

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2406

Port of Middlesbrough Date of First Survey _____ Date of Last Survey _____ No. of Visits _____
 No. in on the Iron or Steel sp. Albertville Port belonging to Amers.
 Reg. Book _____ Built at Middlesbrough By whom Sir R. Dixon & Co. When built 1898
 Owner La Compagnie Belge Maritime du Congo Owners' Address _____
 Yard No. 449 Electric Light Installation fitted by Paterson & Co. Ltd. 110 St. Mark Place, Paris When fitted Aug 1898

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Bow, McAlister & Co. high speed vertical engine developing 32 I.H.P. with 80 lb steam @ 300 lbs per min
coupled on same bedplate to Paterson & Co. Ltd. "Thistle" dynamo

Capacity of Dynamo 1144 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Port Side Starting Platform

Position of Main Switch Board Beside Dynamo having switches to groups 5 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Port Allway 1 of 8 switches, & 3 of 12 switches

If cut outs are fitted on main switch board to the cables of main circuit Yls and on each auxiliary switch board to the cables of auxiliary circuits Yls and at each position where a cable is branched or reduced in size Yls and to each lamp circuit Yls

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 Yls

Are the cut outs of non-oxidizable metal Yls and constructed to fuse at an excess of 50 per cent over the normal current

Are all cut outs fitted in easily accessible positions Yls Are the fuses of standard dimensions Yls 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 Yls

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

Total number of lights provided for 251 arranged in the following groups:—

A	<u>64</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>32</u> (economic lamps)	Amperes
B	<u>61</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>31</u>	do Amperes
C	<u>54</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>24</u>	do Amperes
D	<u>40</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>20</u>	do Amperes
E	<u>32</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>16</u>	do Amperes
1	Mast head light with	1 lamps each of	<u>32</u>	candle power requiring a total current of	<u>1.2</u>	Amperes
2	Side light with	1 lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
4	Cargo lights of	<u>128</u>	candle power, whether incandescent or arc lights	<u>Incandescent</u>		

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

Where are the switches controlling the masthead and side lights placed What House on bridge

DESCRIPTION OF CABLES.

Main cable carrying	<u>126</u>	Amperes, comprised of	<u>34</u>	wires, each	<u>15</u>	L.S.G. diameter,	<u>.488</u>	square inches total sectional area
Branch cables carrying	<u>32</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>18</u>	L.S.G. diameter,	<u>.488</u>	square inches total sectional area
Branch cables carrying	<u>20</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>16</u>	L.S.G. diameter,	<u>.488</u>	square inches total sectional area
Leads to lamps carrying	<u>5</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>18</u>	L.S.G. diameter,	<u>.488</u>	square inches total sectional area
Cargo light cables carrying	<u>4</u>	Amperes, comprised of	<u>14</u>	wires, each	<u>23</u>	L.S.G. diameter,	<u>.181</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure para rubber & vulcanising rubber, India rubber water-proofed tape
Yls. & Co. vulcanised together braided & compounded

Joints in cables, how made, insulated, and protected No. no

Are all the joints of cables thoroughly soldered, resin only having been used as a flux No. no 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 No. no

Are there any joints in or branches from the cable leading from dynamo to main switch board No

How are the cables led through the ship, and how protected In strong wood casing

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 *Galv'd iron pipe*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *None fitted near sources of heat*

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 *Strong wood casing*

How are cables carried through beams *hole lined with teak wood plugs* through bulkheads, &c. *X*

How are cables carried through decks *Galv'd Iron deck tubes*

Are any cables run through coal bunkers *No* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes*

If so, how are they protected *in galvanised iron pipe*

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 *Terminal switch fitted in cast iron boxes (water tight)*

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

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

Are any switches, cut outs, or joints of cables fitted in the pump room or companion

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

The installation is supplied with a voltmeter and *also* an amperemeter, fixed *on main switch board*

The copper used is guaranteed to have 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.

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.

Bateman Cooper

Electrical Engineers

Date *5 Sept 1898*

COMPASSES.

Distance between dynamo or electric motors and standard compass

150 ft
140 ft

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>6</i>	<i>12</i>	<i>10</i>	
<i>6</i>	<i>30</i>	<i>25</i>	
<i>6</i>	<i>100</i>	<i>95</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 course in the case of the standard compass and *nil* degrees on course in the case of the steering compass.

FOR SIR RAYLTON DIXON & COMPANY, LIMITED.

Builder's Signature.

Date *Sept. 6th 1898.*

GENERAL REMARKS.

The various parts of the installation were examined, while being fitted. The materials, and workmanship are good. When completed, the light was tried under full power with satisfactory results.

Gidney Towell

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

It is submitted that this installation appears to be in accordance with the Rules.



Lloyd's Register
Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.