

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 5 MAY 1954

Date of writing Report 30.4.1954 When handed in at Local Office 19 Port of Rotterdam  
 No. in Survey held at Flushing Date, First Survey 20.3.57 Last Survey 25.2.1954  
 Reg. Book. (No. of Visits 72)  
 35501 on the single screw diesel electric driven vessel "LENA" (NEHA) Tons Gross 750.2.29 Net 42.02.74  
 Built at Flushing By whom built Messrs de Schelde Yard No. 00274 When built 2-'54  
 Owners Trans mash import Port belonging to Murmansh  
 Installation fitted by Messrs van Rietschoten & Houwens N.V. When fitted 2-'54  
 Is vessel equipped for carrying Petroleum in bulk no Is vessel equipped with D.F. yes E.S.D. yes Gy.C. X Sub.Sig. no Radar X

Plans, have they been submitted and approved yes System of Distribution 2 wire insulated system Voltage of Lighting 220  
 Heating 220 Power 220 D.C. or A.C., Lighting DC Power DC If A.C. state frequency  
 Prime Movers, has the governing been found as per Rule when full load is thrown on and off yes Are turbine emergency governors fitted with a trip switch  
 Generators, are they compound wound yes, and level compounded under working conditions yes  
 if not compound wound state distance between generators and from switchboard Are the generators arranged to run in parallel yes, are shunt field regulators provided Is the compound winding connected to the negative or positive pole negative 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 and the results found as per Rule yes

Position of Generators ER floor level  
 is the ventilation in way of generators satisfactory yes are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil yes Switchboards, where are main switchboards placed ER 1st platform (Tween-deck level) against aft bulkhead  
 are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil yes, what insulation is used for the panels dead front type Switchboard, if of synthetic insulating material is it an Approved Type, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule Is the construction as per Rule, including locking of screws and nuts yes Description of Main Switchgear for each generator and arrangement of equaliser switches 3-pole C.B. one pole used for equaliser with O.C. protection in twin poles & R.C. protection fitted in 4-pole C.B. equipped with preference tripping & no volt coil

and the switch and fuse gear (or circuit breakers) for each outgoing circuit upto 300 Amps except ventilation feeder: DP switch & DP fuses (rotary switches backup protected by H.R.C. fuses) Above 300 Amps & ventilation feeder: DP C.B. with O.C. protection in twin poles  
 Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 15 ammeters 5 voltmeters synchronising devices For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection yes Earth Testing, state means provided 2 meter & earth indicating lamps

Switches, Circuit Breakers and Fuses, are they as per Rule yes, are the fuses an Approved Type yes  
 make of fuses Hazemeyer & Weber, are all fuses labelled yes If circuit breakers are provided for the generators, at what overload do they operate 10% of generator, and at what current do the reversed current protective devices operate full load current

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule

Cables, are they insulated and protected as per Rule 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%, are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets Are all paper insulated and varnished cambric insulated cables sealed at the ends yes 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 any cables laid under machines or floorplates yes, if so, are they adequately protected yes Are cables in machinery spaces, galleys, laundries, etc., lead covered or run in conduit or of the "HR" type State how the cables are supported or protected ER cables fitted on perforated plating or metal frame work Under floor plates cables run in conduit Cargo holds: cables fitted in sheet iron trunks & covered by sheet iron plates Accommodation: cables clipped to wood grounds or surface

Are all lead sheaths, armouring and conduits effectually bonded and earthed 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 Refrigerated chambers, are the cables and fittings as per Rule yes







DESCRIPTION.			CONDUCTORS		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Cont STB's IV & I VA	No BHP				MOTOR CABLES.				
Life boat winch port	10	1	16	39	49	✓ 30	VIR	LC & MWB	
Vent. fan	04	1	15	23	9	✓ 52	VIR	LC & MWB	
Vent. fan accomm.	3	1	25	13	15	✓ 52	VIR	LC & MWB	
Vent. fan accomm.	3	1	25	13	15	✓ 10	VIR	LC & MWB	
Vent. fan accomm.	4	1	4	16	22	✓ 14	VIR	LC & MWB	
Vent. fan accomm.	3	1	25	13	15	✓ 10	VIR	LC & MWB	
Vent. fan accomm.	3	1	25	13	15	✓ 10	VIR	LC & MWB	
SUPPLIED FROM STB POWER ER 1P									
Rox. salt cooling water pump	26	275	1	25	117	15	✓ 38	VIR	LC & MWB
Rox. fresh cooling water pump	27	5	1	4	222	22	✓ 38	VIR	LC & MWB
Rox. salt fresh cooling water pump	28	275	1	25	117	15	✓ 4	VIR	LC & MWB
Lub. oil transfer pump	29	15	1	25	58	63	✓ 16	VIR	LC & MWB
SUPPLIED FROM STB POWER PROP MOTOR ROOM 5P									
Rox. bilge pump	30	4	1	4	165	22	✓ 32	VIR	LC & MWB
Turning gear prop motor	31	6	1	6	25	29	✓ 64	VIR	LC & MWB
SUPPLIED FROM STB POWER WORKSHOP 8P									
Lathe	4	1	4	168	22	✓ 14	VIR	LC & MWB	
Grinder	15	1	25	71	15	✓ 8	VIR	LC & MWB	
Planer	2	1	25	84	15	✓ 6	VIR	LC & MWB	
Drilling machine	15	1	25	62	15	✓ 10	VIR	LC & MWB	
SUPPLIED FROM STB POWER REFR. COMPRESSOR 9P									
Compressor refr. plant	35	1	4	144	22	✓ 5	VIR	LC & MWB	
Compressor refr. plant	35	1	4	144	22	✓ 10	VIR	LC & MWB	
SUPPLIED FROM STB POWER ER 4P									
Turning gear main diesel eng.	32	3	1	4	125	22	✓ 14	VIR	LC & MWB
Turning gear main diesel eng.	33	3	1	4	125	22	✓ 20	VIR	LC & MWB
Turning gear main diesel eng.	34	3	1	4	125	22	✓ 20	VIR	LC & MWB
Turning gear main diesel eng.	35	3	1	4	125	22	✓ 32	VIR	LC & MWB
SUPPLIED FROM STB POWER ER 7P									
Air compressor ships serv.	4	1	4	173	22	✓ 32	VIR	LC & MWB	
Lub. oil purifier	36	35	1	4	15	22	✓ 26	VIR	LC & MWB
Lub. oil - oil fuel purifier	37	35	1	4	15	22	✓ 24	VIR	LC & MWB
Oil fuel purifier	38	35	1	4	15	22	✓ 16	VIR	LC & MWB
Evapor. circ. pump	39	4	1	4	167	22	✓ 36	VIR	LC & MWB
Evapor. circ. pump	40	4	1	4	167	22	✓ 36	VIR	LC & MWB
Evapor. feed & brine pump	41	4	1	4	17	22	✓ 36	VIR	LC & MWB
Aerating pump	42	1	1	25	465	15	✓ 36	VIR	LC & MWB
Vent. fan ER	43	9	1	16	39	49	✓ 72	VIR	LC & MWB
Hotwater circulating pump	16	1	15	1	9	✓ 24	VIR	LC & MWB	
SUPPLIED FROM STB POWER ER 2P									
Wash water pump	2	1	25	89	15	✓ 5	VIR	LC & MWB	
Drinking water pump	2	1	25	89	15	✓ 5	VIR	LC & MWB	
Drinking & wash water pump	2	1	25	89	15	✓ 5	VIR	LC & MWB	
Salt cooling water pump refr. plant	15	1	25	67	15	✓ 52	VIR	LC & MWB	
Boiler fuel transfer pump	35	1	4	144	22	✓ 14	VIR	LC & MWB	
Fuel oil service pump	44	12	1	25	55	15	✓ 48	VIR	LC & MWB
Sanitary pump	7	1	6	30	29	✓ 44	VIR	LC & MWB	
Sanitary pump	7	1	6	30	29	✓ 44	VIR	LC & MWB	
SUPPLIED FROM STB POWER ER 6P									
Boiler circ. pump	45	5	1	4	197	22	✓ 30	VIR	LC & MWB
Boiler circ. pump	46	5	1	4	197	22	✓ 30	VIR	LC & MWB
Boiler fan	47	15	1	25	68	15	✓ 32	VIR	LC & MWB
Vent. fan ER port	48	19	1	35	74	78	✓ 54	VIR	LC & MWB
Boiler light up pump	49	05	1	15	24	9	✓ 15	VIR	LC & MWB
SUPPLIED FROM STB WINCHES & SALVAGE PUMP FORE									
Windlass port	50	42	1	95	160	160	✓ 74	VIR	LC & MWB
Windlass St. b.	51	42	1	95	160	160	✓ 76	VIR	LC & MWB
6 cargo winches each	275	1	50	110	120	✓		VIR	LC & MWB
salvage pump	46	1	120	177	175	✓ 58	VIR	LC & MWB	
Salvage pump	46	1	120	177	175	✓ 60	VIR	LC & MWB	



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DESCRIPTION.	CONDUCTORS.			MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return, <sup>feet</sup> <sub>m</sub> ).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.					
			Rule.					
SUPPLIED FROM STB. WINCHES 10 P MOTOR CABLES								
	No	BHP						
Welding machine	17.5	1	35	68	78V 50	VIR	LC & MWB	
Life boat winch St. b.	16	1	35	61	85V 70	VIR	LC & MWB	
Life boat winch port	10	1	16	39	50V 50	VIR	LC & MWB	
6. cargo winches each	27.5	1	50	110	120V	VIR	LC & MWB	
Salvage pump	46	1	120	177	175V 54	VIR	LC & MWB	
Salvage pump	46	1	120	177	175V 54	VIR	LC & MWB	
Towing winch	65	1	95	246	270V 72	VC	LC & Br.	

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.									
DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.		
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.					
SUPPLIED FROM MAIN SWITCHBOARD.									
St.B power ER 3P	1	95	129	150V	30	VIR	LC & MWB		
St.B's domestic service (Main deck) D, DA & DB	2	95	472	514	30	VC	LC & CBr		
Control & pilot circuits propelling equipment	1	6		29	12	VIR	LC & MWB		
St.B power propeller motorroom 13P	1	70	90	212	106	VC	LC & CBr		
St.B power propeller motorroom 14P	1	70	90	212	102	VC	LC & CBr		
St.B's ventilation & boat winches V & IVA	1	70	165	212	34	VC	LC & CBr		
St.B power ER 1P	1	70	90	125V	42	VIR	LC & MWB		
Wireless equipment 5KW	1	6	22.5	29	90	VIR	LC & MWB		
St.B power & heating propeller motorroom 5P	1	25	49	63	102	VIR	LC & MWB		
Gyro compass	1	10	20	30	16	VIR	LC & MWB		
DFB medical service hospital 12P	1	16	15.5	49	34	VIR	LC & MWB		
DFB alarm equipment ER A	1	6		29	10	VIR	LC & MWB		
DFB navigation lighting	1	25	1	15.5	100	VIR	LC & MWB		
St.B power workshop 0P	1	16	25	49	42	VIR	LC & MWB		
St.B power refr. equipment 9P	1	16	20	49	40	VIR	LC & MWB		
St.B's power & heating ER 4P & 1P	1	25	42	63	10	VIR	LC & MWB		
St.B power ER 7P	1	95	136	150V	60	VIR	LC & MWB		
St.B power ER 2P	1	50	70	99	72	VIR	LC & MWB		
St.B power ER 6P	1	95	105	150V	30	VIR	LC & MWB		
DFB nautical instruments	1	35	45	70	90	VIR	LC & MWB		
St.B winches & salvage pumps fore 11P	2	95	510	514	110	VC	LC & CBr		
St.B winches & salvage pumps aft 10P	2	95	418	514	70	VC	LC & CBr		
Shore connection	1	70	200	212	44	VC	LC & CBr		
DFB lighting & heating Shelter deck aft 4L	1	6	0	29	76	VIR	LC & MWB		
DFB lighting propelling motorroom 1L	1	25	6	15.5	110	VIR	LC & MWB		
DFB's lighting & heating Shelter deck fore 6L & 6LA	1	16	15	49	110	VIR	LC & MWB		

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.							
SUPPLIED FROM MAIN SWITCHBOARD										
Rev. lub. oil pump 1	1	27 <sup>5</sup>	1	70	104 <sup>5</sup>	125V	30	VIR	LC & MWB	
Rev. lub. oil pump 2	2	27 <sup>5</sup>	1	70	104 <sup>5</sup>	125V	32	VIR	LC & MWB	
Oil fuel transfer pump	3	25	1	50	96 <sup>0</sup>	99V	48	VIR	LC & MWB	
Main fresh cooling water pump 1	4	39	1	95	145	150V	74	VIR	LC & MWB	
Main fresh cooling water pump 2	5	39	1	95	145	150V	74	VIR	LC & MWB	
Amplidyne exciter motor 3	6	42	1	120	160	175V	44	VIR	LC & MWB	
Amplidyne exciter motor 2	7	42	1	120	160	175V	36	VIR	LC & MWB	
Amplidyne exciter motor 1	8	42	1	120	160	175V	30	VIR	LC & MWB	
Steering gear motor 1	9	30	1	70	117	125V	164	VIR	LC & MWB	
Steering gear motor 2	10	30	1	70	117	125V	170	VIR	LC & MWB	
Fire-Extinguish pump 1	11	45	1	120	167	175V	40	VIR	LC & MWB	
Fire-Extinguish pump 2	12	45	1	120	167	175V	42	VIR	LC & MWB	
Main air compressor	13	24	1	50	91	99V	46	VIR	LC & MWB	
Main air compressor	14	24	1	50	91	99V	48	VIR	LC & MWB	
Main salt cooling water pump 2	15	24	1	50	92	99V	68	VIR	LC & MWB	
Main salt cooling water pump 1	16	24	1	50	92	99V	72	VIR	LC & MWB	
SUPPLIED FROM STB POWER ER 3 P										
Rev. bilge pump	17	4	1	4	16 <sup>5</sup>	22 <sup>5</sup> V	16	VIR	LC & MWB	
Bilge pump	18	12 <sup>5</sup>	1	25	50	63V	14	VIR	LC & MWB	
Ballast pump	19	12 <sup>5</sup>	1	25	50	63V	10	VIR	LC & MWB	
Fuel oil service pump	20	12	1	2 <sup>5</sup>	5 <sup>5</sup>	15 <sup>5</sup> V	14	VIR	LC & MWB	
Fan ER	21	19	1	35	74	70V	62	VIR	LC & MWB	
SUPPLIED FROM STB D										
Provision lift	3	1	4	12	22 <sup>5</sup> V	50	VIR	LC & MWB		
SUPPLIED FROM STB PROPELLING ER 13 P										
Salt cooling water pump propelling motor 22	5	1	4	20	22 <sup>5</sup> V	36	VIR	LC & MWB		
Propelling motor fan	23	18	1	35	70 <sup>6</sup>	70V	36	VIR	LC & MWB	
SUPPLIED FROM STB PROPELLING ER 14 P										
Salt cooling water pump prop. motor	24	5	1	4	20	22 <sup>5</sup> V	56	VIR	LC & MWB	
Propelling motor fan	25	18	1	35	70 <sup>6</sup>	70V	36	VIR	LC & MWB	
SUPPLIED FROM STB. IV & IVA										
Vent. fan accomm. port	3	1	2 <sup>5</sup>	13	15 <sup>5</sup> V	30	VIR	LC & MWB		
Vent. fan accomm. St. b.	3	1	2 <sup>5</sup>	13	15 <sup>5</sup> V	30	VIR	LC & MWB		
Life boat winch St. b.	10	1	16	39	49V	70	VIR	LC & MWB		



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.

Van Rietschoten & Houwens N.V.

Electrical Contractors.

Date 17-2-'54

#### COMPASSES.

Have the compasses been adjusted under working conditions. yes

N.V. Kop. Mij. "De Scheide"

Builder's Signature.

Date

Have the foregoing descriptions and schedules been verified and found correct. yes

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

Plans. Are approved plans forwarded herewith. no If not, state date of approval

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith. yes

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 installed under special survey in conformity with the Society's Rules and Regulations and in accordance with the Secretary's letter and the approved plans or equivalent thereto.

The materials used are of good quality and design and workmanship are good. On completion the equipment was tried out under full working conditions and found satisfactory.

This equipment is in my opinion suitable for a classed vessel

Noted 96

24/5/54

Total Capacity of Generators. 730 ✓ Kilowatts.

The amount of Fee ...

£1524.-

When applied for,

4.5.1954

When received,

19

Travelling Expenses (if any) £. 300.-

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUESDAY 26 OCT 1954

Assigned

See minute on

for hull rpt



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