

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 11747

Port of **WEST HARTLEPOOL**. Date of First Survey **17 Dec. 1901** Date of Last Survey **13 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** **33** Built at **West Hartlepool** By whom **Furness Withy & Co. Ltd.** When built **1901-2**
 of rivets **owners** **Manchester Liners Ltd** Owners Address **Manchester**
 to do. 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	39	lights each of	16	candle power requiring a total current of	23.4	Amperes
B	27	lights each of	16	candle power requiring a total current of	16.2	Amperes
C	6	lights each of	16	candle power requiring a total current of	3.6	Amperes
D	34	lights each of	16	candle power requiring a total current of	20.4	Amperes
E		lights each of		candle power requiring a total current of		Amperes
1	Mast head light with	1 lamp each of	32	candle power requiring a total current of	1.2	Amperes
2	Side light with	1 lamp each of	32	candle power requiring a total current of	2.4	Amperes
4	Cargo lights of	6 lights, each	16	candle power, whether incandescent or arc lights	incandescent	

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	67.2	Amperes, comprised of	19	wires, each	14	L.S.G. diameter, .0973 square inches total sectional area
Branch cables carrying	27	Amperes, comprised of	19	wires, each	18	L.S.G. diameter, .0349 square inches total sectional area
Branch cables carrying	15.6	Amperes, comprised of	19	wires, each	20	L.S.G. diameter, .0198 square inches total sectional area
Leads to lamps carrying	1.8	Amperes, comprised of	1	wire, each	18	L.S.G. diameter, .0018 square inches total sectional area
Cargo light cables carrying	3.6	Amperes, comprised of	108	wires, each	—	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 when 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 100 ft. 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 *21st 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	Amperes	feet from standard compass	feet from steering compass
<i>9</i>	<i>6</i>	<i>6</i>	<i>6</i>
<i>3.6</i>	<i>6 to 9</i>	<i>6 to 9</i>	<i>6 to 9</i>
<i>1.2</i>	<i>5</i>	<i>5' 6"</i>	<i>5' 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 *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 25th 1902*

GENERAL REMARKS.

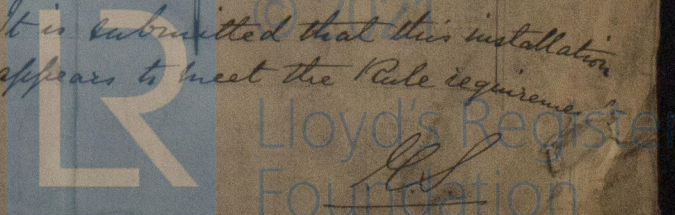
The fitting of the wires throughout this vessel are as stated on this report and appears to be in accordance with the Committee's requirements.

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. 13.