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REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17683

on the *Greenock* Date of First Survey *21st May/20* Date of Last Survey *July 30th/20* No. of Visits *17*
 Built at *Port Glasgow* Port belonging to *Christiania* By whom *Lithgows Ltd* When built *1920*
 Owners' Address *Christiania* When fitted *1920*
 Electric Light Installation fitted by *H. J. Boothroyd Ltd (Port Glasgow)*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

round wound multipolar dynamo by "Clarke Chapman" and direct coupled to vertical engine by same makers.
 of Dynamo *100* Amperes at *100* Volts, whether continuous or alternating current *continuous*
 is Dynamo fixed *in engine room* Whether single or double wire system is used *Double*
 of Main Switch Board *near to dynamo* having switches to groups *for wireless and four of lights, &c., as below*
 of auxiliary switch boards and numbers of switches on each *none fitted*

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 to each lamp circuit *Yes*
and at each position where a cable is branched or reduced in size *Yes* and to each lamp circuit *Yes*
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*
the fuses of non-oxidizable metal *Yes* and constructed to fuse at an excess of *100* per cent over the normal current
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*
all switches and fuses constructed of incombustible materials and fitted on incombustible bases *Yes*

number of lights provided for *177* arranged in the following groups:—

<i>31</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>16</i>	Amperes
<i>40</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>20</i>	Amperes
<i>48</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>24</i>	Amperes
<i>✓</i>	lights each of	<i>✓</i>	candle power requiring a total current of	<i>✓</i>	Amperes
<i>✓</i>	lights each of	<i>✓</i>	candle power requiring a total current of	<i>✓</i>	Amperes
<i>2</i>	Mast head light with	<i>1</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>1.1</i> Amperes
<i>2</i>	Side light with	<i>1</i> lamps each of	<i>32</i>	candle power requiring a total current of	<i>1.1</i> Amperes
<i>6</i>	Cluster Cargo lights of	<i>16</i>	candle power, whether incandescent or arc lights	<i>Incandescent</i>	

 Are lights, what protection is provided against fire, sparks, &c. *no arcs fitted*

Where are the switches controlling the masthead and side lights placed *In chart room*

DESCRIPTION OF CABLES.

Cable Description	Amperes	Wires	S.W.G. diameter	Square inches total sectional area
1 cable carrying	100	19	14	0.94
1 cable carrying	24	7	18	0.125
1 cable carrying	20	7	18	0.125
1 cable carrying	2 1/2	1	18	0.018
1 cable carrying	3	3	20	0.03

DESCRIPTION OF INSULATION, PROTECTION, ETC.

R. taped, lead covered cables, and where exposed in machinery spaces and etc. armoured over the lead with galv. steel wire armour. And where necessary further protected by Steel tubing.
 Joints in cables, how made, insulated, and protected *no joints except mechanical ones*

Are all 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 *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 *Lead covered & armoured & efficiently clipped*



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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 covered and
armoured and where necessary in woot iron tubing

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

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 Lead + Fibre bushes through bulkheads, &c. Watertight Glands

How are cables carried through decks Watertight deck tubes

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 As described above

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage Yes

If so, how are the lamp fittings and cable terminals specially protected Specially guarded fittings

Where are the main switches and fuses for these lights fitted In Engine Room

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 To Watertight Connectors

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.

H. T. BOOTHROYD (PORT-GLASGOW) LTD.

J. H. HITCHCOCK

Electrical Engineers

Date 16th August 1920

COMPASSES.

Distance between dynamo or electric motors and standard compass MANAGING DIRECTOR & SECRETARY

About 175 feet

Distance between dynamo or electric motors and steering compass

About 210 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
A cable carrying	1/2	Amperes	6	feet from standard compass	10
A cable carrying	1	Amperes	8	feet from standard compass	8
A cable carrying	2	Amperes	8	feet from standard compass	8

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 any course in the case of the standard compass and nil degrees on any course in the case of the steering compass.

LITHGOWS LIMITED.

W. B. Allan

Builder's Signature.

Date

18th August 1920

GENERAL REMARKS.

The above installation has been fitted in a satisfactory manner. The materials and workmanship employed so far as could be seen are sound and good. It has been examined under full load and found to be satisfactory.

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

Elec. Lt REH 27/8/20

J. Robinson

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW

Elec Light

24 AUG 1920

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