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Rpt. 13.

Received at London Office 19

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. #0213

Port of Glasgow. Date of First Survey 14/5/20 Date of Last Survey 5/7/20. No. of Visits 5.
 No. in Reg. Book on the Iron or Steel "S.S. Ronald" Port belonging to Hosberg.
 Built at Port Glasgow. By whom Messrs R. Duncan & Co. When built 1920.
 Owners Archie "Aeklor" Owners' Address _____
 Yard No. 345. Electric Light Installation fitted by Messrs Chindley Ross & Co Ltd. When fitted 1900.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 12 K.W. Compound Wound Dynamos with vertical engines having cylinders 8" x 7"

Capacity of Dynamo 120 Amperes at 100 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 at Engine Room Store having switches to groups _____ of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each _____

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 _____ and at each position where a cable is branched or reduced in size _____ 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 300 arranged in the following groups:—

A	<u>45</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>9</u>	Amperes
B	<u>100</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>20</u>	Amperes
C	<u>34</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>6.8</u>	Amperes
D	<u>30</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>6</u>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
	<u>2</u>	Must head light with	<u>2</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.6</u> Amperes
	<u>2</u>	Side light with	<u>2</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.6</u> Amperes
	<u>6-6</u>	lt. Cargo lights 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. _____

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

DESCRIPTION OF CABLES.

Main cable carrying 120 Amperes, comprised of 37 wires, each 16 S.W.G. diameter, .117 square inches total sectional area
 Branch cables carrying 50 Amperes, comprised of 19 wires, each 18 S.W.G. diameter, .034 square inches total sectional area
 Branch cables carrying 55 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .035 square inches total sectional area
 Leads to lamps carrying 3.8 Amperes, comprised of 1 wires, each 16 S.W.G. diameter, .0032 square inches total sectional area
 Cargo light cables carrying 1.2 Amperes, comprised of 1 wires, each 16 S.W.G. diameter, .0032 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Twin V.I.R. single wire armoured and braided cables also single V.I.R. and lead covered cables. Main Cables consist of V.I.R. cables run in galvanised iron tubing.

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 securely fixed to beams etc, with galvanised clips
having M.T. screws.



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.

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

What special protection has been provided for the cables near boiler casings V.I.R. cables run in gas barrel tubing.

What special protection has been provided for the cables in engine room Armoured.

How are cables carried through beams Bushed holes. through bulkheads, &c. Bulkhead Glands

How are cables carried through decks Deck tubes.

Are any cables run through coal bunkers yes or cargo spaces no or spaces which may be used for carrying cargo, stores, or baggage no

If so, how are they protected Armoured cables boxed in with wood.

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 -----

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 2500 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 GRINDLAY, ROSS & CO. LTD.

Electrical Engineers

Date 12th July 1920

COMPASSES.

John B. Grindlay

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

Distance between dynamo or electric motors and steering compass 104 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>4</u>	<u>10</u>	<u>14</u>	<u>14</u>
<u>10</u>	<u>24</u>	<u>16</u>	<u>16</u>
<u>6, 8</u>	<u>28</u>	<u>20</u>	<u>20</u>

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.

Robert Duncan & Co. Ltd.
per AK

Builder's Signature.

Date 15th July 1920.

GENERAL REMARKS.

This installation has been fitted on board under special survey. Tested under full working conditions and found satisfactory.

It is submitted that

this vessel is eligible for THE RECORD Elec. Light.

J.W.D.
27/7/20

J. S. Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW

21 JUL 1920

Elec. Light.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

MC.
20.7.20

Im. 7.10.—Transfer.