

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7191.

Port of *Antwerp* Date of First Survey *Sept. 7* Date of Last Survey *Oct 4* No. of Visits *6*
 No. in *1* on the *Iron* Steel *S.S. "WITIAZ"* Port belonging to *Belgian*
 Reg. Book *1* Built at *Hoboken near Antwerp* By whom *John Cockerill* When built *1906*
 Owners *Soc. Russe d'Assurance et de Transport* Owners Address *Saint Petersburg*
 Yard No. *457* Electric Light Installation fitted by *John Cockerill* When fitted *1906*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Vertical Steam Engine coupled direct to Compound wound four pole dynamo. (Holmes Co. Works)

Capacity of Dynamo *65* Amperes at *110* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *In Engine Room.*

Position of Main Switch Board *near dynamo* having switches to groups *A.B.C.D.V (4)* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *1 in Forecastle (3 switches)*
1 in Bridge 5 (4 switches) *1 in Engine Room (3 switches)*
1 in Poop (4 switches)

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 *Yes*

Are the cut outs of non-oxidizable metal *Yes* and constructed to fuse at an excess of *100* 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 *Yes*

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes*

Total number of lights provided for *138* arranged in the following groups:—

A	Forecastle	31	lights each of	16	candle power requiring a total current of	13.3	Amperes
B	Bridge	32	lights each of	"	candle power requiring a total current of	15.6	Amperes
C	Poop	47	lights each of	"	candle power requiring a total current of	24.8	Amperes
D	Engine	28	lights each of	"	candle power requiring a total current of	18.5	Amperes
E			lights each of		candle power requiring a total current of		Amperes
	(2) Mast head light with	1	lamps each of	16	candle power requiring a total current of	1.02	Amperes
	2 Side light with	1	lamps each of	"	candle power requiring a total current of	1.02	Amperes
	A.B.C.	3	Cargo lights of	5 lamps each	16 candle power, whether incandescent or are lights		Incandescent

If arc lights, what protection is provided against fire, sparks, &c. *no arc lights*

Where are the switches controlling the masthead and side lights placed *In wheel house*

DESCRIPTION OF CABLES.

Main cable carrying	65	Amperes, comprised of	19	wires, each	16	L.S.G. diameter, .062	square inches total sectional area
Branch cables carrying	21.8	Amperes, comprised of	7	wires, each	16	L.S.G. diameter, .0229	square inches total sectional area
Branch cables carrying	6.62	Amperes, comprised of	7	wires, each	20	L.S.G. diameter, .0072	square inches total sectional area
Leads to lamps carrying	1.53	Amperes, comprised of	3	wires, each	22	L.S.G. diameter, .0019	square inches total sectional area
Cargo light cables carrying	2.55	Amperes, comprised of	flexible	wires, each		L.S.G. diameter, .0031	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

wires insulated with pure vulcanized India Rubber & tape, lead covered, armoured with S.I. wire.

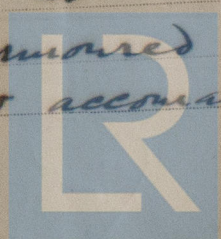
Joints in cables, how made, insulated, and protected *joints in watertight junction boxes*

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 *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 *lead covered, armoured with S.I. wire*

wire & wood casings through passengers crew accommodation



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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 and armoured wire*

What special protection has been provided for the cables near galleys or oil lamps, or other sources of heat? *do. do.*

What special protection has been provided for the cables near boiler casings? *do. do.*

What special protection has been provided for the cables in engine room? *do. do.*

How are cables carried through beams? *holes bushed through bulkheads, &c.*

How are cables carried through decks? *lead tubes*

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

If so, how are they protected? *lead covered & armoured wire*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage?

If so, how are the lamp fittings and cable terminals specially protected?

Where are the main switches and cut outs for these lights fitted?

If in the spaces, how are they specially protected?

Are any switches or cut outs fitted in bunkers?

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 a voltmeter and an amperemeter, fixed *main switch board*

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.

John Cockerill Electrical Engineers

Date *6/10/06*

COMPASSES.

Distance between dynamo or electric motors and standard compass *55 feet.*

Distance between dynamo or electric motors and steering compass *52 do.*

The nearest cables to the compasses are as follows:—

Cable	Amperes	Distance from standard compass	Distance from steering compass
A cable carrying <i>15.6</i>	<i>27 ft.</i>	<i>20 ft.</i>	
A cable carrying <i>2</i>	<i>7 ft.</i>	<i>4 "</i>	
A cable carrying <i>.5</i>	<i>5 in.</i>	<i>5 "</i>	

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 *nil* degrees on *✓* course in the case of the standard compass and *nil* degrees on *✓* course in the case of the steering compass.

Builder's Signature Date

GENERAL REMARKS.

The fittings are substantial & the workman-ship is good, in accordance with the Rules. The vessel is eligible in my opinion to have the record of "Electric light" placed in the Register Book.

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

Committee's Minute

It is submitted that the Record Elec. Light be noted in the Reg. Book.