

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

24 DEC 1936

Date of writing Report 13.12.36 19 36 When handed in at Local Office 19 Port of Hamburg  
 No. in Survey held at Kiel Date, First Survey 8-9-36 Last Survey 27-11-36 19 36  
 Reg. Book. on the Steel Twin Ser. "Don Esteban" (Number of Visits 1.3)  
 Tons { Gross 1616  
 Net 900  
 Built at Nice By whom built Fried. Krupp Germaniaw. Yard No. 560 When built 1936  
 Owners Hijos de J. de la Rama y Cia. Port belonging to Iloilo  
 Electric Light Installation fitted by Fried. Krupp Germaniawerft A.G. Contract No.          When fitted 1936  
 Is the Vessel fitted for carrying Petroleum in bulk no.

System of Distribution Two wire system ✓  
 Pressure of supply for Lighting 220 volts, Heating          volts, Power 220 volts.  
 Direct or Alternating Current, Lighting D.C. ✓ Power D.C. ✓  
 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 temperature rise 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. yes ✓, is an adjustable regulating resistance fitted in series with each shunt field yes ✓ Have certificates of test results for machines under 100 kw. been submitted and approved attached hereto ✓ Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing. ✓

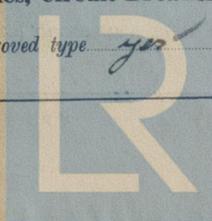
Are all terminals accessible, clearly marked, and furnished with sockets. yes ✓, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched yes ✓ Are the lubricating arrangements of the generators as per Rule yes ✓  
 Position of Generators Main: Engine room forward. Emergency: Special compartment forward of eng. room. 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, except emerg. ✓

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 starboard 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 emergency only ✓

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, Ebony-Asbestos ✓, is all insulation of high dielectric strength and of permanently high insulation resistance yes ✓, is it of an approved type 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.          ✓, is the non-hygroscopic insulating material of an approved type          ✓, 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 ✓, temperature rise of omnibus bars yes ✓, individual fuses to voltmeter, pilot or earth lamp yes ✓, are moving parts of switches alive in the "off" position no ✓ are all screws and nuts securing connections effectively locked yes ✓ are any fuses fitted on the live side of switches no ✓

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches For generators: Double pole overload sine breaker in non current trip. Outg. circuits: Fuse on each pole, double p. sw.  
 Are turbine driven generators fitted with emergency trip switch as per rule          ✓ Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material yes ✓ Instruments on main switchboard 2 + 3 ✓ ammeters 2 ✓  
 voltmeters 2 ✓ synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection          ✓

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Ohmmeter with Ohm scale. ✓  
 Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes ✓ are the fusible cutouts of an approved type yes ✓ have the reversed          ✓



current protection devices been tested under working conditions yes **Joint Boxes, Section and Distribution Boards**, is the construction, protection, insulation, material, and position of these as per rule yes As per German Standards

**Cables:** Single, twin, concentric or multicore, single below are the cables insulated and protected as per Tables IV, V, X or XI of the Rules

If the cables are insulated otherwise than as per Rule, are they of an approved type yes **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 1.5 Volts

**Cable Sockets**, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets. yes **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 none, or waterproof insulating tape yes **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 Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit Lead covered

**Support and Protection of Cables**, state how the cables are supported and protected armoured cables supported by clips where exposed to risk of damage covered with 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**, 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 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 rubber

**Earthing Connections**, state what earthing connections are fitted and their respective sectional areas double pole

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 Special compartment in engine room above water line. Driven by heavy oil engine. Can be started by hand without using compressed air

**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 stowholds 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 as per rule

where are the controlling switches situated as per rule

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 yes, are air heaters constructed and fitted as per Rule yes

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

**Arc Lamps**, other than searchlight lamps, No. of 0, 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, as far as pract. 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 and

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing 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 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, 1935-36!

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	80 each	220	248	400	oil engine	Diesel oil	Above 150° F
AUXILIARY								
EMERGENCY	1	5	230	35	500	oil engine	gas oil	" "
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

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.	Circuit.	Rule.			
MAIN GENERATOR	2	2 x 120	276	2.08	360	384	32	Rubber	Lead covered & armoured
EQUALISER CONNECTIONS	1	120	276	2.08		206	106		
AUXILIARY GENERATOR									
EMERGENCY GENERATOR	1	10	219	1.32	35	381	22		
ROTARY TRANSFORMER MOTOR									
ENGINE ROOM	2	2.5	1	1.5	12	185	100		
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
Upper Deck, starboard	1	16	29	1.24	40	49	29		
Main Deck	1	6	19	.64	25	32	106		
Upper Deck, port	1	16	29	1.24	40	49	35		
Laundry & aft ship	1	95	19	2.5	120	184	101		
Galleys	1	25	29	2.3	50	62	37		
ACCOMMODATION									
Navigation lamps	1	2.5	1	1.75	5	15.5	72		
WIRELESS	1	16	29	1.24	30	49	67		
SEARCHLIGHT	1	6	19	.64	22	28	60		
MASTHEAD LIGHT	1	2.5	1	1.75	1	18.5	100	80	
SIDE LIGHTS	1	2.5	1	1.75	1	18.5	16	18	
COMPASS LIGHTS	1	2.5	1	1.75	1	18.5	10	2	
POOP LIGHTS	1	2.5	1	1.75	1	18.5	110		
CARGO LIGHTS & lanterns	1	2.5	1	1.75	10	18.5	100	96	
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.

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	1	1	50	19	1.83	64	98.3	72	Rubber	Lead covered & armoured
MAIN BILGE LINE PUMPS	1	1	90	37	1.88	92	122	72		armoured
GENERAL SERVICE PUMP	1	1	10	19	.82	32	38.1	32		
HEATER FUEL OIL STRAINER	1	1	10	19	.82	32	38.1	24		
EMERGENCY BILGE PUMP	1	1	10	19	.82	32	38.1	24		
Oil pump/strainer	1	1	2.5	1	1.75	3.5	18.5	28		
SANITARY PUMP	1	1	2.5	1	1.75	3.5	18.5	28		
CIRC. SEA WATER PUMPS	1	1	6	19	.64	17.5	28	30		
CIRC. FRESH WATER PUMPS	1	1	1.5	1	1.38	3	19.4	64		
CO2 COMPRESSOR	1	1	6	19	.64	17.5	28	64		
FRESH WATER PUMP	1	1	6	19	.64	17.5	28	44		
ENGINE TURNING GEAR	1	1	2.5	1	1.75	3.5	18.5	44	28	
ENGINE REVERSING GEAR	1	1	2.5	1	1.75	3.5	18.5	44	28	
LUBRICATING OIL PUMPS	1	1	95	37	1.81	110	184	88		
OIL FUEL TRANSFER PUMP	1	1	10	19	.82	32	38.1	64		
WINDLASS	1	1	95	37	1.81	115	184	120		
WINCHES, FORWARD	2	1	150	61	1.72	160	205	34		
Fire ext. pump	1	1	70	37	1.85	92	122	36		
WINCHES, AFT	1	1	16	19	1.04	32	49	61		
Boat's winch	1	1	16	19	1.04	32	49	61		
STEERING GEAR										
(a) MOTOR GENERATOR	1	1	10	19	.82	32	38.1	130		
(b) MAIN MOTOR	1	1	10	19	.82	32	38.1	10		
Drilling Machine	1	1	2.5	1	1.75	3.5	18.5	30		
WORKSHOP MOTOR	1	1	2.5	1	1.75	3.5	18.5	30		
VENTILATING FANS	2	1	1.5 each	1	1.38	3.2 each	19.4	28	22	
Laundry pump	1	1	95	37	1.81	120	184	30		
Capstan	1	1	16	19	1.04	32	49	104		
Patrol Boat's	1	1	4	19	.82	9.5	38.1	64		
Grinding Machine	1	1	2.5	1	1.75	3.5	18.5	30		

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.

**FRIED. KRUPP  
GERMANIAWERFT**  
Aktiengesellschaft.

Electrical Engineers.

Date

**COMPASSES.**

Distance between electric generators or motors and standard compass *9m*

Distance between electric generators or motors and steering compass *10m*

The nearest cables to the compasses are as follows:—

A cable carrying *.5* Amperes *close to* feet from standard compass *close to* feet from steering compass.

A cable carrying *✓* Amperes *✓* 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 *any* course in the case of the standard compass, and *nil* degrees on *any* course in the case of the steering compass.

**FRIED. KRUPP  
GERMANIAWERFT**  
Aktiengesellschaft.

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.)

*This electric installation has been fitted in accordance with the approved plans, the Secretary's letters and in conformity with the Rules. Materials and workmanship are of good quality. It has given satisfaction under working conditions and was found in order.*

*Noted*

*Min*

*5.1.37*

*OK. G.W.*

Total Capacity of Generators *168* - Kilowatts.

The amount of Fee *£ 786.-*

When applied for,

*21.12.19*

Travelling Expenses (if any) £ *0*

When received,

*22.1.37*

*J.A. Whitecross*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. JAN 8 1937*

Assigned *See other F.E rpt.*

2m.5.34.—Transfer.  
The Surveyors are requested not to write out or below the space for Committee's Minutes.)



© 2020

Lloyd's Register  
Foundation