

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 Slikkerveer Date, First Survey 15-7-38 Last Survey 25-8-1938

Reg. Book.

(Number of Visits 4)

on the M.S. "MURON"

Tons { Gross
Net

Built at Slikkerveer By whom built de Groot & van Nijet 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 _____ volts, Power _____ volts.

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 _____, are they compound wound no

are they over compounded 5 per cent. _____, 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 _____ 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 _____ 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 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 _____ 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 Yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite 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 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 _____ 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 _____

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, do these comply with the requirements of the Rules Yes are the fusible cutouts of an approved type D.A.Z. type — have the reversed A.E.G. make



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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 are constructed, protection, insulation, material, and position of these as per rule **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** **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load

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 **Yes** 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 appliances **NO** if so, are they adequately protected **Yes**

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit **Yes** **Clipped to metal trays or direct to steel or wood work of vessel or run in conduit**

Support and Protection of Cables, state how the cables are supported and protected **Clipped to metal trays or direct to steel or wood work of vessel or run in conduit**

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 wired wholly outside pumproom in gastight conduit** 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**

DESCRIPTION OF GENERATOR	No. of	RATED AT			DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts	Volts	Amps.		Fuel Used	Flash Point of Fuel
MAIN	2	35	32 1/2	109	1700	one generated by main engine one generator by aux. diesel	diesel oil above 150°F
AUXILIARY							
EMERGENCY							
ROTARY TRANSFORMER							

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 mm.	Circuits	Rule			
MAIN GENERATOR	1	70	19	2.17	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	35	"	"
MASTHEAD LIGHT	1	1.5	1	1.39	1	9.5	35	"	"
SIDE LIGHTS	1	1.5	1	1.39	1	9.5	35	"	"
COMPASS LIGHTS	1	1.5	1	1.39	5	9.5	12	"	"
POOP LIGHTS	1	1.5	1	1.39	1	9.5	35	"	"
CARGO LIGHTS									
HEATERS									

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

J. 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.

W. H. M. M. M.
15/9/38.

Total Capacity of Generators 7 Kilowatts.

The amount of Fee £ 84.00 : { When applied for, 13.9.38

Travelling Expenses (if any) £ — : { When received, 4/10.38

W. H. M. M. M.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 16 SEP 1938

Assigned

See F.E. machy rpt.

20, 12, 26.—Transfer.
The Surveyors are requested not to write on or below the space for Committee's Minute.



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