

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office..... 17 1939

Date of writing Report... 7th April 1939... When handed in at Local Office..... 19..... Port of... RotterdamNo. in Survey held at Krimpen a/d IJssel Date, First Survey 14-10-38 Last Survey 4-4-1939
Reg. Book. (Number of Visits..... 15.....)on the m.s. "NIGERSTROOM" Tons { Gross 4638.84
Net 2666.29

Built at Krimpen a/d IJssel By whom built Messrs C. v. d. Giessen Yard No. 656 When built 1938/1939

Owners N.V. "Hollandische Stoomboot Maatschappij." Port belonging to Amsterdam.

Electrical Installation fitted by Messrs. A. de Hoop. Contract No. When fitted 1939

Is vessel fitted for carrying Petroleum in bulk no Is vessel equipped with D.F. yes E.S.D. yes Gy.C. no Sub.Sig. no

Have plans been submitted and approved yes System of Distribution two conductor insulated Voltage of supply for Lighting 110

Heating 220 Power 220 Direct or Alternating Current, Lighting D.C. Power D.C. If Alternating Current state frequency Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off yes Are turbine emergency governors fitted with a

trip switch as per Rule Generators, are they compound wound yes, are they level compounded under working conditions yes,

if not compound wound state distance between generators and from switchboard Where more than one generator is fitted are they

arranged to run in parallel yes, are shunt field regulators provided yes Is the compound winding connected to the negative or positive pole

to the positive pole Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing yes Have certificates of

test for machines under 100 kw. been supplied yes and the results found as per rule yes Are the lubricating arrangements and the construction

of the generators as per rule yes Position of Generators in Engine room at starboard side of main engine

is the ventilation in way of generators satisfactory yes are they clear of inflammable material yes, if situated

near unprotected combustible material state distance from same horizontally and vertically, are the generators protected from mechanical

injury and damage from water, steam and oil yes, are the bedplates and frames earthed yes and the prime movers and generators in metallic

contact yes Switchboards, where are main switchboards placed in engine room at port side on a special

platform

are they in accessible positions, free from inflammable gases and acid fumes yes, are they protected from mechanical injury and damage from water, steam

and oil yes, if situated near unprotected combustible material state distance from same horizontally and vertically, what insulation

material is used for the panels switchboard is of "dead front" type circuit breakers are mounted on Sindanyo slabs, if of synthetic insulating material is it an Approved Type yes, if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule Is the frame effectually earthed yes

Is the construction as per Rule yes, including accessibility of parts yes, absence of fuses on the back of the board switches & fuses are mounted on special frames behind board with a gangway of ample width in between, individual fuses

to pilot and earth lamps, voltmeters, etc. yes locking of screws and nuts yes, labelling of apparatus and fuses yes, fuses on the "dead"

side of switches yes Description of Main Switchgear for each generator and arrangement of equaliser switches

Each main generator: a triple pole circuit breaker with overload & reversed current trips

Auxiliary generator: a double pole switch & double pole fuses

Lighting generator: a double pole circuit breaker with overload trips in each pole

and for each outgoing circuit a double pole circuit breaker with overload trips in each pole or a double pole switch

& double pole fuses —

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 7

ammeters 5 voltmeters synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection yes Earth Testing, state means provided one pair of earth fault indicating lamps on main busbars

and one pair one aux. generator busbars and on lighting busbars

Switches, Circuit Breakers and Fuses, are they as per Rule yes, are the fuses an approved type yes, are all fuses labelled as per Rule yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection yes, have they been tested under working conditions yes. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule yes. Cables, are they insulated and protected as per the appropriate Tables of the Rules yes, if otherwise than as per Rule are they of an approved type ✓, state maximum fall of pressure between bus bars and any point under maximum load 6 Volt (power) 3-6 Volt (Lighting), are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets yes. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends ✓ with insulating compound ✓ or waterproof insulating tape ✓. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or 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, etc., lead covered yes or run in conduit ✓. State how the cables are supported and protected cables are clipped to metal trays or direct to steel work or woodwork of vessel or run in wood casings or in conduit

Are all lead sheaths, armouring and conduits effectually bonded and earthed yes. Refrigerated chambers, are the cables and fittings as per Rule yes. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands yes, where unarmoured cables pass through beams, etc., are the holes effectively bushed yes and with what material Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes. Emergency Supply, state position in special compartment on boat deck and method of control generator - and outgoing circuits are controlled by double pole switches and double pole fuses. Navigation Lamps, are they separately wired yes controlled by separate double pole switches yes and fuses yes. Are the switches and fuses in a position accessible only to the officers on watch yes, is an automatic indicator fitted yes. Secondary Batteries, are they constructed and fitted as per Rule yes, are they adequately ventilated yes. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof yes. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present none, if so, how are they protected ✓

and where are the controlling switches fitted ✓, are all fittings suitably ventilated yes, are all fittings and accessories constructed and installed as per Rule yes. Searchlight Lamps, No. of none, whether fixed or portable ✓, are their fittings as per Rule ✓. Heating and Cooking, is the general construction as per Rule yes, are the frames effectually earthed yes, are heaters in the accommodation of the convection type yes. Motors, are all motors constructed and installed as per Rule yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil yes, if situated near unprotected combustible material state minimum distance from same horizontally ✓ and vertically ✓. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing ✓. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule yes. Control Gear and Resistances, are they constructed and fitted as per Rule yes. Lightning Conductors, where required are they fitted as per Rule steel masts Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with ✓, are all fuses of the 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 ✓. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule yes, are they suitably stored in dry situations yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory 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 ...	32	100	220	450	500	oil engine	diesel oil	Above 160°F
Auxiliary ...	1	35	220	160	1300	oil engine	diesel oil	Above 150°F
Main	1	120	220	545	600	oil engine	"	"
EMERGENCY ...	1	35	220	160	1300	oil engine	diesel oil	Above 160°F
ROTARY TRANSFORMER	1	25	110	227	1450	electra motor	✓	✓

* Renewed 543 No 67031 Replaces one of the 100 kw. machines

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel For Cable.	Sectional Area of Conductors Sq. mm.				
MAIN GENERATOR ...	100	3	285	450	42-56-68	rubber	Lead sheath & steel wire braiding
" " EQUALISER ...	-	1	150	-	21-28-34	"	"
Auxiliary Generator	35	1	120	160	175	66	"
EMERGENCY GENERATOR ... D.C. connect. A.C. connect.	35	1	79	120	125	11	"
ROTARY TRANSFORMER: MOTOR	40 H.P.	1	120	152	175	13	"
" " GENERATOR	25	2	140	227	250	18	"

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...							
Distn board K.E. in engine room	2	100	175	198	48	"	"
" " K.E. " " "	1	6	24	29	19	"	"
" " for workshop makers	1	25	50	63	55	"	"
" " winches forward	2	240	350	350	95	"	"
" " " aft	2	370	450	470	96	"	"
" " Hotel service midship	1	16	40	49	80	"	"
" " " aft	1	35	68	78	148	"	"
" " Heating	2	300	370	410	34	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	1	6	25	29	70	"	"
NAVIGATION LIGHTS ...	1	4	20	22.5	70	"	"
LIGHTING AND HEATING ...							
Lighting dist board Shelter deck	1	4	14	22.5	57	"	"
" " Foreship	1	10	20	38	130	"	"
" " Boat deck	1	4	19	22.5	70	"	"
" " " "	1	6	20	29	70	"	"
2 " " Engine room each	1	2.5	10-13	15.5	76-40	"	"
2 " " Cargo lights (fore & aft) each	1	16	30	49	100	"	"
2 " " Passenger accomm. each	1	10	23-26	38	60-69	"	"
" " Deck lights	1	10	25	38	52	"	"
Connection to emergency board	1	16	40	49	66	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Starting air compressors	2	50	1	150	180	205	60	"
Circ. seawater pumps	2	40	1	120	152	175	13	"
Circ. freshwater pumps	2	20	1	50	77	99	10	"
Lubricating oil pumps	2	12	1	25	40	63	29	"
Engine turning gear	1	7.5	1	10	30	38	54	"
Ballast pump	1	35	1	95	124	150	25	"
General service pump	1	20	1	50	77	99	23	"
Bilge pump	1	10	1	16	40	49	30	"
Emergency bilge pump	1	18	1	35	70	78	70+66	"
Freshwater pumps	2	3	1	2.5	13	15.5	30	"
Fuel oil transfer pump	1	5	1	6	20	29	15	"
Fuel oil pump	1	3	1	2.5	13	15.5	16	"
Fuel oil purifier	2	2	1	2.5	8	15.5	23	"
Lubricating oil purifier	2	3	1	2.5	13	15.5	28	"
Refrigerating compressor	1	12.5	1	25	50	63	56	"
Engine room ventilators	2	25/175	1	1.5	19/7.5	9.5	40	"
Forced draught fan for boiler	1	89.5	1	1.5	3	9.5	76	"
Compressor for pneumatic control of valves in bilge line	1	5	1	6	20.5	29	60	"
Windlass	1	47-1/4	1	95	176	190-1/4	133	"
Capestan	1	30-1/4	1	70	115	125	70	"
Winches	12	25-1/4	1	70	97	125	10	"
Winches	175-1/4	1	30	69	99	63	88	"
Steering gear motor-generator	2	13	1	25	55	63	88	"
rudder motor	2	9	1	25	72	67-1/4	10	"
Heaters: Fuel oil heater	1	9 k.w.	1	16	45	49	33	"
Lubr. oil heater	1	18 k.w.	1	50	91	99	30	"
Air heaters in accamm.	100	5-75-100	1	1.5	2-3-4	9.5	30	Lead sheath

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

Electrical Engineers.

Date

COMPASSES.

Minimum distance between electric generators or motors and standard compass 4 feet - solenoid of tyfon mist horn.

Minimum distance between electric generators or motors and steering compass 7 feet - motor of Atlas echo sounding apparatus.

The nearest cables to the compasses are as follows:—

A cable carrying .00 Ampères 1 foot from standard compass 1 foot from steering compass. Compass lighting

A cable carrying .5 Ampères 15 feet from standard compass 3 feet from steering compass. steering gear

A cable carrying 1 Ampères 9 feet from standard compass 5 feet from steering compass. supply to 3 nav. Lights.

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.

MAAMLOOZE VENNOOTSCHAP
C. VAN DER GIESSEN & ZONEN'S
SCHEEPSWERVEN

Builder's Signature.

Date 11 APR. 1939

Is this installation a duplicate of a previous case no If so, state name of vessel ✓

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

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 installation merits in my opinion the Committee's Approval.

Noted
21/4/39.

Total Capacity of Generators 390 Kilowatts.

The amount of Fee ... £ 612.00 : When applied for,

Travelling Expenses (if any) £ 19.00 : When received,

Committee's Minute

Assigned

Lee HZ machy rpt-

H. van der Wijk.

Surveyor to Lloyd's Register of Shipping.



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Foundation