

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 32197.

Port of Glasgow Date of First Survey 28.11.12 Date of Last Survey 24.12.12 No. of Visits 9
 No. in on the ~~Iron~~ Steel S/S. "BORDERLAND" Port belonging to Liverpool
 Book 69 Built at Glasgow By whom Barclay Curlew & Co. Ltd. When built 1912
 Owners Liverpool & Hamburg S.S. Co. (Limited) Owners' Address Liverpool
 Yard No. 5031 Electric Light Installation fitted by James Brothers Dynamoturbine Ltd. When fitted 1912

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 Siemens 4 pole compound wound dynamo coupled direct to a Ransomes Sims & Yfferies engine single vertical open type. Cylinder 8" x 6"

Capacity of Dynamo 90 Amperes at 102 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In main engine room Whether single or double wire system is used Single

Position of Main Switch Board In main engine room having switches to groups A to D of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

None fitted

If cut outs 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 yes and to each lamp circuit yes

If vessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits —

Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of 100 per cent over the normal current

Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 129 arranged in the following groups:—

A	9	lights each of	16	candle power requiring a total current of	5.4	Amperes
B	55	lights each of	"	candle power requiring a total current of	33.0	Amperes
C	36	lights each of	"	candle power requiring a total current of	21.6	Amperes
D	29	lights each of	"	candle power requiring a total current of	17.4	Amperes
E		lights each of		candle power requiring a total current of		Amperes
2	Mast head light with	1 lamp each of	16	candle power requiring a total current of	1.2	Amperes
2	Side light with	1 lamp each of	1-16 and 1-32	candle power requiring a total current of	1.8	Amperes
6	Cargo lights	each	6 x 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 In chartroom

DESCRIPTION OF CABLES.

Main cable carrying	90.0	Amperes, comprised of	19	wires, each	14	L.S.G. diameter,	.094	square inches total sectional area
Branch cables carrying	33.0	Amperes, comprised of	7	wires, each	16	L.S.G. diameter,	.022	square inches total sectional area
Branch cables carrying	5.4	Amperes, comprised of	7	wires, each	20	L.S.G. diameter,	.004	square inches total sectional area
Leads to lamps carrying	.6	Amperes, comprised of	1	wires, each	18	L.S.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	3.6	Amperes, comprised of	3	wires, each	20	L.S.G. diameter,	.003	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of high conductivity tinned copper wires, insulated with pure and vulcanised india-rubber, taped, braided, and compounded, then laid in well seasoned pine or teak casing or galvanised iron pipe

Joints in cables, how made, insulated, and protected

Jointless system

Are all the joints of cables thoroughly soldered, resin only having been used as a flux — 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 In pine or teak casing secured to bulkheads or under side of decks or in galvanised iron pipe secured to bulkheads or under side of decks. Protection as above

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 casing or iron pipe

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Iron pipe

What special protection has been provided for the cables near boiler casings Iron pipe

What special protection has been provided for the cables in engine room Iron pipe

How are cables carried through beams In fibre plugs through bulkheads, &c. In watertight brass glands

How are cables carried through decks In watertight 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 Iron pipe

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 cut outs for these lights fitted —

If in the spaces, how are they specially protected —

Are any switches or cut outs 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 By gunmetal shoe bolted to ship's beams

How are the returns from the lamps connected to the hull By 3/8" brass Whitworth screw and washers

Are all the joints with the hull in accessible positions yes

The installation is — supplied with 1 voltmeter and — ohm amperemeter, fixed on main switchboard

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas —

Are any switches, cut outs, 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 98 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile after 24 hours' immersion in seawater.

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.

SILVER'S BROTHERS DYNAMO WORKS LIMITED,
MARINE DEPARTMENT.

Mont Bell

G.R.K.

Electrical Engineers

H.H. 8.1.13.
Date

COMPASSES.

Distance between dynamo or electric motors and standard compass over 100 feet

Distance between dynamo or electric motors and steering compass over 100 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>5.4</u>	<u>—</u>	<u>15</u>	<u>—</u>
<u>.6</u>	<u>—</u>	<u>in</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

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 — in the case of the standard compass and nil degrees on — in the case of the steering compass.

FOR BARCLAY, CURLE & CO., LTD.

H. J. Sawyer Secretary

Builder's Signature.

Date

13th Jan 1913

GENERAL REMARKS.

This installation has been fitted in accordance with the rules, tested under full working conditions, and found satisfactory.

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

H.B. Forster

J.W.D. 24/1/13

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

Committee's Minute

GLASGOW 21 JAN. 1913

Elec. Light

Job



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

21 Jan 1913