

Rpt. 13a.

Date 16th June 1902.

Supplement to Electric lighting installation
on the Steam Ship "Anamba" (Yard No. 5) of Copenhagen. Report No. 1662

COMPASSES.

Distance between dynamo or electric motors and standard compass about 60 feet. -
Distance between dynamo or electric motors and steering compass about 115 feet. -

The nearest cables to the compasses are as follows:—

A cable carrying 2 Amperes 4 feet from standard compass ✓ feet from steering compass
A cable carrying 2 Amperes 8 feet from standard compass ✓ feet from steering compass
A cable carrying 6.6 Amperes 20 feet from standard compass ✓ feet from steering compass

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

Aktieselskabet
Hellerup Skibsværft og Maskinbyggeri

Builder's Signature

Builder's Signature

Date

Surveyor to Lloyd's Register

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Foundation

W1365-0184 1/2

Branch cables carrying 14.5 Amperes, comprised of 7 wires, each 17 - 0.056 L.S.G. diameter, 0.0172 square inches total sectional area

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1662.

Port of Copenhagen Date of First Survey 28th April Date of Last Survey 5th June No. of Visits 12
 No. in Reg. Book on the Iron or Steel S.S. "Anamba" Port belonging to Copenhagen
 Built at Mellerup By whom Mellerup, Kiboværft & Maskindbyggeri When built 1902
 Owners Aktieselskabet Det Internationale Kompagni Owners' Address _____
 Yard No. 5 Electric Light Installation fitted by Mrs. P. Oyer & Forstner When fitted 1902
Copenhagen

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 single cyl. steam engine, direct coupled to the dynamo. - The dynamo is shunt wound.
 Voltmeter 60 Volt, - Amperemeter 60 Amp, - fitted on main switch board.
 Capacity of Dynamo 40 Amperes at 50 Volts, whether continuous or alternating current continuous.
 Where is Dynamo fixed In the Engine room.
 Position of Main Switch Board In the Engine room having switches to groups 5 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each None, but all on main switch board
with double pole switch & cut outs for flow & return of all circuits.

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 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 Edison's tools 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 46 arranged in the following groups :-
 A 8 lights each of 16 candle power requiring a total current of 8 Amperes
 B 5 lights each of 16 candle power requiring a total current of 5 Amperes
 C 33 lights each of 10 candle power requiring a total current of 20.4 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

20 Cargo lights of each 10 candle power, whether incandescent or arc lights incandescent.
2 " " " " " about 800 " " " " " are lights.
 If arc lights, what protection is provided against fire, sparks, &c. Lanterns framed and with metal bottom.

Where are the switches controlling the masthead and side lights placed ✓

DESCRIPTION OF CABLES.

Main cable carrying 40 Amperes, comprised of 19 wires, each 16 - 0.064 L.S.G. diameter, 0.0511 square inches total sectional area
 Branch cables carrying 20.4 Amperes, comprised of 7 wires, each 15 - 0.072 L.S.G. diameter, 0.0285 square inches total sectional area
 Branch cables carrying 14.5 Amperes, comprised of 7 wires, each 17 - 0.056 L.S.G. diameter, 0.0172 square inches total sectional area
 Leads to lamps carrying 6.6 Amperes, comprised of 7 wires, each 20 - 0.036 L.S.G. diameter, 0.0071 square inches total sectional area
 Cargo light cables carrying 3 Amperes, comprised of 111 wires, each 35 - 0.0084 L.S.G. diameter, 0.0061 square inches total sectional area

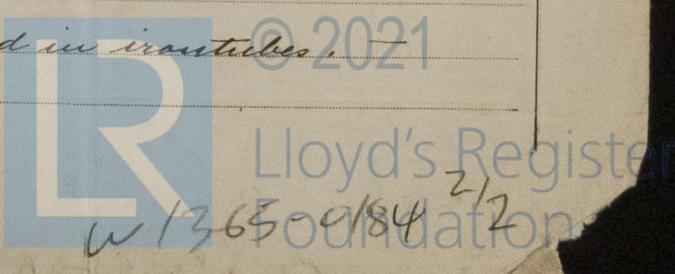
DESCRIPTION OF INSULATION, PROTECTION, ETC.

The copper wires are tinned and insulated with pure & vulcanized india rubber taped & felled; - the whole vulcanized together, then braided with yarn and compounded. -
 Joints in cables, how made, insulated, and protected Soldered & well 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 All accessible.

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 Bergmantubes and in iron tubes.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes, except when holds full of cargo.*

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

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

What special protection has been provided for the cables near boiler casings *Iron tubes.*

What special protection has been provided for the cables in engine room *Bergmann tubes.*

How are cables carried through beams *In iron tubes.* through bulkheads, &c. *No cables carried through bulkheads.*

How are cables carried through decks *In iron tubes and watertight.*

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 *In iron tubes.*

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

If so, how are the lamp fittings and cable terminals specially protected *Lamps portable and metal framed, cable terminals in watertight cast iron boxes.*

Where are the main switches and cut outs for these lights fitted *In main switch board.*

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 *double wire system.*

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 *See over.* 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 *250* 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.

P. Otzen & Thorsteinson Electrical Engineers Date *7. Juni 1902*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 60 feet.*

Distance between dynamo or electric motors and steering compass *about 115 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>2</i> Amperes	<i>4</i> feet from standard compass	<i>✓</i> feet from steering compass
A cable carrying	<i>2</i> Amperes	<i>8</i> feet from standard compass	<i>✓</i> feet from steering compass
A cable carrying	<i>6.6</i> Amperes	<i>20</i> feet from standard compass	<i>✓</i> feet from steering compass

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 *all* courses in the case of the standard compass and *all* courses in the case of the steering compass.

Hellerup Skibsværft og Maskinbyggeri Builder's Signature. Date

GENERAL REMARKS. *The whole electric light installation is as above described, the materials and workmanship is good & all complete.*

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

Committee's Minute

This installation appears to be fitted in accordance with the Rules I.M. 18/6/02

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 13.