>12.6</u>	<u>Amperes</u>
C	<u>55 METAL</u> lights each of <u>2 Carbon</u>	<u>16</u>	<u>33.0</u>	<u>Amperes</u>
D	<u>94 Carbon</u> lights each of <u>6 "</u>	<u>32</u>	<u>58.0</u>	<u>Amperes</u>
E	<u>73</u> lights each of <u>16 "</u>	<u>16</u>	<u>40.0</u>	<u>Amperes</u>
	<u>2 Mast head lights with 2 lamps each of 32</u>		<u>2.2</u> (these are included in A)	<u>Amperes</u>
	<u>2 Side lights with 2 lamps each of 32</u>		<u>2.2</u> (in A)	<u>Amperes</u>
	<u>8 Cargo lights of 80</u>		<u>incandescent</u>	

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 330 Amperes, comprised of 61 wires, each 12 S.W.G. diameter, .500 square inches total sectional area
 Branch cables carrying 11.8 Amperes, comprised of 4 wires, each 21 S.W.G. diameter, .0055 square inches total sectional area
 Branch cables carrying 33.0 Amperes, comprised of 4 wires, each 14 S.W.G. diameter, .014 square inches total sectional area
 Leads to lamps carrying 2 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 2.8 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

In accommodation: The cable is insulated with V.I.R. and is protected by lead sheathing and in engine room etc. it is V.I.R. protected by lead sheathing and galvanised wire armouring.

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 They are all run on the surface of under side of decks, bulkheads etc. and protected as in paragraph above.

For calculations see Golyms Rpt. 1377. 9/4/35.



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 They are either lead covered and armoured cables or V.R. cables in gal^d gas pipe.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat as above.

What special protection has been provided for the cables near boiler casings as above.

What special protection has been provided for the cables in engine room as above.

How are cables carried through beams through fibre ferrules through bulkheads, &c. W.T. glands.

How are cables carried through decks in gal^d iron or brass deck tubes standing 17" above deck.

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 They are lead covered and armoured with gal^d iron wires.

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 on 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 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 ARCHD. WATSON & CO., LTD.,

Electrical Engineers

Date 10/6/15.

COMPASSES.

Distance between dynamo or electric motors and standard compass Dundas DIRECTOR the nearest motor is 90 ft distant

Distance between dynamo or electric motors and steering compass " " " " 85 ft "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>3</u> Amperes	<u>3</u> feet from standard compass	<u>3</u> feet from steering compass
A cable carrying	<u>2</u> Amperes	<u>9</u> feet from standard compass	<u>6</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 —

The maximum deviation due to electric currents, etc., was found to be — degrees on — course in the case of the standard compass and — degrees on — course in the case of the steering compass.

FOR BAROLAY, CURLE & CO., LTD.

H. J. Curley Secretary.

Builder's Signature. Date

GENERAL REMARKS.

This installation has been well fitted on board and when examined under ordinary working conditions was found satisfactory.

It is submitted that

this vessel is eligible for THE RECORD. Elec. Light.

J.W.D.
25/6/15

A. McKeand
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute GLASGOW 22 JUN. 1915

Elec. Light

J.W.D.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

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19/6/15

2 combined lighting plants comprising

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contd.

CIRCUITS.

F.	3 Carbon Lights each of 8 Candle Power requiring a total)	
	current of)	
70	" " " " 16	do. do.)	43.3 amps.
2	" " " " 32	do. do.)	
2	Fans.)	
G.	68 Carbon Lights each of 16	do. do.)	
1	" " " " 32	do. do.)	40.0 amps.
2	Fans.)	
H.	64 Carbon Lights each of 16	do. do.)	
1	Fan.)	36.0 amps.
I.	25 Carbon Lights each of 25	do. do.)	
19	Fans)	43.0 amps.
1	Motor.)	
J.	12 Carbon Lights each of 16	do. do.)	65.7.
5	Fans.)	
K.	Supply Fan.		46.0 amps.
L.	Supply Fan.		46.0 amps.
M.	5 Small Motors.		38.3 amps.
N.	Wireless.		18.2 amps.

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