TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL AND DIRECT SUPPORT MAINTENANCE MANUAL LAMBDA ELECTRONICS REGULATED POWER SUPPLIES USED WITH THE IMPROVED GUARDRAIL V, AN/USD-9A

HEADQUARTERS, DEPARTMENT OF THE ARMY

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OPERATOR'S ORGANIZATIONAL AND

DIRECT SUPPORT MAINTENANCE MANUAL

LAMBDA ELECTRONICS REGULATED POWER SUPPLIES USED WITH

THE IMPROVED GUARDRAIL V, AN/USD-9A

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703-5007.

In either case, a reply will be sent direct to you.

Copies of this manual may be procured from Commander, US Army Communlcatlons-Electronics Command and Fort Monmouth, ATTN DRSEL-ME-PEW, Fort Monmouth, New Jersey 07703-5007

1. Scope

a. This manual, together with the following manufacturer's publications, provides complete operation, organizational and direct support maintenance for the AN/USD-9A (Improved GUARDRAIL V) Lambda Regulated Power Supplies and have been authenticated for Army use

Manufacturer's Publication	*Technical Manual*
Lambda Electronics Assembly 16487-1	TM 11-6130-440-13-2
Lambda Electronics Assembly 16488-1	TM 11-6130-440-13-3
Lambda Electronics Assembly 16489-1	TM 11-6130-440-13-4
Lambda Electronics Assembly 16491-1	TM 11-6130-440-13-5
Lambda Electronics, LGS-F-28-OV-R	TM 11-6130-440-13-6

b. This manual includes:
(1) References (appx A)
(2) Components of End Item List (COEIL) (appx B)
(3) Maintenance Allocation Charts (MAC) (appx D)

c. Repair parts and special tools lists are included in TM 1 1-6130-440-24P

2. Consolidated Index of Army Publications and Blank Forms

Refer to the latest Issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment

3. Maintenance Forms, Records, and Reports

a. *Reports of Maintenance and Unsatisfactory Equipment.* Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, as contained In Maintenance Management Update.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed In AR 735-11-2/DLAR 4140 55/ NAVSUPINST 4355 73A/AFR 400-54/MCO 4430.3F.

c. Discrepancy in Shipment Report (DISREP) (SF 361) Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed In AR 55-38/ NAVSUPINST 4610 33C/AFR 75-18/MCO P4610 19D/DLAR 4500.15.

4. Reporting Equipment Improvement Recommendations (EIR)

If your equipment needs Improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail It to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN DRSEL-ME-MP, Fort Monmouth, New Jersey 07703-5007. We'll send you a reply

5. Administrative Storage

Administrative storage of equipment Issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage the PMCS should be performed to assure operational readiness.

6. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

APPENDIX A

REFERENCES

DA Pam 310-1	Consolidated Index of Army Publications and Blank Forms
DA Pam 738-750	The Army Maintenance Management System (TAMMS)
*TM 11-6130-440-13-2	Operator's Organizational and Direct Support Maintenance Manual for Lambda Electronics Assembly 16487-1
*TM 11-6130-440-13-3	Operator's Organizational and Direct Support Maintenance Manual for Lambda Electronics Assembly, 16488-1
*TM 11-6130-440-13-4	Operator's Organizational and Direct Support Maintenance Manual for Lambda Electronics Assembly 16489-1
*TM 11-6130-440-13-5	Operator's Organizational and Direct Support Maintenance Manual for Lambda Electronics Assembly 16491-1
*TM 11-6130-440-13-6	Operator's Organizational and Direct Support Maintenance Manual for Lambda Electronics, LGS-F-28-OV-R
*TM 11-6130-440-24P	Organizational, Direct Support and General Support Maintenance Repair Parts and Special Tools Lists for Lambda Electronics Regulated Power Supplies used with the Improved Guardrail V, AN/USD-9A
TM 11-740-90-1	Administrative Storage of Equipment
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command)

* Not stocked by the Army Publications Center. Copies may be obtained from Commander, US Army Communications-Electronics Command and Fort Monmouth, ATT DRSEL-ME-PEW, Fort Monmouth, New Jersey 07703-5007

APPENDIX B

COMPONENTS OF END ITEM LIST

Section I. INTRODUCTION

B-1. Scope

This appendix lists integral components of and basic Issue items for the Lambda power supplies used In the AN/USD-9A to help you inventory Items required for safe and efficient operation.

B-2. General

This Components of End Item List is divided into the following sections:

a. Section II Integral Components of the End Item. These Items, when assembled, comprise the Lambda power supplies and must accompany it whenever. It is transferred or turned in. The illustrations will help you identify these items.

b. Section 111 Basic Issue Items. Not applicable.

B-3. Explanation of Columns

a. Illustration This column is divided as follows:

(1) *Figure number*. Indicates the figure number of the illustration on which the Item is shown.

(2) *Item number.* The number used to identify Item called out in the illustration.

b. National Stock Number. Indicates the National stock number assigned to the item and which will be used for requisitioning.

c. Part Number. Indicates the primary number used by the manufacturer, which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an Item or range of Items Following the part number, the Federal Supply Code for Manufacturers (FSCM) is shown in parentheses

d. Description. Indicates the Federal item name and, If required, a minimum description to identify the Item

e. Location. The physical location of each item listed is given in this column The lists are designed to Inventory all Items In one area of the major Item before moving on to an adjacent area.

f. Usable on Code. Not applicable

g. Quantity Required (Qty Reqd). This column lists the quantity of each Item required for a complete major item.

h. Quantity. This column is left blank for use during an Inventory. Under the Rcvd column, list the quantity you actually receive on your major item. The Date columns are for your use when you Inventory the major Item at a later date, such as for shipment to another site.

(Next printed page is B-2)

SECTION II. INTEGRAL COMPONENTS OF END ITEM

(1) ILLUSTRATION (a) FIGURE NO	(1) ILLUSTRATION (b) ITEM NO	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) LOCATION	(5) USABLE ON CODE	(6) QTY REQD	(7) QUANTITY RCVD	(7) QUANTITY DATE
			REGULATED POWER SUPPLY, LAMBDA ELECTRONICS MODELS					
			ASSEMBLY 16487-1 (80103)					
			ASSEMBLY 16488-1 (80103)					
			ASSEMBLY 16489-1 (80103)					
			ASSEMBLY 16491-1 (80103)					
			LGS-F-2B-OV-R (80103)					

APPENDIX D

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

D-1. General

This appendix provides a summary of the maintenance operations for Lambda power supplies used in the AN/USD-9A It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function This appendix may be used as an aid in planning maintenance operations

D-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect Incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the Instrument being compared.

g. Install. The act of emplacing, seating, or fixing Into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services (Inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, re-machining, or resurfacing) to restore serviceability to an Item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end Item, or system

j. Overhaul. That maintenance effort (service/action) necessary to restore an Item to a completely serviceable/operational condition as prescribed by maintenance standards (i e , DMWR) in appropriate technical publications Overhaul is normally the highest degree of maintenance performed by the Army Overhaul does not normally return an Item to like new condition

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipments/components.

D-3. Column Entries

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to Identify components, assemblies, subassemblies, and modules with the next higher assembly

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the Item listed in column 2 When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide

d. Column 4, Maintenance Category. Column 4

specifies, by the listing of a "work time" figure In the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed In column 3. This figure represents the active time required to perform that maintenance function at the Indicated category of maintenance If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "work time" figures will be shown for each category The number of task-hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end Item or system) to a serviceable condition under typical field operating conditions This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks Identified for the maintenance functions authorized In the maintenance allocation chart Subcolumns of column 4 are as follows'

C-Operator/Crew
O-Organizational
F-Direct Support
H-General Support
D-Depot

e. Column 5, *Tools and Equipment.* Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function

f. Column 6, *Remarks*. Column 6 contains an alphabetic code which leads to the remark In section VIII, Remarks, which is pertinent to the Item opposite the particular code

D-4. Tool and Test Equipment Requirements (Sect. VII)

a. Tool or Test Equipment Reference Code The numbers In this column coincide with the numbers used In the tools and equipment column of the MAC The numbers Indicate the applicable tool or test equipment for the maintenance functions

b. Maintenance Category The codes in this column indicate the maintenance category allocated the tool or test equipment

c. Nomenclature This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit) In parentheses.

D-5. Remarks (Sect. VIII)

a. Reference Code. This code refers to the appropriate item In section II, column 6

b. Remarks. This column provides the required explanatory Information necessary to clarity items appearing in section II.

SECTION II MAINTENANCE ALLOCATION CHART FOR

POWER SUPPLY, LAMBDA 16487-1

(I) GROUP NUMBER	(2) COMPONENT/ASSEMBLY FUNCTION	(3) MAINTENANCE	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT	(6) REMARKS
			C	0	F	H	0		
00	POWER SUPPLY, LAMBDA 16487-1	Inspect		0.1				1,2	
		Test		0.5				1,2	
		Test					1.0		
		Adjust		0.5				1,2	
		Replace		1.0				1,2	
		Repair		1.0				1,2	A
		Repair					4.0		A
01	POWER SUPPLY, LAMBDA LJS-12A-S-OV-6453	Test					0.3		
		Replace		0.1				2	
		Repair					4.0		
02	POWER SUPPLY, LAMBDA LGS-6A-28-OV-6453	Test					0.3		
		Replace		0.1				2	
		Repair					4.0		
03	POWER SUPPLY, LAMBDA LJS-llA-15-OV-6453	Test					0.3		
		Replace		0.1				2	
		Repair					4.0		

SECTION III. MAINTENANCE ALLOCATION CHART FOR

POWER SUPPLY, LAMBDA 16488-1

(I) GROUP NUMBER	(2) COMPONENT/ASSEMBLY FUNCTION	(3) MAINTENANCE	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	0	F	H	D		
00	POWER SUPPLY, LAMBDA 16488-1	Inspect		0.1					
		Test		0.5				1,2	
		Test					0.5		
		Adjust		0.5				1,2	
		Repair		1.0				1,2	A
		Repair					4.0		
01	POWER SUPPLY, LAMBDA LGS-SA-15-OV-R	Test					0.3		
		Replace		O.1				2	
		Repair					4.0		
02	POWER SUPPLY, LAMBDA LGS-6A-5-OV-R	Test					0.3		
		Replace		O.1				2	
		Repair					4.0		

SECTION IV MAINTENANCE ALLOCATION CHART
FOR
POWER SUPPLY, LAMBDA 16489-1

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	0	F	H	D		
00	POWER SUPPLY, LAMBDA 16489-1	Inspect		0.1					
		Test		0.5				1,2	
		Test					0.5		
		Adjust		O.5				1,2	
		Repair		1.0				1,2	A
		Repair					4.0		
01	POWER SUPPLY, LAMBDA LJS-12A-5-OV-6453	Test					0.3		
		Replace		O.1				2	
		Repair					4.0		
02	POWER SUPPLY, LAMBDA LJS-12A-12-OV-6453	Test					0.3		
		Replace		0.1				2	
		Repair					4.0		
03	POWER SUPPLY, LAMBDA LJS-11A-12-OV-6453	Test					0.3		
		Replace		O.1				2	
		Repair					4.0		
04	POWER SUPPLY, LAMBDA LJS-11A-S-OVY-6453	Test					0.3		
		Replace		O.1				2	
		Repair					4.0		

SECTION V MAINTENANCE ALLOCATION CHART
FOR
POWER SUPPLY, LAMBDA 16491-1

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
00	POWER SUPPLY, LAMBDA 16491-1	Inspect		0.1					
		Test		0.5				1,2	
		Test					O.5		
		Adjust		O.5				1,2	
		Repair		1.0				1,2	A
		Repair					4.0		
01	POWER SUPPLY, LAMBDA LJS-O10A-5-OV-6453	Test					0.3		
		Replace		O.1				2	
		Repair					4 0		
02	POWER SUPPLY, LAMBDA LGS-5A-12-OY-R	Test					0.3		
		Replace		0. 1				2	
		Repair					4.0		
03	POWER SUPPLY, LAMBDA LJS-1OA-12-OV-R-6453	Test					0.3		
		Replace		0.1				2	
		Repair					4. 0		

SECTION VI MAINTENANCE ALLOCATION CHART FOR

POWER SUPPLY, LAMBDA LGS-F-28-OV-R

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
00	POWER SUPPLY, LAMBDA LGS-F-2R-OY-R	Inspect		0.1					
		Test		0.5				1,2	
		Test					1.5		
		Adjust		O.5				1,2	
		Replace		O.1				2	
							4.0		

SECTION VII. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR

LAMBDA ELECTRONICS REGULATED POWER SUPPLIES USED WITH THE IMPROVED GUARDRAIL V, AN/USD-9A

TOOL OR TEST EQUIPMENT REF CODE	MAINTENAINCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	0	MULTIMETER, DIGITAL AN/PSM-45	6625-01-139-2512	
2	0	TOOL KIT, ELECTRONIC EQUIPMENT TK-10U	5180-DO-610-8177	

SECTION VIII. REMARKS

REFERENCE CODE	REMARKS
A	REPAIR CONSISTS OF REPLACEMENT OF SUBASSEMBLIES

D-9/(D-10 blank)

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