

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 21954

Port of Sunderland Date of First Survey ✓ Date of Last Survey 24th Aug 04 No. of Visits ✓
 No. in Reg. Book on the Iron or Steel S.S. "Wray Castle" Port belonging to Liverpool
 Built at Sunderland By whom W. Pickersgill & Sons When built 1904
 Owners Lancashire S. Co. Ltd. Owners' Address ✓
 Yard No. 144 Electric Light Installation fitted by J. H. Holmes & Co. When fitted 1904

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 6 1/2" x 6 open type engine. auto governor. 100 lb steam pressure. by
ester. coupled to No. 15 Dynamo compound wound by J. H. Holmes & Co.
 Capacity of Dynamo 116 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed Aft end of Engine Room. Starboard side
 Position of Main Switch Board Starboard Bunker bulkhead facing switches to groups A.B.C.D.E.F.G.H. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each

See sketch.

Are cut outs 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 No.
 Are all vessels 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

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

Total number of lights provided for 60 - 100 cp.
61 - 32 cp.
5 - 10 Amp Arc Lamps. Arranged in the following groups:—

A	Arc lamps for 4 lights each of <u>10 Amps</u>	candle power requiring a total current of	<u>10.</u>	Amperes
B	" " " " 3 lights each of <u>one sw. split fuse.</u>	candle power requiring a total current of	<u>10.</u>	Amperes
B	Masthead 3 lights each of <u>16</u>	candle power requiring a total current of	<u>20.4</u>	Amperes
C	Eng etc. 15 lights each of <u>16</u>	candle power requiring a total current of	<u>9.0</u>	Amperes
C	Engines 21 lights each of <u>10</u>	candle power requiring a total current of	<u>12.5</u>	Amperes
	2 Mast head lights each of <u>16</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
	2 Side lights each of <u>16</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
	Cargo lights of <u>—</u>	candle power, whether incandescent or arc lights	<u>—</u>	

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

enclosed type

Where are the switches controlling the masthead and side lights placed

In the chart room.

DESCRIPTION OF CABLES.

Main cable carrying 116 Amperes, comprised of 37 wires, each 16 L.S.G. diameter, .1146 square inches total sectional area
 Branch cables carrying 20.4 Amperes, comprised of 4 wires, each 16 L.S.G. diameter, .0223 square inches total sectional area
 Branch cables carrying 12.5 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .0125 square inches total sectional area
 Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 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.

Insulated with pure rubber, taped & compounded and further protected
with lead covering or galv^d iron wire braided overall as required

Joints in cables, how made, insulated, and protected

Spliced, soldered and insulated with approved rubber
protective tapes etc.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux yes Are all joints in accessible positions, none being

no made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage

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

armoured

WITH GALV^d WIRE

in Holes

Engines & exposed

parts. Lead covered in Accommodation clipped up

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *yes when cargo is out.*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *armouring WITH GALV^d WIRE*
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *do*
 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 *do*
 How are cables carried through beams *insulating busker* through bulkheads, &c. *stuffing boxes.*
 How are cables carried through decks *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 *armouring WITH GALV^d WIRE No. 15, No. 16 + No. 17 S.W.G.*
 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
 Cargo light cables, whether portable or permanently fixed _____ How fixed _____
 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 *Main 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.

J. H. Holmes & Co.

Electrical Engineers

Date

Sep 29 - 04

COMPASSES.

Distance between dynamo or electric motors and standard compass

100 ft about.

Distance between dynamo or electric motors and steering compass

96 ft

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>10</i>	<i>30</i>	<i>30</i>	<i>30</i>
<i>20.4</i>	<i>24</i>	<i>20</i>	<i>20</i>
<i>8.4</i>	<i>16</i>	<i>24</i>	<i>24</i>

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.

Wm. Pickersgill & Sons

Builder's Signature.

Date

Oct 3rd 1904

GENERAL REMARKS.

The above installation appears to comply with the Rules for record of Electric Light in the Register Book.

A. Ryd.

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

Committee's Minute

This installation appears to be fitted in accordance with the Rules.

The 21/10/04

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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.