

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 11747

Port of **WEST HARTLEPOOL**. Date of First Survey *17<sup>th</sup> Dec. 1901* Date of Last Survey *13<sup>th</sup> Jan 1902* No. of Visits *4*  
 main boiler No. in *on the* ~~iron~~ *Steel* **S.S. Manchester Market** Port belonging to **Manchester**  
 Range of *leg. Book* **37** Built at **West Hartlepool** By whom **Furness Withy & Co. Ltd.** When built **1901-7**  
 Owners **Manchester Liners Ltd** Owners Address **Manchester**  
 Card No. **259** Electric Light Installation fitted by **Messrs W.C. Martin & Co. Glasgow** When fitted **1902**

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound Dynamo direct coupled to Single cylinder double acting Steam engine with automatic shaft governor and automatic lubrication.

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

Where is Dynamo fixed **Starting Platform**

Position of Main Switch Board **near Dynamo** having switches to groups **A. B. C. D.** of lights, &c., as below

Positions of auxiliary **FUSE** boards and numbers of **FUSES** on each **A. Panty 1 at 6. 1 at 8 Wheelhouse 1 at 12. Forecastle 1 at 8. B. Top of Engine Room 1 at 10. Poop 1 at 8. C. Top of Engine Room 1 at 16. D Engine Room 1 at 16.**

If cut outs are fitted on main switch board to the cables of main circuit **yes** and on each auxiliary switch boards to the cables of auxiliary circuits **yes** and at each position where a cable is ~~reduced~~ 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-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 the fuses of standard dimensions **yes** 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 **109** arranged in the following groups :-

A	<b>39</b>	lights each of	<b>16</b>	candle power requiring a total current of	<b>23.4</b>	Amperes
B	<b>27</b>	lights each of	<b>16</b>	candle power requiring a total current of	<b>16.2</b>	Amperes
C	<b>6</b>	lights each of	<b>16</b>	candle power requiring a total current of	<b>3.6</b>	Amperes
D	<b>34</b>	lights each of	<b>16</b>	candle power requiring a total current of	<b>20.4</b>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
1		Mast head light with 1 lamp each of	<b>32</b>	candle power requiring a total current of	<b>1.2</b>	Amperes
2		Side light with 1 lamp each of	<b>32</b>	candle power requiring a total current of	<b>2.4</b>	Amperes
4		Cargo lights of 6 lights, each	<b>16</b>	candle power, whether incandescent or arc lights	<b>incandescent</b>	

If arc lights, what protection is provided against fire, sparks, &c. **No Arc Lights**

Where are the switches controlling the masthead and side lights placed **Wheelhouse on bridge**

## DESCRIPTION OF CABLES.

Main cable carrying	<b>67.2</b> Amperes, comprised of	<b>19</b> wires, each	<b>14</b>	L.S.G. diameter, .0973 square inches total sectional area
Branch cables carrying	<b>27</b> Amperes, comprised of	<b>19</b> wires, each	<b>18</b>	L.S.G. diameter, .0349 square inches total sectional area
Branch cables carrying	<b>15.6</b> Amperes, comprised of	<b>19</b> wires, each	<b>20</b>	L.S.G. diameter, .0198 square inches total sectional area
Leads to lamps carrying	<b>1.8</b> Amperes, comprised of	<b>1</b> wire, each	<b>18</b>	L.S.G. diameter, .0018 square inches total sectional area
Cargo light cables carrying	<b>3.6</b> Amperes, comprised of	<b>108</b> wires, each	<b>-</b>	L.S.G. diameter, .006 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

**H.C. copper wire tinned. Insulated with pure and Vulcanised Rubber and tape. The whole vulcanised together, braided and compounded. Sheathed in lead or steel armour.**

Joints in cables, how made, insulated, and protected **No joints.**

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

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 **Twin conductor, Lead or Steel armoured cables clipped direct to wood or iron work of the ship according to surroundings.**

**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 *Metal tubes*

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

What special protection has been provided for the cables near boiler casings *Steel armour*

What special protection has been provided for the cables in engine room *Steel armour*

How are cables carried through beams *Insulating bushes where unarmoured through bulkheads, &c. Water tight Glands*

How are cables carried through decks *Metal tubes fitted water tight to decks.*

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 *Steel armoured cables clipped to deck above protected by beams*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *yes In upper Tweendeck*

If so, how are the lamp fittings and cable terminals specially protected *Strong iron guards and covers.*

Where are the main switches and cut outs for these lights fitted *Engine room*

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 *by fibre forks*

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 \_\_\_\_\_

*At present fitted with a voltmeter and also with an ammeter fixed to switchboard*

Insulation of cables is guaranteed to have a resistance or not less than *2000* 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.

*W. C. Martin & Co* Electrical Engineers

Date *21<sup>st</sup> Feb 1902*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *106 ft*

Distance between dynamo or electric motors and steering compass *104 ft*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>9</i>	Amperes	<i>6</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying	<i>3.6</i>	Amperes	<i>6 to 9</i>	feet from standard compass	<i>6 to 9</i>	feet from steering compass
A cable carrying	<i>1.2</i>	Amperes	<i>5</i>	feet from standard compass	<i>5' 6"</i>	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 *nil* degrees on *certain* course in the case of the standard compass and *nil* degrees on *the same* course in the case of the steering compass.

**FURNESS, WITBY & Co., LIMITED**

*per W. Jackson* Builder's Signature

Date *Feb 25<sup>th</sup> 1902*

**GENERAL REMARKS.**

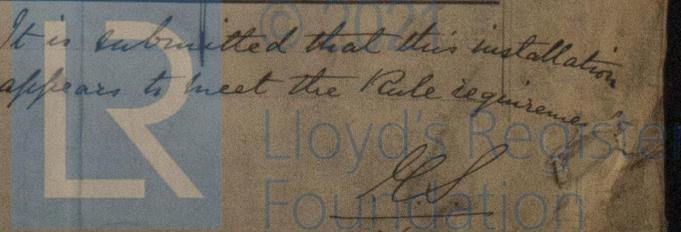
*The fitting of the wires throughout this vessel are as stated on this report and appears to be in accordance with the Committee's requirements.*

*Allison B. Wilson.*

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

Committee's Minute \_\_\_\_\_

*It is submitted that this installation appears to meet the Rule requirements.*



*26.2.02*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 12.