

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 10 NOV 1930

Date of writing Report 24<sup>th</sup> Octob. 1930 When handed in at Local Office

Port of HAMBURG

No. in Survey held at Hamburg  
Reg. Book.

Date, First Survey 23<sup>rd</sup> Sept., 1930 Last Survey 21<sup>st</sup> October, 1930  
(Number of Visits 7)

on the Steel Twin Scr. "KOLL"

Tons { Gross 10051  
Net 2019  
When built 1930

Built at Hamburg

By whom built Deutsche Werft A.G

Yard No. 142

Owners Odd Bergs Tankrederi A/S

Port belonging to Oslo

Electric Light Installation fitted by AEG, Allgemeine Elektrizitäts Ges. Contract No.

When fitted 1930

System of Distribution two wire, two conductor system; separate conductors, except small areas.

Pressure of supply for Lighting 110 volts, Heating - volts, Power 110 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 yes

Generators, do they comply with the requirements regarding rating yes, are they compound wound yes

are 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 yes

Are all terminals accessible, clearly marked, and furnished with sockets yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched yes Are the lubricating arrangements of the generators as per Rule yes

Position of Generators Engine room, Starb. side, steam driven upper -, Diesel eng. driven Lower Green Deck  
is the ventilation in way of the generators satisfactory yes, are they clear of all inflammable material yes

if 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 yes

are their axes of rotation fore and aft yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed yes are the prime movers and their respective generators in metallic contact yes

Main Switch Boards, where placed Engine room, Starb. upper Green Deck.

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 yes, are 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, non-ignitable 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 insulated from the slab

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework yes, and is the frame effectively earthed yes Are the fittings as per Rule regarding: - 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, 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 switch. For each outgoing circuit: A fuse on each pole and a double pole switch /

Instruments on main switchboard 2 ammeters 2 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

lamps alarm lights -

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes



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*17271* *begin for small areas.* *The German Standards have been applied*

**Cables:** *Single, main, auxiliary, or multi-core* are the cables insulated and protected as per Tables IV or V of the Rules *generally*

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *4 Volts*

**Cable Sockets and other connections,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets *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 *none fitted*

**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 *armoured cables supported by clips, on deck and cross gangways running in # troughs, were exposed to mechanical risk in tubes or covered by sheet iron*  
 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 VIII *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 *gas and watertight 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 Partitions,** 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  
*Power and light on the 2 wire 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 *Engine room, lower between deck. Generator driven by oil engine. - Connected to main switch board.*

**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*

**Secondary Batteries,** are they constructed and fitted as per Rule *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 *yes*, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *yes*, *gas tight fittings, closed glass bowls.*, how are the cables led *yes*

where are the controlling switches situated *outside the pump room, in deck house.*

**Searchlight Lamps, No. of** *1*, whether fixed or portable *yes*, are their fittings as per Rule *yes*

**Arc Lamps,** other than searchlight lamps, No. of *1*, 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 axes 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 and fitted as per Rule *yes*

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

**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.
MAIN	1	12	115	104	400	Single cyl. steam eng.	
AUXILIARY	1	14	115	104	400	Heavy oil Engine	Gas oil
EMERGENCY	1	12	115	104	400	Heavy oil Engine	Gas oil
ROTARY TRANSFORMER							

*See Mr. D. 4439*

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor.	COMPOSITION OF STRAND.		Total Maximum Current, Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	90 mm <sup>2</sup>	37	1.55 mm	104	20 m	Rubber (Vulcanized)	Lead covered and armoured
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR	2	70 mm <sup>2</sup>	37	1.55 mm	104	30 m	"	
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ACCOMMODATION								
	WIRELESS	2	10 mm <sup>2</sup>	119	1.82 mm	25	180 m	"	
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	2 x 15 mm <sup>2</sup>	2 x 1	2 x 1.38 mm	0.33	115 m		
	SIDE LIGHTS	2	"	"	"	"	15 m		
	COMPASS LIGHTS	2	"	"	"	"	10 m		
	POOP LIGHTS	2	2 x 2.5 mm <sup>2</sup>	"	2 x 1.75 mm	"	110 m		
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS								

*7 per pole*

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current, Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								Lead covered and armoured.
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR	2	25 mm <sup>2</sup>	19	1.3 mm	30	60 m	Rubber (Vulcanized)	
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	(a) MOTOR GENERATOR	1	25 mm <sup>2</sup>	19	1.3 mm	45	80 m	"	
	(b) MAIN MOTOR	1	25 mm <sup>2</sup>	19	1.3 mm	45	80 m	"	
	WORKSHOP MOTOR	2	2 x 25 mm <sup>2</sup>	2	1.75 mm	16	60 m	"	
	VENTILATING FANS	1	25 mm <sup>2</sup>	2	1.75 mm	16	20 m	"	

*Vertical Deck Boiler*

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.

**ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT**  
**ABT. F. SCHIFFBAU**  
**BAUBUREAU HAMBURG**

Electrical Engineers.

Date

25. Oktober 1930

*Museum*

**COMPASSES.**

Distance between electric generators ~~or motors~~ and standard compass *about 75m*  
 Distance between electric generators ~~or motors~~ and steering compass *about 80m*  
 The nearest cables to the compasses are as follows:—  
 A cable carrying *0.5* Ampères *close to* feet from standard compass *close to* 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.

**DEUTSCHE WERFT**  
**AKTIENGESELLSCHAFT**

*[Signature]*

Builder's Signature.

Date

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. Rules respecting conductors of this Society have been applied generally, as the German Standards are used in this construction. The installation has been built under Special Survey in accordance with the requirements of the Rules, the approved plans and the Secretary's letters. It has given full satisfaction under full working and manoeuvring conditions and is eligible in my opinion to be classed in the Society's Reg. Book with Record of "Electric Light."*

*It is submitted that this vessel is eligible for THE RECORD. Elec. Light.*

*[Signature]*  
 10/11/30.

Total Capacity of Generators *24* Kilowatts.

The amount of Fee ... £ *19: 10: 5. 11. 30*  
 Travelling Expenses (if any) £ *- : - : 12. 12. 30*

*[Signature]*  
 Surveyor to Lloyd's Register of Shipping.

Im. 228.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Committee's Minute

FRI. 21 NOV 1930

Assigned

*Elec. Lt.*



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