

# 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 or Steel S.S. "Gartgair" Port belonging to G  
 Built at Whitinch By whom Messrs Barclay Curle & Co When built  
 Owners Ruman Oceanic 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.  
 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:—

A	<u>95</u> lights each of <u>16</u>	candle power requiring a total current of <u>11.8</u> Amperes
B	<u>24 METAL</u> lights each of <u>16</u>	candle power requiring a total current of <u>12.6</u> Amperes
C	<u>55 METAL</u> lights each of <u>16</u>	candle power requiring a total current of <u>33.0</u> Amperes
D	<u>94 Carbon</u> lights each of <u>32</u>	candle power requiring a total current of <u>58.0</u> Amperes
E	<u>73</u> lights each of <u>16</u>	candle power requiring a total current of <u>40.0</u> Amperes
<u>2 Mast head lights with 2 lamps each of 32 candle power requiring a total current of 2.2 (these are included in A) Amperes</u>		
<u>2 Side lights with 2 lamps each of 32 candle power requiring a total current of 2.2 (in A) Amperes</u>		
<u>(included in Circuits F&amp;G) 8 Cargo lights of 80 candle power, whether incandescent or arc lights 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 &c. 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 &c. and protected as in paragraph above.

For Calculations see Glycerine 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<sup>d</sup> 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<sup>d</sup> iron or brass deck tubes standing 12" 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<sup>d</sup> 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 *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	<i>3</i> Amperes	<i>3</i> feet from standard compass	<i>3</i> feet from steering compass
A cable carrying	<i>2</i> Amperes	<i>9</i> feet from standard compass	<i>6</i> 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 BARCLAY, CURLE & CO., LTD.

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. McEland*  
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute *GLASGOW 22 JUN. 1915*  
*Elec. Light*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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## Report on Electric Light Installation No.

contd.

C I R C U I T S.

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	Mtor.			)
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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