

Rpt. 13.

No. 27279<sup>c</sup>

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

SEP 14 1938

Received at London Office

Date of writing Report 9-9-1938 When handed in at Local Office 10 Port of ROTTERDAM  
 No. in Survey held at Slipperveer Date, First Survey 15-7-38 Last Survey 25-8-1938  
 Reg. Book. on the M.S. "MURON" (Number of Visits 4) Tons { Gross  
 Net  
 Built at Slipperveer By whom built de Groot & van Vliet Yard No. 218 When built 1938  
 Owners N.V. TANKREEDERY "OBOR" Port belonging to Rotterdam  
 Electric Light Installation fitted by N.V. Electr. Bureau "BOHAMEE" Contract No. When fitted 1938  
 Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution two wire  
 Pressure of supply for Lighting 32 volts, Heating Power volts, Power  
 Direct or Alternating Current, Lighting direct current Power  
 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 no, are they compound wound no  
 are they over compounded 5 per cent. no, 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  
 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 engineroom portside, 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 yes and yes 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 engineroom 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 yes and yes 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 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 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 yes  
 Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches for the two generators: one d.p. change over switch in series with a d.p. change over contactor and one set of d.p. fuses; for each outgoing circuit: a d.p. switch and d.p. fuses.  
 Are turbine driven generators fitted with emergency trip switch as per rule yes Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material yes Instruments on main switchboard 2 ammeters 3 voltmeters yes 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 earthfault indicating lamps Switches, Circuit Breakers and Fusible Cut-outs, D.A.Z. type - have the reversed A.E.G. make  
 do these comply with the requirements of the Rules yes are the fusible cutouts of an approved type

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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 yes are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules yes

Cables: Single, twin, concentric, or multi-core 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 yes

any point of the installation under maximum load yes

area of 0.04 square inch and above provided with soldering sockets yes

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 yes or waterproof insulating tape yes

insulating compound yes are cables laid under machines or 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

Support and Protection of Cables, state how the cables are supported and protected yes

If cables are run in good 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 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 All apparatus earthed where necessary to Rule requirements 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 by 32V. battery with interlocked charge - & discharge contactors on main switchboard

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 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 pumproom is lighted by two fittings mounted outside, with a stout glass bowl separated from the interior how are the cables led wired wholly outside pumproom in gastight conduit

where are the controlling switches situated outside pumproom

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 one 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 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 D.A.Z. type - A.E.G. make

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.		Insulated with	HOW PROTECTED.
		Kilowatts.	Volts.	Amps.	R.P.M.		Fuel Used.	Flash Point of Fuel.		
MAIN	2	35	32 1/2	109	1200	one generated by main engine one generator by aux. diesel	diesel oil	above 150°F		
AUXILIARY										
EMERGENCY										
ROTARY TRANSFORMER										

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuits.	Rule.			
MAIN GENERATOR	1	70	19	2 1/2	100	125	60	rubber	Lead cov. & steel wire braiding
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	4	7	.86	ON	125	54	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	2.5	1	1.79	8	15.5	60	"	"
ENGINE ROOM	1	1.5	1	1.39	6	9.5	65	"	"
AUXILIARY SWITCHBOARDS									
navigation lights	1	2.5	1	1.79	5	15.5	135	"	"
navigation D.B. ①	1	2.5	1	1.79	5	15.5	40	"	"
foreship D.B. ②	1	2.5	1	1.79	3	15.5	70	"	"
deck lights & pumproom	1	1.5	1	1.39	9	9.5	25	"	"
ACCOMMODATION D.B. ③	1	2.5	1	1.79	15	15.5	20	"	"
WIRELESS									
SEARCHLIGHT	1	1.5	1	1.39	1	9.5	75	"	"
MASTHEAD LIGHT	1	1.5	1	1.39	1	9.5	35	"	"
SIDE LIGHTS	1	1.5	1	1.39	1	9.5	12	"	"
COMPASS LIGHTS	1	1.5	1	1.39	5	9.5	35	"	"
POOP LIGHTS	1	1.5	1	1.39	1	9.5	35	"	"
CARGO LIGHTS									
HEATERS									

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		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										
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										



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.

N.V. Electro-Technisch Bureau „BOHAMEE“

*W. H. M. M. M.*

Directeur

Electrical Engineers.

Date

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass

42 feet

Minimum distance between electric generators or motors and steering compass

37 "

The nearest cables to the compasses are as follows:—

A cable carrying .5 Amperes 1 feet from standard compass — feet from steering compass.

A cable carrying .5 Amperes 1 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 *nihil* degrees on *every course* course in the case of the standard compass, and — degrees on — course in the case of the steering compass.

N.V. Scheepsbouwwerf  
v.b. DE GROOT & VAN VLIET

*De Vliet*

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 installation has been made and fitted in accordance with the approved plan. Society's Rules and Secretary's letters. It has been tested under full working condition and was found satisfactory and merits in my opinion the Committee's approval.*

*Noted*

*15/9/38.*

Total Capacity of Generators *7* Kilowatts.

The amount of Fee ...

£ *84.00.*

When applied for,

*13.9.1938*

Travelling Expenses (if any) £

When received.

*4/10/38*

*gmr 4/10.*

*C. M. Brouse*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 16 SEP 1938

Assigned

*See F.E. machy rpt.*



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