

## 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 on the Iron or Steel *"Lutetian"* Port belonging to *London*  
 Reg. Book 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 & Tunnel.*

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

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	<i>140</i>	Amperes, comprised of	<i>36</i>	wires, each	<i>15</i>	L.S.G. diameter,	<i>.154</i>	square inches total sectional area
Branch cables carrying	<i>24.44</i>	Amperes, comprised of	<i>4</i>	wires, each	<i>15</i>	L.S.G. diameter,	<i>.0285</i>	square inches total sectional area
Branch cables carrying	<i>21.28</i>	Amperes, comprised of	<i>4</i>	wires, each	<i>16</i>	L.S.G. diameter,	<i>.0225</i>	square inches total sectional area
Leads to lamps carrying	<i>1.12</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>18</i>	L.S.G. diameter,	<i>.00181</i>	square inches total sectional area
Cargo light cables carrying	<i>4.48</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>14</i>	L.S.G. diameter,	<i>.00503</i>	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

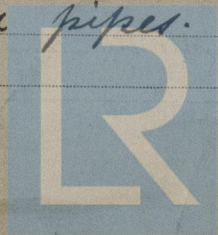
*Wiring in Berths etc, pure rubber, vulcanised rubber, taped and lead covered, mains as above and run in Iron pipes. Engine Room etc Lead covered & armoured.*

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.*



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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. watertight glands

How are cables carried through decks watertight 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.

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 5 Amperes 10 feet from standard compass 6 feet from steering compass

A cable carrying .56 Amperes runs into feet from standard compass 6 feet from steering compass

A cable carrying .56 Amperes 6 ft feet from standard compass runs into 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 710 degrees on any course in the case of the

standard compass and 710 degrees on all course in the case of the steering compass.

GENERAL REMARKS.

SIR JAMES LAING & SONS, Ltd.

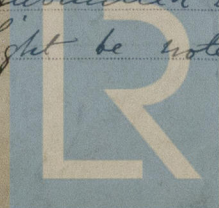
IN LIQUIDATION.

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.



Lloyd's Register of Shipping

28.8.08

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.