

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. H1461

Port of Glasgow Date of First Survey 6th May Date of Last Survey 27th May No. of Visits 4
 No. in on the Iron or Steel SS CLAN MACNAIR Port belonging to Glasgow
 Reg. Book 12486 Built at Irvine By whom Messrs The Clyde Dockyard When built 1921
 Owners Cayzer Irvine & Co Owners' Address _____
 Yard No. A86 Electric Light Installation fitted by Messrs The Sunderland Works & Co When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

TOTAL KW = 18.

One compound plant consisting of single cylinder vertical open type inverted engine 200 revs / 100 lbs steam coupled to compound wound multi-pole dynamo. 18 KW.

Capacity of Dynamo 2 1/2 Amperes at 66 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed 3rd platform Eng room star side Whether single or double wire system is used Double

Position of Main Switch Board Middle platform in Eng room having switches to groups Eight of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each In chart room with switches controlling foremast, mainmast, port, star, stern & anchor lights, compasses, telegraphs, & horse lamps.

If fuses are fitted on main switch board to the cables of main circuit Yes and on each auxiliary ~~board~~ ^{FUSE} 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 No 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 205 @ 16 CP arranged in the following groups:—

A <u>Foremast</u>	<u>28</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>24.08</u>	Amperes
B <u>Mainmast</u>	<u>40</u> lights each of	<u>4</u>	candle power requiring a total current of	<u>31.40</u>	Amperes
C <u>Engines</u>	<u>35</u> lights each of	<u>0</u>	candle power requiring a total current of	<u>30.10</u>	Amperes
D <u>Deck</u>	<u>32</u> lights each of	<u>0</u>	candle power requiring a total current of	<u>24.52</u>	Amperes
E <u>Eng & Stw rooms</u>	<u>40</u> lights each of	<u>0</u>	candle power requiring a total current of	<u>25.80</u>	Amperes
<u>2 Mast head lights</u> with <u>1 lamp</u> each of	<u>32 CP</u>		candle power requiring a total current of	<u>1.42</u>	Amperes
<u>2 Side lights</u> with <u>1 lamp</u> each of	<u>32 CP</u>		candle power requiring a total current of	<u>1.42</u>	Amperes
<u>5 Cargo lights</u> of	<u>6 - 16</u>		candle power, whether incandescent or arc lights	<u>Incandescent</u>	

If arc lights, what protection is provided against fire, sparks, &c. None fitted

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

DESCRIPTION OF CABLES.

Main cable carrying 244 Amperes, comprised of 74 wires, each 16 S.W.G. diameter, 0.352 square inches total sectional area
 Branch cables carrying 34 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, 0.0225 square inches total sectional area
 Branch cables carrying 24.08 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, 0.0225 square inches total sectional area
 Leads to lamps carrying 0.86 Amperes, comprised of 3 wires, each 0.029 S.W.G. diameter, 0.002 square inches total sectional area
 Cargo light cables carrying 5.16 Amperes, comprised of 70 wires, each 36 S.W.G. diameter, 0.0032 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

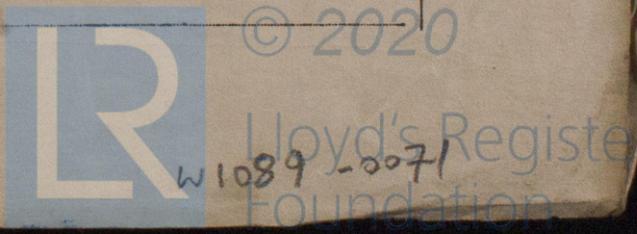
Main Machinery Spaces: Vulcanized rubber tapes & Braided cable in Steel tubes
 Accommodation " " " " " " " " Wood casing

Joints in cables, how made, insulated, and protected None made

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 None made

How are the cables led through the ship, and how protected Steel tubes clipped to Beams



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 T.S. Raw steel pipes

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

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

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

How are cables carried through beams Holes bushed with fibre through bulkheads, &c. Steel tubes

How are cables carried through decks W/T. Deck tubes

Are any cables run through coal bunkers — or cargo spaces — or spaces which may be used for carrying cargo, stores, or baggage —

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

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 both on main & branch

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° Farhenheit 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.

p.pro THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers Date 7th October 1921.

[Signature] Director.

COMPASSES.

Distance between dynamo or electric motors and standard compass 132 feet

Distance between dynamo or electric motors and steering compass 128 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>24.08</u> Amperes	<u>10</u> feet from standard compass	<u>14</u> feet from steering compass
A cable carrying	<u>0.86</u> Amperes	<u>10</u> feet from standard compass	<u>led into</u> feet from steering compass
A cable carrying	<u>0.86</u> Amperes	<u>led into</u> feet from standard compass	<u>10</u> 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 nil degrees on any course in the case of standard compass and nil degrees on any course in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS. *[Signature]* Director.

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

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

FREE £16-10-0. pd 27-10-21

Committee's Minute GLASGOW 25th 1921

Elec Light

[Signature] J.S. Rankin. Surveyor to Lloyd's Register of Shipping.

FRI. OCT. 20 1922

TUE MAR 28 1922

FRI. JUN. 16 1922

Lloyd's Register Foundation

24.10.21

16c. 1/10—Transfer.