

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4354.

Port of Antwerp Date of First Survey June 26<sup>th</sup> Date of Last Survey July 1<sup>st</sup> No. of Visits 2  
 No. in on the SS Leopoldville Port belonging to Antwerp  
 Reg. Book Built at Belfast By whom Harland & Wolff When built 1908  
 Owners Sie. Belge Maritime du Congo Owners' Address  
 Yard No. 402 Electric Light Installation fitted by Harland & Wolff When fitted 1908

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Compound Engines & Dynamos, cylinders 10" x 17" x 10" stroke, giving an output of 40 K.W. at 100 volts, when running at a speed of 250 R.P.M.

Capacity of Dynamo 400 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine Room Whether single or double wire system is used Single

Position of Main Switch Board Engine Room having switches to groups A, B, C, D, E, F, G, H & I of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 box containing 10 switches in Wheelhouse, 1 box containing 4 switches in athwartship passage, forward on Bridge Deck, 1 box containing 27 switches in Entrance aft on Bridge Deck,

If cut outs 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 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 150 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 782 arranged in the following groups:—

A Machinery spaces	74 lights each of	16	candle power requiring a total current of	44.4	Amperes
B Engine Room	175 lights each of	16	candle power requiring a total current of	105	Amperes
C Captain & Signals	32 lights each of	16	candle power requiring a total current of	25.2	Amperes
D Daylight	136 lights each of	16	candle power requiring a total current of	88.2	Amperes
E Cargo	32 lights each of	16	candle power requiring a total current of	43.2	Amperes
2 Mast head light with	1 lamps each of	32	candle power requiring a total current of	1.2	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	1.2	Amperes
6 Cargo lights	4 of 128 cp each & 2-12amp are lamps		candle power, whether incandescent or are lights	both	

If arc lights, what protection is provided against fire, sparks, &c. Glass globes around arcs protected by wire netting

Where are the switches controlling the masthead and side lights placed in Wheelhouse

## DESCRIPTION OF CABLES.

Main cable carrying	88.2 Amperes, comprised of	19 wires, each	14 L.S.G. diameter, .09442	square inches total sectional area
Branch cables carrying	20 Amperes, comprised of	7 wires, each	16 L.S.G. diameter, .02227	square inches total sectional area
Branch cables carrying	Amperes, comprised of	wires, each	L.S.G. diameter,	square inches total sectional area
Leads to lamps carrying	3.6 Amperes, comprised of	7 wires, each	22 L.S.G. diameter, .004266	square inches total sectional area
Cargo light cables carrying	4.8 Amperes, comprised of	145 wires, each	38 L.S.G. diameter, .004199	square inches total sectional area

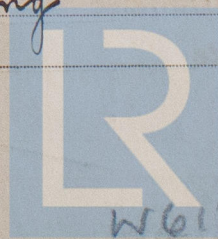
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables throughout Decks are of 2500 megohm class and C.M.A. quality, insulated with pure rubber and vulcanised rubber, braided and compounded over all. Cables in Engine Room & Boiler Room protected by lead covering and steel armouring and braided over all. Joints in cables, how made, insulated, and protected Soldered using resin as a flux and insulated with pure rubber and prepared 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 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 in strong wood casing



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Yes

782

F. Power

G. 1<sup>st</sup> Cl. Accommodation

H. 2<sup>nd</sup> Cl. Accommodation

# I. Saloons

E 10 avgo

32

lights, each of

16

candle power requiring a total current of

43.2

Amperes

Position of Main Switch Board

Engine Room ✓

having switches to groups **A, B, C, D, E, F, G, H & I** of lights, &c., as below

1 box containing 6 switches in Entrance aft on Shelter Deck, 1 box containing 16 switches in passage between Galley & 1<sup>st</sup> Cl. Saloon on Upper Deck, 1 box containing 10 switches in starboard passage outside 2<sup>nd</sup> Cl. Pantry on Upper Deck, 1 C.I. box containing 6 switches in Boiler Room and 2 C.I. boxes each containing 6 switches in Engine Room.

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



**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 Piping

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered, steel armoured & braided

What special protection has been provided for the cables near boiler casings Lead covered, steel armoured & braided over all

What special protection has been provided for the cables in engine room Lead covered, steel armoured and braided over all

How are cables carried through beams beams lashed with fibre through bulkheads, &c. in glands if W.T. otherwise

How are cables carried through decks in iron deck pipes lashed with fibre

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 cut outs for these lights fitted

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 Permanently How fixed in strong wood casing

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Through earth terminal

How are the returns from the lamps connected to the hull sweated to 3/8" dia. kinned brass tap screws in beams etc.

Are all the joints with the hull in accessible positions Yes

The installation is \_\_\_\_\_ supplied with a voltmeter and \_\_\_\_\_ an amperemeter, fixed on switchboard for

**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 copper used is guaranteed to have a conductivity of 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 2500 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.

*For Harland & Wolff Ltd*

Electrical Engineers

Date 7 July 1911

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 142 feet to Dynamo, 23 feet to nearest motor

Distance between dynamo or electric motors and steering compass 139 feet to Dynamo, 21 feet to nearest motor

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
10.2	7 1/2	5 1/2	
20	23	20	
21.6	52	49	

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 nil degrees on all course in the case of the

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

*For Harland & Wolff Ltd*

Builder's Signature.

Date 7 July 1911

**GENERAL REMARKS.**

*The fittings & workmanship examined & found good, & the installation is in accordance with the Rules and the vessel is eligible in my opinion for the record of "Electric Light"*

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

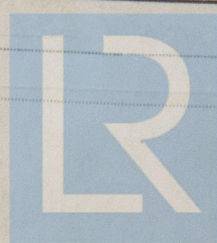
*J.W.D. 6/7/11*

*A.E. Farmer*

Surveyor to Lloyd's Register of British and Foreign Shipping

Committee's Minute

TUE. JUL. 25. 1911



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