

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 71075

Port of Newcastle-on-Tyne Date of First Survey May 7th Date of Last Survey Jun 10 No. of Visits 7
 No. in Reg. Book on the Iron or Steel Wat Balloon Port belonging to London
 Built at Bill Quay, Newcastle By whom Messrs. W. & A. Shanks & Co. When built 1918
 Owners The Shipping Controller Owners' Address
 Card No. 210 Electric Light Installation fitted by Messrs. J. H. Holmes & Co. When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

6 1/2 x 6" Open Vertical Single Cylinder Engine capable of giving 16 1/2 H.P. at 100 lb steam pressure.
 Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed On Starling Plate Whether single or double wire system is used Double
 Position of Main Switch Board near Dynamo having switches to groups M.B.C.D.E. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each 1 group of 10 switches in Starling Plate Room. 1 group of 10 switches in Starling Plate Room. 1 group of 10 switches in Starling Plate Room. 1 group of 10 switches in Starling Plate Room.
 fuses 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
 vessel is wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits Yes
 are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 100 per cent over the normal current
 are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases Yes
 total number of lights provided for 121 arranged in the following groups:—

<u>59</u>	lights each of <u>20 Watt</u>	<u>16</u>	candle power requiring a total current of <u>14</u>	Amperes
<u>24</u>	lights each of <u>16</u>	<u>32</u>	candle power requiring a total current of <u>13.5</u>	Amperes
<u>6</u>	lights each of <u>5</u>	<u>32</u>	candle power requiring a total current of <u>13.5</u>	Amperes
<u>8</u>	lights each of <u>20 Watt</u>	<u>16</u>	candle power requiring a total current of <u>7.0</u>	Amperes
<u>24</u>	lights each of <u>16</u>	<u>32</u>	candle power requiring a total current of <u>13.5</u>	Amperes
<u>1</u>	Most head light with <u>1</u> lamp each of <u>32</u>	<u>16</u>	candle power requiring a total current of <u>1.12</u>	Amperes
<u>2</u>	Side light with <u>1</u> lamp each of <u>32</u>	<u>32</u>	candle power requiring a total current of <u>2.24</u>	Amperes
<u>4</u>	Cargo lights of <u>6x16</u>		candle power, whether incandescent or arc lights <u>Incandescent</u>	

 Are lights, what protection is provided against fire, sparks, &c. Yes

DESCRIPTION OF CABLES.

are the switches controlling the masthead and side lights placed on the Bridge with master switch in wheelhouse
 cable carrying 100 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .011 square inches total sectional area
 cables carrying 40 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 cables carrying 13.5 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007 square inches total sectional area
 to lamps carrying 2 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .008 square inches total sectional area
 light cables carrying 3.36 Amperes, comprised of 1 wires, each 16 S.W.G. diameter, .003 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

all conductors are encased in A.C. conductors (Twisted) insulated with pure para rubber & vulcanized rubber, taped, & braided
 in cables, how made, insulated, and protected None. Looping in system carried out.

are the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 None
 are any joints in or branches from the cable leading from dynamo to main switch board None
 are the cables led through the ship, and how protected Lead covered & clipped up in wheelhouse
also where threaded & braided

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes, except in Hold No.*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Arranged & Braid.*
 What special protection has been provided for the cables near galley or oil lamps or other sources of heat *Arranged & Braid.*
 What special protection has been provided for the cables near boiler casings *Ditto.*
 What special protection has been provided for the cables in engine room *Ditto.*
 How are cables carried through beams *Bushed with Fibre through bulkheads, &c. Slapping Glands.*
 How are cables carried through decks *Lead & Iron plates flanged & made watertight.*
 Are any cables run through coal bunkers *Yes* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes*
 If so, how are they protected *Arranged & Braid.*
 Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *None*
 If so, how are the lamp fittings and cable terminals specially protected *✓*
 Where are the main switches and fuses for these lights fitted *✓*
 If in the spaces, how are they specially protected *✓*
 Are any switches or fuses fitted in bunkers *None*
 Cargo light cables, whether portable or permanently fixed *Portable* How fixed *2.5. Socket Connections.*
 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 *✓*
 Is the installation supplied with a voltmeter *Yes* and with an amperemeter *Yes*, fixed *on Main Board.*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas *✓*
 Are any switches, fuses, 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 copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than *100* megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

H. H. Thomas, Esq. Electrical Engineers Date *19/6/18*

COMPASSES.

Distance between dynamo or electric motors and standard compass *approx 64 ft.*
 Distance between dynamo or electric motors and steering compass *" 60 ft.*
 The nearest cables to the compasses are as follows:—

A cable carrying	Ampere	Distance from standard compass	Distance from steering compass
<i>5.5</i>	<i>inside</i>	<i>inside</i>	<i>inside</i>
<i>5.6</i>	<i>12</i>	<i>4</i>	<i>4</i>
<i>14.5</i>	<i>16</i>	<i>12</i>	<i>12</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 *0* degrees on *any* course in the case of the standard compass and *0* degrees on *any* course in the case of the steering compass. *ppr. J. H. Thomas*

WOOD, SKINNER & Co., LIMITED. Builder's Signature. Date *22nd June 1918.*

GENERAL REMARKS.

The above installation has been fitted in a satisfactory manner & in accordance with the Rules.

It is submitted that this vessel is eligible for THE RECORD. Elec. light. *J. H. Thomas* Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. JUL. 2-1918