

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5152

Port of Newcastle on Tyne Date of First Survey July 07 Date of Last Survey Aug 30 '06 No. of Visits 6
 No. in Reg. Book 21 on the Iron or Steel 1/2 "San Cristobal" Port belonging to London
 Built at Low Walker By whom Sir W. G. Armstrong, Whitworth & Co. L. When built 1906
 Owners J. Pearson & Co. Ltd Owners' Address London
 Yard No. 781 Electric Light Installation fitted by Clarke Chapman & Co. Ltd. When fitted 1906

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One single cylinder double acting engine direct coupled to a continuous current compound wound dynamo.

Capacity of Dynamo 140 Amperes at 65 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed in Engine room, Bottom Platform Whether single or double wire system is used Double

Position of Main Switch Board near dynamo having switches to groups A. B. C of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each each light or group of lights provided with switches as required

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 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits yes

Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of 50 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, slate & amber

Total number of lights provided for 83 arranged in the following groups:—

Group	Description	Number of Lights	Candle Power	Current (Amperes)
A	20" Projector	lights each of 20000	requiring a total current of 60	Amperes
B	32	lights each of 16	requiring a total current of 29.5	Amperes
C	51	lights each of 16	requiring a total current of 46.1	Amperes
D		lights each of	requiring a total current of	Amperes
E		lights each of	requiring a total current of	Amperes
	2 Mast head light with 1 lamps each of 32		requiring a total current of 3.4	Amperes
	2 Side light with 1 lamps each of 32		requiring a total current of 3.4	Amperes
	2 Cargo lights of 8-16		candle power, whether incandescent or arc lights <u>incandescent</u>	

If arc lights, what protection is provided against fire, sparks, &c. Totally enclosed in hexagonal clear glass lantern.

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

DESCRIPTION OF CABLES.

Current	Wires	Diameter (L.S.G.)	Total Sectional Area (square inches)
Main cable carrying <u>140</u> Amperes, comprised of <u>37</u> wires, each <u>14</u> L.S.G. diameter, <u>.1838</u> square inches total sectional area			
Branch cables carrying <u>60</u> Amperes, comprised of <u>19</u> wires, each <u>16</u> L.S.G. diameter, <u>.0603</u> square inches total sectional area			
Branch cables carrying <u>4</u> Amperes, comprised of <u>4</u> wires, each <u>20</u> L.S.G. diameter, <u>.0070</u> square inches total sectional area			
Leads to lamps carrying <u>.9</u> Amperes, comprised of <u>1</u> wires, each <u>18</u> L.S.G. diameter, <u>.0018</u> square inches total sectional area			
Cargo light cables carrying <u>4</u> Amperes, comprised of <u>4</u> wires, each <u>20</u> L.S.G. diameter, <u>.0070</u> square inches total sectional area			

DESCRIPTION OF INSULATION, PROTECTION, ETC.

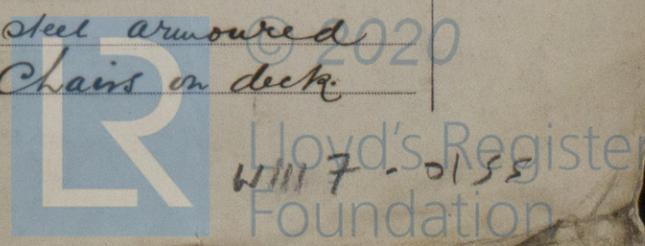
Vulcanized india-rubber taped and braided, lead covered overall, where exposed steel armouring over the lead covering.

Joints in cables, how made, insulated, and protected no joints except mechanical ones.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux yes 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 yes, no

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 Lead covered and steel armoured
Cables led in galvanized iron pipes fixed in N.1. Chains on deck



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible no

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead covered and steel 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 —————

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

How are cables carried through beams in lead bushes through bulkheads, &c. in watertight glands.

How are cables carried through decks through pipes & galvanized iron deck tubes.

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 & armoured in pipes

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 —————

Cargo light cables, whether portable or permanently fixed Portable How fixed in Watertight Ct. Boxes.

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Double wire system

How are the returns from the lamps connected to the hull —————

Are all the joints with the hull in accessible positions —————

The installation is now supplied with a voltmeter and also an amperemeter, fixed 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 yes

Are any switches, cut outs, or joints of cables fitted in the pump room or companion no, all switches & connections outside.

How are the lamps specially protected in places liable to the accumulation of vapour or gas all fittings guarded & airtight.

The copper used is guaranteed to have a conductivity of 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 2000 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.

Robert Scope Electrical Engineers Date Oct 22nd 1906.

COMPASSES.

Distance between dynamo or electric motors and standard compass Director. 120 feet.

Distance between dynamo or electric motors and steering compass 112 "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>.9</u> Amperes	<u>12</u> feet from standard compass	<u>6</u> feet from steering compass
A cable carrying	<u>.9</u> Amperes	<u>6</u> feet from standard compass	<u>12</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 nil degrees on all course in the case of the standard compass and nil degrees on all courses in the case of the steering compass.

SIR W. G. ARMSTRONG & CO. LTD. Builder's Signature. Date 25/10/06

GENERAL REMARKS.

R. S. Saxton tele. etc.
This installation examined and so far as seen appears satisfactory

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

Committee's Minute

It is submitted that the Record Elec. Light be noted in the Reg. Book.



30.10.06

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 13.—5m.34.