

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 16439.

Port of Glasgow Date of First Survey 5th April 97 Date of Last Survey 28th Sept 98 No. of Visits 101
 No. in on the Iron or Steel T.S.S. "Moskva" Port belonging to Odessa
 Reg. Book 946 Built at Clydebank By whom Clydebank Eng. & Ship^y Coy When built 1898
 Owners Russian Volunteer Fleet Owners Address
 Yard No. 307 Electric Light Installation fitted by Clydebank Eng. & Ship^y Coy When fitted 1898

DESCRIPTION OF DYNAMO, ENGINE, ETC.

3 Combined sets Engine & Dynamo each having an output of 200 amps at 100 volts and 250 revs per min. (Compound wound)
 Capacity of Dynamos 200 Amperes ^{each} at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed In Dynamo Room on upper dk port side aft
 Position of Main Switch Board 50 50 having switches to 8 groups of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each 52 Distributing fuse boxes in various parts of ship

If cut outs are fitted on main switch board to the cables of main circuit Yes and on each auxiliary switch boards 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits
 Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of 50 per cent over the normal current
 Are all cut outs 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
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases yes
 Total number of lights provided for 500 arranged in the following groups:—

A	60	lights each of	16 x 8	candle power requiring a total current of	31.8	Amperes
A ₁	48		16 x 8		28	
B	73	lights each of	16 x 8	candle power requiring a total current of	37.8	Amperes
B ₁	87		16 x 8 x 32		44	
C	79	lights each of	16 x 8	candle power requiring a total current of	41.5	Amperes
C ₁	54		16 x 8		31.8	
D	55	lights each of	16 x 8	candle power requiring a total current of	22	Amperes
E	40	lights each of	16	candle power requiring a total current of	24	Amperes
1	Must head light with	2 lamps each of	16	candle power requiring a total current of	1.2	Amperes
2	Side light with	2 lamps each of	16	candle power requiring a total current of	1.2	Amperes
5	Cargo lights of	128 cp each		candle power, whether incandescent or arc lights	Incandescent	

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 Wheel House

DESCRIPTION OF CABLES.

Main cable carrying	190	Amperes, comprised of	37	wires, each	14	L.S.G. diameter,	.190	square inches total sectional area
Branch cables carrying	31.2	Amperes, comprised of	30	wires, each	20	L.S.G. diameter,	.0312	square inches total sectional area
	9.6		7		18		.0128	
Branch cables carrying	15.6	Amperes, comprised of	15	wires, each	20	L.S.G. diameter,	.0156	square inches total sectional area
	27.8		7		14		.0356	
Leads to lamps carrying	1.8	Amperes, comprised of	1	wires, each	18	L.S.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	5	Amperes, comprised of	1	wires, each	14	L.S.G. diameter,	.0050	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of tinned Copper wire insulated pure & vulcanizing India Rubber, and proofed tape, the whole thoroughly vulcanized together & encased in lead pipe
 Joints in cables, how made, insulated, and protected Soldered with resin as flux then India Rubber Strip & Solution, India Rubber tape & Waterproof tape.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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 Joints accessible made in distributing boxes.
 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 Led along upper dk then thro into main dk & run fore and aft.

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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 *Led inside of Deck houses & covered places.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Protected by Wood Casings*

What special protection has been provided for the cables near boiler casings *Clear of Boiler Casings*

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

How are cables carried through beams *Led thro hard wood plugs* through bulkheads, &c. *Watertight glands.*

How are cables carried through decks *Watertight Deck Tubes.*

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

If so, how are they protected *Cables are armoured.*

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 *Fitting portable with brass guard & cable terminals fitted into brass sockets & provided with cap when*

Where are the main switches and cut outs for these lights fitted *Main Switch & fuses placed in each Distributing Box.*

If in the spaces, how are they specially protected *Not fitted in Spaces.*

Are any switches or cut outs fitted in bunkers *No*

Cargo light cables, whether portable or permanently fixed *Portable Cables to Reflectors. How fixed.*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Fixed to beams by gunmetal bolt & nut.*

How are the returns from the lamps connected to the hull *Fixed to the beams by brass screws.*

Are all the joints with the hull in accessible positions *yes.*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, cut outs, 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 installation is supplied with a voltmeter and an amperemeter, fixed

The copper used is guaranteed to have a conductivity of *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile after 24 hours' immersion in seawater.

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.

THE CLYDEBANK ENGINEERING & SHIPBUILDING CO., LTD.

A. M. Millan SECRETARY

Electrical Engineers

Date *5th Oct 1898*

COMPASSES.

Distance between dynamo or electric motors and standard compass

174 feet

Distance between dynamo or electric motors and steering compass

173 "

The nearest cables to the compasses are as follows:—

A cable carrying	<i>17</i>	Ampères	<i>8</i>	feet from standard compass	<i>8</i>	feet from steering compass
A cable carrying	<i>15.6</i>	Ampères	<i>25</i>	feet from standard compass	<i>21</i>	feet from steering compass
A cable carrying	<i>7.2</i>	Ampères	<i>30</i>	feet from standard compass	<i>25</i>	feet from steering compass

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 CLYDEBANK ENGINEERING & SHIPBUILDING CO., LTD.

A. M. Millan SECRETARY

Builder's Signature

Date *5th Oct 1898*

GENERAL REMARKS.

The Electric Lighting of this vessel has been efficiently carried out and tried under full power and in my opinion satisfactory in all respects.

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

Committee's Minute

It is submitted that this installation appears to be in accordance with the

James Mollison

11.10.98

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THE