

# RETAIN

Rpt. 13.

No. 26918e

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

MAY 24 1938

Date of writing Report 17-5-1938. When handed in at Local Office 19 Port of R'dam.

No. in Survey held at ROTTERDAM. Date, First Survey 25.2.38 Last Survey 5-2-1938  
 Reg. Book. M.S. "Clea" (Number of Visits 9)

on the M.S. "Clea" Tons { Gross 801.8  
 Net 472.5

Built at Rotterdam. By whom built Rott. Droogd. Mij. Yard No. 198. When built 1937-'38.

Owners Ned. Ind. Tanksf. Mij. Port belonging to 's Gravenhage.

Electric Light Installation fitted by N.V. van Rietschoien & Houwens Contract No.            When fitted '37-'38.

Is the Vessel fitted for carrying Petroleum in bulk Yes.

### System of Distribution

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

### Direct or Alternating Current, Lighting

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           

approved Yes. Have certificates of test results for machines under 100 kw. been submitted and approved Yes.

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           , 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           

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 (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           

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 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           , accessibility of all parts Yes., absence of fuses on back of board           , temperature rise of omnibus bars           , 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           

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches no.

dynamo and circuits with double pole switch.

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 2.

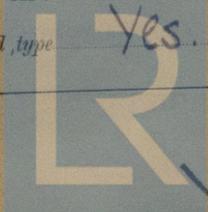
voltmeters            synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection           

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system earth lamps.

Switches, Circuit Breakers and Fusible Cut-outs,            are the fusible cutouts of an approved type Yes.            have the reversed           

Do these comply with the requirements of the Rules Yes.

BIJLAGE N° 640



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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, twin, concentric, or multicore  single core 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.

**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  Cable Runs, are the cables sized 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  Yes. if so, are they adequately protected  Yes, in iron conduit.

Are cables in machinery spaces, galleys, lavatories, bathrooms and lavatories lead covered or run in conduit  Yes.

**Support and Protection of Cables,** state how the cables are supported and protected  either direct on beams or on perfor. plates.

If cables are run in wood casings, are the casings and caps secured by screws  are the cap screws of brass  are the cables run in separate grooves  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 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 or hard wood.

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas  only to earth, switch and fuse boxes as big as possible. 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

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected

where are the controlling switches situated

are all fittings suitably ventilated  are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials

**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**  one connection whether fixed or portable  are their fittings as per Rule

**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

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

**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  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

**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.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	16	110			Steam engine.		
AUXILIARY	1	16	110			Diesel motor.		
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.	Circuit.	Rule.			
MAIN GENERATOR	1	0.1478	37	0.72	145	149.7	36		95 φ
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	0.1478	37	0.72	145	149.7	60		95 φ
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM									
BOILER ROOM									
AUXILIARY SWITCHBOARDS		0.06000	19	0.64	~ 70	76.3	200		35 φ
Portable conn. a. deck Navigation		0.01462	7	0.52	~ 20	38.7	160		10 φ
		0.01462	7	0.52	10	38.7	540		10 φ
ACCOMMODATION									
Foreship (lighting)	1	0.02214	7	0.64	12	48.4	1000		16 φ
Midship	1	0.03960	19	0.52	51	62.6	540		26 φ
Aft	1	0.02214	7	0.64	37	48.4	120		16 φ
Engine room	1	0.01462	7	0.52	39	38.7	60		10 φ
WIRELESS	1	0.02214	7	0.64	~ 40	48.4	600		16 φ
SEARCHLIGHT	1	0.06000	19	0.64		76.3	1000		35 φ
MASTHEAD LIGHT	1	0.001943	1	0.55	0.4	9.8	500		1.5 φ
SIDE LIGHTS	1	0.001943	1	0.55	0.4	9.8	120		1.5 φ
COMPASS LIGHTS	1	0.001943	1	0.55	0.15	9.8	72		1.5 φ
POOP LIGHTS	1	0.001943	1	0.55	0.4	9.8	750		1.5 φ
CARGO LIGHTS	1	0.001943	1	0.55	2	9.8	500		1.5 φ
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	1	1	0.1168	19	0.72	61	100			50 φ
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP	1	1	0.007005	7	0.36	17.6	75			4 φ
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS	1	1	0.007005	7	0.36	12.5	100			4 φ
Grinding stone	1	1	0.1546	7	0.44	24.5	25			6 φ
Drilling mach.	1	1	0.1046	7	0.44	17.7	25			6 φ
Lathe	1	1	0.003217	7	0.265	13.8	25			2.5 φ
Trimming pump	1	1	0.007005	7	0.36	17	120			4 φ
Clear view screen	1	1	0.001943	1	0.60	0.6	45			1.5 φ

all cable with rubber with lead.

all cable with rubber with lead.

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.

*M. K. K. K.*  
 Electrical Engineers.

Electrical Engineers. Date \_\_\_\_\_

COMPASSES.

Minimum distance between electric generators or motors and standard compass *clear view screen ~ 8 feet.*

Minimum distance between electric generators or motors and steering compass *clear view screen ~ 6 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying *0,15* Ampères *1* feet from standard compass *4* feet from steering compass.

A cable carrying *0,4* 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 *0* degrees on *every* course in the case of the standard compass, and *0* degrees on *every* course in the case of the steering compass.

DE ROTTERDAMSCH E DROOGDOEK MIJ.

Directeur

*A. Knappe*

Builder's Signature. Date *17-5-'38*

Is this installation a duplicate of a previous case \_\_\_\_\_ If so, state name of vessel \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, &c. *THIS INSTALLATION HAS BEEN*)  
*ERIED IN ACCORDANCE WITH THE APPROVED PLANS, SOCIETY'S RULES AND*  
*SECRETARY'S LETTER, MATERIAL TESTED AS REQUIRED AND WORKMANSHIP GOOD*  
*THE WHOLE WAS FOUND IN A GOOD WORKING CONDITION WHEN TRIED AND*  
*MERITS IN MY OPINION THE APPROVAL OF THE COMMITTEE.*

*Noted*  
*26/5/38*

Total Capacity of Generators *32* ~~*16*~~ Kilowatts. *La. 1/6/38.*

The amount of Fee ... *£ 272.* : *125.19.38*

Travelling Expenses (if any) £ : *73.6.38* *1973.6*

*H. F. Debra*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 31 MAY 1938

Assigned

*See Rot. No. 26918*

20, 12, 38.—Transfer. The Surveys are requested not to write on or below the space for Committee's Minute



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