

REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of MIDDLESBROUGH-ON-TEES.

FRI 3 JUL 1891

No. 481

No. in Reg. Book. Name of Ship

"Angola"

Built at Middlesb.

When built 1891

Electric Light Installation fitted by J. H. Holmes & Co.

when fitted June 1891

DESCRIPTION OF DYNAMO AND ENGINE.—

6 1/2" x 6" single cylinder engine fitted with automatic expansion governors. Compound wound dynamo coupled direct to
Capacity of Dynamo 135 Amperes at 60 Volts, whether continuous or alternating current

Where is Dynamo fixed Starting Platform of Engine Room.

LAMPS.—

Is vessel wired on single or double wire system Single Total number of lights 130 arranged in the following groups:—

A	<u>15</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>15</u>	Amperes
B	<u>21</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>21</u>	Amperes
C	<u>51</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>51</u>	Amperes
D	<u>43</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>43</u>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
<u>1</u>	Mast head light with <u>2</u> lamps each of	<u>16</u>	candle power requiring a total current of	<u>2</u>	Amperes	
<u>2</u>	Side light with <u>2</u> lamps each of	<u>16</u>	candle power requiring a total current of	<u>4</u>	Amperes	
	Cargo lights of		candle power, whether incandescent or arc lights			

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

SWITCHES AND CUT-OUTS.—

Position of Main Switch Board Near Dynamo having switches to groups 4 of lights as above

Positions of other switch boards and numbers of switches on each

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

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

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 Yes Porcelain or Slate

DESCRIPTION OF CABLES.—

Main cable carrying	Amperes, comprised of	wires, each	legal standard wire gauge diameter
Branch cables carrying	Amperes, comprised of	wires, each	legal standard wire gauge diameter
Branch cables carrying	Amperes, comprised of	wires, each	legal standard wire gauge diameter
Leads to lamps	Amperes, comprised of	wires, each	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.—

High Class Vulcanized Rubber protected with braided hemp outside.

Joints in cables, how made, insulated, and protected In the usual way.

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 moulding.

What special protection has been provided for the cables in open alleyways Heavy wood moulding or iron sheathing

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

What special protection has been provided for the cables near boiler casings "

What special protection has been provided for the cables in engine room Iron sheathed wire.

How are cables carried through decks in Galv Iron Deck Tubes and through bulkheads Brass glands, watertight.

Are any cables run through coal bunkers or cargo spaces If so, how are they protected Heavy wood moulding

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

If so, how are they specially protected

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 Brass Bolt & nut & short length of cable

How are the returns from the lamps connected to the hull Brass screws & washers

Are all the joints with the hull in accessible positions Yes

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of 6 hours' duration Yes

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

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

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.

J. H. Holmes Electrical Engineers

Date July 1st 1891

COMPASSES.—

Distance between dynamo and standard compass Sir William Thompson distance about 70 ft

Distance between dynamo and steering compass Compass

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	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

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

H. M. Williams

Surveyor's Signature Date July 2nd 1891