

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 33713.

Port of Glasgow. Date of First Survey 30.12.13 Date of Last Survey 5.3.14 No. of Visits 5
 No. in on the Iron or Steel S.S. "BANDRA" Port belonging to GLASGOW.
 Reg. Book 62 Sup Built at SCOTSTOUN By whom BARCLAY CURLE & CO. LTD. When built 1913-14.
 Owners BRITISH INDIA STEAM NAVIGATION CO. LTD. Owners' Address LONDON.
 Yard No. 507. Electric Light Installation fitted by SIEMENS BROS. DYNAMOWKS LTD. When fitted 1914.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Siemens 4 pole compound wound generator direct coupled to a Shanks open type vertical compound engine cylinders $7\frac{1}{2} \times 8$ also 1 Siemens compound wound dynamo direct coupled to a Shanks single cylinder engine $4\frac{1}{2} \times 4\frac{1}{2}$.

Capacity of Dynamo @ 200 & @ 50 Amperes at 100 Volts, whether continuous or alternating current Continuous

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

Position of Main Switch Board In main Engine Room having switches to groups A to E. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 2 of 2 switches and 1 of 3 switches outside engine room casing and 1 of 3 switches in engine room.

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.

Total number of lights provided for 272 arranged in the following groups:—

A	<u>53</u>	lights each of <u>48 of 16 & 5 of 32</u>	candle power requiring a total current of <u>42.4</u>	Amperes
B	<u>83</u>	<u>20</u> lights each of <u>16</u> <u>8</u> <u>LTS. 12" FANS CEILING FANS</u>	candle power requiring a total current of <u>67.4</u>	Amperes
C	<u>100</u>	lights each of <u>16</u>	candle power requiring a total current of <u>72.0</u>	Amperes
D	<u>36</u>	lights each of <u>35 of 16 & 1 of 32</u>	candle power requiring a total current of <u>22.2</u>	Amperes
E	<u>WIRELESS</u>	lights each of <u>—</u>	candle power requiring a total current of <u>30.0</u>	Amperes
	<u>2</u>	Mast head light with <u>1</u> lamps each of <u>32</u>	candle power requiring a total current of <u>2.4</u>	Amperes
	<u>2</u>	Side light with <u>1</u> lamps each of <u>32</u>	candle power requiring a total current of <u>2.4</u>	Amperes
	<u>3</u>	Cargo lights of <u>8 x 16</u>	candle power, whether incandescent or arc lights <u>Incandescent & Arc.</u>	

If arc lights, what protection is provided against fire, sparks, &c. Enclosed in glazed lantern

Where are the switches controlling the masthead and side lights placed in Chart House

DESCRIPTION OF CABLES.

Main cable carrying 181.8 Amperes, comprised of 37 wires, each .083 S.W.G. diameter, .200 square inches total sectional area
 Branch cables carrying 72 Amperes, comprised of 19 wires, each .14 S.W.G. diameter, .094 square inches total sectional area
 Branch cables carrying 22.2 Amperes, comprised of 7 wires, each .16 S.W.G. diameter, .022 square inches total sectional area
 Leads to lamps carrying .6 Amperes, comprised of 7 wires, each .23 S.W.G. diameter, .0031 square inches total sectional area
 Cargo light cables carrying 4.8 Amperes, comprised of 7 wires, each .23 S.W.G. diameter, .0031 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of high conductivity tinned copper wire insulated with pure and vulcanised india rubber, taped, braided and compounded. Where necessary taped and lead covered or, taped, lead covered and armoured with galvanized steel wires.

Joints in cables, how made, insulated, and protected

Jointless System with extension boxes.

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 In pipe casing or clipped to decks or bulkheads with brass or galvanized iron clips. 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 covered and armoured

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat? Lead covered and 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 bushes through bulkheads, &c. In special glands

How are cables carried through decks? In special deckpipes

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? 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? 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? 2 and with 2 amperemeters? fixed on Main 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.W. H.S. Stewart Electrical Engineers Date 26/3/14

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	<u>10.8</u>	Amperes	<u>about 20</u>	feet from standard compass	<u>about 20</u>	feet from steering compass
A cable carrying	<u>.6</u>	Amperes	<u>in</u>	feet from standard compass	<u>in</u>	feet from steering compass
A cable carrying	<u>✓</u>	Amperes	<u>✓</u>	feet from standard compass	<u>✓</u>	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power? No

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

H. J. Creevey Builder's Signature Date 14th May 14

GENERAL REMARKS.

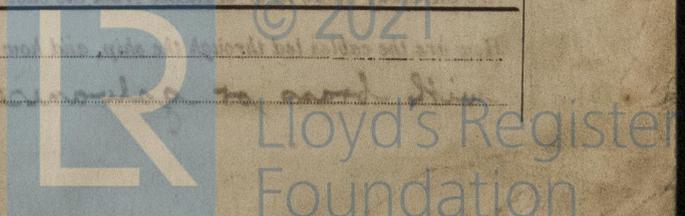
The installation has been examined, tried and found satisfactory.

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

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

Committee's Minute GLASGOW 20 MAY 1914 Elec. light.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



19/5/14