

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of *Newcastle*

WED. 10 JAN 1894

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Name of Ship

*S.S. "Sussex"*

Built at

*Newcastle*

When built

Electric Light Installation fitted by

*Clarke, Chapman, & Co. Ltd.*

when fitted

*November 1893.*

## DESCRIPTION OF DYNAMO AND ENGINE.—

*One vertical single cylinder engine having cylinders 6½" x 6" and coupled direct to compound wound dynamo on one bedplate.*

Capacity of Dynamo

*62*

Amperes at

*65*

Volts, whether continuous or alternating current

*Continuous*

There is Dynamo fixed

*In Engine Room.*

## MPS.—

Vessel wired on single or double wire system

*Double*

Total number of lights

*68*

arranged in the following groups:—

*34*

lights each of

*16*

candle power requiring a total current of

*34*

Amperes

*31*

lights each of

*16*

candle power requiring a total current of

*28*

Amperes

lights each of

candle power requiring a total current of

Amperes

lights each of

candle power requiring a total current of

Amperes

lights each of

candle power requiring a total current of

Amperes

*1*

Mast head light with

*1*

lamps each of

*double filament 32*

candle power requiring a total current of

Amperes

*2*

Side light with

*1*

lamps each of

*do*

candle power requiring a total current of

Amperes

*None*

Cargo lights of

candle power, whether incandescent or arc lights

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

## SWITCHES AND CUT-OUTS.—

Position of Main Switch Board

*near dynamo*

having switches to groups

*A + B*

of lights as above

Positions of other switch boards and numbers of switches on each

*one switch to each light*

*and Pump room (3) lights controlled by one switch outside pump room.*

If cut outs are fitted to main circuit

*Yes*

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

*no except at main switch board.*

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 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 the lamps specially protected in places liable to the accumulation of vapour or gas

*in air tight fittings*

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

*Yes*

## DESCRIPTION OF CABLES.—

Main cable carrying

*62*

Amperes, comprised of

*19*

wires, each

*16*

legal standard wire gauge diameter

Branch cables carrying

*22*

Amperes, comprised of

*7*

wires, each

*16*

legal standard wire gauge diameter

Branch cables carrying

*12*

Amperes, comprised of

*7*

wires, each

*18*

legal standard wire gauge diameter

Cables to lamps

*9*

Amperes, comprised of

*1*

wires, each

*18*

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

*2000*

megohms per statute mile after 24 hours' immersion in seawater



DESCRIPTION OF INSULATION, PROTECTION, &c.—

Cables & wires insulated pure I.R. then vulcanizing I.R. I.R. Coated tape and the whole vulcanized together & covered preservative compound  
Cables are braided in addition to this

Joints in cables, how made, insulated, and protected soldered with resin, two layers pure rubber tape, rubber solution then finished with two layers of prepared tape & solution.

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

How are cables led throughout the ship *In wood casing under beams in engine room & 1 1/2 inches in lead lined armored cables*

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

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *oil lamps are not fitted close to cables*

What special protection has been provided for the cables near boiler casings *as above*

What special protection has been provided for the cables in engine room *as above*

How are cables carried through decks *through pipes* and through bulkheads *teak plugs*

Are any cables run through coal bunkers *yes* or cargo spaces *yes* If so, how are they protected *lead covered cables laid in casings*

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

If so, how are they specially protected *in cast iron air tight boxes with lids*

Cargo light cables, whether portable or permanently fixed \_\_\_\_\_ 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 \_\_\_\_\_

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of *Six* hours' duration

The insulation resistance of the whole installation was not less than \_\_\_\_\_ ohms

The installation is \_\_\_\_\_ supplied with a voltmeter and \_\_\_\_\_ an ammeter, fixed on main switchboard

General Remarks.—

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.

*FOR CLARKE, CHAPMAN & CO. LTD.*  
*H. R. Chapman* Electrical Engineers  
Director.

Date *3<sup>rd</sup> Jan<sup>ry</sup> 1904*

COMPASSES.—

Distance between dynamo and standard compass *14 3 feet*

Distance between dynamo and steering compass *13 9 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>1.8</i>	<i>8</i>	<i>6</i>	

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 *nil* degrees on *last* course in the case of the standard compass  
and *nil* degrees on *last* course in the case of the steering compass.

*FOR SIR W. G. ARMSTRONG, MITCHELL & CO. LTD.*

*Arthur Gulston*  
*Richard Sturt*

Builder's Signature Date *6<sup>th</sup> January 1894*

Surveyor's Signature Date *8<sup>th</sup> January 1893*



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