

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

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WARRANTY PROGRAM  
FOR  
GENERATOR SET, TACTICAL QUIET  
60 KW, 50/60 AND 400 HZ  
MEP-806A AND MEP-816A

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Headquarters, Department of the Army, Washington, D.C.

30 OCTOBER 1996

\*This bulletin supersedes TB 9-6115-645-24/SI 09244A/09245A-24, dated 30 December 1992.

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**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this manual. If you find a mistake or if you know a way to improve the procedures, please let us know.

(A) - ARMY: Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA-Form 2028-2 located in the back of this manual directly to Commander, U.S. Army Aviation and Troop Command ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. You may also submit your recommended changes by E-mail directly to <mpmt%avma28@st-louis-emh7.army.mil>. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

(MC) - MARINE CORPS: NAVMC Form 10772 directly to: Commander, Marine Corps Logistics Bases (Code 850), Albany, GA 31704-5000.

A reply will be furnished directly to you.

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**1. General.**

a. This Warranty Technical Bulletin (WTB) provides guidance for the Warranty Control Office and user activities in managing and complying with the manufacturer's warranty for the Diesel Engine Generator Sets, 60 KW, 50/60 and 400 Hz, designated MEP-806A and MEP-816A. The generator sets were manufactured by Libby Corporation, Kansas City, MO under prime contract DAAK01-88-D-D082, and Fermont Division, Dynamics Corporation of America, Bridgeport, CT under prime contract DAAK01-94-D-0036. Refer to Appendix A for serial number effectivity.

b. This warranty is designed to indemnify the Government and provide an additional incentive for the manufacturers to deliver a quality product. Due to warranty claim(s) processing time, the warranty is not an appropriate vehicle for maintaining readiness of Tactical Quiet Generators. The normal supply system should be used to maintain readiness. Parts provided in response to warranty claims should be used to replenish your supply stocks.

c. The warranty provides that the generator set and all components at the time of acceptance or delivery will conform to design and manufacturing requirements, be free from all defects in materials and workmanship, and conform to all performance requirements delineated in the applicable specifications of these contracts. The warranty will be for 1800 operating hours on each unit, or thirty-six (36) months, whichever occurs first, from the date that the unit has been accepted by the Government as shown on the Material Inspection and Receiving Report (DD Form 250). This warranty shall include furnishing of new items to replace any that prove to be nonconforming and/or defective within the warranty period. Such items shall be furnished without cost to the Government.

d. When repair or replacement requires transportation of the nonconforming or defective items, shipping cost from the line item delivery point (irrespective of the f.o.b. point or the point of acceptance) to the Contractor's plant and return shall be at the expense of the Contractor.

**2. Explanation of Terms.** The following terms apply to the warranty program:

- a. *Abuse.* The improper use, repair, or handling of items such that the warranty may become void.
  - b. *Acceptance.* The act of an authorized representative of the Government by which the Government assumes for itself, or as an agent of another, ownership of existing and identified supplies, or approves specific services rendered, as partial or complete performance of the contract.
  - c. *Acceptance Date.* The date the unit has been accepted by the Government as shown on the Material Inspection and Receiving Report (DD Form 250).
  - d. *Alterations/Modifications.* Any alteration after delivery such as retrofit, conversion, remanufacture, whether or not authorized by a design change or engineering change.
  - e. *Correction.* The elimination of a defect.
  - f. *Defect.* Any condition or characteristic in any supplies furnished by the Contractor under the contract which fails to conform to the design and manufacturing requirements, or fails to meet the standards or materials of workmanship, or is a departure from performance requirements as delineated in the specifications of this contract.
  - g. *Failed Item.* A part, component, or end item that fails to perform its intended use as defined herein.
  - h. *False Return.* The return of suspected defective warranty items to the manufacturer that are eventually determined to be serviceable.
1. *Prime Contractor.* A party that enters into an agreement directly with the United States to furnish part or all of a weapon system.
- j. *Reimbursement.* To repay or make restitution for claims and/or false returns, etc.
  - k. *Repair.* To restore an item to serviceable condition.
1. *Supplies.* The commodities purchased under the contract and all original constituent components/parts thereof delivered under the contract, excluding Government-furnished property (GFP). It also includes all new contractor-supplied or contractor overhauled replacement components/parts as may be installed on the original commodities delivered under the contract to remedy a defect in an original component/part.
- m. *Validation.* The process by which the contractor shall test/measure the WTB to assure its accuracy as it pertains to the warranty items(s).

n. **Warranty.** A promise or statement of fact from a seller to a purchaser on the nature, usefulness, or condition of the supplies or performance of services to be furnished. The main purposes of a warranty in a Government contract are to outline the rights and obligations of the Contractor and the Government for defective items and services. It also serves to foster quality performance by the Contractor but is not a substitute for an adequate quality assurance program.

o. **Warranty Claim.** An action started by the Government for warranted items which have failed and the claim is issued by U.S. Army Aviation and Troop Command (ATCOM) Warranty Control Office (WARCO) in conjunction with the Contracting Officer.

p. **Warranty Control (WARCO).** An agency established at ATCOM to handle and process warranty claims which originate by field users. All warranty claim actions will be processed through the U.S. Army Aviation and Troop Support Command WARCO (AMSAT-A-WC).

q. **Warranty Start Date.** The date the warranty is effective.

r. **Warranty Technical Bulletin (WTB).** A document that provides guidelines for warranty control officers and user activities on how to manage and apply warranties in full.

**3. Coverage - Specific.** Table 1 identifies the generator sets covered by the Warranty Technical Bulletin.

**Table 1. Specific Coverages**

Nomenclature	Line Item Number	Model Number	NSN	Mfg (CAGE) Part No.	Serial Number	Contract No./ Prime Contractor	Warranty Type/ Coverage
Generator Set, 60 KW 50/60 HZ	See Appx A	MEP-806A	6115-01-274-7390	36024 88-806	See Appx A	DMK01-88-D-D082 Libby Corporation	Time 36 Mos, or 1800 Oper Hrs
Generator Set, 60 KW 400 HZ	See Appx A	MEP-816A	6115-01-274-7395	36024 88-816	See Appx A	DAAK01-88-D-D082 Libby Corporation	Time 36 Mos, or 1800 Oper Hrs
Generator Set, 60 KW 50/60 HZ	See Appx A	MEP-806A	6115-01-274-7390	30554 88-806	See Appx A	DAAK01-94-D-0036 Vermont Division	Time 36 Mos, or 1800 Oper Hrs
Generator Set, 60 KW 400 HZ	See Appx A	MEP-816A	6115-01-274-7395	30554 88-816	See Appx A	DAAK01-94-D-0036 Vermont Division	Time 36 Mos, or 1800 Oper Hrs

**4. Contractor Responsibilities - Libby Corporation.** The following paragraphs pertain to generator sets purchased under contact DAAK01-88-D-D082. Refer to Appendix A for serial number effectivity.

a. The Prime Contractor (Libby) guarantees the supplies and parts at the time of acceptance or delivery conform to the design and manufacturing requirements, are free from all defects in materials and workmanship, and conform to all performance requirements delineated in the applicable specifications of the contract. This guarantee will be for 1800 operating hours on each unit, or thirty-six (36) months, whichever occurs first, from the date that the unit has been accepted by the Government as shown on the Material Inspection and Receiving Report (DD Form 250). The guarantee shall include furnishing of new items to replace any that prove to be nonconforming and/or defective within the warranty period. Such items shall be furnished without cost to the Government. When repair or replacement requires transportation of the nonconforming or defective items, shipping cost from the line item delivery point to the Contractor's plant and return shall be at the expense of the Contractor.

b. The Contractor (Libby) will be allowed sixty (60) days from the receipt of the warranty claim form to process and validate the ATCOM WARCO warranty claims. The WARCO will be notified in writing at the end of this 60 day period of the recommended action.

c. The following paragraphs describe the Prime Contractor's understanding of the warranty process and responsibilities in handling a warranty claim.

- (1) Generator set fails. User completes DA Form 2402, Exchange Tag.

**NOTE**

**Prior to using DA Form 2407, read DA PAM 738-750 for detailed preparation instructions.**

- (2) Using activity prepares and submits DA Form 2407, Maintenance Request, to ATCOM WARCO.

(3) The Prime Contractor is notified through ATCOM WARCO and the ATCOM Contracting Office that a failure has occurred. Notification should be sent to: Libby Corporation, 5800 Stilwell, Kansas City, MO 64120-4200, ATTN: Warranty Claims.

(4) Upon notification, the Prime Contractor will review the warranty claim and recommend one of the following within 60 days after receiving the warranty claim:

(a) Return item for warranty replacement using Material Return Authorization number which will be assigned by Libby at the time the return decision is made.

(b) Return item for failure analysis and evaluation of warranty using Material Return Authorization number.

(c) Item is not covered under warranty.

(5) Upon notification by ATCOM WARCO that the item is to be returned to Libby, the using activity will package and return the item to Libby Corporation at the address provided in paragraph 4c(3).

(6) Upon receipt of the failed item and completed Form 2407, the Prime Contractor will conduct a failure analysis to determine cause of failure and evaluate the validity of the warranty claim. Libby will provide the results of the analysis to ATCOM WARCO within 45 days after receiving the item.

(7) If valid, Libby will return the repaired or replaced item to the user within 60 days after the analysis has been completed.

(8) If the claim is not valid, the ATCOM WARCO will be notified and disposition instructions requested.

(9) Warranty Status Reports will be prepared and submitted to ATCOM WARCO on a quarterly basis. The reports will summarize warranty activities taken during each reporting period. They will also contain historical data on past warranty claims.

**5. Contractor Responsibilities - Fermont Division.** The following paragraphs pertain to generator sets purchased under contact DAAK01-94-D-0036. Refer to Appendix A for serial number effectivity.

a. The Prime Contractor (Fermont) guarantees the supplies and parts at the time of acceptance or delivery conform to the design and manufacturing requirements, are free from all defects in materials and workmanship, and conform to all performance requirements delineated in the applicable specifications of the contract. This guarantee will be for 1800 operating hours on each unit, or thirty-six (36) months, whichever occurs first, from the date that the unit has been accepted by the Government as shown on the Material Inspection and Receiving Report (DD Form 250). The guarantee shall include furnishing of new items to replace any that prove to be nonconforming and/or defective within the warranty period. Such items shall be furnished without cost to the Government. When repair or replacement requires transportation of the nonconforming or defective items, shipping cost from the line item delivery point (irrespective of the f.o.b. point or the point of acceptance) to the Contractor's plant and return shall be at the expense of the Contractor.

b. The Contractor's warranty will extend only to the proper installation of Government-furnished property (GFP), unless the Contractor performs some modification or other work on the property, in which case the full warranty will extend to the modification or other work.

c. The Contractor is not obligated to correct or replace supplies if the facilities, tooling, drawings, or other equipment, or supplies necessary to accomplish the correction or replacement have been made unavailable to the Contractor by action of the Government. In the event that correction or replacement has been directed, the Contractor will promptly notify the Contracting Officer, in writing, of the nonavailability.

d. The Contractor (Fermont) will be allowed ten (10) legal working days from the receipt of the warranty claim form to process and validate the ATCOM WARCO warranty claims. The WARCO will be notified in writing at the end of this 10 day period of the recommended action.

e. The following paragraphs describe the Prime Contractor's understanding of the warranty process and responsibilities in handling a warranty claim.

- (1) Generator set fails. User completes DA Form 2402, Exchange Tag.

**NOTE**

**Prior to using DA Form 2407, read DA PAM 738-750 for detailed preparation instructions.**

- (2) Using activity prepares and submits DA Form 2407, Maintenance Request, to ATCOM WARCO.

(3) ATCOM WARCO or the ATCOM Contracting Office notifies the Contractor that a failure has occurred within 10 days after receipt of a failure notice from the using activity. Notification should be sent to: Fermont, 141 North Avenue, Bridgeport, CT 06606, ATTN: Warranty Claims.

(4) Upon notification, the Prime Contractor will review the warranty claim and recommend one of the following within 10 days after receiving the warranty claim:

(a) Return item for warranty replacement using Material Return Authorization number which will be assigned by Fermont at the time the return decision is made.

(b) Return item for failure analysis and evaluation of warranty using Material Return Authorization number.

(c) Item is not covered under warranty.

(5) Upon notification by ATCOM WARCO that the item is to be returned to Fermont, the using activity will package and return the item to Fermont at the address provided in paragraph 5e(3).

(6) The contractor shall repair or replace the warranted item within 90 days from the date when both the WARCO notification and the item are received. The contractor shall promptly provide all material, labor, facilities and tools needed to effect repairs and commence to repair/replace such parts in accordance with published service/repair procedures.

(7) Contractor shall notify an authorized Government representative upon receipt of the warranted item to witness the opening of the warranted item shipping containers at that facility. The Government representative will verify contractor actions concerning warranted/non-warranted repair requirements of the item. If a Government representative is not available within 3 working days, the contractor may proceed and the 90 day turn-around-time will commence at that time.

(8) If the claim is not valid, the ATCOM WARCO will be notified and disposition instructions requested.

(9) Warranty Performance Reports will be prepared and submitted to ATCOM WARCO upon request by the Contracting Officer or WARCO for as long as the warranty is in effect.

**6. Government Responsibilities/Identification.** The Government activity responsible for administrative functions of the warranty program is the U.S. Army Aviation and Troop Command, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. Point of contact is AMSAT-A-WC. Business hours are 0700 - 1600 hours (Central). Telephone numbers are, Commercial (314) 263-3425, Autovon (DSN) 693-3425. The following paragraphs describe the responsibilities of each Government activity.

a. *Government Maintenance.* Failure to follow published maintenance procedures at the maintenance levels specified in the appropriate technical manual could result in a warranty claim being declared invalid. The following maintenance requirements must be performed:

(1) Preventive Maintenance Checks and Services (PMCS). All PMCS requirements contained in the Operator's Manual (TM 9-6115-645-10) and the Unit, Direct and General Support Maintenance Manuals (TM 9-6115-645-24 and TM 9-2815-256-24).

(2) Lubrication Order. All lubrication requirements are outlined in LO 9-6115-645-12.

(3) Corrective maintenance for the equipment is given in TM 9-6115-645-24 and TM 9-2815-256-24 based upon the approved Maintenance Allocation Chart (MAC). Any deviations from the normal maintenance and repair procedures is not authorized.

b. The owning unit is responsible for operating and maintaining the generator sets in accordance with the technical manuals. All PMCS and lubrication order requirements must be met. In addition, all operating procedures will be strictly followed while observing all warnings, cautions, and notes. Upon experiencing a warranty related failure, the owning unit shall prepare the required documentation in accordance with paragraphs 4c(2) or 5e(2).

c. *Warranty Control Office Responsibilities.* The ATCOM WARCO, AMSAT-A-WC, will handle all warranty claims generated by the field units with the exception of FMS customers. The WARCO will determine whether or not each claim is a candidate for warranty consideration. The Government will initiate Warranty Claim Actions (WCA) for warranty items and Quality Deficiency Reports (QDR) for systematic failures in accordance with DA PAM 738-750 and this Technical Bulletin. The ATCOM WARCO will coordinate warranty claims with the ATCOM Contracting Officer as appropriate. FMS customers will administer their own WCA and QDRs.

d. *Army Oil Analysis Program (AOAP)*. There are no warranty components of the generator set enrolled in the AOAP.

e. *Alteration/Modifications*. Alterations and modifications shall not be made unless expressly authorized or directed by: Commander, U.S. Army Aviation and Troop Command, ATTN: AMSAT-A-TCB, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. Telephone numbers: Commercial (314) 263-0579; Autovon (DSN) 693-0579.

## 7. Design/Performance Specifications.

a. Design and performance specifications for the generator set are contained in the Operator's Technical Manual (TM 9-6115-645-10) and the Unit, Direct and General Support Maintenance Manuals (TM 9-6115-645-24 and TM 9-2815-256-24) which also contain maintenance procedures and authorized maintenance levels. Testing and measuring methods designed to check generator set performance are contained in the maintenance manuals.

b. The warranty label (Figure 1) is located at the front of the generator set. When generating a warranty claim, information from the data plate must be used in completing the required DA Forms.

**8. Nullification.** The following examples of actions which will nullify the warranty are examples only, and are not inclusive and do not alter the terms of the contract warranty provisions.

a. Any maintenance/repair procedure, improper use or operation, abuse, improper environmental exposure, and installation methods which are outside of the published guidelines and procedures contained in the technical manuals can be cause for nullifying a warranty claim.

b. In addition, the following actions will be cause for nullification of the warranty:

(1) Subsequent damage to components as a result of continued use after a component malfunction.

(2) Damage caused by combat conditions or acts of war.

(3) Operation of the unit with the battle short switch on.

(4) Operation of the unit in an environment beyond that specified in the Operator's Technical Manual TM 9-6115-645-10.

(5) Installation of equipment not in accordance with the technical manuals.

(6) Any abuse, such as improper use, repair, or handling of warranted items.

(7) Any damage caused by (1) acts of God or the public enemy, (2) acts of the Government in either its sovereign or contractual capacity, (3) fires, (4) floods, or (5) unusually severe weather beyond the performance specifications.

c. *Abuse Determination*. In cases where generator set abuse is suspected (i.e., not obvious), the ATCOM WARCO or Prime Contractor shall initiate an inquiry into the circumstances leading up to the generator set failure. The Prime Contractor must submit a letter requesting an inquiry through the ATCOM WARCO and Contracting Office.

(1) The ATCOM WARCO will review the Prime Contractor's request and provide a response to the Prime Contractor through the Contracting Office.

(2) This warranty is void for any generator set for which abuse is determined. The generator set may be returned to a functional condition by performing the necessary repair procedures in TM 9- 6115-645-24 and TM 9-2815-256-24.

(3) The Prime Contractor will identify warranty claims that are under investigation in the quarterly Warranty Status Report, if supplied.

d. *Abuse Avoidance.* When abuse (intentional or unintentional) has been determined, a statement shall be made by the abuse determination activity as to how abuse can be avoided in the future.

**9. Claim Procedures.** The following procedures provide instructions for processing warranty claims (refer to DA PAM 738-750).

a. *Identification of Failed Items.* Generator sets and components thereof that experience a warranty failure shall be tagged/identified to prevent improper repair or use. Tag the generator set with an Exchange Tag, DA Form 2402 and complete the Maintenance Request Form, DA Form 2407 (refer to DA PAM 738-750). There are no items requiring special handling, storage, or shipment during the processing or warranty claims.

b. *Disposition.* Upon notification by ATCOM WARCO that the item is to be returned to the Prime Contractor, the using activity will package and return the item directly to the Prime Contractor at the address noted in paragraph 4b(3) or 5e(3) as appropriate. A copy of the Maintenance Request Form, DA Form 2407 (refer to DA PAM 738-750) will be forwarded with the failed item.

(1) False Return (Libby Corporation). If, upon investigation, the returned generator set or item is found to be serviceable, the Government unit submitting the return will pay shipping cost and will be charged \$1000.00 for contractor processing, testing, and administrative time. In addition, the using activity should consider the down time of the affected generator set. False returns will be reported in the quarterly Warranty Status Reports submitted by the contractor. These false returns will be monitored by the ATCOM WARCO and corrective action will be taken.

(2) False Return (Fermont Division). If, upon preliminary analysis of the component/part returned for warranted repairs, the cause of the failure cannot be duplicated or verified and the item functions within the required specifications, the contractor shall prepare an analysis report of the actions taken to include a cost reimbursement proposal. This report/proposal shall be forwarded to the WARCO within 30 days after completion of the analysis for review/approval.

(3) Receipts/Verification of Contractor Repairs. Upon receipt of the repaired components, the using activity will review the accompanying documentation. The repaired part will be tagged by the Prime Contractor service department. The using activity will also visually inspect the repaired part for evidence of physical damage incurred during shipping. No item testing will be required to ensure that the component was repaired properly. The Prime Contractor assumes all responsibility for testing after repair.

(4) Special Area Requirements. There are no special limitations or adjustments/changes required at different commands, theaters, or locations.

c. *Reimbursement for Army Repair.* Reimbursement for Army repair is not authorized by this warranty.

d. *Claim Denials/Disputes.* Claim denials or disputes will be coordinated through the Prime Contractor Warranty Administrator and the ATCOM WARCO.

e. *Reporting.* Reporting or recording action on a failed item shall be as specified in DA PAM 738-750. Contractor unique forms shall not be used.



**10. Storage/Shipment Handling.**

- a. *Storage.* There are no special storage requirements pertaining to the warranty contract.
- b. *Shipment.* The returned item must be packaged and shipped collect to the Prime Contractor at the address given in paragraph 4b(3) or 5e(3). Shipping costs for items shipped to the user by the Prime Contractor will be paid by the Prime Contractor. No shipment shall be made without authority from ATCOM WARCO.
- c. *Handling.* There are no special handling requirements for the generator sets or components.

US DEPARTMENT OF DEFENSE NATO STANDARD OTAN			
GENERATOR SET DIESEL ENGINE 60KW 50/60HZ			
MODEL	MEP-806A	NSN	6115-01-274-7390
SER NO	RZJ	REG NO.	
TM	9-6115-645-10	NAVFAC	9-6115-645-10
TO	35C2-3-444-11	TM	09244A/09245A-10/1
VOLTS	120/208V 3PH, 208/416V 3PH		
AMPS	208, 104	PF	0.8
DRY WT	3556 LB	LG	87 IN
		W	35.7 IN
		HGT	59 IN
DATE MFD		CONTR NO	DAAK01-88-D-0082
WARRANTY		DATE INSP	
MFD BY	LIBBY CORP	INSP STAMP	
30554-88-20063-09			

US DEPARTMENT OF DEFENSE NATO STANDARD OTAN			
GENERATOR SET DIESEL ENGINE 60KW 400HZ			
MODEL	MEP-816A	NSN	6115-01-274-7395
SER NO	RZJ	REG NO.	
TM	9-6115-645-10	NAVFAC	9-6115-645-10
TO	35C2-3-444-11	TM	09244A/09245A-10/1
VOLTS	120/208V 3PH, 208/416V 3PH		
AMPS	208, 104	PF	0.8
DRY WT	3606 LB	LG	87 IN
		W	35.7 IN
		HGT	59 IN
DATE MFD		CONTR NO	DAAK01-88-D-0082
WARRANTY		DATE INSP	
MFD BY	LIBBY CORP	INSP STAMP	
30554-88-20063-10			

Figure 1. Warranty Label  
(Sheet 1 of 2)

US DEPARTMENT OF DEFENSE NATO STANDARD OTAN	
GENERATOR SET DIESEL ENGINE 60KW 50/60HZ	
MODEL	MEP-806A
NSN	6115-01-274-7390
SER NO	FZ
REG NO.	
TM	9-6115-645-10
NAVAC	9-6115-645-10
TO	35C2-3-444-11
TM	09244A/09245A-10/1
VOLTS 120/208V 3PH, 208/416V 3PH	
AMPS	208, 104
PF	0.8
DRY WT	3556 LB
LG	87 IN
W	35.7 IN
HGT	59 IN
DATE MFD	
CONTR NO	DAAK01-94-D-0036
WARRANTY	
DATE INSP	
MFD BY	FERMONT DIV
INSP STAMP	
30554-88-20063-09	

US DEPARTMENT OF DEFENSE NATO STANDARD OTAN	
GENERATOR SET DIESEL ENGINE 60KW 400HZ	
MODEL	MEP-816A
NSN	6115-01-274-7395
SER NO	FZ
REG NO.	
TM	9-6115-645-10
NAVAC	9-6115-645-10
TO	35C2-3-444-11
TM	09244A/09245A-10/1
VOLTS 120/208V 3PH, 208/416V 3PH	
AMPS	208, 104
PF	0.8
DRY WT	3606 LB
LG	87 IN
W	35.7 IN
HGT	59 IN
DATE MFD	
CONTR NO	DAAK01-94-D-0036
WARRANTY	
DATE INSP	
MFD BY	FERMONT DIV
INSP STAMP	
30554-88-20063-10	

Figure 1. Warranty Label  
 (Sheet 2 of 2)

APPENDIX A  
EQUIPMENT UNDER WARRANTY

MEP-806A

LINE ITEM NUMBERS

SERIAL NUMBERS

1901AA, 1901AM, 1901AN,  
1901AP, 1901AQ, 1901AR,  
1901AS, 1901AT, 1901AU,  
1901AV, 1901AW, 1901AX,  
1901AY, 1901AZ, 1901BA,  
2901AA, 2901AM, 2901AN,  
2901AP, 2901AQ, 2901AR,  
5901AA, 5901AM, 5901AN,  
5901AP, 5901AQ, 5901AR,  
5901AS, 5901AT, 5901AU,  
5901AV, 5901AW, 5901AX,  
AND 5901AY

RZJ00050 THRU RZJ02282

TBD BY GOVERNMENT

FZ00041 THRU FZ00045,  
AND FZ84000 THRU FZ94999

MEP-816A

LINE ITEM NUMBERS

SERIAL NUMBERS

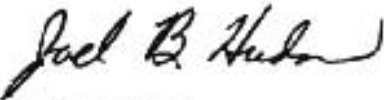
1801AA, 1801AM, 2801AA,  
5801AA, 5801AM, 5801AN,  
5801AP, AND 5801AQ

RZJ15050 THRU RZJ15255

TBD BY GOVERNMENT

FZ00046 THRU FZ00050,  
AND FZ95000 THRU FZ99999

By Order of the Secretaries of the Army, and Navy (Including the Marine Corps):

Official: 

JOEL B. HUDSON  
*Administrative Assistant to the  
Secretary of the Army*

03070

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Commander  
Navy Facilities Engineering  
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To be distributed in accordance with DA Form 1 2-25-E, block no. 6012, requirements for TB 9-6115-645-24.

## These are the instructions for sending an electronic 2028


The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13,15, 16, 17, and 27.

From: "Whomever" <whomever@avma27.army.mil>  
To: mpmtO/oavma28@st-louis-emh7.army.mil  
Subject: DA Form 2028

1. **From:** Joe Smith
2. Unit: home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St:** MO
6. **Zip:** 77777
7. **Date Sent:** 19-OCT-93
8. **Pub no:** 55-2840-229-23
9. **Pub Title:** TM
10. **Publication Date:** 04-JUL-85
11. Change Number: 7
12. Submitter Rank: MSG
13. **Submitter FName:** Joe
14. Submitter MName: T
15. **Submitter LName:** Smith
16. **Submitter Phone:** 123-123-1234
17. **Problem: 1**
18. Page: 2
19. Paragraph: 3
20. Line: 4
21. NSN: 5
22. Reference: 6
23. Figure: 7
24. Table: 8
25. Item: 9
26. Total: 123
27. **Text:**

This is the text for the problem below line 27.

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

				<b>SOMETHING WRONG WITH PUBLICATION</b>	
<i>THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL.</i>				FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)	
				DATE SENT	
PUBLICATION NUMBER		PUBLICATION DATE		PUBLICATION TITLE	
<b>BE EXACT PIN-POINT WHERE IT IS</b>				<b>IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.</b>	
PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.		
PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER				SIGN HERE	

## The Metric System and Equivalents

### Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

### Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 decagram = 10 grams = .35 ounce  
 1 hectogram = 10 decagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

### Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

### Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

### Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

### Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
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