

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 12483

Port of *Hartlepool* Date of First Survey *23rd Aug* Date of Last Survey *15th Oct. 1904* No. of Visits *7*  
 No. in Reg. Book *107* on the ~~Iron~~ *Steel* "*Rapallo*" Port belonging to *West Hartlepool*  
 Built at *West Hartlepool* By whom *Furness, Withy & Co. Ltd.* When built *Feb 1902*  
 Owners *Furness, Withy & Co. Ltd.* Owners' Address *West Hartlepool*  
 Yard No. *261* Electric Light Installation fitted by *Furness, Withy & Co. Ltd.* When fitted *Oct. 1904.*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

A compound-wound Dynamo, coupled direct to single cylinder Engine, running at a speed of *350* revolutions at *100* lbs steam pressure.

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

Where is Dynamo fixed *Bottom Platform of Engine Room, Starboard Side*

Position of Main Switch Board *Near Dynamo* having switches to groups *4* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Forecastle 1 at 10, Saloon 1 at 8, Navigation 1 at 5, Engineer's Accommodation 2 at 4, Engine Room 1 at 8, 2 at 4, 2 at 3, Aft, 1 at 4.*

If cut outs are fitted on main switch board to the cables of main circuit *Yes* and on each auxiliary switch board to the cables of auxiliary circuits *Yes* and at each position where a cable is branched or 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 *123* arranged in the following groups:—

A	<i>19</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>11.4</i>	Amperes
B	<i>32</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>19.2</i>	Amperes
C	<i>55</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>33.8</i>	Amperes
D	<i>17</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>6.6</i>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
	<i>1</i>	Mast head light with	<i>1</i> lamp each of	<i>32</i>	candle power requiring a total current of	<i>1.2</i> Amperes
	<i>2</i>	Side light with	<i>1</i> lamp each of	<i>32</i>	candle power requiring a total current of	<i>2.4</i> Amperes
	<i>4</i>	Cargo lights of	<i>6 1/2</i> at <i>16</i> c.p. each	candle power, whether incandescent or arc lights	<i>Incandescent</i>	

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

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

## DESCRIPTION OF CABLES.

Main cable carrying	<i>119</i>	Amperes, comprised of	<i>37</i>	wires, each	<i>16</i>	L.S.G. diameter,	<i>.119</i>	square inches total sectional area
Branch cables carrying	<i>12.7</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>18</i>	L.S.G. diameter,	<i>.0127</i>	square inches total sectional area
Branch cables carrying	<i>22.5</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>16</i>	L.S.G. diameter,	<i>.225</i>	square inches total sectional area
Leads to lamps carrying	<i>61.2</i>	Amperes, comprised of	<i>19</i>	wires, each	<i>16</i>	L.S.G. diameter,	<i>.0612</i>	square inches total sectional area
Cargo light cables carrying		Amperes, comprised of		wires, each		L.S.G. diameter,		square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Best vulcanized rubber, taped & braided, sheathed in Steel Armour in Tween Decks, Lead covered in Wood casing in Engine Room & Storehold. Twin Lead covered in Saloon and Accommodation.*

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 *None* 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 *Yes*

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 *Steel Armour, clipped in Angle Irons under Beams.*



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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

Lead Sheathing

in Wood casings

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

Lead Sheathing in Wood casing.

How are cables carried through beams

Fibre Bushes.

through bulkheads, &c.

How are cables carried through decks

Iron Pipes made Watertight

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 Armour in Angle Iron

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

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

Brass Watertight Plugs &

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

an amperemeter, fixed in Main Switchboard.

Insulation of cables is guaranteed to have a resistance of not less than  
statute mile after 24 hours' immersion in seawater.

2000.

megohms per

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.

FURNESS, WITBY & CO., LIMITED.

B. W. D. Wrenwright Electrical Engineers

Date

COMPASSES.

Distance between dynamo or electric motors and standard compass

112 feet.

Distance between dynamo or electric motors and steering compass

104 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 5.4 Amperes 5 feet from standard compass 8 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

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

degrees on

course in the case of the steering compass.

FURNESS, WITBY & CO., LIMITED.

B. W. D. Wrenwright Builder's Signature.

Date

18. 11. 04

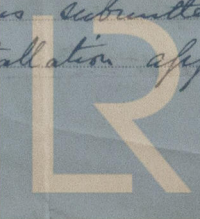
GENERAL REMARKS.

The wiring of the vessel throughout is in accordance with the above and with the Committee's requirements.

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

Committee's Minute

It is submitted that this installation appears to be satisfactory.



Lloyd's Register of Shipping

19. 11. 04

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.