

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 23802.

Port of Sunderland Date of First Survey 24 July Date of Last Survey 6 August No. of Visits 3
 No. in Reg. Book 38 on the Iron or Steel "Lutetian" Port belonging to London
 Built at Sunderland By whom Sir J. Laing & Sons Ltd When built 1908
 Owners Lutetian Navigation Co Ltd Owners' Address London
 Yard No. 629 Electric Light Installation fitted by Sunderland Forge Co Ltd When fitted 1908

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Multipolar compound wound Dynamo direct coupled to open type Engine both by the Sunderland Forge & Engineering Co. Ltd.
 Capacity of Dynamo 140 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed Bottom of Engine Room Whether single or double wire system is used double
 Position of Main Switch Board close to Dynamo having switches to groups four of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each one in Steering Gear room controlling Pump Rooms & Yarnel.

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-oxidisable 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 no 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 125 arranged in the following groups :-

A	<u>6</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>3.36</u>	Amperes
B	<u>49</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>24.44</u>	Amperes
C	<u>38</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>21.28</u>	Amperes
D	<u>32</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>14.96</u>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
	<u>2</u>	Mast head light with	<u>1</u> lamps each of <u>32 cp R.Y.</u>	candle power requiring a total current of	<u>2.24</u>	Amperes
	<u>2</u>	Side light with	<u>1</u> lamps each of <u>do</u>	candle power requiring a total current of	<u>2.24</u>	Amperes
	<u>2</u>	Cargo lights of	<u>8 x 16</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>	

If are lights, what protection is provided against fire, sparks, &c. none fitted
 Where are the switches controlling the masthead and side lights placed in Wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying	<u>140</u>	Amperes, comprised of	<u>36</u>	wires, each	<u>15</u>	L.S.G. diameter,	<u>.154</u>	square inches total sectional area
Branch cables carrying	<u>24.44</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>15</u>	L.S.G. diameter,	<u>.0285</u>	square inches total sectional area
Branch cables carrying	<u>21.28</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>16</u>	L.S.G. diameter,	<u>.0225</u>	square inches total sectional area
Leads to lamps carrying	<u>1.12</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>18</u>	L.S.G. diameter,	<u>.0181</u>	square inches total sectional area
Cargo light cables carrying	<u>4.48</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>14</u>	L.S.G. diameter,	<u>.00503</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wiring in Berths etc, pure rubber, vulcanised rubber, taped and lead covered, mains as above and run in Iron pipes. Engine Room etc Lead covered & armoured.
 Joints in cables, how made, insulated, and protected All properly sweated then insulated 6 layers pure Rubber Tape, then adhesive tape.
 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
 Are there any joints in or branches from the cable leading from dynamo to main switch board in.
 How are the cables led through the ship, and how protected all run in iron pipes.



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 iron pipes

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 do

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

How are cables carried through beams holes bushed with fibre through bulkheads, &c. waterlight glands

How are cables carried through decks waterlight 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 no

If so, how are they protected —

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 —

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

Are all the joints with the hull in accessible positions —

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

How are the lamps specially protected in places liable to the accumulation of vapour or gas Special Gas tight fittings

The copper used is guaranteed to have a conductivity of 99 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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO., LTD.

Wm. Man Electrical Engineers Date 24th Aug 1908

COMPASSES.

Distance between dynamo or electric motors and standard compass about 180 feet

Distance between dynamo or electric motors and steering compass " 170 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>5</u> Amperes	<u>10</u> feet from standard compass	<u>6</u> feet from steering compass
A cable carrying	<u>.56</u> Amperes	<u>runs into</u> feet from standard compass	<u>6</u> feet from steering compass
A cable carrying	<u>.56</u> Amperes	<u>6 ft</u> feet from standard compass	<u>runs into</u> feet from steering compass

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 no degrees on any course in the case of the standard compass and nil degrees on all course in the case of the steering compass.

W. G. Russell Builder's Signature. Date 24th Aug 1908

RECEIVED BY THE MANAGER OF
 GENERAL REMARKS. SIR JAMES LANG & SONS, Ltd. This installation appears to comply with the Rules & worked satisfactorily, the vessel is eligible for the record "Electric Light" in the Register Book R.W. Coomber.

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.



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

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