

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

NOV 14 1938

Received at London Office

Date of writing Report 24<sup>th</sup> - 10 - 1938 When handed in at Local Office 19 Port of ROTTERDAM  
 No. in Survey held at ROTTERDAM Date, First Survey 7<sup>th</sup> - 10 - 38 Last Survey 19<sup>th</sup> - 10 - 1938  
 Reg. Book. 72526 on the m.s. "CLAUSINA" (Number of Visits 2)  
 Built at ROTTERDAM By whom built Rotterdamsche Droogdok M.Y. Yard No. 203 When built 1938  
 Owners Ned. Ind. Tankboot M.Y. Port belonging to the Hague.  
 Electric Light Installation fitted by v. Pietschoten & Houwens N.V. Contract No. \_\_\_\_\_ When fitted 1938  
 Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution Two conductor insulated system ✓

Pressure of supply for Lighting 110 volts, Heating ✓ volts, Power 110 volts.

Direct or Alternating Current, Lighting direct current Power direct current

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 yes

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing ✓

Have certificates for generators under 100 kw. been supplied and approved 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 in engine room, starboardside, 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 in engine room, starboardside

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

is it of an approved type marble, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or mica nit or other non-hygroscopic insulating material, and the slab similarly insulated from its framework yes

is the non-hygroscopic insulating material of an approved type 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, 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 steam driven generator and for each outgoing circuit: one double pole change over switch and one set of double pole fuses; for oil driven generator: one double pole switch and one set of double pole fuses.

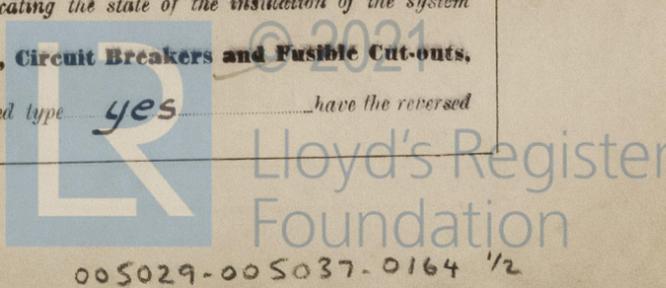
Are turbine driven generators fitted with emergency trip switch as per rule ✓ Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material yes

Instruments on main switchboard 2 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 one pair of earth fault indicating lamps for each generator

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  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, ~~twisted~~, or multicore *all types* are the cables insulated and protected as per 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  **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load *4.2 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  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, raptakes or other hot objects, or to avoidable risk of mechanical damage *yes* are cables laid under machines or floorplates *yes* if so, are they adequately protected *yes*

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit *yes* *all cables are clipped to metal trays or direct to steelwork or woodwork of vessel, or run in conduit.*

**Support and Protection of Cables**, state how the cables are supported and protected *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 *no joints*

**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 *Lead covering & steel wire braiding of cables and all apparatus earthed where necessary* 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

**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 (telephone)* 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 *the w.t. fittings in centre-castle space have stout prismatic glass lenses; these lights are entirely switched off at sea.* are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *pumprooms are lighted by w.t. fittings in special gaslight boxes in the pumproom entrances.* how are the cables led *wiring in conduit wholly outside pumprooms* where are the controlling switches situated *in Chart room* 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 *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 *where possible* 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  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 *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 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	16	110	145	390	Steam engine	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
AUXILIARY	1	16	110	145	390	Oil engine	diesel oil	above 150°F
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR	1	.150	37	.072	145	152	36	rubber	Lead sheath - steel wire braiding
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	.150	37	.072	145	152	60	"	"
EMERGENCY GENERATOR	1	.150	37	.072	-	152		"	"
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	.0145	7	.052	36	37	60	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
Workshop dist. board	1	.0600	19	.064	70	83	200	"	"
Navigation board	1	.0145	7	.052	10	37	540	"	"
Portable connections D.B.	1	.0145	7	.052	20	37	160	"	"
ACCOMMODATION									
Fore ship D.B.	1	.0225	7	.064	12	46	1000	"	"
Midship D.B.	1	.0400	19	.052	51	64	540	"	"
Aft accomm. D.B.	1	.0225	7	.064	37	46	120	"	"
WIRELESS	1	.0225	7	.064	42	46	600	"	"
SEARCHLIGHT	1	.0600	19	.064		83	1000	"	"
MASTHEAD LIGHT	1	.0023	1	.055	4	9.5	500	"	"
SIDE LIGHTS	1	.0023	1	.055	4	9.5	120	"	"
COMPASS LIGHTS	1	.0023	1	.055	15	9.5	70	"	"
POOP LIGHTS	1	.0023	1	.055	4	9.5	750	"	"
CARGO LIGHTS	1	.0023	1	.055	2	9.5	600	"	"
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	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										
ENGINE TURNING GEAR	1	1	.12	19	.087	61	125	100	rubber	Lead sheath - steel wire braiding
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP	1	1	.0070	7	.036	17	24	120	"	"
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS	1	1	.0070	7	.036	12.5	24	100	"	"
Grinding stone	1	1	.0100	7	.044	24.5	31	25	"	"
Drilling machine	1	1	.0100	7	.044	17.7	31	25	"	"
Lathe	1	1	.0050	7	.033	13.8	22.5	25	"	"
Oil purifier	1	1	.0070	7	.036	17.7	24	75	"	"
Clear view screen	1	1	.0026	1	.055	5	9.5	45	"	"

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.

*Van Rietschoten & Houwer*  
*Napier*

Electrical Engineers. Date 31 Oct 1938

COMPASSES.

Minimum distance between electric generators or motors and standard compass 8 feet (clear view screen)

Minimum distance between electric generators or motors and steering compass 6 feet (clear view screen)

The nearest cables to the compasses are as follows:—

A cable carrying 15 Ampères 1 foot from standard compass 1 foot from steering compass.

A cable carrying 4 Ampères 6 feet from standard compass 6 feet from steering compass.

A cable carrying 20 Ampères 20 feet from standard compass 15 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 nihil degrees on every course in the case of the standard

compass, and nihil degrees on every course in the case of the steering compass.

P. P. DE ROTTERDAMSCH E DROOGDOEK M.V.

*[Signature]* Builder's Signature. Date 3 Nov. 1938.

Is this installation a duplicate of a previous case Yes If so, state name of vessel m.s. "CORYDA"

General Remarks (State quality of workmanship, opinions as to class, etc. The electrical equipment of this

vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The material and workmanship are good and the electrical installation merits in my opinion the Committee's approval.

*Noted*  
*[Signature]*  
15/11/38

Total Capacity of Generators 32 Kilowatts.

The amount of Fee ... £ 275.00. : When applied for, 12.11.38

Travelling Expenses (if any) £ 1.00 : When received, 2/12/38

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

FRI 18 NOV 1938

Committee's Minute

Assigned

*See FE machy st*

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



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