

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 13237

Port of Hamburg Date of First Survey 8th Oct. 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. Sr. Motor Vessel "Hagen" Port belonging to Hamburg
 Built at Kiel By whom Fried Krupp A.G., Germaniaw. 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 to Siemens-Schuckert's 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 Recessdeck with 20 switches, 1 Saloon passage with 18 switches, 1 in Passage aft with 10 switches, 1 in Chart-house 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 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 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
 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 Chart-house	5 lights each of	1 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		incandescent

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 Chart-house

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	German land
Branch cables carrying	200 Amperes, comprised of	19 wires, each	2.1 L.S.G. diameter,	50 square inches total sectional area	70% m
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 " " "	
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 tinned, 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 tinned, coated with caoutchouc and rubber and spun with tape insertion.
 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 of lamp leads protected by wood battens

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 sized —

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 2 voltmeter and yes 2 amperemeter, 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

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 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 <u>6</u> Amperes	<u>close to</u> feet from standard compass	<u>close to</u> feet from steering compass
A cable carrying <u>—</u> Amperes	<u>—</u> feet from standard compass	<u>—</u> feet from steering compass
A cable carrying <u>—</u> Amperes	<u>—</u> feet from standard compass	<u>—</u> 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 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
Germany
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.

J. Köhler
 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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