

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 34912

Port of **NEWCASTLE-ON-TYNE** Date of First Survey **Nov 18 98** Date of Last Survey **Feb 14 99** No. of Visits **2**
 No. in Reg. Book on the Iron or Steel **5/5 "Fremington"** Port belonging to **Liverpool**
 Built at **Sunderland** By whom **R. Thompson** When built **1898-9**
 Owners **Liverpool & North Derton S.S. Co.** Owners Address **Liverpool**
 Yard No. **204** Electric Light Installation fitted by **J. H. Holmes & Co.** When fitted **1899**

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two pole Gramme type dynamo, Bransome, Simons & Jeffries engine coupled direct to dynamo.

Capacity of Dynamo **60** Amperes at **60** Volts, ~~whether continuous or alternating~~ current **350**

Where is Dynamo fixed **Engine room**

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

Positions of auxiliary switch boards and numbers of switches on each **Engine room 3, Wheelhouse 3**
9 1 fuse board with 2 fuses forward

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 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 **43** arranged in the following groups :-

A	Ship	10	lights each of	16	candle power requiring a total current of	10	Amperes
B	Engine	9	lights each of	16	candle power requiring a total current of	9	Amperes
C	Cargo	20	lights each of	16	candle power requiring a total current of	20	Amperes
D	Signals	4	lights each of	32	candle power requiring a total current of	8	Amperes
E			lights each of		candle power requiring a total current of		Amperes
	1	Must head light with	1 lamp each of	32	candle power requiring a total current of	2	Amperes
	2	Side lights with	1 lamp each of	32	candle power requiring a total current of	4	Amperes
	20	Cargo lights of		16	candle power, whether incandescent or arc lights		Incandescent

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

Where are the switches controlling the masthead and side lights placed **Wheel-house**

DESCRIPTION OF CABLES.

Main cable carrying **60** Amperes, comprised of **16** wires, each **16** L.S.G. diameter, **.061** square inches total sectional area
 Branch cables carrying **20** Amperes, comprised of **16** wires, each **16** L.S.G. diameter, **.072** square inches total sectional area
 Branch cables carrying **5** Amperes, comprised of **2 1/2** wires, each **2 1/2** L.S.G. diameter, **.0055** square inches total sectional area
 Leads to lamps carrying **Amperes**, comprised of **1,000** wires, each **1,000** L.S.G. diameter, **1,000** 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.

Henley's Glass G.

Joints in cables, how made, insulated, and protected **none**

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 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 **in casing or steel pipes**

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *when cargo is out*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Iron pipes on deck ceiling*

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 *"*

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

How are cables carried through beams *in insulators* through bulkheads, &c. *glands*

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

If so, how are they protected *as above*

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 *port cable* How fixed *✓*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *brass bolts nuts & washers*

How are the returns from the lamps connected to the hull *Do is timed.*

Are all the joints with the hull in accessible positions *yes*

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 *now* supplied with a voltmeter and *one* amperemeter, fixed in *switchboard in engine room*

The copper used is guaranteed to have a conductivity of *95* 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. Roberts, G.

Electrical Engineers Date *24-2-99*

COMPASSES.

Distance between dynamo or electric motors and standard compass *65 ft. - about 70*

Distance between dynamo or electric motors and steering compass *60 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>5</i>	Amperes	<i>about 70</i>	feet from standard compass	<i>15</i>	feet from steering compass
A cable carrying	<i>1</i>	Amperes	<i>6</i>	feet from standard compass	<i>3</i>	feet from steering compass <i>double wire</i>
A cable carrying	<i>✓</i>	Amperes	<i>✓</i>	feet from standard compass	<i>✓</i>	feet from steering compass

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.

Robert Thompson Builder's Signature Date *March 10. 1899.*

GENERAL REMARKS.

This installation has been fitted as stated in the report, the workmanship being good throughout

Robert Haig

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

Committee's Minute

This installation appears to be fitted in accordance with the Rules

really

17/3/99

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

