

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 18513

Port of Glasgow. Date of First Survey ☒ Date of Last Survey th 28th Nov 1900 No. of Visits ☒
 No. in Reg. Book on the Iron or Steel *S.S. Vaderland* Port belonging to *Liverpool*
 Built at *Glydebank* By whom *John Brown & Co. Ltd. Glasgow* When built *1900*
 rs *International Navigation Co.* Owners' Address *Liverpool*
 No. *341* Electric Light Installation fitted by *John Brown & Co. Ltd. Glasgow* When fitted *1900*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Generating Sets, each comprising a 4 pole Compound Wound Dynamo coupled direct to a double cylinder upright Engine
 Capacity of Dynamo *each 300* Amperes at *110* Volts, whether continuous or alternating current *continuous*
 are *fixed in Dynamo Room Orlop Deck*

Position of Main Switch Board *Dynamo Room* having switches to *groups 9 fans & 23 groups of lights, &c., as below*
 Positions of *Distributing boxes* auxiliary switch boards and numbers of switches on each *40 Distributing boxes in various parts of the ship, with an average of 4 switches per box.*

Cut outs are fitted on main switch board to the cables of main circuit *yes* and on each *Distributing box* 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*
 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 *yes*
 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 *equivalent 16 cp 12 HP Washing Machines* arranged in the following groups:—

57	36	36	57	lights each of	16	candle power requiring a total current of	34	22	22	34	Amperes
30	45	26	42	" " "	16	" " "	18	27	16	25	"
43	66	(58)	89	lights each of	84	16	26	40	38	53	Amperes
(34) (20) (20) (20)	20	98	33	" " "	16	" " "	23	12	59	20	"
(125) (73) (65) (65)	73	(65) (65)	98	lights each of	16	" " "	75	44	50	50	Amperes
39	77	40	40	" " "	16	" " "	23	46	24	"	"
125 HP	10 HP	10 HP	10 HP	lights each of	"	" " "	100	80	100	100	Amperes
125 HP	2 HP	2 HP	2 HP	lights each of	"	" " "	96	40	96	"	Amperes
2	Mast head lights	with	2	lamps each of	16	" " "	"	1.2	"	"	Amperes
2	Side lights	with	2	lamps each of	16	" " "	"	1.2	"	"	Amperes
10	Cargo lights	of	96	" " "	"	" " "	"	"	"	"	"

Are 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	300	Amperes, comprised of	550	wires, each	20	L.S.G. diameter,	.55	square inches total sectional area
	88	" " "	19	" " "	12	" " "	.1649	" " "
Branch cables carrying	54	Amperes, comprised of	37	wires, each	16	L.S.G. diameter,	.1220	square inches total sectional area
	60	" " "	19	" " "	15	" " "	.0790	" " "
Branch cables carrying	60	Amperes, comprised of	19	wires, each	16	L.S.G. diameter,	.0624	square inches total sectional area
Leads to lamps carrying	.6	Amperes, comprised of	1	wires, each	16	L.S.G. diameter,	.0032	square inches total sectional area
Cargo light cables carrying	3.6	Amperes, comprised of	1	wires, each	16	L.S.G. diameter,	.0032	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of tinned copper wires insulated with pure & vulcanized india-rubber, then taped, the whole thoroughly vulcanized together, covered with longitudinal narrow strong braiding well served with preservative & weather resisting comp. thickness of dielectric *1/10 inch*
 Joints in cables, how made, insulated, and protected *Soldered with resin as a flux, then India rubber sheet insulation & 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 *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 *From Dynamo Room, up Engine Room Casing, along Lower, Main, Upper & Promenade Decks. Protected by wood casing on Upper & Promenade Decks. Main Deck - Wood casing & steel pipes. Lower Deck - Steel pipes.*

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 pipes*

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

What special protection has been provided for the cables near boiler casings *Steel pipes*

What special protection has been provided for the cables in engine room *Steel pipes*

How are cables carried through beams *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 *yes* or spaces which may be used for carrying cargo, stores, or baggage *yes*

If so, how are they protected *Steel tubes*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coats, or baggage *yes*

If so, how are the lamp fittings and cable terminals specially protected *Fixed lights within a strong G. I. casing. Connections for same outside of Bunkers*

Where are the main switches and cut outs for these lights fitted *No switches. Cut outs outside of Bunkers*

If in the spaces, how are they specially protected *—*

Are any switches or cut outs 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 *—*

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 *2* voltmeters and *4* amperemeters fixed *on face of switchboard*

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 *5000* 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.

John Brown & Company, Limited.

A. M. Millan Assistant Secretary.

Electrical Engineers

Date

COMPASSES.

Distance between dynamo or electric motors and standard compass *Dynamo 180 ft. Nearest generator 68 ft*

Distance between dynamo or electric motors and steering compass *50 178 ft 20 00 66 ft*

The nearest cables to the compasses are as follows:—

A cable carrying	Ampere	feet from standard compass	feet from steering compass
<i>20</i>	<i>20</i>	<i>17</i>	
<i>29</i>	<i>34</i>	<i>29</i>	
<i>9.6</i>	<i>30</i>	<i>23</i>	

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 *0* degrees on *—* course in the case of standard compass and *—* degrees on *—* course in the case of the steering compass.

John Brown & Company, Limited.

A. M. Millan Assistant Secretary.

Builder's Signature.

Date

GENERAL REMARKS.

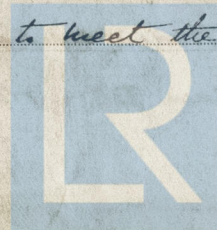
The Electric lighting of this vessel has been carried out in an efficient manner and tried under full power throughout & in our opinion satisfactory

James Morrison

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

Committee's Minute

It is submitted that this installation appears to meet the Rule requirements



Lloyd's Register
6.12.00
Foundation

TESTED NOT TO WRITE ACROSS THIS MARGIN