

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 23089

Port of Glasgow Date of First Survey 1-8-12 Date of Last Survey 27-8-12 No. of Visits 8
 No. in Reg. Book H. M. S. "ANT" Port belonging to Portsmouth
 Built at Port Glasgow By whom Murdoch & Murray When built 1913
 Owners Admiralty Owners' Address hess. Claud Hamilton Ltd When fitted 17-8-13
 Yard No. Electric Light Installation fitted by

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Open type single cylinder double acting steam engine, direct coupled to a four pole compound wound ship lighting dynamo, running at 350 R.P.M.
 Capacity of Dynamo 95 Amperes at 60 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine Room Whether single or double wire system is used double
 Position of Main Switch Board Engine Room having switches to groups 4 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each none

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 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 93 arranged in the following groups :-

A	<u>12</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>12</u>	Amperes
B	<u>8</u>	lights each of	"	candle power requiring a total current of	<u>8</u>	Amperes
C	<u>38</u>	lights each of	"	candle power requiring a total current of	<u>34</u>	Amperes
D	<u>31</u>	lights each of	"	candle power requiring a total current of	<u>30</u>	Amperes
E		lights each of		candle power requiring a total current of		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>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>4</u> Amperes
<u>2</u>	Cargo lights of	<u>5</u>	lamp each of	<u>16</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>

If arc lights, what protection is provided against fire, sparks, &c. no arcs

Where are the switches controlling the masthead and side lights placed Chart Room

DESCRIPTION OF CABLES.

Main cable carrying	<u>95</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>14</u>	S.W.G. diameter,	<u>.0934</u>	square inches total sectional area
Branch cables carrying	<u>38</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>16</u>	S.W.G. diameter,	<u>.0221</u>	square inches total sectional area
Branch cables carrying	<u>30</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>18</u>	S.W.G. diameter,	<u>.0124</u>	square inches total sectional area
Leads to lamps carrying	<u>5</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>19</u>	S.W.G. diameter,	<u>.0024</u>	square inches total sectional area
Cargo light cables carrying	<u>5</u>	Amperes, comprised of	<u>3</u>	wires, each	<u>20</u>	S.W.G. diameter,	<u>.0029</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

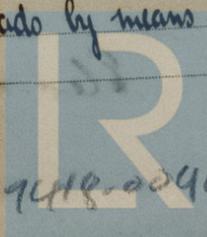
H.C. Copper wire tinned, insulated with pure and vulcanizing india rubber and tape, the whole vulcanized together braided compounded and lead covered

Joints in cables, how made, insulated, and protected no joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances - 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 -

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 Lead covered wire fixed to bulkheads by means of brass clips.



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 covers

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covers

What special protection has been provided for the cables near boiler casings Lead covers

What special protection has been provided for the cables in engine room Lead covers

How are cables carried through beams Lead bushes through bulkheads, &c. W.T. Glands

How are cables carried through decks deck tubes

Are any cables run through coal bunkers none or cargo spaces none or spaces which may be used for carrying cargo, stores, or baggage none

If so, how are they protected -

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 fuses for these lights fitted -

If in the spaces, how are they specially protected -

Are any switches or fuses fitted in bunkers no

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 double wire

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 main 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 **CLAUD HAMILTON, LIMITED,**
H. Lawrence. Electrical Engineers Date 2nd Sept 13.

COMPASSES.

Distance between dynamo or electric motors and standard compass 52 feet

Distance between dynamo or electric motors and steering compass 60 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>30</u>	Amperes	<u>20</u>	feet from standard compass	<u>27</u>	feet from steering compass
A cable carrying	<u>5</u>	Amperes	<u>10</u>	feet from standard compass	<u>10</u>	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 90 degrees on each course in the case of the standard compass and degrees on course in the case of the steering compass.

George H. Murray Builder's Signature. Date 4th Sept 1913

GENERAL REMARKS.

The installation has been examined, tried and found satisfactory.

It is submitted that this vessel is eligible for THE RECORD. Elec. Light.

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

Committee's Minute GLASGOW 9-568 1913
Elec. Light.



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

500, 12-1-Transfer
 2/9/13