

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17587.

Port of Greenock Date of First Survey 28th Oct. 1919 Date of Last Survey 31 Dec. 19 No. of Visits 12
 No. in Reg. Book on the Iron or Steel 10 Dundrum Castle Port belonging to London
 Built at Greenock By whom Harland & Wolff When built 1919
 Owners Union Castle Line Owners' Address London
 Yard No. 572 Electric Light Installation fitted by Harland & Wolff Ltd When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Steam Driven Generating Set. Engine by Shanks Ltd. Newcastle. Single cylinder 52" x 5" stroke 520 R.P.M. forced lubrication W.P. 100 lbs. 2" Dynamometer by Holmes Ltd. Newcastle. Open type liquid compound.

Capacity of Dynamo 10 KW. 100 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Starboard Side Engine Room Whether single or double wire system is used Double

Position of Main Switch Board on Engineers' Store Bulkhead having switches to groups Six of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 10 Auxiliary Switchboards, Dis boxes only, fitted:-
1 in Wheel House 1 in Bridge Deck House 1 in Poop & 1 in Engine Room for Lighting Circuits.
2 Distribution Boxes in Engine Room for Cargo Circuits.

If 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

If 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 33 S.W.G. Copper 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 224 arranged in the following groups:-

A	<u>3</u>	lights each of	<u>32</u>	candle power requiring a total current of	<u>3.6</u>	Amperes
B	<u>156</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>93.6</u>	Amperes
C	<u>6</u>	lights each of	<u>8</u>	candle power requiring a total current of	<u>1.8</u>	Amperes
D	<u>36</u>	lights each of	<u>40 Watts</u>	candle power requiring a total current of	<u>14.4</u>	Amperes
E	<u>6</u>	lights each of	<u>6 cp. for Morse</u>	candle power requiring a total current of	<u>1.2</u>	Amperes
<u>2</u>	Mast head light with	<u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
<u>2</u>	Side light with	<u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
<u>11</u>	Cargo lights of	<u>96</u>	candle power, whether incandescent or arc lights	<u>Incandescent</u>		
<u>2</u>	" "	<u>1000</u>	" " 2 watt type			

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

No Arcs

Where are the switches controlling the masthead and side lights placed In Wheel House

DESCRIPTION OF CABLES.

Main cable carrying	<u>100</u> Amperes, comprised of	<u>19</u> wires, each	<u>14</u> S.W.G. diameter, .094	square inches total sectional area
Branch cables carrying	<u>38.3</u> Amperes, comprised of	<u>7</u> wires, each	<u>16</u> S.W.G. diameter, .022	square inches total sectional area
Branch cables carrying	<u>27</u> Amperes, comprised of	<u>7</u> wires, each	<u>18</u> S.W.G. diameter, .0135	square inches total sectional area
Leads to lamps carrying	<u>3.6</u> Amperes, comprised of	<u>1</u> wires, each	<u>17</u> S.W.G. diameter, .0025	square inches total sectional area
Cargo light cables carrying	<u>5</u> Amperes, comprised of	<u>103</u> wires, each	<u>38</u> S.W.G. diameter, .003	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

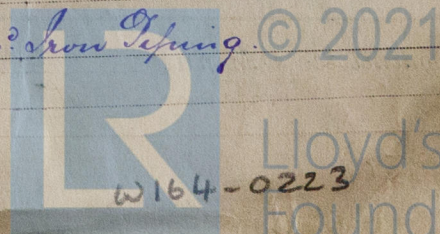
Main cables Twisted lead Armoured & Braided 600 Hegolin Grade
 Sub " in Machinery & Crew Space do do do do
 Sub " in Officers' Accommodation SP 254 17 Lead Covered

Joints in cables, how made, insulated, and protected Cables run over Open Decks viz:- Fore and After Well Decks
are carried in Galv. Iron Tubes, cables being V.L.R. single core and are joined to twin core
in joint boxes in Forecastle, Fore & Aft end of Stairs' Accom., and Poop.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances brass blocks and 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 In Perforated Steel Trays & Galv. Iron Pipeing



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 *Galv. Iron Pipe*
or *Wire Armoured Braided*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Wire Armoured & Braided*

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 *Like Bunkies* through bulkheads, &c. *W.I. Brass Glands*

How are cables carried through decks *Galv. Iron Deck Tubes. 18" long and 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 *Wire Armoured & Braided*

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 *None*

Where are the main switches and fuses for these lights fitted *do*

If in the spaces, how are they specially protected *do*

Are any switches or fuses fitted in bunkers *do*

Cargo light cables, whether portable or permanently fixed *Portable* 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 _____

Is the installation supplied with a voltmeter *Yes*, and with an amperemeter *Yes*, fixed on *Switchboard*

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 *600* 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.

FOR HARLAND & WOLFF LIMITED,

COMPASSES.

Distance between dynamo or electric motors and standard compass *100 feet*

Distance between dynamo or electric motors and steering compass *96 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	in instrument	feet from standard compass	in instrument	feet from steering compass
<i>3</i>	<i>Amperes</i>	<i>in instrument</i>	<i>in instrument</i>	<i>in instrument</i>	<i>in instrument</i>
<i>10</i>	<i>Amperes</i>	<i>Five</i>	<i>Three</i>	<i>Three</i>	<i>Three</i>
<i>Amperes</i>	<i>Amperes</i>	<i>Amperes</i>	<i>Amperes</i>	<i>Amperes</i>	<i>Amperes</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 *Nil* course in the case of the standard compass and *Nil* degrees on *Nil* course in the case of the steering compass.

FOR HARLAND & WOLFF LIMITED,

GENERAL REMARKS.

The fitting of the wires in this vessel is as stated in this report and appears to be in accordance with the Committee requirements. The installation has been tested under full load and marked well.

It is submitted that this vessel is eligible for

ELEC: LIGHT 8/1/20.

Committee's Minute *GLASGOW 6-JAN 1920*

Elec. Light

Builder's Signature. Date *31st. December, 1919.*

Surveyor to Lloyd's Register of Shipping.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.