

REPORT ON ELECTRIC FITTINGS.

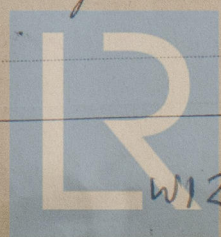
(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 19th July 1925 When handed in at Local OfficeReceived at London Office.....25 JUL 1925Port of HAMBURGNo. in Survey held at HAMBURG
Reg. Book.Date, First Survey 14th MARCH Last Survey 7th July 1925
(Number of Visits.....24.....)on the Steel Sc. Motor V. "DUISBURG"Built at HAMBURGBy whom built VULCAN-WERKEYard No. 638When built 1925Owners DEUTSCH-AUSTRIAL. IMPERIAL. GEE.

Port belonging to

HAMBURGElectric Light Installation fitted by SIEMENS-SCHÜCKERT WERKE GmbHContract No. ✓When fitted 1925System of Distribution two wire with direct current for power - single wire with shell return for Lighting.Pressure of supply for Lighting 110 volts, Heating ✓ volts, Power 220 volts.Direct or Alternating Current, Lighting direct. Power direct.If alternating current system, state frequency of periods per second ✓Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off yesGenerators, do they comply with the requirements regarding overload yes, are they compound wound yesare they over compounded 5 per cent. yes, if not compound wound state distance between each generator ✓Where more than one generator is fitted are they arranged to run in parallel no., is an adjustable regulating resistance fitted in series with each shunt field yesAre all terminals accessible and clearly marked yes, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited yesAre the lubricating arrangements of the generators as per Rule yesPosition of Generators Engine room Stb. side.is the ventilation in way of the generators satisfactory yes, are they clear of all inflammable material yesif situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators ✓ and ✓, are the generators protected from mechanical injury and damage from water, steam or oil yesare their axis of rotation fore and aft yesEarthing, are the bedplates and frames of the generating plant efficiently earthed yes are the prime movers and their respective generators in metallic contact yesMain Switch Boards, where placed Engine room Stb. side.If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard ✓Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes yesare they protected from mechanical injury and damage from water, steam or oil yes, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards ✓ and ✓are they constructed wholly of durable, incombustible non-absorbent materials yes, is all insulation of high dielectric strength and of permanently high insulation resistance yes, if semi-insulating material is used, are all conducting parts connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework ✓, and is the frame effectively earthed ✓

Are the following fittings as per Rule, viz.:— spacing or shielding of live parts

yes, accessibility of all parts yes, absence of fuses on back of board yes, proportion of omnibus bars yes: 50x6 1/2., individual fuses to voltmeter, pilot or earth lamp yes, connections of switches yes.Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches For each generator:A fuse on each pole and a double-pole linked switch. For each outgoing circuit: a fuse on each pole and a single-pole changeover switch on one pole.Instruments on main switchboard 3 ammeters 3 voltmeters ✓ synchronising device for paralleling purposes.Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Voltmeter with Ohm scale and warning alarm lamp.Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yesSection and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes

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Lloyd's Register
Foundation

W1219-0142

Insulation of Cables, state type of cables, single & twin *yes* are the cables insulated and protected as per Tables III or IV of the Rules *generally*
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *light, about 3 lbs., power 6 lbs.*
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.007 square inch and above provided with soldering socket *yes*

Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *no paper, insulated cables.*

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage *yes*

Support and Protection of Cables, state how the cables are supported and protected *cables (armoured) clipped, where they are ex. posed to mechanical damage they are carried in iron channel bars.*

If cables are run in wood casings, are the casings and caps secured by screws *yes*, are the cap screws of brass *yes*, are the cables run in separate grooves *yes*. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VI *yes*

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *yes*

Joints in Cables, state if any, and how made, insulated, and protected *water-tight joint boxes.*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands *yes*

Bushes in Beams and Non-watertight Positions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *yes* state the material of which the bushes are made *hard wood*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *yes, for lightning only. power installation fire-conductor system.*

are their connections made as per Rule *yes*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule *yes*

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *yes*

Navigation Lamps, are these separately wired *yes*, controlled by separate switch and separate fuses *yes*

are the fuses double pole *yes*, are the switches and fuses grouped in a position accessible only to the officers on watch *yes*

has each navigation lamp an automatic indicator, as per Rule *yes*, are separate screens provided for the use of oil and electric side lights *yes*

are separate oil lanterns provided for the mast head lights and side lights *yes*

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight *yes*

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected *no.*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *no.*

how are the cables led

where are the controlling switches situated *yes*

Searchlight Lamps, No. of *yes*, whether fixed or portable *portables*, are their fittings as per Rule *yes*

Arc Lamps, other than searchlight lamps, No. of *yes*, are their live parts insulated from the frame or case *yes*, are their fittings as per Rule *yes*

Motors, are their working parts readily accessible *yes*, are the coils self-contained and readily removable for replacement *yes*

are the brushes, brush holders, terminals and lubricating arrangements as per Rule *yes*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *yes*

are they protected from mechanical injury and damage from water, steam or oil *yes* are their axis of rotation fore and aft *yes*

if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type *yes*

if not of this type, state distance of the combustible material horizontally or vertically above the motors *yes* and *yes*

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed as per Rule *yes*

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule *steel mesh.*

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings *yes*

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *yes*

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY.	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	each 100	230	435	255-300	Driven by two Diesel Mts. 40 H.P. each.	Diesel gas oil	170° F.
AUXILIARY	1	10	115	87	400	2-cyl. Diesel eng. 4 H.P. P.P.		
EMERGENCY	1							
ROTARY TRANSFORMER	2	20	115	173	1500	2-cyl. Mtds.	20 KW. 220 V. 130.7. Rev. per m. 1500.	

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current Ampères.	Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2 x 2	150	37	2.5	435	4-10		
	AUXILIARY GENERATOR	1	50	19	1.85	87	8		
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	10	each 1.5	1	1.4	6	250		
	BOILER ROOM								
	Station 721	1	4	1	2.25	8.5	55		
	" 2	1	10	7	1.35	31	2.5		
	" 3	1	15	7	2.1	53	42		
	" 4	1	4	1	2.25	8	50		
	Navig. Comp.	1	2.5	1	1.8	6	55		
	Rotary transf. Generator	2	120	37	2.05	173	2 x 5		
	" (Spare)	2	120	37	2.05	173	2 x 5	rubber	lead covered & armoured.
	WIRELESS	1	6	1	2.75	25	52		
	SEARCHLIGHT	1	6	1	2.75	22	95		
	MASTHEAD LIGHT	1	1.5	1	1.4	2	90		
	SIDE LIGHTS	2	1.5	1	1.4	2	20		
	COMPASS LIGHTS	2	1.5	1	1.4	2	10		
	POOP LIGHTS	1	1.5	1	1.4	2	100		
	CARGO LIGHTS	1	1.5	1	1.4	2.5	25		
	ARC LAMPS	2	50	19	1.85	20	2 x 16		
	HEATERS	2	2.5	1	1.8	11.5	2 x 30		

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current Ampères.	Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP & Fan	2	2 x 120	37	2.05	260	2 x 25		
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP	2	16	7	1.7	48	2 x 36		
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS	1	2 x 120	37	2.05	230	2 x 34		
	Lubricating								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP	1	2.5	1	1.8	16	2 x 20		
	ENGINE TURNING GEAR	3	6	1	2.75	26	2 x 25-14-10		
	ENGINE REVERSING GEAR	2	16	7	1.7	48	2 x 36		
	LUBRICATING OIL PUMPS	connected to Ballast & Circ. Sea Water Pumps.						rubber	lead covered & armoured.
	OIL FUEL TRANSFER PUMP	1	25	7	2.1	68	2 x 32		
	WINDLASS	1	135	37	2.5	285	2 x 50		
	WINCHES, FORWARD	4	2 x 95	19	2.5	132	2 x 75		
	WINCHES, AFT	4	2 x 95	19	2.5	132	2 x 75		
	STEERING GEAR	1	2 x 25	19	1.55	77	2 x 84		
	WORKSHOP MOTOR	1	2 x 4	1	2.25	19	2 x 26		
	VENTILATING FAN for R.B.	1	4	1	2.25	12	2 x 21		
	Winch. midship	2	95	19	2.5	66	2 x 45		
	Oil separator	2	1.5	1	1.4	8.8	2 x 33		
	Refriger. Compressor	1	25	7	2.1	58	2 x 30		
	Servo Motor for								
	Lifting purposes	2	4	1	2.25	7.2	2 x 16-8		
	Prime Mover for	1	6	1	2.75	22	2 x 32		
	Circ. P. Fuel Dynam.	1	2.5	1	1.8	16	2 x 12		
	Rotary Transf. Motor	2	20	19	2.15	130	2 x 5		

All Conductors are of annealed copper conforming to British Standard Specification No. 7.
The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
The foregoing is a correct description.

*Th. Siemens-Schuckert-Werke
Hamburg*

Electrical Engineers.

Date *10th July 1925*

COMPASSES.

Distance between electric generators or motors and standard compass } *about 30 m* *doubt wire in vicinity of compass.*

Distance between electric generators or motors and steering compass } . . .

The nearest cables to the compasses are as follows:—

A cable carrying *0.5* Ampères *about 10* feet from standard compass *about 10* feet from steering compass.

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

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

Have the compasses been adjusted with and without the electric installation at work at full power. *with*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted. *yes.*

The maximum deviation due to electric currents 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.

VULCAN-WERKE
Hamburg und Stettin Actiengesellschaft

Builder's Signature.

Date *10th July 1925*

M. Walde

Is this installation a duplicate of a previous case. *no* If so, state name of vessel . . .

General Remarks (State quality of workmanship, opinions as to class, &c. *Material and workmanship of*)

this Electric Installation are of good quality. All the conductors used are of the "German Standards", the Society's Rules respecting conductors have been applied generally. The Electric Installation is fitted in accordance with the approved plan, the Secretary's letters and otherwise in conformity with the requirements of the Rules and is eligible in my opinion for record of "ELECTR. LIGHT."

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

*MS. J.W.D.
27/7/25.*

Total Capacity of Generators *310* Kilowatts

The amount of Fee . . . £ *39. 5.* : *17. July 25.*

Travelling Expenses (if any) £ : : *18. 8. 25*

Friedrich Hill
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 31 JUL 1925

Assigned