

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 16<sup>th</sup> June 1939 When handed in at Local Office

Port of BREMEN

No. in Survey held at BREMEN  
Reg. Book.

Date, First Survey

Last Survey 7<sup>th</sup> June 1939

(Number of Visits 27)

88670 on the SINGLE SCREW M/V.

JAVA

Tons { Gross 9250  
Net 5646

Built at BREMEN

By whom built DESCHIMAG A.G. WESER

Yard No. 951 When built 1939

Owners STOOMVAART MAATSCHAPPY "NEDERLAND" Port belonging to AMSTERDAM

Electric Light Installation fitted by ALLGEMEINE ELECTR. GESELLSCHAFT

Contract No.

When fitted 1939

Is the Vessel fitted for carrying Petroleum in bulk NO

System of Distribution SINGLE WIRE WITH HULL RETURN

Pressure of supply for Lighting 230 volts, Heating 230 volts, Power 230 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 yes, 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 yes

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 Engine Room Starboard side, 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 Engine Room forward

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 each generator a single pole circuit breaker with overload and reversed current trips.

For each outgoing circuit a single pole fuse and a switch on the insulated pole

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 6 ammeters 3

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

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

Insulation tester supplied 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 are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules yes *German Standard*

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 1.5 - 2 Vch **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 This type of cables are not insulated, 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 floorplates yes, a few if so, are they adequately protected yes Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit lead covered

**Support and Protection of Cables**, state how the cables are supported and protected all cables are fixed in iron cable leads and mounted where necessary If cables are run in wood casings, are the casings and caps secured by screws yes, are the cap screws of brass yes, are the cables run in separate grooves all lead covered 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 in main joint boxes

**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 Main Generator earthing connections 2 x 500 mm<sup>2</sup>, 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 none

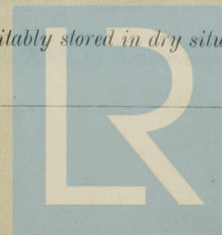
**Navigation Lamps**, are these separately wired yes, controlled by separate switch and separate fuses yes, are the fuses double pole no, are the switches and fuses grouped in a position accessible only to the officers on watch yes has each navigation lamp an automatic indicator as per Rule yes **Secondary Batteries**, are they constructed and fitted as per Rule none are they ventilated as per Rule —

**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 no, how are the cables led — where are the controlling switches situated — 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 of 2000 W 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 and vertically 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 none, 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 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 these marks **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 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





**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 ...	3	200	230	870	350	Heavy Oil Engine	Heavy Oil	above 150 F
AUXILIARY ...								
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 ...	2	500	91	2.65	870	2 x 475	32	RUBBER	Lead covered braided
EQUALISER CONNECTIONS	1	500	91	2.65		475	32	-	-
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR									
AUXILIARY SWITCHBOARDS	1	35	19	1.53	70	80	10 m	-	-
Boiler Room ...	1	95	37	1.81	125	150	45	-	-
AUXILIARY SWITCHBOARDS	1	10	19	0.82	35	38	40	-	-
L I V I I I X	1	4	19	0.52	18	22	25-32	-	-
L X I	1	1.5	1	1.78	6	9	5	-	-
L V I I + L X I	1	4	19	0.52	20	22	20 90	-	-
AUX. SWITCHBO. HEATING H I	1	95	37	1.81	150	150	80	-	-
- H I I	1	95	37	1.81	150	150	20	-	-
Accommodation H. I I. H. I I.	1	150	61	1.77	200	205	20-22	-	-
- H V I I V I	1	150	61	1.77	200	205	28	-	-
AUX. SWITCHBO. POWER K I	1	95	37	1.81	150	150	14	-	-
- K I I K I I I K I I I	1	185	61	1.97	230	232	10. 15. 10	-	-
- K I I I	1	16	19	1.04	50	50	25	-	-
WIRELESS	1	25	19	1.3	18	62	25	-	-
SEARCHLIGHT	1	2.5	1	1.78	10	15	5	-	-
MASTHEAD LIGHT	1	1.5	1	1.78	0.5	9	65	-	-
SIDE LIGHTS	1	1.5	1	1.78	0.5	9	10	-	-
COMPASS LIGHTS	1	1.5	1	1.78	0.1	9	8	-	-
POOP LIGHTS	1	1.5	1	1.78	0.5	9	92	-	-
CARGO LIGHTS	1	2.5	1	1.78	0.5	15	5	-	-
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.			
1 Bridge Pump	1	1	25	19	1.3	56.66	62	32	Rubber	Lead covered braided
2 Ballast Pumps	1	1	25	19	1.3	56.66	62	10	-	-
3 General Service Pump	1	1	25	19	1.3	56.66	62	7	-	-
4 Oil Pump Oil Pump	1	1	95	37	1.81	108	150	32	-	-
5 Air Compressor	1	1	240	91	1.84	225.27	275	34	-	-
6 Separator Pump	1	2	120	61	1.59	275	350	9	-	-
7 Freshw. Cool. Pump	1	2	120	61	1.59	295	350	15.5	-	-
8 Core Oil pump Main Mot.	1	2	120	61	1.59	260	350	23	-	-
9 Lub. " " "	1	1	95	37	1.81	116	150	30	-	-
10 " " " Gearing	1	1	95	37	1.81	116.146	150	26.5	-	-
11 Air Compressor	1	1	240	91	1.84	225	275	37	-	-
12 Lub. Oil pump Spare	1	1	95	37	1.81	116.146	150	28	-	-
13 Piston cool. oil pump	1	2	120	61	1.59	260.218	350	15	-	-
14 Freshw. Cool. Pump	1	2	120	61	1.59	295.35	350	14	-	-
15 Pear. Cool. Pump	1	2	120	61	1.59	275.333	350	7.5	-	-
16 Form. Lubric. Oil Pump	1	1	95	37	1.81	108	150	6.5	-	-
17 General Serv. Pump	1	1	25	19	1.3	57	62	8	-	-
18 Fuel oil transp. Pump	1	1	35	19	1.53	55	80	11	-	-
19 Refr. Compressor	1	1	16	19	1.04	37	50	20	-	-
20 Steering gear	1	1	70	37	1.55	100	125	80	-	-
K I										
1 & 2 Lub. pumps for boiler	2	1	6	19	0.64	22.30	30	10	-	-
3 & 4 Fuel oil day pumps	2	1	1.5	1	1.78	4.6	9	15	-	-
5 Drinking w. pump	1	1	2.5	1	1.78	11	15	14	-	-
6 Piston pump	1	1	1.5	1	1.78	5.5	9	14	-	-
7 Main shaft turning gear	1	1	6	19	0.64	22.31	30	10	-	-
8 Turning gear Harb.	1	1	6	19	0.64	22.31	30	30	-	-
9 Lub. oil pump pump	1	1	2.5	1	1.78	12.17	15	8.5	-	-
10 & 11 Fuel oil pump pump	2	1	1.5	1	1.78	5.5	9	13	-	-
K I I										
2 Turning gear Harb.	1	1	6	19	0.64	22.31	30	14	-	-
3 Cooling P. Refr. g.	1	1	1.5	1	1.78	3	9	10	-	-
4 & 5 Piston Cool. P. Main Eng.	2	1	6	19	0.64	22	30	4.5	-	-
6 & 7 Spare										
K I I I										
1-5 Lub. oil & fuel oil Ref.	5	1	2.5	1	1.78	9	15	11-6	-	-
K I I I I										
1 & 2 Eng. Room Ventilator	2	1	16	19	1.04	30	50	7	-	-
3 & 4 Exhaust Pump for Main Eng.	2	1	4	19	0.52	14	22	10	-	-
5 Exhaust for boiler fan	1	1	2.5	1	1.78	9	15	5	-	-
1 Refr. Room pump	1	1	1.5	1	1.78	5	9	10	-	-
2 & 3 Eng. Room Ventilator	2	1	16	19	1.04	30	50	15	-	-
5 Refr. Ventilator	1	1	1.5	1	1.78	11.5	9	11	-	-
K I I I I I										
1 Warmwater pump	1	1	6	19	0.64	20	30	21	-	-
2 & 3 Warmwater pump	2	1	1.5	1	1.78	5	9	18	-	-
Main Switchboard										
29 I Windmills	2	1	120	61	1.59	210	175	82	-	-
30 I I I	4	1	185	61	1.97	310	232	46	-	-
31 I I	6	1	240	91	1.84	550	275	44	-	-
32 I " & Windmill	5	1	240	91	1.84	540.370	275	100	-	-
33 I I	4	1	185	61	1.97	350	232	61	-	-



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0054 212



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.

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT  
ABTEILUNG SCHIFFBAU  
BREITENBURG

Electrical Engineers.

Date

12. VI. 1939

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass 18 m

Minimum distance between electric generators or motors and steering compass 18 m

The nearest cables to the compasses are as follows:—

A cable carrying 3 Ampères 2 feet from standard compass 2 feet from steering compass.

A cable carrying 0.1 Ampères close to feet from standard compass close to feet from steering compass.

A cable carrying 40 Ampères 5 feet from standard compass 5 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 all course in the case of the standard compass, and nil degrees on all course in the case of the steering compass.

Deutsche Schiff- und Maschinenbau Aktiengesellschaft  
Werk: Act. Ges. „Weser“

*[Signature]*

*[Signature]*

Builder's Signature.

Date

14.6.1939

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 Electric Installation has

been fitted in accordance with the approved plans, the Secretary's letters and in conformity with the requirements of the Rules. The materials used and the workmanship are of good quality. Regarding conductors the German Standards have been applied generally. The whole Installation has been tested under working condition and found in order.

Noted J. Inc.  
22/6/39

Total Capacity of Generators 600 Kilowatts.

The amount of Fee ... RM 1200. +  
Travelling Expenses (if any) £ : :  
When applied for. 17.6.1939.  
When received. 19.

A. Carstensen  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 30 JUN 1939

Assigned

See FE machy rpt.



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