

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1593

Port of Shanghai Date of First Survey 28.3.16 Date of Last Survey 22.5.16 No. of Visits 14
 No. in on the ~~Iron~~ Steel Screw Towboat "Ilia Monomets" Port belonging to Vladivostock
 Reg. Book Built at Shanghai By whom Shanghai Dk & Eng Co Ltd When built 1916
 Owners Russian Government Owners' Address Vladivostock
 Yard No. 1390 Electric Light Installation fitted by Shanghai Dk & Eng Co Ltd When fitted 1916

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Multipolar Direct Current Dynamo compound wound, coupled direct to a single cylinder high speed engine.

Capacity of Dynamo 90 Amperes at 110 Volts, whether continuous or alternating current continuous ✓

Where is Dynamo fixed Engine room, bottom platform. Whether single or double wire system is used Double ✓

Position of Main Switch Board Engine room having switches to groups Five groups of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Double pole distribution boards, one in engine room, controlling engine room, one in aft companion way, one in fore pantry & one in chart room, All switches local & not attached to fuse boards.

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 10 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 No wire fuses

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes.

Total number of lights provided for 914 searchlight arranged in the following groups:—

A	<u>One searchlight</u>	lights each of	<u>1500</u>	candle power requiring a total current of	<u>35</u>	Amperes
B	<u>25</u>	lights each of	<u>40 watts</u>	candle power requiring a total current of	<u>10</u>	Amperes
C	<u>18</u>	lights each of	<u>40 "</u>	candle power requiring a total current of	<u>7</u>	Amperes
D	<u>29</u>	lights each of	<u>40 "</u>	candle power requiring a total current of	<u>11</u>	Amperes
E	<u>19</u>	lights each of	<u>40 "</u>	candle power requiring a total current of	<u>7</u>	Amperes
1	Mast head light with	1 lamps each of	<u>16</u>	candle power requiring a total current of	<u>64 watts</u>	Amperes
2	Side light with	1 lamps each of	<u>16</u>	candle power requiring a total current of	<u>128 watts</u>	Amperes
2	Cargo lights of		<u>120</u>	candle power, whether incandescent or arc lights	<u>incandescent.</u>	

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

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

DESCRIPTION OF CABLES.

Main cable carrying	<u>113</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>14</u>	S.W.G. diameter,	<u>.094</u>	square inches total sectional area
Branch cables carrying	<u>46</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>16</u>	S.W.G. diameter,	<u>.022</u>	square inches total sectional area
Branch cables carrying	<u>34</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>18</u>	S.W.G. diameter,	<u>.0125</u>	square inches total sectional area
Leads to lamps carrying	<u>12</u>	Amperes, comprised of	<u>3</u>	wires, each	<u>20</u>	S.W.G. diameter,	<u>.0030</u>	square inches total sectional area
Cargo light cables carrying	<u>7</u>	Amperes, comprised of	<u>40</u>	wires, each	<u>36</u>	S.W.G. diameter,	<u>.0018</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC. Tinned copper conductors insulated with a thick lap of pure Para rubber, two coats of best vulcanized rubber, then a helical binding of IR coated cotton tape, the whole vulcanized, taped, braided & covered with preservative compound.

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 No joints

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 in steel conduits.

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 Steel conduits

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

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 protected by fibre tubing through bulkheads, &c. bulkhead fitting

How are cables carried through decks Watertight deck wayleads of brass

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

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 watertight plugs on deck

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 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.

W. S. B. & Co. **THE SHANGHAI DOCK & ENGINEERING CO., LTD.**

Electrical Engineers

Date 1.6.16

COMPASSES.

Distance between dynamo or electric motors and standard compass 72 feet

Distance between dynamo or electric motors and steering compass 70 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>35</u>	<u>12</u>	<u>14</u>	
<u>✓</u>	<u>✓</u>	<u>✓</u>	
<u>✓</u>	<u>✓</u>	<u>✓</u>	

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

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.

THE SHANGHAI DOCK & ENGINEERING CO., LTD.

Builder's Signature.

Date 1.6.16

GENERAL REMARKS. The installation has been fitted according to the Rules and was tried under working conditions & found satisfactory.

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

H. L. Fletcher

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

Committee's Minute FRI 7-JUL 1916

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.