

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 18 JUL 1921

Port of *Newcastle* Date of First Survey *1921* Date of Last Survey *1921* No. of Visits *2*
 No. in Reg. Book *on the Iron or Steel Steamer "Gronanga"* Port belonging to *Gronanga*
 Built at *Newcastle at S.W.* By whom *at S.W. Dockyard* When built *1921*
 Owners *Communist Steamer Line of Steamers* Owners' Address *Cheltenham*
 Yard No. *43* Electric Light Installation fitted by *at S.W. Dockyard* When fitted *1921*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Dynamo 4 Pole Compound Wound 360 R.P.M. driven by Single Cylinder High Speed Vertical Engine direct coupled
 Capacity of Dynamo *100* Amperes at *100* Volts, whether continuous or alternating current *continuous*
 Where is Dynamo fixed *Engine room platform* Whether single or double wire system is used *Double*
 Position of Main Switch Board *Engine room* having switches to groups *Six* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *Engine room for circuits & ventilation and in chart house six circuits and switches*

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
 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 arranged in the following groups:—

A Navigation	13 lights each of	5-32	candle power requiring a total current of	9.3	Amperes
B Machinery	39 lights each of	4-16	candle power requiring a total current of	21.8	Amperes
C Accommodation	53 lights each of	50-25	candle power requiring a total current of	15	Amperes
D Wireless	lights each of	1-32	candle power requiring a total current of	15	Amperes
E Crew	25 lights each of	33-25	candle power requiring a total current of	7.43	Amperes
Cargo	60 lights each of	1-32	candle power requiring a total current of	23.6	Amperes
2 Mast head light with	1 lamps each of	32	candle power requiring a total current of	2.24	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	2.24	Amperes
Cargo lights of			candle power, whether incandescent or arc lights	Accumulator	

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

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

DESCRIPTION OF CABLES.

Main cable carrying	102.5 Amperes, comprised of	19 wires, each	14 S.W.G. diameter,	.094 square inches total sectional area
Branch cables carrying	21.3 Amperes, comprised of	7.9 wires, each	20 S.W.G. diameter,	.007 square inches total sectional area
Branch cables carrying	33.6 Amperes, comprised of	7 wires, each	18 S.W.G. diameter,	.03375 square inches total sectional area
Leads to lamps carrying	15.9 Amperes, comprised of	1 wires, each	18 S.W.G. diameter,	.01246 square inches total sectional area
Cargo light cables carrying	4.5 Amperes, comprised of	1 wires, each	18 S.W.G. diameter,	.003217 square inches total sectional area
Cargo light cables carrying	13.4 Amperes, comprised of	7 wires, each	20 S.W.G. diameter,	.007 square inches total sectional area

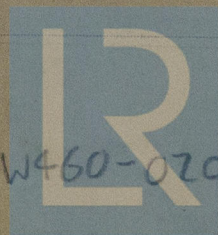
DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables insulated with pure vulcanized rubber & braided run in galvanized iron pipe
Other cables insulated with pure vulcanized rubber, steel armored
Accumulator wiring insulated with pure vulcanized rubber and lead covered
 Joints in cables, how made, insulated, and protected *See 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 *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 *Through cleat tubes clipped to beams & bulkheads*



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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*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Kept well clear*

What special protection has been provided for the cables near boiler casings *Lead covered and armoured*

What special protection has been provided for the cables in engine room *Lead covered and armoured*

How are cables carried through beams *Holes bushed with lead* through bulkheads, &c. *Watertight glands*

How are cables carried through decks *Deck tubes*

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 *Steel wire armour*

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 *No* *Switch board*

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 *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.

Alfred Shepherd Manager

Electrical Engineers

Date

COMPASSES.

Distance between dynamo or electric motors and standard compass *175 feet approximately*

Distance between dynamo or electric motors and steering compass *165 do do*

The nearest cables to the compasses are as follows:—

Cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying <i>24</i>	<i>15</i>	<i>10</i>	<i>10</i>
A cable carrying <i>46</i>	<i>30</i>	<i>20</i>	<i>20</i>
A cable carrying <i>24</i>	<i>45</i>	<i>30</i>	<i>30</i>

Have the compasses been adjusted with and without the electric installation at work at full power *without*

The maximum deviation due to electric currents, etc., was found to be *degrees* on *course* in the case of the standard compass and *degrees* on *course* in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS.

The workmanship and material used in this installation is of the best and is in accordance with Rules.

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

Lock

18/7/21

Surveyor to Lloyd's Register of Shipping.

Committee's Minute