

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 38170.

Port of Glasgow. Date of First Survey 26<sup>th</sup> March Date of Last Survey 12<sup>th</sup> Sept./18 No. of Visits 8.  
 No. in Reg. Book 459. on the ~~Iron or~~ Steel Motor Vessel "Glenapp" Port belonging to Glasgow.  
 Built at Whiteinch By whom Barclay Curle & Co. Ltd When built 1918.  
 Owners Glen Line Limited Owners' Address London.  
 Yard No. 519 Electric Light Installation fitted by Siemens Bros. Dynamo Works Ltd. When fitted 1918.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

3 Multipolar compound dynamos of Allmanns Svenska Electric Coy. Sweden manufacture direct coupled to 3 Diesel type oil engines of Harland & Wolffs manufacture. 210 revs. per minute.

Capacity of Dynamo 3 of 840 Amperes at 220 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 1A to E16 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 3 way Junction box in alleyway outside engine casing with switches and fuses.

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-oxidisable 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 292 arranged in the following groups:—

1A	25	lights each of	7 @ 3.4 @ 16, 4 @ 32 & 13 @ 20 watts (metal fl)	1A	9.2	
2A	57		30 @ 16 (carbon) 27 @ 16 metal	2A	27.9	
3A	104		30 @ 16 " 77 @ 16 " candle power requiring a total current of	3A	40.0	Amperes
4A	100		16 cp carbons	4A	60.0	
5A	Wireless			5A	30.0	Amperes
6A	Searchlight	lights each of	—	6A	50.0	
1-8	Wired by Harland & Wolff (Motor Room Machinery)			1-8	—	
9	Stearing Gear	lights each of	—	9	120	Amperes
10	Windlass			10	240	
11	Warping Winch			11	86	
12	2 Winches	lights each of	—	12	100	Amperes
13	—			13	100	
14	—			14	100	Amperes
15	—			15	100	
16	—			16	100	Amperes
1	Mast head light with 1 lamp each of	32	candle power requiring a total current of	1-2		Amperes
2	Side lights with 1 lamp each of	32	candle power requiring a total current of	2-4		Amperes
10	Cargo lights of	6 X 16 Carbon	candle power, whether incandescent or arc lights	Incandescent		
5	" " "	1000	" " " " " " "	500 watt Half Watts.		

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 840 Amperes, comprised of 2 cables 91 wires, each .101" S.W.G. diameter, 1.5 square inches total sectional area  
 Branch cables carrying 240 Amperes, comprised of 37 wires, each .112 S.W.G. diameter, .350 square inches total sectional area  
 Branch cables carrying 86 Amperes, comprised of 19 wires, each .14 S.W.G. diameter, .094 square inches total sectional area  
 Leads to lamps carrying .3 Amperes, comprised of 3 wires, each .22 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 3.6 Amperes, comprised of 3 wires, each .22 S.W.G. diameter, .0018 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of high conductivity tinned copper wire insulated with pure and vulcanised india rubber and taped and compounded or taped and lead covered or lead covered and armoured through holds and engine room etc.

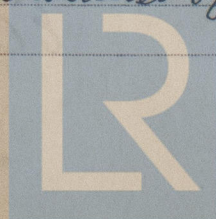
Joints in cables, how made, insulated, and protected

No joints - Jointless System.

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 to bulkheads or undersides of decks with brass or galvanised clips and screws.



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Foundation

W1012-0225/2



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.

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

What special protection has been provided for the cables near boiler casings Lead Covered and Armoured.

What special protection has been provided for the cables in engine room Lead Covered and Armoured.

How are cables carried through beams In Fibre Ferrules through bulkheads, &c. W. Y. Glands.

How are cables carried through decks W. Y. Deck pipes.

Are any cables run through coal bunkers No or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes.

If so, how are they protected Lead Covered and Armoured.

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 —.

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 with 2 and with an amperemeter Yes with 3, 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.

*H. H. Hume*

Electrical Engineers

Date

30/10/18

COMPASSES.

Distance between dynamo or electric motors and standard compass about 150 feet

Distance between dynamo or electric motors and steering compass About 150 feet

The nearest cables to the compasses are as follows:—

Cable carrying	Amperes	Distance from standard compass	Distance from steering compass
A cable carrying 9.2	20	16 feet	16 feet
A cable carrying		feet from standard compass	feet from steering compass
A cable carrying 3	in	in	in

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.

FOR BARDLEY, GURLE & CO., LTD.

*H. H. Hume*

Builder's Signature.

Date 4<sup>th</sup> Dec 1918

GENERAL REMARKS.

This installation has been fitted on board under special survey tested under full working conditions for a period of six hours & found satisfactory.

It is submitted that this vessel is eligible for THE RECORD Elec. Light.

*J. Stanley Rankin*

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

Committee's Minute GLASGOW 10 DEC 1918

Elec. Light.

1/12

Rpt. 9a.

Port of

Glasgow.

Continuation of Report No.

dated

on the

Particulars of Switch-board

Framework: Standard Strip Iron with stays bolted to the framework of the ship.

Panels: Enamelled Slate 1 1/4" thick front edge bevelled.

Cable Sockets: Twin Sockets provided for the 3 Generator Panels 1000 amp feeder circuit and 1-100 ~~amp~~ <sup>amp</sup> circuits.

Circuit Breakers: Automatic Circuit Breakers fitted on generator mains & on compressor motor mains.

Fuses: Dorman & Smith "Dampier" pattern fuses fitted.

Regulators: 3 Switchboard type shunt regulators fitted on generator panels.

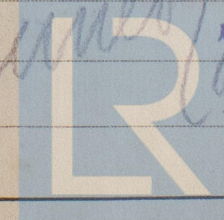
Circuit No.	Circuits arranged Thus:-	Capacity of switch	Sectional Area. sq"	Size of main	Current in Amps.
1A	Navigation	50 Amps	.0125"	7/18	12
2A	Saloon and Forward (lighting)	50 Amps	.0125"	7/18	27
3A	Engineers and Aft ( " " )	50 Amps	.0125"	7/18	22
4A	Motor Room ( " " )	50 Amps	.0125"	7/18	20
5A	Wireless Telegraphy	50 Amps	.022"	7/16	60
6A	Projector	50 Amps	.035"	7/14	40
1	Starboard Piston cooling & forced lub. pump	100 "	.06"	1 1/16	45
2	" Circulating Pump & port forced lub. pump	200 "	.15"	3 1/5	165
3	Port Circulating Pump & Port Piston cooling "	200 "	.182"	3 1/4	187 172
4	Fire Pump	200 "	.182"	3 1/4	187 122
5	Bilge Pumps & Port turning gear motor	100 "	.182"	1 9/14	9.1
6	Fuel Oil Pump & Workshop motor	100 "	.0125"	Double terminals for 7/18	40
7	Ballast Pump, F.W. Pump, & Star turning gear motor	200 "	.15"	3 1/5	155 182
8	Air Compressor	1000 "	.5"	Double terminals for 6 1/12	280 664
9	Steering Motor	150 "	.117"	3 1/16	100 117
10	Windlass	250 "	.35"	3 1/12	260 264
11	Warping Winch	100 "	.182"	1 9/14	110 113
12	Two Winch Motors	150 "	.182"	1 9/14	100
13	" " "	150 "	.182"	1 9/14	100
14	" " "	150 "	.182"	1 9/14	100
15	" " "	150 "	.182"	1 9/14	100
16	" " "	150 "	.182"	1 9/14	100

Board made up of 3 Generator & 6 Feeder Panels height overall 5 ft. and length overall 14'3". Board was supplied with Three Ammeters, One mpc voltmeter & One busbar voltmeter.

Machines arranged for parallel running except when any one mpc was supplying direct to compressor motor which generator could not then be paralalled with the other two

SIEMENS BROTHERS DYNAMO WORKS LIMITED.  
MARINE DEPARTMENT.

*H. H. Hume*



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Port of

No. in  
Reg. Book

459.

Owners

Yard No. 5

DESCRIPTION

Three  
- Lamps

Capacity of 1

Where <sup>are</sup> Dy

Position of M

Positions of

If fuses are

circuits

If vessel is wi

Are the fuses

Are all fuses

are perma

Are all switch

Total number o

A

B

C

D

E

Mast

If arc lights, wh

Where are the s

DESCRIPTION

Main cable carryi

Branch cables can

Branch cables can

Leads to lamps can

Cargo light cables c

DESCRIPTION

Cable

with p

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Joints in cables, ho

Are all the joints o

positions, non

Are there any joint

How are the cables

Cable



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