

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. *7898* Port of *Hull* SAT. 25 JUL 1891
 No. in *540* Name of Ship *Lutterworth* Built at *Hull* Received at London Office *18*
 Reg. Book *540* Electric Light Installation fitted by *Charles C. L. L.* when fitted *1891*

DESCRIPTION OF DYNAMO AND ENGINE.

Horizontal Engine, rope drive, continuous rope, with cross over pulley. Dynamo vertical with consecutive poles.
 Capacity of Dynamo *160* Amperes at *55* Volts, whether continuous or alternating current *Continuous*
 Where is Dynamo fixed *Lower part of engine room*

LAMPS.—

Is vessel wired on single or double wire system *double* Total number of lights *114* arranged in the following groups:—

A Saloon <i>46</i>	lights each of <i>16</i>	candle power requiring a total current of <i>47</i>	Amperes
B Amidships <i>30</i>	lights each of <i>16</i>	candle power requiring a total current of <i>32</i>	Amperes
C Engine Rm <i>14</i>	lights each of <i>16</i>	candle power requiring a total current of <i>15</i>	Amperes
D Forecastle <i>20</i>	lights each of <i>16</i>	candle power requiring a total current of <i>21</i>	Amperes
E Aft Hold <i>4</i>	lights each of <i>16</i>	candle power requiring a total current of <i>4</i>	Amperes
1 Mast head light with <i>3</i>	lamps each of <i>16</i>	candle power requiring a total current of <i>3</i>	Amperes
2 Side light with <i>3</i>	lamps each of <i>16</i>	candle power requiring a total current of <i>6</i>	Amperes
7 Cargo lights of <i>16</i>		candle power, whether incandescent or arc lights <i>incandescent</i>	

If arc lights, what protection is provided against fire, sparks, &c.

SWITCHES AND CUT-OUTS.—

Position of Main Switch Board *Engine Rm* having switches to groups *switch to each circuit* of lights as above

Positions of other switch boards and numbers of switches on each *One main switch in steward's room to control saloon lights, Mast H, side lights, and cargo lights are in Mate's room.*

If cut outs are fitted to main circuit *Main cut outs are on switch board* and to each auxiliary circuit *Yes.*
 and at each position where cable is branched or reduced in size *Yes.*

If vessel is wired on the double wire system are cut outs fitted on each wire

Are the cut outs of non-oxidizable metal *Yes* and constructed to fuse at an excess of *25* per cent over the normal current

Are all cut outs fitted in easily accessible positions *Yes.*

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 *✓*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *✓*

Are all switches and cut-outs constructed of unflammable materials and fitted on unflammable bases *✓*

DESCRIPTION OF CABLES.—

Main cable carrying *47* Amperes, comprised of *19* wires, each *16* legal standard wire gauge diameter

Branch cables carrying *20* Amperes, comprised of *7* wires, each *16* legal standard wire gauge diameter

Branch cables carrying *32* Amperes, comprised of *19* wires, each *18* legal standard wire gauge diameter

Leads to lamps *1* Amperes, comprised of *1* wires, each *16* legal standard wire gauge diameter

Cargo light cables carrying Amperes, comprised of wires, each legal standard wire gauge diameter

The copper used has 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

DESCRIPTION OF INSULATION, PROTECTION, &c.—

Insulation of pure rubber & vulcanised rubber Rubber tape coating then vulcanised together & covered with preservative compound
The wire are further protected in wood casing & lead pipes where necessary
Joints in cables, how made, insulated, and protected All joints in cables are spliced, soldered, then insulated first with india rubber solution, next 2 layers of pure rubber then 2 layers of prepared tape.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux

Yes

How are cables led throughout the ship

Cables are led throughout the ship in yellow pine casing, grooves separating the — and + wires

What special protection has been provided for the cables in open alleyways

Wood casing

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

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 decks

Brass tubes fitted with seal

and through bulkheads

Through teak plugs.

Are any cables run through coal bunkers

No

or cargo spaces

Yes

If so, how are they protected

wood casing

Are any lamps fitted in coal bunkers or spaces which may be used for cargo

Yes

If so, how are they specially protected

an iron shutter covers the lamp when space is used for cargo

Cargo light cables, whether portable or permanently fixed

fixed

How fixed

on a teak base fixed to bulkhead

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

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of

6

hours' duration

The insulation resistance of the whole installation was not less than

150,000

ohms

The installation is

supplied with a voltmeter and

Yes

an amperemeter, fixed

surtek board

in engine room.

General Remarks.

The particulars appear to be in accordance with the Committee suggestions.

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.

Wm Paterson, broker
W C Martin

Electrical Engineers

Date

10th July 1891

COMPASSES.—

Distance between dynamo and standard compass

80 feet

Distance between dynamo and steering compass

70 "

The nearest cables to the compasses are as follows:—

A cable carrying

3

Amperes

6

feet from standard compass

feet from steering compass

A cable carrying

Amperes

feet from standard compass

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

adjusted with light at full power

The maximum deviation due to electric currents, etc., was found to be

degrees on

course in the case of the standard compass

and

degrees on

course in the case of the steering compass.

Builder's Signature

Date

A Williamson & Co

Surveyor's Signature

Date

22 July 1891



Lloyd's Register Foundation