

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1062

Port of Copenhagen Date of First Survey 3<sup>rd</sup> Novemb<sup>r</sup> 97 Date of Last Survey 30<sup>th</sup> Jan. 97 No. of Visits 4  
 No. in on the ~~Iron~~ Steel S/S Heracles Port belonging to Stockholm - Sweden  
 Reg. Book Built at Elsinore By whom Felsingers Jernstals & Maskinbyggeri When built 1897  
 Owners Bergnings & Dyperitbolaget "Neptun" Owners' Address Stockholm  
 Yard No. 68 Electric ~~Light~~ Power Installation fitted by Hanselmannstätt - Stockholm When fitted 1897

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Vertical, inverted compound Engine, direct coupled to Dynamo.  
Voltmeter 550 Volts. Amperemeter 150 Amperes, fitted at Switchboard.

Capacity of Dynamo 116 Amperes at 550 Volts, whether continuous or alternating current alternating  
~~To drive 2 motors of 51 Amperes each and at 550 Volts.~~

Where is Dynamo fixed In the Engine room Starboard side.

Position of Main Switch Board by the Engine having switches to groups one main switch of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each at each motor.

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  and to each lamp circuit

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 100 per cent over the normal current

Are all cut outs fitted in easily accessible positions yes Are the fuses of standard dimensions  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

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

Total number of lights provided for \_\_\_\_\_ arranged in the following groups:—

A	lights each of	candle power requiring a total current of	Amperes
B	lights each of	candle power requiring a total current of	Amperes
C	lights each of	candle power requiring a total current of	Amperes
D	lights each of	candle power requiring a total current of	Amperes
E	lights each of	candle power requiring a total current of	Amperes
	Mast head light with _____ lamps each of	candle power requiring a total current of	Amperes
	Side light with _____ lamps each of	candle power requiring a total current of	Amperes
	Cargo lights of _____	candle power, whether incandescent or arc lights	

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed

## DESCRIPTION OF CABLES.

Main cable carrying 116 Amperes, comprised of 3 cables in one lead covering 70% of 116 each  $\cdot 0770 \text{ m}^2 \times 3 \text{ cables} = .231 \text{ m}^2$  total sectional area 0.77 square inches  
 Branch cables carrying 51 Amperes, comprised of 3 cables in one lead covering 95% of 51 each  $\cdot 0385 \text{ m}^2 \times 3 \text{ cables} = .115 \text{ m}^2$  total sectional area 0.35 square inches  
 Branch cables carrying \_\_\_\_\_ Amperes, comprised of \_\_\_\_\_ wires, each L.S.G. diameter, \_\_\_\_\_ square inches total sectional area  
 Leads to lamps carrying \_\_\_\_\_ Amperes, comprised of \_\_\_\_\_ wires, each L.S.G. diameter, \_\_\_\_\_ square inches total sectional area  
 Cargo light cables carrying \_\_\_\_\_ Amperes, comprised of \_\_\_\_\_ wires, each L.S.G. diameter, \_\_\_\_\_ square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Composed of tinned copper insulated with pure & vulcanized india rubber, taped and felled, the whole vulcanized together, then braided with yarn and compounded some of which is armed with iron.

Joints in cables, how made, insulated, and protected Soldered and insulated.

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

How are the cables led through the ship, and how protected



**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture

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

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 through bulkheads, &c.

How are cables carried through decks

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

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

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 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

The copper used is guaranteed to have a conductivity of 97 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 950 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.

*J. P. Hausmannstadt* Electrical Engineers  
*Johannes Stenquist*

Date *Nov. 29 - 1897*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying	Amperes	feet from standard compass	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.

*J. P. Hausmannstadt*

Builder's Signature.

Date *2nd December 1897*

**GENERAL REMARKS.**

The 2 Motors are not placed in the ship, but on the wreck to be lifted and the current therefore led through 3 concentric vulcanized and lead covered cables of 50 mm<sup>2</sup> area. The whole Electric Power Installation is fitted as required by the Rules, the Material & Workmanship is good throughout.

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

*Judrietz Krulz*

Committee's Minute

FRI. 7 JAN 1898

FRI. 10 MAR 1899

FRI. 24 MAR 1899

TUES. 29 AUG 1899

Elec Light & Motors

This installation appears to be fitted in accordance with the Rules

Lloyd's Register Foundation

CPN1110/244

CPN1110/236

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 13.