

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

21 DEC 1936

Received at London Office

Date of writing Report: 8<sup>th</sup> DEC. 1936 When handed in at Local Office: 19 Port of HAMBURG  
 No. in Survey held at HAMBURG Date, First Survey: 9<sup>th</sup> OCT. Last Survey: 25<sup>th</sup> Nov. 1936  
 Reg. Book. on the STEEL SC. "RIGEL" Tons { Gross 1016  
 Net 611  
 Built at HAMBURG By whom built DEUTSCHE WERFT A.G. Yard No. 176 When built 1936  
 Owners TRELLEBORGS ANFARTVGS NYHATTEN Port belonging to TRELLEBORG  
 Electric Light Installation fitted by A. E. G. - HAMBURG Contract No. - When fitted 1936  
 Is the Vessel fitted for carrying Petroleum in bulk YES.

## System of Distribution

Pressure of supply for Lighting

Direct or Alternating Current, Lighting

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

Generators, do they comply with the requirements regarding temperature rise

are they over compounded 5 per cent.

Where more than one generator is fitted are they arranged to run in parallel

series with each shunt field

approved

Are all terminals accessible, clearly marked, and furnished with sockets

short circuited, or touched

Position of Generators

in way of the generators satisfactory

woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

are the generators protected from mechanical injury and damage from water, steam or oil

Earthing, are the bedplates and frames of the generating plant efficiently earthed

in metallic contact

Main Switch Boards, where placed

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

injury and damage from water, steam or oil

horizontally from or vertically above the switchboards

materials

is it of an approved type

non-hygroscopic insulating material, and the slab similarly insulated from its framework

type

omnibus bars

"off" position

switches

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

Are turbine driven generators fitted with emergency trip switch as per rule

fire-resisting material or lined with approved material

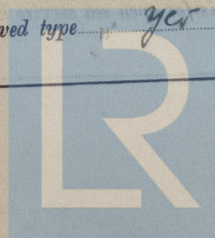
voltmeters

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the Rules

are the fusible cutouts of an approved type





current protection devices been tested under working conditions ☒ **Joint Boxes, Section and Distribution Boards**, is the construction, protection, insulation, material, and position of these as per Rule ☒ *The German Standards have been applied*

**Cables:** Single, twin, concentric, or multicore ☒ are the cables insulated and protected as per Tables IV, V, & VI of the Rules ☒ *generally*

If the cables are insulated otherwise than as per Rule, are they of an approved type ☒ **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load *Power 4 Volts - Lights 3 Volts* **Cable Sockets**, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets ☒ **Paper Insulated and Varnished Cambric Insulated Cables.**

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound ☒ or waterproof insulating tape ☒ **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 ☒ *Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit* ☒ *yes*

**Support and Protection of Cables**, state how the cables are supported and protected *lead covered and armoured, slipped on fresh iron perforated cable runs*

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

**Refrigerated Chambers**, 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-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 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 *lead*

**Earthing Connections**, state what earthing connections are fitted and their respective sectional areas ☒ *are their connections made as per Rule* ☒

**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 ☒

**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 ☒

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected ☒ *electric motors in compartment close to pump room - gas-tight glands (open room) - controlled from alleyway near Chief Eng. Room.*

where are the controlling switches situated ☒ *yes* are all fittings suitably ventilated ☒ *yes* are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials ☒ *yes*

**Heating and Cooking Appliances**, are they constructed and fitted as per Rule ☒ are air heaters constructed and fitted as per Rule ☒

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

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

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

have machines of over 100 BHP been inspected by the Surveyor's during manufacture and testing ☒ **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 ☒ *yes* **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* are all fuses of the filled cartridge type ☒ *yes* are they of an approved type ☒ *yes*

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office ☒ *yes*

**Spare Gear**, if the vessel is for open sea service have spares been supplied as per Rule ☒ *yes*

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 ...	<del>1</del>	<del>33</del>	<del>115</del>	<del>287</del>	<del>750</del>	<del>High 450 S.A. Diesel Eng.</del>	<del>Special Oil.</del>	<del>about 170° F.</del>
AUXILIARY ...	<del>1</del>	<del>8</del>	<del>115</del>	<del>70</del>	<del>450</del>	<del>2 cy</del>		
EMERGENCY ...		See below.						
ROTARY TRANSFORMER	Hilborn	Transformer not fitted, will be fitted, later.						

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	2x2	95	37	1.81	287	303.2	24		
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	2	35	19	1.53	70	77.7	46		
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	4x2	1.5	1	1.38	3	9.4	each about 10 to 15		
BOILER ROOM	2x2	1.5	1	1.38	3	9.4			
AUXILIARY SWITCHBOARDS									
Fore. Midship. All Rigs	2	35	19	1.53	80	77.7	31		
Lights. Fore. Midship	2	10	19	0.85	35	38.1	72		
Midship	2	4	19	0.52	8	22.1	62		
Navigation Lights	2	2.5	1	1.78	3	15.5	60	rubber	lead covered and armoured.
Muddan + Fore Peak Pump	2	120	61	1.59	196	219	124		
ACCOMMODATION									
Second. Gallery	2	4	19	0.52	18	22.1	48		
WIRELESS	2	16	19	1.04	-	49	86		
SEARCHLIGHT	2	1.5	1	1.38	0.5	9.4	36 - 40		
MASTHEAD LIGHT	2	1.5	1	1.38	0.5	9.4	16		
SIDE LIGHTS	2	1.5	1	1.38	0.5	9.4	10		
COMPASS LIGHTS	2	1.5	1	1.38	0.5	9.4	54		
POOP LIGHTS	2	1.5	1	1.38	0.5	9.4	50		
CARGO LIGHTS	2 For 2.5	1	1.78	4.5	15.5	50			
ARC LAMPS	2 For 2.5	1	1.78	4.5	15.5	50			
HEATERS	2	6	19	0.64	35	28.7	28		

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	2	2	70	37	1.55	115	123.7	40 - 52		
MAIN BILGE LINE PUMPS	2	2	25	19	1.30	56.5	63.2	42 - 46		
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP Fore Peak	1	2	6	19	0.64	21	28.7	25		
CIRC. SEA WATER PUMPS	1	2	4	19	0.52	4.7	22.1	38		
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR	1		95	See Hamburg Sept 22 1936 dated 11/37						
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS	1	2	95	37	1.81	175	190.5	124	rubber	lead covered and armoured.
WINCHES, FORWARD										
WINCHES, AFT	1	2	50	19	1.83	96	98.3	72		
STEERING GEAR - Elec. Hydraulic										
(a) MOTOR GENERATOR	1	2	6	19	0.64	30	28.7	90		
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS	1	2	16	19	1.04	43	49	32		
Galley Fan	1	2	2.5	1	1.78	4.4	15.5	10		
CARPENTER - 9 BHP	1		50	See Hamburg Sept 22 1936 dated 11/37						

Above General set removed and One Unclashed 4 Cyl. Lister engine driving a Maudslayi Dynamo 22 Kw 100V. Stand and One Unclashed 3 Cyl. Lister engine driving a Harland Dynamo 15 Kw 110V. Stand.

One Clashed 4 Cyl. Lister engine driving a ASEA. Dynamo 22.5 Kw. 115V. replaces an existing generator set on the Port side (port side of Main Deck).



All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

AST. F. SCHIFFBAU  
BAUVEREIN HAMBURG

Electrical Engineers.

Date

14.12.1936

#### COMPASSES.

Distance between electric ~~generators or~~ motors and standard compass *about 3 m.*

Distance between electric ~~generators or~~ motors and steering compass *2.5 m.*

The nearest cables to the compasses are as follows:—

A cable carrying *0.3* Amperes *close to* feet from standard compass *close to* feet from steering compass.

A cable carrying *0.4* Amperes *close to* feet from standard compass *—* feet from steering compass.

A cable carrying *—* Amperes *—* 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*

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.

DEUTSCHER VERKEHR  
AKTIEGESELLSCHAFT

Builder's Signature.

Date 15/12/36.

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. As the conductors used are of the 'German Standard' the Society's Rules regarding to conductors have been applied generally. The installation has been fitted under Special Survey in accordance with the approved plans, the Secretary's Letter, and otherwise in compliance with the requirements of the Rules and is eligible in my opinion to be placed in the Society's Reg. No.*

*Noted*

*True*

*23.12.36*

Total Capacity of Generators *55* Kilowatts.

The amount of Fee ...

*Rm. 505*

When applied for,

*15/XI/1936*

Travelling Expenses (if any) *—*

When received,

*22.1.37*

*Friedrich Witt*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*See Ham. J.C.  
22126*