

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

16 SEP

Received at London Office

Date of writing Report 2<sup>ND</sup> SEPT. 1939 When handed in at Local Office 19 Port of GRONINGEN

No. in Survey held at WESTERBROEK Date, First Survey 11<sup>TH</sup> AUG. Last Survey 28<sup>TH</sup> AUG. 1939  
Reg. Book. (Number of Visits 4)

on the STEEL SINGLE SREW MOTORSHIP "BUG" Tons { Gross 496.41  
Net 321.23

Built at WESTERBROEK By whom built N.V. E.J. SMIT & ZONN Yard No. 660 When built 1939

Owners MEJRS. ROTHER & KILACZYCKI LTD Port belonging to GDYNIA

Electric Light Installation fitted by FA. HERMAN G. EEKELS Contract No. v When fitted 1939

Is the Vessel fitted for carrying Petroleum in bulk NO

System of Distribution TWO WIRE SYSTEM

Pressure of supply for Lighting 48 volts, Heating v volts, Power 220 volts

Direct or Alternating Current, Lighting D.C. Power D.C.

If alternating current system, state frequency of periods per second v

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 24 K.W. COMP. 342 K.W. SHUNT  
are they over compounded 5 per cent. YES, if not compound wound state distance between each generator + 5 MR.

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 v

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

Have certificates for generators under 100 kw. been supplied and approved v

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 MOTORROOM, 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 v and v

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 MOTORROOM, BOXES LIGHTING S.B. POWER P.S.

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 v

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 v and v, 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 v, 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 NIL, 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

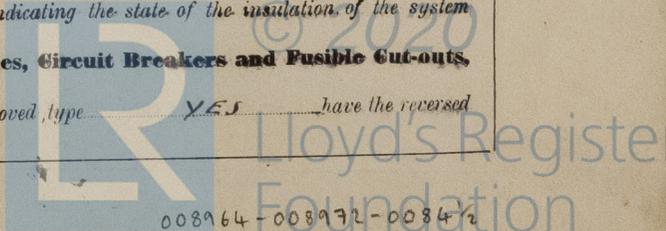
POWER: DOUBLE POLE ROTARY CIRCUIT BREAKER; LIGHTING: DOUBLE POLE CIRC<sup>r</sup> BREAKER

Are turbine driven generators fitted with emergency trip switch as per rule v Are cupboards or compartments containing switchboards composed of  
fire-resisting material or lined with approved material YES Instruments on main switchboard 2 ammeters 2

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

v Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system  
2 x 2 EARTH 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 YES have the reversed



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 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 POWER 3 1/2 V; LIGHT 2 V **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 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 ✓

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit LEAD COVERED & ARMOURD CABLES

**Support and Protection of Cables,** state how the cables are supported and protected METAL CLIPS

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 ✓

**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 NONE state the material of which the bushes are made ✓

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas ✓ are their connections made as per Rule ✓

**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule ✓ **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 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 NONE how are the cables led ✓ 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 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 ✓ 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 NONE FITTED 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 ✓ **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 ✓ are all fuses of the filled cartridge type ✓ are they of an approved type ✓ 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

**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 POWER	1	24	220	109	450	2 CYL. AUX. ENGINE.	DIESEL OIL	ABOVE 150° F.
AUXILIARY LIGHT	2	3 & 2	48	60 & 40	1000	" MAIN ENGINE " (3 CYL.)		
EMERGENCY								
ROTARY TRANSFORMER								

**GENERATOR, LIGHTING AND HEATING CONDUCTORS.**

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet. Max.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR	1	40	37	1.6	109	130V	18-	RUBBER LEAD COVERED	ARMOURD
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	1 1/2	1	1.38	1 1/2	10	44-	"	"
BOILER ROOM	1	1 1/2	1	1.38	2	10	36-	"	"
AUXILIARY SWITCHBOARDS	1	4	4	.85	13	18.2	10.35'	"	"
GENERATOR	1	25	7	2.13	42.5	64	20.4	"	"
"	1	25	7	2.13	63	64	36.6	"	"
ACCOMMODATION	1	2 1/4	4	.68	5	15	42'	"	"
"	1	1 1/2	1	1.38	3	10	85'	"	"
"	1	2 1/4	4	.68	4	15	51'	"	"
"	1	1 1/2	1	1.38	2	10	67'	"	"
"	1	2 1/4	4	.68	4	15	56'	"	"
"	1	1 1/2	1	1.38	2	10	38'	"	"
"	1	2 1/4	4	.68	5	15	116'	"	"
WIRELESS	1	1 1/2	1	1.38	1	10	18'	"	"
SEARCHLIGHT									
MASTHEAD LIGHT	1	1 1/2	1	1.38	.75	10	175'	"	"
SIDE LIGHTS	1	1 1/2	1	1.38	.75	10	36'	"	"
COMPASS LIGHTS	1	1 1/2	1	1.38	.10	10	42'	"	"
POOP LIGHTS	1	1 1/2	1	1.38	.75	10	38'	"	"
CARGO LIGHTS	1	2 1/4	39	.28	4	15	50'	"	"
HEATERS									

**MOTOR CONDUCTORS.**

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet. Max.	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	1	1	6	7	1.05	21.5	24	13	RUBBER	ARMOURD
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	1	1	1 1/2	4	1.38	1.72	4.8	28	"	"
WINDLASS	1	1	16	4	1.71	45	46	24	"	"
WINCHES, FORWARD	1	1	16	4	1.71	36.5	46	20.40	"	"
WINCHES, AFT	1	1	16	4	1.71	36.5	46	20.40	"	"
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.

*H.G.* HERMAN G. FEKELS

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

**COMPASSES.**

Minimum distance between electric generators or motors and standard compass \_\_\_\_\_

Minimum distance between electric generators or motors and steering compass \_\_\_\_\_

The nearest cables to the compasses are as follows:—

A cable carrying 45 Ampères 20 feet from standard compass 6 feet from steering compass.

A cable carrying 5 Ampères 15 feet from standard compass 20 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 EVERY course in the case of the standard compass, and NIL degrees on EVERY course in the case of the steering compass.

Builder's Signature *N.V.E. J. Smit & Zonen Scheepswerf*  
 Date 21/9/39

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

General Remarks (State quality of workmanship, opinions as to class, &c. THE INSTALLATION HAS BEEN FITTED

IN ACCORDANCE WITH THE APPROVED PLANS AND SECRETARY'S LETTERS

AND IN CONFORMITY WITH THE SOCIETY'S RULES.

THE WORKMANSHIP WAS FOUND GOOD AND THE INSTALLATION WAS FOUND

IN GOOD WORKING CONDITION WHEN TESTED.

IN MY OPINION THE INSTALLATION MERITS THE COMMITTEE'S APPROVAL.

*Noted  
 L.H.  
 21/9/39*

Total Capacity of Generators 29 Kilowatts.

The amount of Fee ... .. £ 264.- : { When applied for. 11-9-1939

Travelling Expenses (if any) £ \_\_\_\_\_ : { When received. 19-9-1939

*A. L. ...*  
*G. Willems*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned See G.O. 76-78

2m.12.36.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute