

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

OCT 7 1938

Received at London Office

Date of writing Report 23rd Sept. 1938 When handed in at Local Office 19 Port of Rotterdam

No. in Survey held at Rotterdam Date, First Survey 15th Aug. -38 Last Survey 22nd Sept. 1938

Req. Book. on the m.s. "NOORDAM" (Number of Visits 3)

Tons { Gross 5239
Net 3102

Built at Rotterdam By whom built Messrs. P. Smit Jr. Yard No. 515 When built 1938

Owners Nederlandsch Amerikaansche Stoomv. My. Port belonging to Rotterdam

Electric Light Installation fitted by A. de Hoop - Rotterdam Contract No. When fitted 1938

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution two wire

Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 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 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 in main engine room, two at portside, two at starboardside, 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 main engine room on special platform

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 micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework ✓

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 between board & frame 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

in circuits under 100. Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches for each generator: triple pole circuit breaker, with overload & reversed current trips.

for each outgoing circuit: double pole circuit breaker or a double pole switch & one set of double pole 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 7 ammeters 5

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 one pair of earth fault indicating Lamps

do these comply with the requirements of the Rules Yes are the fusible cutouts of an approved type Hazemeyer make have the reversed type: 25 & 94



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. 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 4 Volts

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 floorplates 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

Support and Protection of Cables, state how the cables are supported and protected clipped to steel trays or direct to steel and woodwork of vessel or run in conduit; secured by metal clips

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 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 Yes, there are two joints in the cable connection to the bilge pump & emergency bilge pump; joints made in w.t. 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 hard wood

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Lead covering & steel wire braiding of cables & all apparatus earthed where necessary 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 oil engine driven generator & switchboard in special compartment on boatdeck; generator protection by d.p. circuit breaker on board.

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 stowholds 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 Yes; protected by cast on brass guards of the watertight ceiling lights

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

where are the controlling switches situated Yes 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 Yes whether fixed or portable Yes, are their fittings as per Rule Yes

Motors, are their working parts readily accessible Yes, where possible 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, where possible 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

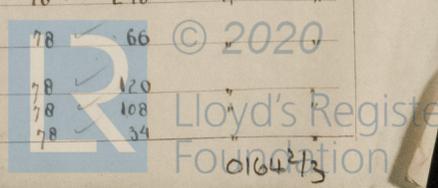
have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing Yes have certificates for all motors for essential services been supplied and approved Yes Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed 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 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 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.	No. of Motors	Motor conductors		Total max. current Amps. Rule	Approx. Length ft.	Insulation & Protection.
		Conductors no. per pole	Composition of Strips no. diameter mm.			
Fuel oil purifiers	3	1	6	7	1.07	20 29 180 rubber - steel wire braiding
Trichloroethylene pump	1	1	10	7	1.37	30 38 270 "
Lubricating oil purifiers	2	1	2.5	1	1.79	12 15.5 180 "
Streamline filter pump	1	1	1.5	1	1.39	3 9.5 210 "
Heater Streamline filter	2	1	70	19	2.21	109 125 210 "
Lub. oil Heaters	2	1	35	19	1.55	60 78 180 "
Fuel oil Heaters	3	1	50	19	1.86	82 99 180 "
Pump swimming pool	1	1	6	7	1.07	20 29 220 "
Tweendeck Fans	4	1	2.5	1	1.79	10 15.5 90 "
Tweendeck Fans	2	1	1.5	1	1.39	6 9.5 240 "
Thermotank Fans	12	1	2.5	1	1.79	0 15.5 60-180 "
Range 108 k.w.	1	2	480	61	2.26	490 550 370 "
Range 51 k.w.	1	1	185	61	1.98	232 235 430 "
Oven 30 k.w.	1	1	95	19	2.57	136 150 300 "
Oven 10.5 k.w.	1	1	25	7	2.13	48 63 300 "
Califier pumps	2	1	1.5	1	1.39	4 9.5 60 "
Port cooling pump	1	1	10	7	1.37	26 38 230 "
Lighting conductors.						
Distribution board T. deck B.	1	35	19	1.55	64 78	60 "
" S B.	1	35	19	1.55	29 78	180 "
" R B.	1	35	19	1.55	10 78	100 "
" U B.	1	35	19	1.55	14.5 78	140 "
" E prom. deck	1	35	19	1.55	49 78	300 "
" L deck A.	1	35	19	1.55	74 78	168 "
" M A.	1	35	19	1.55	21 78	60 "
" K A.	1	35	19	1.55	41 78	180 "
Navigation	1	4	7	.87	2 22.5	328 "
" W deck C.	1	6	7	1.07	23.5 29	148 "
" X C.	1	6	7	1.07	5.5 29	234 "
" P B.	1	6	7	1.07	12.8 29	300 "
" O B.	1	6	7	1.07	2.8 29	320 "
" Pr C.	1	6	7	1.07	5.1 29	148 "
" RC B.	1	6	7	1.07	25.4 29	214 "
" RD B.	1	6	7	1.07	10.6 29	280 "
" V B.	1	4	7	.87	14.4 22.5	414 "
" J engine room	1	6	7	1.07	7 29	200 "
" Z "	1	6	7	1.07	7.5 29	240 "
" RB deck B.	1	6	7	1.07	18 29	426 "
" RA B.	1	6	7	1.07	9.5 29	234 "
" C. boatdeck	1	35	19	1.55	72 78	248 "
" D "	1	35	19	1.55	14 78	66 "
" A "	1	35	19	1.55	38 78	120 "
" B "	1	35	19	1.55	48 78	108 "
" MA "	1	35	19	1.55	18 78	34 "



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 ...	4	240	220	1090	400	oil engine	diesel oil	above 150°F
AUXILIARY ...								
EMERGENCY ...	1	45	220	205	1500	oil engine	diesel oil	above 150°F
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. m.m.	No.	Diameter. m.m.	Circuit.	Rule.			
MAIN GENERATOR ...	4	960	61	2.26	1090	1100	114-126-180-192	rubber	Lead sheath - maranex sheath steel wire br. - Cotton braid
EQUALISER CONNECTIONS ...	2	480	61	2.26	-	550	57-63-90-96	"	"
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...	1	150	37	2.31	205	205	90	"	"
ROTARY TRANSFORMER MOTOR GENERATOR...									
ENGINE ROOM...									
BOILER ROOM...									
AUXILIARY SWITCHBOARDS ...									
Refr. Distr. Board	2	370	61	1.98		470	240	"	"
Boatwinch Distr. Board	1	50	19	1.86	96	99	150	"	"
Winches Aft D.B.	4	740	61	1.98	865	940	270	"	"
Winches forward D.B.	3	720	61	2.26	780	825	660	"	"
Emergency switchboard	1	95	19	2.57	140	150	240	"	"
ACCOMMODATION Hotel service	1	120	37	2.06	160	175	360	"	"
Thermotank vent. D.B.	1	50	19	1.86	96	99	210	"	"
Twoendeck vent aft D.B.	1	6	7	1.07	20	29	420	"	"
Twoendeck vent forward D.B.	1	10	7	1.37	32	38	630	"	"
Heating D.B.	1	150	37	2.31	186	205	120	"	"
Heating D.B.	1	120	37	2.06	162	175	300	"	"
WIRELESS Hot water boilers D.B.	1	10	7	1.37	30	38	240	"	"
WIRELESS Hot water boilers D.B.	1	6	7	1.07	18	29	480	"	"
MASTHEAD LIGHTS ...	1	1.5	1.39	1.39	2	9.5	600 - 270	"	"
SIDE LIGHTS ...	1	1.5	1	1.39	2	9.5	90 - 90	"	"
COMPASS LIGHTS ...	1	1.5	1	1.39	1	9.5	60	"	"
POOP LIGHTS ...	1	1.5	1	1.39	2	9.5	660	"	"
CARGO LIGHTS ...	1	1.5	1	1.39	1	9.5	± 120	"	"
HEATERS ...	1	1.5	1	1.39	5.8	9.5	± 180	"	"

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. m.m.	No.	Diameter. m.m.	In Circuit.	Rule.			
BALLAST PUMP ...	1	1	50	19	1.86	88	99	132	rubber	Lead sheath - maranex sheath - steel wire br. - Cotton braid.
MAIN BILGE LINE PUMPS ...	1	1	50	19	1.86	88	99	96	"	"
GENERAL SERVICE PUMP ...										
EMERGENCY BILGE PUMP ...	1	1	70	19	2.21	96	125	360	"	"
SANITARY PUMP ...	3	1	50	19	1.86	88	99	180	"	"
CIRC. SEA WATER PUMPS ...	2	2	190	19	2.57	252	300	270	"	"
CIRC. FRESH WATER PUMPS...	1	2	190	19	2.57	252	300	270	"	"
AIR COMPRESSOR ...	2	2	140	19	2.21	240	250	340	"	"
FRESH WATER PUMP ...	2	1	10	7	1.37	26	38	60	"	"
ENGINE TURNING GEAR...	2	1	16	7	1.73	40	49	90	"	"
Oil Fuel Transfer Pump	1	1	35	19	1.55	60	78	162	"	"
Oil Fuel Pump	1	1	1.5	1.3	1.39	8	9.5	180	"	"
Lubricating Oil Pumps	3	2	240	37	2.06	340	350	270	"	"
WINDLASS ...	1	2	190	19	2.57	360	380 int.	240	"	"
WINCHES, 35 h.p.	11	1	70	19	2.21	140	150 int.	± 120	"	"
Winches 25 h.p.	12	1	50	19	1.86	100	115 int.	± 210	"	"
Boatwinches 8 h.p.	3	1	16	7	1.73	33	50 int.	± 90	"	"
STEERING GEAR—										
(a) MOTOR GENERATOR...	2	2	370	61	1.98	400	470	540	"	"
(b) MAIN MOTOR ...	2	2	370	61	1.98	390	470	20	"	"
WORKSHOP MOTORS ...	3	1	4	7	.87	20	22.5	90	"	"
Eng. rm. VENTILATING FANS ...	4	1	35	19	1.55	69	78	300	"	"
Forced Draught Fan	2	1	1.5	1	1.39	4	9.5	210	"	"
Blower for Atomizer	2	1	6	7	1.07	20	29	270	"	"
Sewage Pumps	2	1	25	7	2.13	48	63	270	"	"
Compressor Sprinklersyst	1	1	1.5	1	1.39	8	9.5	90	"	"
Sprinkler pump	1	1	95	19	2.57	140	160	90	"	"
Ballast pump clean water	1	1	50	19	1.86	88	99	96	"	"

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. ELECTROTECHNISCH-BUREAU
A. DE HOOP

Electrical Engineers.

Date 26.9.1938

COMPASSES.

Minimum distance between electric generators or motors and standard compass
8ft. - 8 Amps motor of Lux Rich system.
25ft. - 20 Amps wireless motor-generator.
Minimum distance between electric generators or motors and steering compass
10ft. - 8 Amps motor of Lux Rich system
24ft. - 20 Amps wireless motor-generator.

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 9 feet from standard compass 6 feet from steering compass. deck lighting
A cable carrying .07 Ampères 1 feet from standard compass 9 feet from steering compass.
A cable carrying .07 Ampères 10 feet from standard compass 1 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 in the case of the standard compass, and nihil degrees on every course in the case of the steering compass.

MACHINEFABRIEK & SCHEEPSWERF VAN
P. SMIT J.F. N.V.

Builder's Signature.

Date 20.9.1938

J.H. van Beuningen

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. The electrical equipment of this vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The material and workmanship are good and the electrical installation merits in my opinion the Committee's approval.

*Noted
14/10/38*

Total Capacity of Generators 1005 Kilowatts.

The amount of Fee ... £ 841,50 : When applied for, 6.10.38
1/3 Rotterdam office
1/3 Copenhagen office
Travelling Expenses (if any) £ 22,00 : When received, 18/10.38
Expenses of Copenhagen - Surveyors - see letter of 13-11-1937, received from Copenhagen Surveyors.

H. van der Wyk.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 18 OCT 1938

Assigned

See minute re machinery

2m.12.96-Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute



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