

Rpt. 13.

No. 24168

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office AUG 24 1939

Date of writing Report 19/5/39 19 When handed in at Local Office 19 Port of **HAMBURG**

No. in Survey held at **HAMBURG** Date, First Survey 14/11/38 Last Survey 11/3/39 19

Reg. Book. 35562 on the **Steel Sca "VAC PORT"** (Number of Visits.....)

Tons { Gross 6774  
Net 3970

Built at **HAMBURG** By whom built **Hovaldtswerke A.S.** Yard No. 744 When built 1939

Owners **Standard Transportation Co. Ltd.** Port belonging to **LONDON**

Electric Light Installation fitted by **Siemens Schuckertwerke A.G.** Contract No. When fitted 1939

Is the Vessel fitted for carrying Petroleum in bulk **yes**

System of Distribution **Two wire system 2 conductors**

Pressure of supply for Lighting **110** volts, Heating **110** volts, Power **110** 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 **no**, 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 **none**

Have certificates for generators under 100 kw. been supplied and approved **yes, attached hereto**

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** **Elevated platform in E.R. aft**, 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 **Elevated platform in E.R. aft**

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, tested 2000 Volts A.C., 1'**, 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

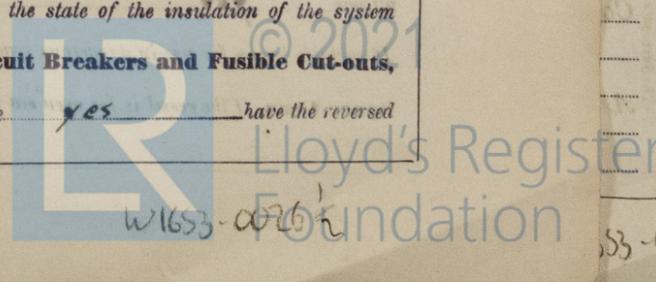
**Generators: Fuse on each pole, overc. circ. breakers. Circs: Double pole change over switch, fuse on each pole**

Are turbine driven generators fitted with emergency trip switch as per rule **none** Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material **yes**

**Instruments** on main switchboard **2** ammeters **2** voltmeters  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 **Voltmeter 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



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current protection devices been tested under working conditions yes are all fuses labelled as per rule yes

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

Cables: Single, twin, concentric, or multicore single are the cables insulated and protected as per British Standards Tables IV, V, X, XI, XII or XIII of the Rules yes

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 2.5 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 laid under machines or floorplates no if so, are they adequately protected yes

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit lead covered, partly in conduit

Support and Protection of Cables, state how the cables are supported and protected clips, along crew's alleyway in conduit

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 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 lead and hard wood

Earthing Connections, state what earthing connections are fitted and their respective sectional areas yes 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 NONE

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 are they ventilated 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 NONE

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected in pump rooms:- lamps placed in gaslight trunks from outside of pump rooms how are the cables led yes

where are the controlling switches situated bridge house

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 portable 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

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing yes have certificates for all motors for essential services been supplied and approved 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 NONE 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 fitted 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 flameproof type approved for use in dangerous spaces yes

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule yes are they suitably stored in dry situations yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	20 each	112	174	400	Steam engines.		
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT, AMPERES.		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, each	1	120	61	1.89	174	177	20	Rubber	lead covered and armoured.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	1.5	1	1.38	max. 4	9	max. 100	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
I Bridge Deck	1	120	61	1.89	128	177	280	"	"
II									
III Aft Deck	1	35	19	1.53	68	78	80	"	"
IV									
V Fore	1	4	19	.52	16	22	380	"	"
ACCOMMODATION									
Steer connection	1	120	61	1.89	200 Amps. peak	177	20	"	"
WIRELESS	1	16	19	1.04	49	36	220	"	"
SEARCHLIGHT	1	4	19	.52	18	22	120	"	"
MASTHEAD LIGHT	1	4.5	1	1.38	4	9	120	120	"
SIDE LIGHTS	1	1.5	1	1.38	4	9	12	15	"
COMPASS LIGHTS	1	1.5	1	1.38	4	9	12	15	"
POOP LIGHTS	1	1.5	1	1.38	4	9	120	"	"
CARGO LIGHTS	1	1.5	1	1.38	4	9	100	"	"
HEATERS	1	6	19	.52	18	29	20	"	"

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT, AMPERES.		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										
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	1	1	1.5	1	1.38	4.5	9	20	Rubber	lead covered and armoured.
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										
Drilling machine	1	1	4	19	.52	20	29	26	"	"
Lathe	1	1	2.5	19	1.30	52	63	20	"	"
Grinding Stone	1	1	2.5	1	1.75	12	16	20	"	"

The Electrical Equipment is installed in accordance with the approved plans.  
 All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

**SIEMENS-SCHUCKERTWERKE**  
 AKTIVGESELLSCHAFT  
 HANSEATISCHE ZWEIGNIEDERLASSUNG HAMBURG  
 in Vollmacht

Electrical Engineers.

Date 14. III. 39.

**COMPASSES**

Minimum distance between electric generators or motors and standard compass 73 m

Minimum distance between electric generators or motors and steering compass 76 m

The nearest cables to the compasses are as follows:—

A cable carrying 2 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 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 course in the case of the standard compass, and NIL degrees on any course in the case of the steering compass.

**HOWALDTSWERKE**  
 Aktiengesellschaft

*[Signature]* Builder's Signature.

Date

Is this installation a duplicate of a previous case yes If so, state name of vessel "Coimbra" Ham. Dpt. No. 22443  
21/7/37

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

*This electric installation is fitted in accordance with the approved plans and instructions thereto and in compliance with this Society's Rules. Materials and workmanship are of good quality. It has given satisfaction when running under full working conditions and was found in order.*

*Noted*  
*[Signature]*  
28/8/39.

Total Capacity of Generators 40 Kilowatts.

The amount of Fee ... 2 Mk, 500.- { When applied for, 21. 8. 19. 39

Travelling Expenses (if any) £ : : { When received, 13. 3. 40

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

Committee's Minute

TUE 29 AUG 1939

Assigned See FE machy rll.

The Surveyors are requested not to write on or below the space for Committee's Minute



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