

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 13237

Port of Hamburg Date of First Survey 8th Octbr. 12 Date of Last Survey 12th March 13 No. of Visits 12
 No. in Reg. Book 53 Supp. on the ~~Iron or Steel~~ Twin Sc. Fr. Motor Vessel "Hagen" Port belonging to Hamburg
 Built at Kiel By whom Fried Krupp A. G. Germaniaman When built 1913
 Owners Deutsche Amerika Petroleum Ges. Owners' Address Hamburg
 Yard No. 186 Electric Light Installation fitted by the Builders When fitted 1913

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 Steam & Air Compound Engine and 1 Diesel Motor coupled direct 2 Siemens-Schuckerts Dynamos running at 175-280 and 350 revolutions per minute.

Capacity of Dynamos each 220 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Recessdeck (Engine Room) Whether single or double wire system is used double

Position of Main Switch Board Recessdeck having switches to groups A, B, C, D & E of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 main Switchboard on Reccessdeck with 20 switches,

1 Saloon passage with 18 switches, 1 in Passage aft with 13 switches, 1 in
Charthouse with 5 switches, 1 Forecastle with 6 switches.

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 gessel 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 20 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 200 arranged in the following groups:—

A Engine Space	40	lights each of	25	candle power requiring a total current of	30	Amperes
B Midd Acc.	86	lights each of	25	candle power requiring a total current of	65	Amperes
C Aft. "	48	lights each of	25	candle power requiring a total current of	35	Amperes
D Forecastle	21	lights each of	25	candle power requiring a total current of	15	Amperes
E Charthouse	5	lights each of	10 off 25, 4 off 32	candle power requiring a total current of	4.5	Amperes
E { 2 Mast head lights with	1	lamps each of	32	candle power requiring a total current of	2	Amperes
2 Side lights with	1	lamps each of	32	candle power requiring a total current of	2	Amperes
included in B, C, D & E. 6 Cargo lights of each 5 x 25 candle power, whether incandescent or arc lights <u>incandescent</u>						

If arc lights, what protection is provided against fire, sparks, &c. No arc lights fitted. 14 portable Handlamps with single lights of 25 candle power are included in A, B, C, D & E.

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

DESCRIPTION OF CABLES.

Main cable carrying 250 Amperes, comprised of 38 wires, each 2.5 L.S.G. diameter, 120 square inches total sectional area
 Branch cables carrying 200 Amperes, comprised of 19 wires, each 2.1 L.S.G. diameter, 50 square inches total sectional area
 Branch cables carrying 120 Amperes, comprised of 19 wires, each 1.8 L.S.G. diameter, 35 square inches total sectional area
 " " " 40 " " " 7 " " 2 " " 10 " " 10 square inches total sectional area
 Leads to lamps carrying 4 Amperes, comprised of 1 wires, each 1.2 L.S.G. diameter, 1.5 square inches total sectional area
 Cargo light cables carrying 10 Amperes, comprised of 1 wires, each 2.3 L.S.G. diameter, 2.5 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main and Branch cables copper lined, coated with Para caoutchouc, coated with impregnated jute tape, lead covered, spun with impregnated jute band, double iron bound and jute spun asphalted + spun with impregnated jute band. Circuit of lamp leads: copper lined, coated with caoutchouc and rubber and spun with tape insulation.
Joints in cables, how made, insulated, and protected. Soldered and covered with caoutchouc and tape for lamp circuits and leads; metallic screw joints contained in watertight boxes on incombustible bases for main and branch cables.

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 Main and Branch cables carried except where they are exposed to heat & moisture, where they are led in iron boxes, circuit & lamp leads protected by wood, bottom

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 *Iron bound band covered cables, protected by iron boxes.*

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

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 *hard wood bushes* through bulkheads, &c. *screwed brass bushes*

How are cables carried through decks *Iron galvanized stand pipes 1 1/2" high filled with non conducting asphalt*

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 *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 *—*

The installation is *yes* supplied with Voltmeter and *yes* ammeter, fixed *on main switch board*

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 *yes*

Are any switches, cut outs, or joints of cables fitted in the pump room or companion *no*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *all fittings screwed & painted tight*

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 *50 millions Siemens Units* megohms per *Kilometer* ~~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.

The Builders are the Electrical Engineers Date *—*

COMPASSES.

Distance between dynamo or electric motors and standard compass *130 ft.*

Distance between dynamo or electric motors and steering compass *140 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>6</i>	<i>close to</i>	<i>close to</i>	<i>close to</i>
<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>
<i>—</i>	<i>—</i>	<i>—</i>	<i>—</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 *nil* degrees on *—* course in the case of the standard compass and *nil* degrees on *—* course in the case of the steering compass.

Fried. Krupp Aktiengesellschaft
Germania
V. Krupp Builder's Signature. Date *6th March 1913.*

GENERAL REMARKS.

The Elec. Light installation on board of this vessel is in my opinion fitted in conformity with the Society's Rules and eligible to be recorded "Elec. Light" in the Society's Register Book.

It is submitted that this vessel is eligible for THE RECORD. Elec. light. *J.W.D.* *28/3/13*

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

Committee's Minute TUE. APR. 1—1913

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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